



- (51) **International Patent Classification:**
C12Q 1/68 (2006.01) *G01N 33/50* (2006.01)
- (21) **International Application Number:**
PCT/AU2016/050927
- (22) **International Filing Date:**
30 September 2016 (30.09.2016)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
2015903986 30 September 2015 (30.09.2015) AU
- (71) **Applicant:** IMMUNEXPRESS PTY LTD [AU/AU]; 6 Leonard Street, Boonah, Queensland 4310 (AU).
- (72) **Inventors:** BRANDON, Richard Bruce; 6 Leonard Street, Boonah, Queensland 4310 (AU). FOX, Brian Andrew; 2312 N 39th Street, Seattle, Washington 98103 (US). MCHUGH, Leo Charles; 112 10th Avenue East, Seattle, Washington 98102 (US). SAMPSON, Dayle Lorand; 9513 #B Ashworth Avenue N, Seattle, Washington 98103 (US).
- (74) **Agent:** DAVIES COLLISON CAVE PTY LTD; 10/301 Coronation Drive, Milton, Queensland 4064 (AU).
- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- with sequence listing part of description (Rule 5.2(a))

(54) **Title:** PATHOGEN BIOMARKERS AND USES THEREFOR

(57) **Abstract:** Disclosed are compositions, methods and apparatus for diagnosing and/or monitoring a virus-associated systemic inflammation by measurement of a host immune response. The invention can be used for diagnosis including early diagnosis, monitoring, making treatment decisions, or management of subjects suspected of having systemic inflammation associated with an infection. More particularly, the present disclosure relates to peripheral blood RNA and protein biomarkers that are useful for specifically distinguishing between the host systemic immune response to viruses as compared to the host immune response to other causes of systemic inflammation.



TITLE OF THE INVENTION

"PATHOGEN BIOMARKERS AND USES THEREFOR"

FIELD OF THE INVENTION

[0001] This application claims priority to Australian Provisional Application No. 2015903986 entitled "Pathogen biomarkers and uses therefor" filed 30 September 2015, the contents of which are incorporated herein by reference in their entirety.

[0002] This invention relates generally to compositions, methods and apparatus for diagnosing and/or monitoring a virus-associated systemic inflammation by measurement of a host immune response. The invention can be used for diagnosis including early diagnosis, monitoring, making treatment decisions, or management of subjects suspected of having systemic inflammation associated with an infection. More particularly, the present invention relates to peripheral blood RNA and protein biomarkers that are useful for specifically distinguishing between the host systemic immune response to viruses as compared to the host immune response to other causes of systemic inflammation.

BACKGROUND OF THE INVENTION

[0003] Fever and clinical signs of systemic inflammation (or SIRS) are commonly seen in patients presenting to medical services; either in general practice clinics, outpatient clinics, emergency rooms, hospital wards or intensive care units (Rangel-Frausto *et al.* (1995). The natural history of the systemic inflammatory response syndrome (SIRS). A prospective study. JAMA : the Journal of the American Medical Association, 273(2), 117–123; McGowan *et al.* (1987). Fever in hospitalized patients. With special reference to the medical service. The American Journal of Medicine, 82(3 Spec No), 580–586; Bor *et al.* (1988). Fever in hospitalized medical patients: characteristics and significance. Journal of General Internal Medicine, 3(2), 119–125; Finkelstein *et al.* (2000). Fever in pediatric primary care: occurrence, management, and outcomes. Pediatrics, 105(1 Pt 3), 260–266).

[0004] When SIRS is the result of a confirmed infectious process it is called infection-positive SIRS (ipSIRS), otherwise known as sepsis. Within this definition lies the following assumptions; the infectious process could be local or generalized; the infection could be bacterial, fungal/yeast, viral or parasitic; the infectious process could be in an otherwise sterile body compartment. Such a definition has been updated in Levy *et al.* 2003 ("2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference," Critical Care Medicine 31, no. 4: 1250–1256) to accommodate clinical and research use of the definition. The revised definition allows that the infection be in a sterile or non-sterile site (*e.g.*, overgrowth of a pathogen / commensal in the intestine) and that the infection can be either confirmed or suspected.

[0005] In many instances the use of the terms SIRS and sepsis, and what clinical conditions they do or do not include, are confusing in clinical situations. Such confusion leads to difficulties in clinical diagnosis and in making decisions on subsequent patient treatment and management. Difficulties in clinical diagnosis are based on the following questions: 1) what constitutes a "suspected" infection given that many body organs / sites are naturally colonized by microbes (*e.g.*, *Escherichia coli* in the intestines, *Staphylococcus epidermidis* in skin), viruses (*e.g.*, latent viruses such as herpes) or parasites (*e.g.*, *Toxoplasma*, *Giardia*); 2) what constitutes a

pathological growth of an organism in a normally non-sterile body site?; 3) what contributions to SIRS are made by a viral / microbial / parasitic co-infection in a non-sterile body site (e.g., upper respiratory tract), and if such an infection is suspected then should the patient be put on antibiotics, anti-fungal, anti-viral or anti-parasitic compounds?

[0006] Patients with fever and SIRS need to be carefully assessed, and tested, to determine the cause of the presenting clinical signs as there are many possible differential diagnoses (Munro, N. (2014). Fever in acute and critical care: a diagnostic approach. AACN Adv Crit Care 25: 237–248). Possible differential diagnoses include infection (bacterial, fungal, viral, parasitic), trauma, allergy, drug reaction, autoimmunity, surgery, neutropenia, cancer, metabolic disorders, clotting disorders. Patients with fever and SIRS caused by bacterial or fungal infection often require immediate medical attention and it is therefore important to quickly differentiate such patients. Patients with fever and SIRS caused by viral infection need to be further assessed to determine 1) the degree of systemic inflammation due to viral infection, 2) the degree of involvement of microbes (commensals, microbiome, pathogens) to systemic inflammation 3) contributions that each of viruses, microbes and sterile injury are making to systemic inflammation 4) likelihood of the patient rapidly deteriorating. The results of such an assessment aids clinicians in making appropriate management and treatment decisions.

[0007] Whether or not a host responds to a viral infection through a SIRS depends largely upon the extent and type of exposure to viral antigen (Klimpel GR. Immune Defenses. In: Baron S, editor. Medical Microbiology. 4th edition. Galveston (TX): University of Texas Medical Branch at Galveston; 1996. Chapter 50). Factors that affect host immune system exposure to viral antigen include; 1) Host immune status, including vaccination, 2). Primary or secondary exposure to the same virus, 3). Stage of infection (early, late, re-activation), 4). Infection type (cytolytic, persistent, latent, integrated), 5). Mechanism of spread (primary hematogenous, secondary hematogenous, local, nervous), 6). Virus location (systemic or restricted to mucosal surface). Table 1 lists some example virus types (by family and Baltimore classification) and the means by which the host is exposed to viral antigen. Viruses have multiple methods of interacting with the host and its cells and if a host mounts a systemic inflammatory response to a viral infection it means that the immune system has been exposed to sufficient levels of novel viral antigens. Types of viral antigens include proteins (capsid, those involved in virus replication) and nucleic acids (RNA and/or DNA). Most viral proteins are specific to a particular type of virus and the host immune system will respond in a specific, adaptive, and usually delayed, manner. However, it is known that there are host receptors, called pattern recognition receptors (PRR), for foreign (microbial, viral) nucleic acid, including RNA and DNA (Perry, A. K., Chen, G., Zheng, D., Tang, H., & Cheng, G. (2005). The host type I interferon response to viral and bacterial infections. Cell Research, 15(6), 407–422). PRRs recognise, in a non-specific manner, conserved molecular motifs called Pathogen Associated Molecular Patterns, or PAMPs. The cellular pathways and conserved response to PRR stimulation are well documented and includes the production of Type I interferons (Type I IFNs). Whilst DNA and RNA viruses use different initial receptors they both activate the kinases TANK-binding kinase-1 (TBK1) and/or the inducible I B kinase (IKK-i), which ultimately leads to the production of Type I IFNs. The variable downstream effects of Type I IFNs are dependent upon a number of factors including, but not limited to, cell source, concentration, receptor density, receptor avidity and affinity, cell type Hall, J. C., & Rosen, A. (2010). Type I interferons: crucial participants in disease

amplification in autoimmunity. *Nature Reviews Rheumatology*, 6(1), 40–49). Accordingly, the host immune system responds to a viral infection in both a generalized and specific manner.

[0008] Currently, diagnosis of viral conditions is challenging. In general, the conventional method for diagnosing viral infection is cell culture and isolation (growth of virus in cell culture, observation of cytopathic effect (CPE) or hemabsorption (HAD), and partial or complete identification by staining or biochemical or immunoassay (e.g. immunofluorescence)) (Hsiung, G. D. 1984. *Diagnostic virology: from animals to automation*. *Yale J. Biol. Med.* 57:727–733; Leland DS, Ginocchio CC (2007) *Role of Cell Culture for Virus Detection in the Age of Technology*. *Clinical Microbiology Reviews* 20: 49–78). This method has limitations in that it requires; appropriate transport of the clinical sample in an appropriate virus-preservation medium, an initial strong suspicion of what the infecting virus might be (to select a suitable cell line that will grow the suspected virus), a laboratory having suitable expertise, equipment and cell lines, and, once these conditions are all in place, a lengthy incubation period (days to weeks) to grow the virus. The process is laborious and expensive.

[0009] With respect to improving the diagnosis of viral conditions, and more recently, sensitive and specific assays such as those using monoclonal antibodies or nucleic acid amplification have become available and are now widely available and used in diagnostic laboratories. Amplification of viral DNA and RNA (e.g., PCR) and viral antigen detection are fast and do not require the lengthy incubation period needed for viral isolation in cell cultures, may involve less technical expertise, and are sensitive enough to be useful for viruses that do not proliferate in standard cell cultures. Molecular detection of viral DNA and RNA also has its limitations in that an initial strong suspicion of what the infecting virus might be is also required (to use specific PCR primers and probes, for example), the method detects both live and dead virus, and that most molecular tests are designed to detect only one type of virus and, as such, will only detect one type of virus. By way of example, it has been shown that mixed respiratory infections occur in up to 15% of immunocompetent children and that such mixed infections lead to an increase in disease severity (Waner, J. L. 1994. *Mixed viral infections: detection and management*. *Clin. Microbiol. Rev.* 7:143–151). A PCR designed to only one type of virus will not detect a mixed infection if the primers and probes are not specific to all viruses present in the clinical specimen. To cover the possibility of a mixed infection, as well as to cover multiple possible viral causes or strains, there are some commercially available assays capable of detecting more than one virus and/or strain at a time (e.g., BioMerieux, BioFire, FilmArray®, Respiratory Panel; Luminex, xTAG® Respiratory Viral Panel). Such an approach is especially useful in confirming an infective agent if clinical signs are pathognomonic or if a particular body system is affected (e.g., respiratory tract or gastrointestinal tract). Further, there are techniques that allow for amplification of viral DNA of unknown sequence which could be useful in situations where the clinical signs are generalized, for viruses with high mutation rates, for new and emerging viruses, or for detecting biological weapons of man-made nature (Clem *et al.* (2007) *Virus detection and identification using random multiplex (RT)-PCR with 3'-locked random primers*. *Virol J* 4: 65; Liang *et al.* (1992) *Differential display of eukaryotic messenger RNA by means of the polymerase chain reaction*. *Science* 257(5072):967-971; Nie X *et al.* (2001) *A novel usage of random primers for multiplex RT-PCR detection of virus and viroid in aphids, leaves, and tubers*. *J Virol Methods* 91(1):37-49; Ralph *et al.* (1993) *RNA fingerprinting using arbitrarily primed PCR identifies differentially regulated RNAs in mink lung (Mv1Lu) cells growth arrested by transforming growth factor beta 1*. *Proc Natl Acad Sci U S A* 90(22):10710-

10714.). However, it has been shown that the use of molecular detection methods, compared to conventional detection methods, in patients with lower respiratory tract infections did not significantly change the treatment regimen but led to an overall increase in cost of patient management (Oosterheert JJ, van Loon AM, Schuurman R, Hoepelman AIM, Hak E, *et al.* (2005)

5 Impact of rapid detection of viral and atypical bacterial pathogens by real-time polymerase chain reaction for patients with lower respiratory tract infection. *Clinical Infectious Diseases* 41: 1438–1444). Thus, the availability of faster and more sensitive molecular detection assays for pathogens does not necessarily positively impact clinical decision making, patient outcome, antibiotic use, adoption or hospital econometrics. Further, pathogen detection assays for viruses have limitations
10 in that the results are often difficult to interpret in a clinical context when used in isolation. Thus, the diagnosis of a viral infection, and if a virus is isolated or identified whether it is pathogenic or not, cannot always be made simply by determining the presence of such an organism in a host sample.

[0010] In some instances, detection of host antibodies to an infecting virus remains the
15 diagnostic gold standard, because either the virus cannot be grown, or the presence of virus in a biological fluid is transient (*e.g.*, arboviral infections) and therefore cannot be detected at all times. Antibody detection also has limitations including: it usually takes at least 10 days for a host to generate detectable and specific immunoglobulin G antibodies in a primary infection, by which time the clinical signs have often abated; anti-viral antibodies following a primary infection can persist
20 for a long period making it difficult to interpret the timing of an infection relapse for viruses that show latency; a specific test must be ordered to detect a specific virus. These limitations make it difficult to determine when the host was infected, whether high antibody titers to a particular virus means that a particular virus is the causative agent of the presenting clinical signs, and which test to order. In some instances the ratio of IgM to IgG antibodies can be used to determine the
25 recency of virus infection. IgM is usually produced early in the immune response and is non-specific, whereas IgG is produced later in the immune response and is specific. Examples of the use of this approach include the diagnosis of hepatitis E (Tripathy *et al.* (2012). Cytokine Profiles, CTL Response and T Cell Frequencies in the Peripheral Blood of Acute Patients and Individuals Recovered from Hepatitis E Infection. *PLoS ONE*, 7(2), e31822), dengue (SA-Ngasang *et al.*
30 (2005). Specific IgM and IgG responses in primary and secondary dengue virus infections determined by enzyme-linked immunosorbent assay. *Epidemiology and Infection*, 134(04), 820), and Epstein-Barr Virus (Hess, R. D. (2004). Routine Epstein-Barr Virus Diagnostics from the Laboratory Perspective: Still Challenging after 35 Years. *Journal of Clinical Microbiology*, 42(8), 3381–3387). The IgM / IgG ratio approach also suffers from the limitation that the clinician must
35 know which specific test to order *a priori*.

[0011] A need, therefore, exists for better ways of detecting the presence of viral inflections, particularly systemic inflammation associated with viral infections, to permit early diagnosis, monitoring, making treatment decisions, or management of subjects having, or suspected of having, a systemic inflammation.

40 SUMMARY OF THE INVENTION

[0012] The present invention arises from the determination that certain host response peripheral blood expression products, including RNA transcripts (RNA markers), are commonly, specifically and differentially expressed across different mammals (humans, macaques, pigs)

during systemic inflammations caused by different viral infections. Such RNA transcripts (biomarkers) are useful for diagnosis early in the infective process and over the course of an infection. These biomarkers are therefore useful in early diagnosis, diagnosis, monitoring, prognosis and determination of severity of systemic inflammation associated with viral infection. In particular, based on the known and demonstrated specificity to virus-associated systemic inflammation, such biomarkers are useful in determining the etiology of a systemic inflammatory response when caused by a viral infection.

[0013] Because such biomarkers are commonly, specifically and differentially expressed across species, and in response to a variety of different types of viruses covering examples from each of the Baltimore classification groups (I-VII), they are considered to be "pan-viral" inflammatory biomarkers in mammals. To ensure that the biomarkers described herein are truly pan-viral and also specific to a viral infection, the following procedures and methods were deliberately performed: 1). A mixture of both DNA and RNA viruses were included in the "discovery" core datasets – only those biomarkers with strong performance across all of these datasets were selected for further analysis, 2). A wide range of virus families, including both DNA and RNA viruses, were included in the various "validation" datasets, 3). A wide range of virus families causing a variety of clinical signs were included in the various datasets, 4). Viruses covering all of the Baltimore Classification categories were included in the various datasets, 5). Viruses and samples covering a variety of stage of infection, infection type, mechanism of spread and location were included in the various datasets, 6). Controlled and time-course datasets were selected to cover more than one species of mammal (humans, macaques, pigs), 7). In time-course studies samples early in the infection process were chosen, prior to peak clinical signs, to limit the possibility of a bacterial co-infection, 8). Biomarkers significant for other conditions that may induce the same biochemical pathways were subtracted (*e.g.*, biomarkers for autoimmunity, asthma, bacterial infections, sarcoidosis, stress, anaphylaxis, trauma, age, obesity, gender and race), 9). Validation was performed in both adults and children with a variety of viral conditions. Following the stringent selection process only those biomarkers with an AUC greater than existing virus assays and clinical judgment were selected to ensure clinical utility.

[0014] Based on this determination, the present inventors have developed various methods, apparatus, compositions, and kits, which take advantage of differentially expressed biomarkers, including ratios thereof (derived biomarkers), to determine the presence, absence or degree of virus-associated inflammatory response syndrome (VaSIRS) in subjects presenting with fever or clinical signs of systemic inflammation. In certain embodiments, these methods, apparatus, compositions, and kits represent a significant advance over prior art processes and products, which have not been able to: 1) distinguish VaSIRS from other etiologies of systemic inflammation; and/or 2) determine the contribution of a viral infection (if any) to the presenting clinical signs and pathology.

[0015] Accordingly, in one aspect, the present invention provides methods for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS. These methods generally comprise, consist or consist essentially of: (1) determining a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker in a sample taken from the subject and that is at least partially indicative of a level of the VaSIRS biomarker in the sample; and (2) determining the indicator using the biomarker value. Suitably, the subject has at least one clinical sign of SIRS.

The at least one VaSIRS biomarker is suitably not a biomarker of at least one other SIRS condition (e.g., 1, 2, 3, 4 or 5 other SIRS conditions) selected from the group consisting of: bacterium associated SIRS, autoimmune disease associated SIRS, cancer associated SIRS and trauma associated SIRS. The sample is suitably a biological sample, representative examples of which include blood samples including peripheral blood samples, and leukocyte samples. In other embodiments, the sample is a tissue biopsy such as a liver tissue biopsy.

[0001] In specific embodiments, the at least one VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ZBP1*, *TMEM62*, *CD38*, *ISG15*, *IFI44*, *RSAD2*, *HERC5*, *MX1*, *HERC6*, *OAS2*, *XAF1*, *IFI6*, *PARP12*, *EIF2AK2*, *DHX58*, *UBE2L6*, *DDX60*, *USP18*, *RTP4*, *PHF11*, *IFIH1*, *ZBP1*, *STAT1*, *LAP3*, *TAP1*, *C19orf66*, *CUL1*, *POLB*, *ZC3HAV1*, *IL16*, *ITPKB*, *CAMK2G*, *CTDSP2*, *DPEP2*, *LTB*, *CBX7*, *FBNP1*, *FOXO1*, *MAST3*, *LDLRAP1*, *TMEM204*, *FAIM3*, *RGS14*, *IKBKB*, *ZXDC*, *PHF20*, *DGKA*, *XPC*, *PPARD*, *C2orf68*, *NLRP1*, *IL27RA*, *ABLIM1*, *JAK1*, *METTL3*, *SAFB2*, *PPM1F*, *TYK2*, *BANP*, *CRTC3*, *ATM*, *PAFAH1B1*, *PIK3IP1*, *WDR37*, *TGFBR2*, *ZNF274*, *STAT5B*, *MAML1*, *SATB1*, *DOCK9*, *CHMP7*, *BRD1*, *BTG1*, *ATF7IP2*, *DIDO1*, *LEF1*, *TNRC6B*, *SERTAD2*, *CEP68*, *BCL2*, *VPS8*, *CHD3*, *PUM2*, *TGOLN2*, *NDE1*, *CCR7*, *PSTPIP1*, *TIAM1*, *PECAM1*, *PDE3B*, *MYC*, *FOXJ2*, *PRMT2*, *CSNK1D*, *RPL10A*, *SERINC5*, *ARHGEF2*, *HGSNAT*, *TRAK1*, *PHF2*, *PBX3*, *SESN1*, *DPF2*, *IL4R*, *NOSIP*, *MPPE1*, *NR3C1*, *ABAT*, *GCC2*, *ZFC3H1*, *SETD2*, *ITSN2*, *R3HDM2*, *ARHGAP15*, *PCF11*, *MAPRE2*, *ST3GAL1*, *NACA*, *WDR47*, *SSBP2*, *CLK4*, *EIF3H*, *FRY*, *ZNF238*, *PTGER4*, *PCNX*, *NECAP2*, *CASC3*, *MSL1*, *VEZF1*, *KIAA0232*, *RASSF2*, *RPL22*, *ACAA1*, *MAP4K4*, *BEX4*, *NCPB2*, *LRMP*, *CAMK1D*, *UTP14A*, *STX6*, *RPS6KA3*, *PRKAA1*, *GOLGA7*, *ZNF143*, *SNRK*, *SYPL1*, *CYLD*, *PRUNE*, *CRLF3*, *CD93*, *GPS2*, *FBXO11*, *UBE2D2*, *USP10*, *CCNG2*, *SOS2*, *ARRB1*, *CEP170*, *SMAD4*, *CIAPIN1*, *KLF7*, *PHF20L1*, *ALDH3A2*, *PDCD6IP*, *WASF2*, *TGFB1*, *GPBP1L1*, *PCBP2*, *DCP2*, *LYST*, *ERBB2IP*, *ANKRD49*, *NDFIP1*, *ATAD2B*, *ZNF292*, *CCNT2*, *MARCH7*, *ACAP2*, *MED13*, *IL6ST*, *PHF3*, *SP3*, *SEC62*, *ZFYVE16*, *NEK7*, *POLD4*, *GNA12*, *TRIB2*, *YTHDF3*, *PPP2R5A*, *PPP1R2*, *ZDHHC17*, *STK38L*, *ST13*, *FAM134A*, *PFDN5*, *MARCH8*, *POLR1D*, *OASL*, *N4BP1*, *NOD2*, *RNF19B*, *PRKAG2*, *IGSF6*, *MEF2A*, *LPIN2*, *PPP1R11*, *USP15*, *BACH1*, *SSFA2*, *MKLN1*, *FYB*, *NSUN3*, *MAX*, *STAM2*, *HHEX*, *CLEC4A*, *ZFAND5*, *ABI1*, *MORC3*, *RC3H2*, *MAP1LC3B*, *TM2D3*, *CHST11*, *NAB1*, *KLF3*, *YPEL5*, *MXI1*, *CD97*, *CYTH4*, *HCK*, *ARHGAP26*, *RARA*, *XPO6*, *TNFRSF1A*, *SLCO3A1*, *ICAM3*, *PTPN6*, *PRKCD*, *RAB11FIP1*, *CSF2RB*, *LCP2*, *TYROBP*, *PHC2*, *RHOG*, *PSAP*, *LYN*, *TMEM127*, *LILRA2*, *AOAH*, *FGR*, *PLEKHO2*, *ARAP1*, *RBM23*, *PTPRE*, *KLF6*, *LIMK2*, *LILRB3*, *TLR2*, *GPR97*, *GMIP*, *SIRPA*, *LRP10*, *LPAR2*, *TREM1*, *IL13RA1*, *ITGAX*, *ARHGAP25*, *SIRPB1*, *ZDHHC18*, *TLE3*, *ITGB2*, *SNX27*, *PGS1*, *ATP6V1B2*, *RAB31*, *MAP3K11*, *PACSIN2*, *KIAA0513*, *EMR2*, *RERE*, *NUMB*, *RALB*, *ETS2*, *STAT5A*, *LST1*, *RIN3*, *TNK2*, *IQSEC1*, *PISD*, *SORL1*, *FES*, *KIAA0247*, *IL6R*, *LAPTM5*, *VAMP3*, *FAM65B*, *MAP3K5*, *TRIM8*, *ZYX*, *MAPK14*, *PLEKHO1*, *NCOA1*, *RNASET2*, *APBB1IP*, *RXRA*, *PTAFR*, *CNPY3*, *TNFSF13*, *RPS6KA1*, *OSBPL2*, *MTMR3*, *TMBIM1*, *TFEB*, *TFE3*, *RAF1*, *STX3*, *LAT2*, *GRB2*, *NDEL1*, *SEMA4D*, *FCGRT*, *DOK3*, *HIP1*, *UBN1*, *PLXNC1*, *NRBF2*, *INPP5D*, *SH2D3C*, *MMP25*, *IL10RB*, *FLOT2*, *PIAS1*, *PITPNA*, *APLP2*, *CTBP2*, *GPSM3*, *RNF130*, *DGCR2*, *ZMIZ1*, *CAP1*, *GSK3B*, *RGS19*, *RAB7A*, *CREBBP*, *RBMS1*, *IL1RAP*, *RTN3*, *PPP4R1*, *TRIOBP*, *GABARAP*, *MCTP2*, *NFKB1*, *CST3*, *ABHD2*, *SH2B3*, *STX10*, *TSC22D3*, *TLE4*, *HAL*, *ARRB2*, *MAP3K3*, *NPL*, *CCND3*, *SERINC3*, *GNAQ*, *USP4*, *PSEN1*, *KBTBD2*, *LYL1*, *AIF1*, *MBP*, *ACVR1B*, *RAB4B*, *PTEN*, *ASAP1*, *MANSC1*, *RYBP*, *CSAD*, *UBXN2B*, *TNIP1*, *WBP2*, *OGFRL1*, *SNN*, *HPCAL1*, *CD37*, *RNF146*, *RAB14*, *TOPORS*, *NFYA*, *FOXO3*, *CREB1*, *MAPK1*, *SOAT1*, *UBQLN2*, *OSBPL11*, *KLHL2*, *VAV3*, *BRD4*, *MARK3*, *BAZ2B*, *ZNF148*, *CASP8*, *CHMP1B*, *HPS1*, *RNF141*, *MOSPD2*, *PINK1*, *CDIPT*, *NCOA4*, *PPP3R1*, *MKRN1*, *GYPC*, *BMP2K* and *FBXO9*. Non-limiting examples of nucleotide sequences for these VaSIRS biomarkers are listed in SEQ ID NOs: 1-415

(see, Table 19 for sequence ID numbers, biomarker gene symbols, Ensembl transcript IDs). Non-limiting examples of amino acid sequences for these VaSIRS biomarkers are listed in SEQ ID NOs: 416-830. In illustrative examples, an individual VaSIRS biomarker is selected from the group consisting of: (a) a polynucleotide expression product comprising a nucleotide sequence that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence identity with the sequence set forth in any one of SEQ ID NO: 1-415, or a complement thereof; (b) a polynucleotide expression product comprising a nucleotide sequence that encodes a polypeptide comprising the amino acid sequence set forth in any one of SEQ ID NO: 416-830; (c) a polynucleotide expression product comprising a nucleotide sequence that encodes a polypeptide that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence similarity or identity with at least a portion of the sequence set forth in SEQ ID NO: 416-830; (d) a polynucleotide expression product comprising a nucleotide sequence that hybridizes to the sequence of (a), (b), (c) or a complement thereof, under medium or high stringency conditions; (e) a polypeptide expression product comprising the amino acid sequence set forth in any one of SEQ ID NO: 416-830; and (f) a polypeptide expression product comprising an amino acid sequence that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence similarity or identity with the sequence set forth in any one of SEQ ID NO: 416-830 (see, Table 20 for sequence ID numbers and GenBank Accession Numbers).

[0016] Certain VaSIRS biomarkers of the present invention have strong diagnostic performance on their own (as measured, for example, using area under curve (AUC)) for detecting VaSIRS and are referred to herein as "Group A VaSIRS biomarkers". Thus, in specific embodiments, the at least one VaSIRS biomarker is selected from Group A VaSIRS biomarkers, wherein an individual Group A VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ZBP1*, *TMEM62* and *CD38*. Suitably, the biomarker value is measured or derived for a single Group A VaSIRS biomarker and the indicator is determined using the biomarker value. Alternatively, biomarker values are measured or derived for at least 2 or each of the Group A VaSIRS biomarkers, and the indicator is determined by combining the biomarker values.

[0017] Other VaSIRS biomarkers have strong diagnostic performance when combined with one or more other VaSIRS biomarkers. In some embodiments, pairs of biomarkers are used to determine the indicator. In illustrative examples of this type, one biomarker of a biomarker pair is selected from Group B VaSIRS biomarkers and the other is selected from Group C VaSIRS biomarkers, wherein an individual Group B VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ISG15*, *IFI44*, *RSAD2*, *HERC5*, *MX1*, *HERC6*, *OAS2*, *XAF1*, *IFI6*, *PARP12*, *EIF2AK2*, *DHX58*, *UBE2L6*, *DDX60*, *USP18*, *RTP4*, *PHF11*, *IFIH1*, *ZBP1*, *STAT1*, *LAP3*, *TAP1*, *C19orf66*, *CUL1*, *POLB* and *ZC3HAV1*, and wherein an individual Group C VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *IL16*, *ITPKB*, *CAMK2G*, *CTDSP2*, *DPEP2*, *LTB*, *CBX7*, *FBNP1*, *FOXO1*, *MAST3*, *LDLRAP1*, *TMEM204*, *FAIM3*, *RGS14*, *IKBKB*, *ZXDC*, *PHF20*, *DGKA*, *XPC*, *PPARD*, *C2orf68*, *NLRP1*, *IL27RA*, *ABLIM1*, *JAK1*, *METTL3*, *SAFB2*, *PPM1F*, *TYK2*, *BANP*, *CRTC3*, *ATM*, *PAFAH1B1*, *PIK3IP1*, *WDR37*, *TGFB2*, *ZNF274*, *STAT5B*, *MAML1*, *SATB1*, *DOCK9*, *CHMP7*, *BRD1*, *BTG1*, *ATF7IP2*, *DIDO1*, *LEF1*, *TNRC6B*, *SERTAD2*, *CEP68*, *BCL2*, *VPS8*, *CHD3*, *PUM2*, *TGOLN2*, *NDE1*, *CCR7*, *PSTPIP1*, *TIAM1*, *PECAM1*, *PDE3B*, *MYC*, *FOXJ2*, *PRMT2*, *CSNK1D*, *RPL10A*, *SERINC5*, *ARHGEF2*, *HGSNAT*, *TRAK1*, *PHF2*, *PBX3*, *SESN1*, *DPF2*, *IL4R*, *NOSIP*, *MPPE1*, *NR3C1*, *ABAT*, *GCC2*, *ZFC3H1*, *SETD2*, *ITSN2*, *R3HDM2*, *ARHGAP15*, *PCF11*, *MAPRE2*, *ST3GAL1*, *NACA*, *WDR47*, *SSBP2*, *CLK4*, *EIF3H*, *FRY*, *ZNF238*, *PTGER4*, *PCNX*, *NECAP2*,

CASC3, MSL1, VEZF1, KIAA0232, RASSF2, RPL22, ACAA1, MAP4K4, BEX4, NCBP2, LRMP, CAMK1D, UTP14A, STX6, RPS6KA3, PRKAA1, GOLGA7, ZNF143, SNRK, SYPL1, CYLD, PRUNE, CRLF3, CD93, GPS2, FBXO11, UBE2D2, USP10, CCNG2, SOS2, ARRB1, CEP170, SMAD4, CIAPIN1, KLF7, PHF20L1, ALDH3A2, PDCD6IP, WASF2, TGFB1, GPBP1L1, PCBP2, DCP2, LYST, ERBB2IP, ANKRD49, NDFIP1, ATAD2B, ZNF292, CCNT2, MARCH7, ACAP2, MED13, IL6ST, PHF3, SP3, SEC62, ZFYVE16, NEK7, POLD4, GNA12, TRIB2, YTHDF3, PPP2R5A, PPP1R2, ZDHHC17, STK38L, ST13, FAM134A, PFDN5, MARCH8 and POLR1D.

[0018] In other illustrative examples, one biomarker of a biomarker pair is selected from Group D VaSIRS biomarkers and the other is selected from Group E VaSIRS biomarkers, wherein an individual Group D VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *OASL*, *N4BP1*, *NOD2*, *RNF19B*, *PRKAG2*, *IGSF6*, *MEF2A*, *LPIN2*, *PPP1R11*, *USP15*, *BACH1*, *SSFA2*, *MKLN1*, *FYB*, *NSUN3*, *MAX*, *STAM2*, *HHEX*, *CLEC4A*, *ZFAND5*, *ABI1*, *MORC3*, *RC3H2*, *MAP1LC3B*, *TM2D3*, *CHST11*, *NAB1*, *KLF3*, *YPEL5* and *MXI1*, and wherein an individual Group E VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *CD97*, *CYTH4*, *HCK*, *ARHGAP26*, *RARA*, *XPO6*, *TNFRSF1A*, *SLCO3A1*, *ICAM3*, *PTPN6*, *PRKCD*, *RAB11FIP1*, *CSF2RB*, *LCP2*, *TYROBP*, *PHC2*, *RHOG*, *PSAP*, *LYN*, *TMEM127*, *LILRA2*, *AOAH*, *FGR*, *PLEKHO2*, *ARAP1*, *RBM23*, *PTPRE*, *KLF6*, *LIMK2*, *LILRB3*, *TLR2*, *GPR97*, *GMIP*, *SIRPA*, *LRP10*, *LPAR2*, *TREM1*, *IL13RA1*, *ITGAX*, *ARHGAP25*, *SIRPB1*, *ZDHHC18*, *TLE3*, *ITGB2*, *SNX27*, *PGS1*, *ATP6V1B2*, *RAB31*, *MAP3K11*, *PACSIN2*, *KIAA0513*, *EMR2*, *RERE*, *NUMB*, *RALB*, *ETS2*, *STAT5A*, *LST1*, *RIN3*, *TNK2*, *IQSEC1*, *PISD*, *SORL1*, *FES*, *KIAA0247*, *IL6R*, *LAPTM5*, *VAMP3*, *FAM65B*, *MAP3K5*, *TRIM8*, *ZYX*, *MAPK14*, *PLEKHO1*, *NCOA1*, *RNASET2*, *APBB1IP*, *RXRA*, *PTAFR*, *CNPY3*, *TNFSF13*, *RPS6KA1*, *OSBPL2*, *MTMR3*, *TMBIM1*, *TFEB*, *TFE3*, *RAF1*, *STX3*, *LAT2*, *GRB2*, *NDEL1*, *SEMA4D*, *FCGRT*, *DOK3*, *HIP1*, *UBN1*, *PLXNC1*, *NRBF2*, *INPP5D*, *SH2D3C*, *MMP25*, *IL10RB*, *FLOT2*, *PIAS1*, *PITPNA*, *APLP2*, *CTBP2*, *GPSM3*, *RNF130*, *DGCR2*, *ZMIZ1*, *CAP1*, *GSK3B*, *RGS19*, *RAB7A*, *CREBBP*, *RBMS1*, *IL1RAP*, *RTN3*, *PPP4R1*, *TRIOBP*, *GABARAP*, *MCTP2*, *NFKB1*, *CST3*, *ABHD2*, *SH2B3*, *STX10*, *TSC22D3*, *TLE4*, *HAL*, *ARRB2*, *MAP3K3*, *NPL*, *CCND3*, *SERINC3*, *GNAQ*, *USP4*, *PSEN1*, *KBTBD2*, *LYL1*, *AIF1*, *MBP*, *ACVR1B*, *RAB4B*, *PTEN*, *ASAP1*, *MANSC1*, *RYBP*, *CSAD*, *UBXN2B*, *TNIP1*, *WBP2*, *OGFRL1*, *SNN*, *HPCAL1*, *CD37*, *RNF146*, *RAB14*, *TOPORS*, *NFYA*, *FOXO3*, *CREB1*, *MAPK1*, *SOAT1*, *UBQLN2*, *OSBPL11*, *KLHL2*, *VAV3*, *BRD4*, *MARK3*, *BAZ2B*, *ZNF148*, *CASP8*, *CHMP1B*, *HPS1*, *RNF141*, *MOSPD2*, *PINK1*, *CDIPT*, *NCOA4*, *PPP3R1*, *MKRN1*, *GYPC*, *BMP2K* and *FBXO9*.

[0019] In some embodiments, biomarker values are measured or derived for a Group B VaSIRS biomarker and for a Group C VaSIRS biomarker, and the indicator is determined by combining the biomarker values. In some embodiments, biomarker values are measured or derived for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values. In other embodiments, biomarker values are measured or derived for a Group B VaSIRS biomarker, for a Group C VaSIRS biomarker, for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values. Suitably, in the above embodiments, the methods comprise combining the biomarker values using a combining function, wherein the combining function is at least one of: an additive model; a linear model; a support vector machine; a neural network model; a random forest model; a regression model; a genetic algorithm; an annealing algorithm; a weighted sum; a nearest neighbor model; and a probabilistic model.

[0020] In some embodiments, the methods comprise: (a) determining a pair of biomarker values, each biomarker value being a value measured or derived for at least one corresponding VaSIRS biomarker; (b) determining a derived biomarker value using the pair of biomarker values, the derived biomarker value being indicative of a ratio of concentrations of the pair of VaSIRS biomarkers; and determining the indicator using the derived marker value. In illustrative examples of this type, biomarker values are measured or derived for a Group B VaSIRS biomarker and for a Group C VaSIRS biomarker to obtain the pair of biomarker values and the derived biomarker value is determined using the pair of biomarker values. In other illustrative examples, biomarker values are measured or derived for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker to obtain the pair of biomarker values and the derived biomarker value is determined using the pair of biomarker values.

[0021] In some embodiments, the methods comprise: (a) determining a first derived biomarker value using a first pair of biomarker values, the first derived biomarker value being indicative of a ratio of concentrations of first and second VaSIRS biomarkers; (b) determining a second derived biomarker value using a second pair of biomarker values, the second derived biomarker value being indicative of a ratio of concentrations of third and fourth VaSIRS biomarkers; and (c) determining the indicator by combining the first and second derived biomarker values. Suitably, the first VaSIRS biomarker is selected from Group B VaSIRS biomarkers, the second VaSIRS biomarker is selected from Group C VaSIRS biomarkers, the third VaSIRS biomarker is selected from Group D VaSIRS biomarkers, and the fourth VaSIRS biomarker is selected from Group E VaSIRS biomarkers. In illustrative examples of this type, the methods comprise combining the biomarker values using a combining function, wherein the combining function is at least one of: an additive model; a linear model; a support vector machine; a neural network model; a random forest model; a regression model; a genetic algorithm; an annealing algorithm; a weighted sum; a nearest neighbor model; and a probabilistic model.

[0022] Suitably, in embodiments that utilize pairs of VaSIRS biomarkers as broadly described above and elsewhere herein, an individual pair of VaSIRS biomarkers has a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 (or between ± 0.8 , ± 0.7 , ± 0.6 , ± 0.5 , ± 0.4 , ± 0.3 , ± 0.2 or ± 0.1) and the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, wherein the performance threshold is indicative of an explained variance of at least 0.3. In illustrative examples of this type, an individual VaSIRS biomarker has a condition correlation with the presence, absence or degree of VaSIRS that lies outside a condition correlation range, wherein the condition correlation range is between ± 0.3 . In other illustrative examples, an individual VaSIRS biomarker has a condition correlation with the presence, absence or degree of VaSIRS that lies outside a condition correlation range, wherein the condition correlation range is at least one of ± 0.9 , ± 0.8 , ± 0.7 , ± 0.6 , ± 0.5 or ± 0.4 . In specific embodiments, the performance threshold is indicative of an explained variance of at least one of 0.4, 0.5, 0.6, 0.7, 0.8 and 0.9.

[0023] In certain embodiments that utilize pairs of VaSIRS biomarkers as broadly described above and elsewhere herein the Group B VaSIRS biomarker is suitably an expression product of *ISG15*, the Group C VaSIRS biomarker is suitably an expression product of *IL16*, the Group D VaSIRS biomarker is suitably an expression product of *OASL*, and the Group E VaSIRS biomarker is suitably an expression product of *CD97*.

[0024] The virus associated with the VaSIRS is suitably selected from any one of Baltimore virus classification Groups I, II, III, IV, V, VI and VII, which is capable of inducing at least one of the clinical signs of SIRS.

[0025] Another aspect of the present invention provides apparatus for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS. This apparatus generally comprises at least one electronic processing device that:

[0026] determines a pair of biomarker values, each biomarker value being a value measured or derived for at least one corresponding VaSIRS biomarker, as broadly described above and elsewhere herein, of a sample taken from the subject and being at least partially indicative of a concentration of the VaSIRS biomarker in the sample;

[0027] determines a derived biomarker value using the pair of biomarker values, the derived biomarker value being indicative of a ratio of concentrations of the pair of VaSIRS biomarkers; and

[0028] determines the indicator using the derived biomarker value.

[0029] In specific embodiments, the pairs of VaSIRS biomarkers are selected from the biomarker pairs listed in Table 13 or Table 14.

[0030] In yet another aspect, the present invention provides compositions for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS. These compositions generally comprise, consist or consist essentially of at least one pair of cDNAs and at least one oligonucleotide primer or probe that hybridizes to an individual one of the cDNAs, wherein the at least one pair of cDNAs is selected from pairs of cDNA including a first pair and a second pair of cDNAs, wherein the first pair comprises a Group B VaSIRS biomarker cDNA and a Group C VaSIRS biomarker cDNA and wherein the second pair comprises a Group D VaSIRS biomarker cDNA and a Group E VaSIRS biomarker cDNA. Suitably, the compositions comprise a population of cDNAs corresponding to mRNA derived from a cell or cell population. In some embodiments, the cell is a cell of the immune system, suitably a leukocyte. In some embodiments, the cell population is blood, suitably peripheral blood. In some embodiments, the at least one oligonucleotide primer or probe is hybridized to an individual one of the cDNAs. In any of the above embodiments, the composition may further comprise a labeled reagent for detecting the cDNA. In illustrative examples of this type, the labeled reagent is a labeled said at least one oligonucleotide primer or probe. In other embodiments, the labeled reagent is a labeled said cDNA. In some embodiments, the at least one oligonucleotide primer or probe is in a form other than a high-density array. In some embodiments, the composition comprises a pair of primers that hybridize to opposite strands of the cDNA and that permit nucleic acid amplification of an amplicon with homology to the cDNA. In specific examples of this type, the composition further comprises a probe that hybridizes to the amplicon. In these embodiments, at least one of the pair of primer and probe is labeled.

[0031] Still another aspect of the present invention provides kits for determining an indicator indicative of the likelihood of the presence, absence or degree of VaSIRS. The kits generally comprise, consist or consist essentially of at least one pair of reagents selected from reagent pairs including a first pair of reagents and a second pair of reagents, wherein the first pair of reagents comprises (i) a reagent that allows quantification of a Group B VaSIRS biomarker; and

(ii) a reagent that allows quantification of a Group C VaSIRS biomarker, wherein the second pair of reagents comprises: (iii) a reagent that allows quantification of a Group D VaSIRS biomarker; and (iv) a reagent that allows quantification of a Group E VaSIRS biomarker.

[0032] In a further aspect, the present invention provides methods for managing a subject with VaSIRS. These methods generally comprise, consist or consist essentially of: exposing the subject to a treatment regimen for treating VaSIRS, or avoiding exposing the subject to a treatment regimen for treating a SIRS other than VaSIRS based on an indicator obtained from an indicator-determining method, wherein the indicator is indicative of the presence of VaSIRS in the subject, and wherein the indicator-determining method is an indicator-determining method as broadly described above and elsewhere herein. In some embodiments, the methods further comprise taking a sample from the subject and determining an indicator indicative of the likelihood of the presence, absence or degree of VaSIRS using the an indicator-determining method. In other embodiments, the methods further comprise sending a sample taken from the subject to a laboratory at which the indicator is determined according to the indicator-determining method. In these embodiments, the methods suitably further comprise receiving the indicator from the laboratory.

[0033] Yet another aspect of the present invention provides methods of monitoring the efficacy of a particular treatment regimen in a subject towards a desired health state (*e.g.*, absence of VaSIRS). These methods generally comprise, consist or consist essentially of: (1) determining a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as broadly defined above in a sample taken from the subject and that is at least partially indicative of a level of the VaSIRS biomarker in the sample, wherein the sample is taken after treatment of the subject with the treatment regimen; (2) determining an indicator using the biomarker value, wherein the indicator is used in assessing a likelihood of the subject having a presence, absence or degree of VaSIRS, and (3) assessing the likelihood of the subject having a presence, absence or degree of VaSIRS using the indicator to thereby determine whether the treatment regimen is effective for changing the health status of the subject to the desired health state.

[0034] In another aspect, the present invention provides methods of determining whether a treatment regimen is effective for treating a subject with VaSIRS. These methods generally comprise, consist or consist essentially of: (a) correlating a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as broadly defined above with an effective treatment regimen; (b) determining a biomarker value that is measured or derived for the at least one corresponding VaSIRS biomarker in a sample taken from the subject after treatment with the treatment regimen; (c) determining an indicator using the biomarker value, wherein the indicator is used in assessing a likelihood of the subject having a presence, absence or degree of VaSIRS, (d) assessing the likelihood of the subject having a presence, absence or degree of VaSIRS using the indicator to thereby determine whether the treatment regimen is effective for treating VaSIRS in the subject.

[0035] A further aspect of the present invention provides methods of correlating a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as broadly defined above with a positive or negative response to a treatment regimen. These methods generally comprise, consist or consist essentially

of: (a) determining a biomarker value for the at least one corresponding VaSIRS biomarker in a sample taken from a subject with VaSIRS following commencement of the treatment regimen, wherein the biomarker value is at least partially indicative of a level of the VaSIRS biomarker in the sample; and (c) correlating the sample VaSIRS biomarker value with a positive or negative response to the treatment regimen.

[0036] Another aspect of the present invention provides methods of determining a positive or negative response to a treatment regimen by a subject with VaSIRS. These methods generally comprise, consist or consist essentially of: (a) correlating a reference biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more)

corresponding VaSIRS biomarker as broadly defined above with a positive or negative response to the treatment regimen; and (b) determining a biomarker value for the at least one corresponding VaSIRS biomarker in a sample taken from a subject with VaSIRS, wherein the sample biomarker value indicates whether the subject is responding to the treatment regimen.

[0037] In some embodiments, the methods of determining a positive or negative response to a treatment regimen further comprise: (i) determining a first sample biomarker value for the at least one corresponding VaSIRS biomarker as broadly defined above in a sample taken from the subject prior to commencing the treatment regimen; and (ii) comparing the first sample biomarker value with a second sample biomarker value for the at least one corresponding VaSIRS biomarker taken from the subject after commencement of the treatment regimen, to thereby determine a positive or negative response to the treatment regimen.

[0038] Another aspect of the present invention provides methods of treating, preventing or inhibiting the development of VaSIRS in a subject. These methods generally comprise, consist or consist essentially of: exposing the subject to a treatment regimen for treating VaSIRS, or avoiding exposing the subject to a treatment regimen for treating a SIRS other than VaSIRS based on an indicator obtained from an indicator-determining method, the indicator-determining method comprising, consisting or consisting essentially of: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one VaSIRS biomarker as broadly defined above of the subject; (b) determining an indicator using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence or degree of VaSIRS, wherein: (i) at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3.

[0039] Suitably, the method further comprises: (1) determining a plurality of measured biomarker values, each measured biomarker value being a measured value of VaSIRS biomarker of the subject; and (2) applying a function to at least one of the measured biomarker values to determine at least one derived biomarker value, the at least one derived biomarker value being indicative of a value of a corresponding derived VaSIRS biomarker.

[0040] Suitably, the function includes at least one of: (a) multiplying two biomarker values; (b) dividing two biomarker values; (c) adding two biomarker values; (d) subtracting two

biomarker values; (e) a weighted sum of at least two biomarker values; (f) a log sum of at least two biomarker values; and (g) a sigmoidal function of at least two biomarker values.

[0041] In another aspect of the present invention, methods are provided for monitoring the efficacy of a particular treatment regimen in a subject towards a desired health state. These methods generally comprise, consist or consist essentially of: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one VaSIRS biomarker as broadly defined above of the subject after treatment with a treatment regimen; (b) determining an indicator using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence or degree of VaSIRS, wherein: (i) at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for a VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3, and (c) determining that the treatment regimen is effective for changing the health status of the subject to the desired health state on the basis that the indicator indicates the presence of VaSIRS or the presence of VaSIRS of a lower degree relative to the degree of VaSIRS in the subject before treatment with the treatment regimen.

[0042] Still other aspects of the present invention contemplate the use of the indicator-determining methods as broadly described above and elsewhere herein in methods for correlating a biomarker profile with an effective treatment regimen for VaSIRS, or for determining whether a treatment regimen is effective for treating a subject with VaSIRS, or for correlating a biomarker profile with a positive or negative response to a treatment regimen, or for determining a positive or negative response to a treatment regimen by a subject with VaSIRS.

BRIEF DESCRIPTION OF THE DRAWINGS

[0043] Figure 1 is a ROC plot of the performance (AUC) of ZBP1 in the merged and normalized dataset (14 individual datasets).

[0044] Figure 2 is a plot of the performance (AUC) of CD38 in the merged and normalized dataset (14 individual datasets).

[0045] Figure 3 is a plot of the performance (AUC) of TMEM62 in the merged and normalized dataset (14 individual datasets).

[0046] Figure 4 shows plots of the performance of the individual biomarker ZBP1 in the four "core" viral datasets, including influenza virus, Lassa fever virus, cytomegalovirus and dengue fever virus.

[0047] Figure 5 shows plots of the performance of the individual biomarker CD38 in the four "core" viral datasets, including influenza virus, Lassa fever virus, cytomegalovirus and dengue fever virus.

[0048] Figure 6 shows plots of the performance of the individual biomarker TMEM62 in the four "core" viral datasets, including influenza virus, Lassa fever virus, cytomegalovirus and dengue fever virus.

[0049] Figure 7 shows a ROC plot for the best performing combination of derived biomarkers (ISG15:IL16 / OASL:CD97) across a combination of 14 different viral datasets.

[0050] Figure 8 shows a plot of area under curve obtained across a combination of 14 different viral datasets when sequentially adding derived biomarkers to the best performing single derived biomarker (IL16 / ISG15). The combination of ISG15:IL16 / OASL:CD97 is considered to have the optimal commercial utility with the lowest risk of introduction of noise.

[0051] Figure 9 shows plots of the performance of the derived biomarker IL16 / ISG15 in the four "core" viral datasets, including influenza virus, Lassa fever virus, cytomegalovirus and dengue fever virus.

[0052] Figure 10 shows plots of the performance of the derived CD97 / OASL in the four "core" viral datasets, including influenza virus, Lassa fever virus, cytomegalovirus and dengue fever virus.

[0053] Figure 11 shows box and whisker plots of the gene expression ratio index for combination of derived biomarkers IL16 / ISG15 and CD97 / OASL for 624 patients with suspected sepsis. Patients are grouped based on whether a pathogenic organism was isolated (bacteria, mixed condition, virus) or not (healthy, SIRS).

[0054] Figure 12 is an example output depicting an indicator that is useful for assessing the presence of VaSIRS in a patient.

[0055] Figure 13 shows box and whisker plots of the gene expression ratio index for combination of derived biomarkers IL16 / ISG15 and CD97 / OASL for pediatric patients. Patients are grouped based on whether they were healthy (Control) or whether they were positively diagnosed with BaSIRS (Sepsis) or VaSIRS (Virus).

[0056] Figure 14 shows a box and whisker plot of the results of a comparison of two groups of subjects, including 17 healthy controls and 30 patients infected with HIV. Samples analysed were taken from both healthy subjects and patients at the time of study enrolment. The Area Under Curve (AUC) using the combination of derived biomarkers IL16 / ISG15 and CD97 / OASL was 0.91.

[0057] Figure 15 shows box and whisker plots for a time course study in piglets deliberately infected (Day 0) with porcine circovirus and followed for 29 days. Blood samples were taken prior to inoculation (Day 0) and on Days 7, 14, 21 and 29. The derived biomarkers IL16 / ISG15 + CD97 / N4BP1 were validated in this independent sample set (GSE14790). The alternate biomarker N4BP1 was substituted for OASL because this latter biomarker is not found in pigs. Areas Under Curve (AUCs) for the combined derived biomarkers were 0.812, 1.00, 1.00 and 1.00 for Days 0 vs 7, 0 vs 14, 0 vs 21 and 0 vs 29, respectively.

[0058] Figure 16 shows pan-viral signature values for children with acute RSV infection and following recovery (dataset GSE69606). The box and whisker plots show a difference (AUC = 0.903) between the pan-viral signature for those children with acute RSV infection (left panel) compared to moderate and severely affected children in recovery 4-6 weeks later (right panel). Little difference can be seen in the pan-viral signature between children with acute mild (n=9), moderate (n=9) or severe (n=8) infection (left panel). The pan-viral signature is therefore not affected by disease severity.

[0059] Figure 17 shows pan-viral signature values for children with and without detectable human rhinovirus (GSE67059). Box and whisker plots of the performance of the pan-viral signature in children (<2 years old). The children were pre-sorted into groups according to presence or absence of HRV in nasopharyngeal swabs, and whether they were asymptomatic, or treated as an inpatient or outpatient. The pan-viral signature AUCs were as follows: 0.884 for all HRV+ versus all HRV-; 0.806 for healthy versus asymptomatic (but confirmed HRV+), 0.896 for healthy versus inpatient; 0.894 for healthy vs. outpatient. The lack of difference in pan-viral signature values for different disease severity, as indicated by whether the patients were asymptomatic or symptomatic, and whether they were treated as an outpatient or inpatient, indicates that the pan-viral signature is unaffected by disease severity.

[0060] Figure 18 shows time-course values for the pan-viral signature after intra-nasal infection of human subjects with H3N2 influenza A (GSE30550). Box and whisker plot showing the pan-viral signature value for symptomatic human subjects, over a 108 hour period following intra-nasal inoculation of influenza H3N2. A difference in pan-viral signature value compared to pre-inoculation can be seen as early as 36 hours and peaks at 69 hours which precedes recorded clinical signs. Thus, the pan-viral signature is diagnostic for viral infection early in the disease course. Similar times for earliest detection and peak values were seen in both humans and mice in response to experimental inoculation with the same strain of influenza virus. A similar time course response in different species to the same virus strain suggests the possibility that similar virus strains have a similar temporal pan-viral signature response.

[0061] Figure 19 shows pan-viral signature values over time for macaques inoculated with Marburg virus (GSE58287). The box and whisker plots showing the pan-viral signature values over 9 days for 15 macaques exposed to aerosolized Marburg virus on day 0. Three macaques were euthanized every two days. Virus was first detected in regional lymph nodes on day 3 post-exposure, viremia was detected on day 4, and the first fever on day 5. Based on these values the pan-viral signature is diagnostic for viral infection early in the disease course, 2 days before the first appearance of viral antigen in lymph nodes, 3 days before the detection of viremia, and 4 days before clinical signs.

[0062] Figure 20 shows pan-viral signature values over time for liver biopsy tissue from chimpanzees inoculated with Hepatitis C Virus or Hepatitis E Virus. The box and whisker plots show the pan-viral signature values as a function of time in chimpanzees that were intravenously inoculated with either Hepatitis C virus (HCV; N=3) or Hepatitis E virus (HEV; N=4). Liver biopsy samples were analyzed for gene expression at various time points. The pan-viral signature had an AUC > 0.96 when comparing all time points post-inoculation to pre-inoculation. The values show that the pan-viral signature can detect a viral response in tissues other than peripheral blood (liver biopsy) and that different viruses (Hepatitis E and C) create a different response in terms of amplitude and time.

[0063] Figure 21 shows the performance of the pan-viral signature in adult patients presenting to ER with fever. Box and whisker plots for 93 patients in the FEVER study retrospectively diagnosed with either bacterial sepsis (n=55), no infection (n=22), or viral infection (n=15). AUCs were 0.934, 0.854 and 0.583 for viral versus bacterial, viral versus uninfected, and bacterial versus uninfected, respectively.

[0064] Figure 22 shows the AUC for the pan-viral signature for two groups of patients diagnosed with HIV located in either Africa (n=43) or the USA (n=15). Patient samples were collected at study enrollment when they had a confirmed acute infection and at weeks 1, 2, 4, 12, and 24. The pan-viral signature AUC when comparing healthy controls to African patients who did not receive any treatment remained at or above 0.9 at all time points, whereas the AUCs when comparing healthy controls to USA patients receiving treatment dropped from above 0.9 at enrolment to less than 0.5 by Week 24. Also, the pan-viral signature scores over time largely reflect the mean HIV viral loads as described in GSE29429.

[0065] Figure 23 shows subject response to a live yellow fever vaccine. Two geographically separated groups of volunteers (Lausanne, n=11; Montreal, n=15) were vaccinated subcutaneously on Day 0 with Stamaril (Sanofi-Pasteur YF17D-204 YF-VAX), a vaccine containing live attenuated yellow fever virus which affords protection from 10 days following vaccination. Whole blood samples were collected on days 0, 3 and 7 for the Lausanne cohort and on days 0, 3, 7, 10, 14, 28 and 60 for the Montreal cohort. The pan-viral signature value peaked on Day 7 following vaccination and dropped to pre-vaccination levels by Day 14. The pan-viral signature value largely reflects viremia (viral particles per mL of plasma) as detailed in Gaucher *et al.* (2008) (Supplemental Material, Table 5). In this study a specific antibody response to vaccination was not detected until 14 days post-vaccination.

DETAILED DESCRIPTION OF THE INVENTION

1. Definitions

[0066] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by those of ordinary skill in the art to which the invention belongs. Although any methods and materials similar or equivalent to those described herein can be used in the practice or testing of the present invention, preferred methods and materials are described. For the purposes of the present invention, the following terms are defined below.

[0067] The articles "a" and "an" are used herein to refer to one or to more than one (*i.e.*, to at least one) of the grammatical object of the article. By way of example, "an element" means one element or more than one element.

[0068] As used herein, the term "amplicon" refers to a nucleic acid that is the product of amplification. Thus an amplicon may be homologous to a reference sequence, a target sequence, or any sequence of nucleic acid that has been subjected to amplification. Generally, within a reaction sample, the concentration of amplicon sequence will be significantly greater than the concentration of original (template) nucleic acid sequence.

[0069] As used herein, "and/or" refers to and encompasses any and all possible combinations of one or more of the associated listed items, as well as the lack of combinations when interpreted in the alternative (or).

[0070] The term "biomarker" broadly refers to any detectable compound, such as a protein, a peptide, a proteoglycan, a glycoprotein, a lipoprotein, a carbohydrate, a lipid, a nucleic acid (*e.g.*, DNA, such as cDNA or amplified DNA, or RNA, such as mRNA), an organic or inorganic chemical, a natural or synthetic polymer, a small molecule (*e.g.*, a metabolite), or a discriminating molecule or discriminating fragment of any of the foregoing, that is present in or derived from a sample. "Derived from" as used in this context refers to a compound that, when detected, is

indicative of a particular molecule being present in the sample. For example, detection of a particular cDNA can be indicative of the presence of a particular RNA transcript in the sample. As another example, detection of or binding to a particular antibody can be indicative of the presence of a particular antigen (*e.g.*, protein) in the sample. Here, a discriminating molecule or fragment is a molecule or fragment that, when detected, indicates presence or abundance of an above-identified compound. A biomarker can, for example, be isolated from a sample, directly measured in a sample, or detected in or determined to be in a sample. A biomarker can, for example, be functional, partially functional, or non-functional. In specific embodiments, the "biomarkers" include "immune system biomarkers", which are described in more detail below.

[0071] The term "biomarker value" refers to a value measured or derived for at least one corresponding biomarker of a subject and which is typically at least partially indicative of an abundance or concentration of a biomarker in a sample taken from the subject. Thus, the biomarker values could be measured biomarker values, which are values of biomarkers measured for the subject, or alternatively could be derived biomarker values, which are values that have been derived from one or more measured biomarker values, for example by applying a function to the one or more measured biomarker values. Biomarker values can be of any appropriate form depending on the manner in which the values are determined. For example, the biomarker values could be determined using high-throughput technologies such as mass spectrometry, sequencing platforms, array and hybridization platforms, immunoassays, flow cytometry, or any combination of such technologies and in one preferred example, the biomarker values relate to a level of activity or abundance of an expression product or other measurable molecule, quantified using a technique such as PCR, sequencing or the like. In this case, the biomarker values can be in the form of amplification amounts, or cycle times, which are a logarithmic representation of the concentration of the biomarker within a sample, as will be appreciated by persons skilled in the art and as will be described in more detail below.

[0072] The term "biomarker profile" refers to one or a plurality of one or more types of biomarkers (*e.g.*, an mRNA molecule, a cDNA molecule and/or a protein, *etc.*), or an indication thereof, together with a feature, such as a measurable aspect (*e.g.*, biomarker value) of the biomarker(s). A biomarker profile may comprise a single biomarker whole level, abundance or amount correlates with the presence, absence or degree of a condition (*e.g.*, a healthy condition or VaSIRS). Alternatively, a biomarker profile may comprise at least two such biomarkers or indications thereof, where the biomarkers can be in the same or different classes, such as, for example, a nucleic acid and a polypeptide. Thus, a biomarker profile may comprise at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, or 100 or more biomarkers or indications thereof. In some embodiments, a biomarker profile comprises hundreds, or even thousands, of biomarkers or indications thereof. A biomarker profile can further comprise one or more controls or internal standards. In certain embodiments, the biomarker profile comprises at least one biomarker, or indication thereof, that serves as an internal standard. In other embodiments, a biomarker profile comprises an indication of one or more types of biomarkers. The term "indication" as used herein in this context merely refers to a situation where the biomarker profile contains symbols, data, abbreviations or other similar indicia for a biomarker, rather than the biomarker molecular entity itself. The term "biomarker profile" is also used herein to refer to a biomarker value or combination of at least two biomarker values, wherein individual biomarker values correspond to values of

biomarkers that can be measured or derived from one or more subjects, which combination is characteristic of a discrete condition, stage of condition, subtype of condition or a prognosis for a discrete condition, stage of condition, subtype of condition. The term "profile biomarkers" is used to refer to a subset of the biomarkers that have been identified for use in a biomarker profile that can be used in performing a clinical assessment, such as to rule in or rule out a specific condition, different stages or severity of conditions, subtypes of different conditions or different prognoses. The number of profile biomarkers will vary, but is typically of the order of 10 or less.

[0073] The terms "complementary" and "complementarity" refer to polynucleotides (*i.e.*, a sequence of nucleotides) related by the base-pairing rules. For example, the sequence "A-G-T," is complementary to the sequence "T-C-A." Complementarity may be "partial," in which only some of the nucleic acids' bases are matched according to the base pairing rules. Or, there may be "complete" or "total" complementarity between the nucleic acids. The degree of complementarity between nucleic acid strands has significant effects on the efficiency and strength of hybridization between nucleic acid strands.

[0074] Throughout this specification, unless the context requires otherwise, the words "comprise," "comprises" and "comprising" will be understood to imply the inclusion of a stated step or element or group of steps or elements but not the exclusion of any other step or element or group of steps or elements. Thus, use of the term "comprising" and the like indicates that the listed elements are required or mandatory, but that other elements are optional and may or may not be present. By "consisting of" is meant including, and limited to, whatever follows the phrase "consisting of". Thus, the phrase "consisting of" indicates that the listed elements are required or mandatory, and that no other elements may be present. By "consisting essentially of" is meant including any elements listed after the phrase, and limited to other elements that do not interfere with or contribute to the activity or action specified in the disclosure for the listed elements. Thus, the phrase "consisting essentially of" indicates that the listed elements are required or mandatory, but that other elements are optional and may or may not be present depending upon whether or not they affect the activity or action of the listed elements.

[0075] The term "correlating" refers to determining a relationship between one type of data with another or with a state.

[0076] The term "degree" of VaSIRS, as used herein, refers to the seriousness, severity, stage or state of a VaSIRS. For example, a VaSIRS may be characterized as mild, moderate or severe. A person of skill in the art would be able to determine or assess the degree of a particular VaSIRS. For example, the degree of a VaSIRS may be determined by comparing the likelihood or length of survival of a subject having a VaSIRS with the likelihood or length of survival in other subjects having VaSIRS. In other embodiments, the degree of a VaSIRS may be determined by comparing the clinical signs of a subject having a condition with the degree of the clinical signs in other subjects having VaSIRS.

[0077] As used herein, the terms "diagnosis", "diagnosing" and the like are used interchangeably herein to encompass determining the likelihood that a subject will develop a condition, or the existence or nature of a condition in a subject. These terms also encompass determining the severity of disease or episode of disease, as well as in the context of rational therapy, in which the diagnosis guides therapy, including initial selection of therapy, modification of therapy (*e.g.*, adjustment of dose or dosage regimen), and the like. By "likelihood" is meant a

measure of whether a subject with particular measured or derived biomarker values actually has a condition (or not) based on a given mathematical model. An increased likelihood for example may be relative or absolute and may be expressed qualitatively or quantitatively. For instance, an increased likelihood may be determined simply by determining the subject's measured or derived biomarker values for at least two VaSIRS biomarkers and placing the subject in an "increased likelihood" category, based upon previous population studies. The term "likelihood" is also used interchangeably herein with the term "probability". The term "risk" relates to the possibility or probability of a particular event occurring at some point in the future. "Risk stratification" refers to an arraying of known clinical risk factors to allow physicians to classify patients into a low, moderate, high or highest risk of developing a particular disease or condition.

[0078] The term "gene", as used herein, refers to a stretch of nucleic acid that codes for a polypeptide or for an RNA chain that has a function. While it is the exon region of a gene that is transcribed to form mRNA, the term "gene" also includes regulatory regions such as promoters and enhancers that govern expression of the exon region.

[0079] The term "high-density array" refers to a substrate or collection of substrates or surfaces bearing a plurality of array elements (*e.g.*, discrete regions having particular moieties, *e.g.*, proteins (*e.g.*, antibodies), nucleic acids (*e.g.*, oligonucleotide probes), *etc.*, immobilized thereto), where the array elements are present at a density of about 100 elements/ cm² or more, about 1,000 elements/ cm² or more, about 10,000 elements/ cm² or more, or about 100,000 elements/ cm² or more. In specific embodiments, a "high-density array" is one that comprises a plurality of array elements for detecting about 100 or more different biomarkers, about 1,000 or more different biomarkers, about 10,000 or more different biomarkers, or about 100,000 or more different biomarkers. In representative example of these embodiments, a "high-density array" is one that comprises a plurality of array elements for detecting biomarkers of about 100 or more different genes, of about 1,000 or more different genes, of about 10,000 or more different genes, or of about 100,000 or more different genes. Generally, the elements of a high-density array are not labeled. The term "low-density array" refers to a substrate or collection of substrates or surfaces bearing a plurality of array elements (*e.g.*, discrete regions having particular moieties, *e.g.*, proteins (*e.g.*, antibodies), nucleic acids (*e.g.*, oligonucleotide probes), *etc.*, immobilized thereto), where the array elements are present at a density of about 100 elements/ cm² or less, about 50 elements/ cm² or less, about 20 elements/ cm² or less, or about 10 elements/ cm² or less. In specific embodiments, a "low-density array" is one that comprises a plurality of array elements for detecting about 100 or less different biomarkers, about 50 or less different biomarkers, about 20 or less different biomarkers, or about 10 or less different biomarkers. In representative example of these embodiments, a "low-density array" is one that comprises a plurality of array elements for detecting biomarkers of about 100 or less different genes, of about 50 or less different genes, of about 20 or less different genes, or of about 10 or less different genes. Generally, the elements of a low-density array are not labeled.

[0080] As used herein the terms "homology", "homologous" and the like refer to the level of similarity between two or more nucleic acid sequences in terms of percent of sequence identity. Generally, homologous sequences or sequences with homology refer to nucleic acid sequences that exhibit at least 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% sequence identity to one another. Alternatively, or in addition, homologs, homologous sequences or sequences with

homology refer to nucleic acid sequences that hybridize under high stringency conditions to one another. High stringency conditions include and encompass from at least about 31% v/v to at least about 50% v/v formamide and from at least about 0.01 M to at least about 0.15 M salt for hybridization at 42° C, and at least about 0.01 M to at least about 0.15 M salt for washing at 42° C. High stringency conditions also may include 1% BSA, 1 mM EDTA, 0.5 M NaHPO₄ (pH 7.2), 7% SDS for hybridization at 65° C, and (i) 0.2 x SSC, 0.1% SDS; or (ii) 0.5% BSA, 1mM EDTA, 40 mM NaHPO₄ (pH 7.2), 1% SDS for washing at a temperature in excess of 65° C.

[0081] The term "indicator" as used herein refers to a result or representation of a result, including any information, number, ratio, signal, sign, mark, or note by which a skilled artisan can estimate and/or determine a likelihood or risk of whether or not a subject is suffering from a given disease or condition. In the case of the present invention, the "indicator" may optionally be used together with other clinical characteristics, to arrive at a diagnosis (that is, the occurrence or nonoccurrence) of VaSIRS or a prognosis for a VaSIRS in a subject. That such an indicator is "determined" is not meant to imply that the indicator is 100% accurate. The skilled clinician may use the indicator together with other clinical indicia to arrive at a diagnosis.

[0082] The term "immobilized" means that a molecular species of interest is fixed to a solid support, suitably by covalent linkage. This covalent linkage can be achieved by different means depending on the molecular nature of the molecular species. Moreover, the molecular species may be also fixed on the solid support by electrostatic forces, hydrophobic or hydrophilic interactions or Van-der-Waals forces. The above described physico-chemical interactions typically occur in interactions between molecules. In particular embodiments, all that is required is that the molecules (*e.g.*, nucleic acids or polypeptides) remain immobilized or attached to a support under conditions in which it is intended to use the support, for example in applications requiring nucleic acid amplification and/or sequencing or in in antibody-binding assays. For example, oligonucleotides or primers are immobilized such that a 3' end is available for enzymatic extension and/or at least a portion of the sequence is capable of hybridizing to a complementary sequence. In some embodiments, immobilization can occur via hybridization to a surface attached primer, in which case the immobilized primer or oligonucleotide may be in the 3'-5' orientation. In other embodiments, immobilization can occur by means other than base-pairing hybridization, such as the covalent attachment.

[0083] The term "immune system", as used herein, refers to cells, molecular components and mechanisms, including antigen-specific and non-specific categories of the adaptive and innate immune systems, respectively, that provide a defense against damage and insults resulting from a viral infection. The term "innate immune system" refers to a host's non-specific reaction to insult to include antigen-nonspecific defense cells, molecular components and mechanisms that come into action immediately or within several hours after exposure to almost any insult or antigen. Elements of the innate immunity include for example phagocytic cells (monocytes, macrophages, dendritic cells, polymorphonuclear leukocytes such as neutrophils, reticuloendothelial cells such as Küpffer cells, and microglia), cells that release inflammatory mediators (basophils, mast cells and eosinophils), natural killer cells (NK cells) and physical barriers and molecules such as keratin, mucous, secretions, complement proteins, immunoglobulin M (IgM), acute phase proteins, fibrinogen and molecules of the clotting cascade, and cytokines. Effector compounds of the innate immune system include chemicals such as lysozymes, IgM, mucous and chemoattractants (*e.g.*, cytokines or histamine), complement and clotting proteins.

The term "adaptive immune system" refers to antigen-specific cells, molecular components and mechanisms that emerge over several days, and react with and remove a specific antigen. The adaptive immune system develops throughout a host's lifetime. The adaptive immune system is based on leukocytes, and is divided into two major sections: the humoral immune system, which acts mainly *via* immunoglobulins produced by B cells, and the cell-mediated immune system, which functions mainly *via* T cells.

[0084] Reference herein to "immuno-interactive" includes reference to any interaction, reaction, or other form of association between molecules and in particular where one of the molecules is, or mimics, a component of the immune system.

[0085] The term "label" is used herein in a broad sense to refer to an agent that is capable of providing a detectable signal, either directly or through interaction with one or more additional members of a signal producing system and that has been artificially added, linked or attached via chemical manipulation to a molecule. Labels can be visual, optical, photonic, electronic, acoustic, opto-acoustic, by mass, electro-chemical, electro-optical, spectrometry, enzymatic, or otherwise chemically, biochemically hydrodynamically, electrically or physically detectable. Labels can be, for example tailed reporter, marker or adapter molecules. In specific embodiments, a molecule such as a nucleic acid molecule is labeled with a detectable molecule selected from the group consisting of radioisotopes, fluorescent compounds, bioluminescent compounds, chemiluminescent compounds, metal chelators or enzymes. Examples of labels include, but are not limited to, the following radioisotopes (*e.g.*, ^3H , ^{14}C , ^{35}S , ^{125}I , ^{131}I), fluorescent labels (*e.g.*, FITC, rhodamine, lanthanide phosphors), luminescent labels such as luminol; enzymatic labels (*e.g.*, horseradish peroxidase, beta-galactosidase, luciferase, alkaline phosphatase, acetylcholinesterase), biotinyl groups (which can be detected by marked avidin, *e.g.*, streptavidin containing a fluorescent marker or enzymatic activity that can be detected by optical or calorimetric methods), predetermined polypeptide epitopes recognized by a secondary reporter (*e.g.*, leucine zipper pair sequences, binding sites for secondary antibodies, metal binding domains, epitope tags).

[0086] The term "microarray" refers to an arrangement of array elements, *e.g.*, probes (including primers), ligands, biomarker nucleic acid sequence or protein sequences on a substrate. The term "microarray" includes within its scope "high-density arrays" and "low-density arrays".

[0087] The term "nucleic acid" or "polynucleotide" as used herein includes RNA, mRNA, miRNA, cRNA, cDNA mtDNA, or DNA. The term typically refers to a polymeric form of nucleotides of at least 10 bases in length, either ribonucleotides or deoxynucleotides or a modified form of either type of nucleotide. The term includes single and double stranded forms of DNA or RNA.

[0088] By "obtained" is meant to come into possession. Samples so obtained include, for example, nucleic acid extracts or polypeptide extracts isolated or derived from a particular source. For instance, the extract may be isolated directly from a biological fluid or tissue of a subject.

[0089] As used herein, the term "positive response" means that the result of a treatment regimen includes some clinically significant benefit, such as the prevention, or reduction of severity, of symptoms, or a slowing of the progression of the condition. By contrast, the term "negative response" means that a treatment regimen provides no clinically significant benefit, such

as the prevention, or reduction of severity, of symptoms, or increases the rate of progression of the condition.

[0090] "Protein", "polypeptide" and "peptide" are used interchangeably herein to refer to a polymer of amino acid residues and to variants and synthetic analogues of the same.

5 **[0091]** By "primer" is meant an oligonucleotide which, when paired with a strand of DNA, is capable of initiating the synthesis of a primer extension product in the presence of a suitable polymerizing agent. The primer is preferably single-stranded for maximum efficiency in amplification but can alternatively be double-stranded. A primer must be sufficiently long to prime the synthesis of extension products in the presence of the polymerization agent. The length of the
10 primer depends on many factors, including application, temperature to be employed, template reaction conditions, other reagents, and source of primers. For example, depending on the complexity of the target sequence, the primer may be at least about 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, 500, to one base shorter in length than the template sequence at the 3' end of the
15 primer to allow extension of a nucleic acid chain, though the 5' end of the primer may extend in length beyond the 3' end of the template sequence. In certain embodiments, primers can be large polynucleotides, such as from about 35 nucleotides to several kilobases or more. Primers can be selected to be "substantially complementary" to the sequence on the template to which it is designed to hybridize and serve as a site for the initiation of synthesis. By "substantially
20 complementary", it is meant that the primer is sufficiently complementary to hybridize with a target polynucleotide. Desirably, the primer contains no mismatches with the template to which it is designed to hybridize but this is not essential. For example, non-complementary nucleotide residues can be attached to the 5' end of the primer, with the remainder of the primer sequence being complementary to the template. Alternatively, non-complementary nucleotide residues or a
25 stretch of non-complementary nucleotide residues can be interspersed into a primer, provided that the primer sequence has sufficient complementarity with the sequence of the template to hybridize therewith and thereby form a template for synthesis of the extension product of the primer.

[0092] As used herein, the term "probe" refers to a molecule that binds to a specific sequence or sub-sequence or other moiety of another molecule. Unless otherwise indicated, the
30 term "probe" typically refers to a nucleic acid probe that binds to another nucleic acid, also referred to herein as a "target polynucleotide", through complementary base pairing. Probes can bind target polynucleotides lacking complete sequence complementarity with the probe, depending on the stringency of the hybridization conditions. Probes can be labeled directly or indirectly and include primers within their scope.

35 **[0093]** The term "prognosis" as used herein refers to a prediction of the probable course and outcome of a clinical condition or disease. A prognosis is usually made by evaluating factors or symptoms of a disease that are indicative of a favorable or unfavorable course or outcome of the disease. The skilled artisan will understand that the term "prognosis" refers to an increased probability that a certain course or outcome will occur; that is, that a course or outcome
40 is more likely to occur in a subject exhibiting a given condition, when compared to those individuals not exhibiting the condition.

[0094] The term "sample" as used herein includes any biological specimen that may be extracted, untreated, treated, diluted or concentrated from a subject. Samples may include,

without limitation, biological fluids such as whole blood, serum, red blood cells, white blood cells, plasma, saliva, urine, stool (*i.e.*, feces), tears, sweat, sebum, nipple aspirate, ductal lavage, tumor exudates, synovial fluid, ascitic fluid, peritoneal fluid, amniotic fluid, cerebrospinal fluid, lymph, fine needle aspirate, amniotic fluid, any other bodily fluid, cell lysates, cellular secretion products, inflammation fluid, semen and vaginal secretions. Samples may include tissue samples and biopsies, tissue homogenates and the like. Advantageous samples may include ones comprising any one or more biomarkers as taught herein in detectable quantities. Suitably, the sample is readily obtainable by minimally invasive methods, allowing the removal or isolation of the sample from the subject. In certain embodiments, the sample contains blood, especially peripheral blood, or a fraction or extract thereof. Typically, the sample comprises blood cells such as mature, immature or developing leukocytes, including lymphocytes, polymorphonuclear leukocytes, neutrophils, monocytes, reticulocytes, basophils, coelomocytes, hemocytes, eosinophils, megakaryocytes, macrophages, dendritic cells natural killer cells, or fraction of such cells (*e.g.*, a nucleic acid or protein fraction). In specific embodiments, the sample comprises leukocytes including peripheral blood mononuclear cells (PBMC).

[0095] The term "solid support" as used herein refers to a solid inert surface or body to which a molecular species, such as a nucleic acid and polypeptides can be immobilized. Non-limiting examples of solid supports include glass surfaces, plastic surfaces, latex, dextran, polystyrene surfaces, polypropylene surfaces, polyacrylamide gels, gold surfaces, and silicon wafers. In some embodiments, the solid supports are in the form of membranes, chips or particles. For example, the solid support may be a glass surface (*e.g.*, a planar surface of a flow cell channel). In some embodiments, the solid support may comprise an inert substrate or matrix which has been "functionalized", such as by applying a layer or coating of an intermediate material comprising reactive groups which permit covalent attachment to molecules such as polynucleotides. By way of non-limiting example, such supports can include polyacrylamide hydrogels supported on an inert substrate such as glass. The molecules (*e.g.*, polynucleotides) can be directly covalently attached to the intermediate material (*e.g.*, a hydrogel) but the intermediate material can itself be non-covalently attached to the substrate or matrix (*e.g.*, a glass substrate). The support can include a plurality of particles or beads each having a different attached molecular species.

[0096] As used herein, the term SIRS ("systemic inflammatory response syndrome") refers to a clinical response arising from a non-specific insult with two or more of the following measureable clinical characteristics; a body temperature greater than 38° C or less than 36° C, a heart rate greater than 90 beats per minute, a respiratory rate greater than 20 per minute, a white blood cell count (total leukocytes) greater than 12,000 per mm³ or less than 4,000 per mm³, or a band neutrophil percentage greater than 10%. From an immunological perspective, it may be seen as representing a systemic response to insult (*e.g.*, major surgery) or systemic inflammation. As used herein, "VaSIRS" includes any one or more (*e.g.*, 1, 2, 3, 4, 5) of the clinical responses noted above but with underlying viral infection etiology. Confirmation of infection can be determined using any suitable procedure known in the art, illustrative examples of which include nucleic acid detection (*e.g.*, polymerase chain reaction (PCR)), immunological detection (*e.g.*, ELISA), isolation of virus from infected cells, cell lysis and imaging techniques such as electron microscopy. From an immunological perspective, VaSIRS may be seen as a systemic response to viral infection, whether it is a local, peripheral or systemic infection.

[0097] The terms "subject", "individual" and "patient" are used interchangeably herein to refer to an animal subject, particularly a vertebrate subject, and even more particularly a mammalian subject. Suitable vertebrate animals that fall within the scope of the invention include, but are not restricted to, any member of the phylum Chordata, subphylum vertebrata including primates, rodents (e.g., mice rats, guinea pigs), lagomorphs (e.g., rabbits, hares), bovines (e.g., cattle), ovines (e.g., sheep), caprines (e.g., goats), porcines (e.g., pigs), equines (e.g., horses), canines (e.g., dogs), felines (e.g., cats), avians (e.g., chickens, turkeys, ducks, geese, companion birds such as canaries, budgerigars etc.), marine mammals (e.g., dolphins, whales), reptiles (snakes, frogs, lizards, etc.), and fish. A preferred subject is a primate (e.g., a human, ape, monkey, chimpanzee). The subject suitably has at least one (e.g., 1, 2, 3, 4, 5 or more) clinical sign of SIRS.

[0098] As used herein, the term "treatment regimen" refers to prophylactic and/or therapeutic (i.e., after onset of a specified condition) treatments, unless the context specifically indicates otherwise. The term "treatment regimen" encompasses natural substances and pharmaceutical agents (i.e., "drugs") as well as any other treatment regimen including but not limited to dietary treatments, physical therapy or exercise regimens, surgical interventions, and combinations thereof.

[0099] It will be appreciated that the terms used herein and associated definitions are used for the purpose of explanation only and are not intended to be limiting.

2. Pan-viral systemic inflammation biomarkers and their use for identifying subjects with VaSIRS

[0100] The present invention concerns methods, apparatus, compositions and kits for identifying subjects with VaSIRS or for providing a prognosis for subjects with VaSIRS. In particular, VaSIRS biomarkers are disclosed for use in these modalities to assess the likelihood of the presence, absence or degree of VaSIRS in subjects, or for providing a prognosis for subjects with VaSIRS. The methods, apparatus, compositions and kits of the invention are useful for early detection of VaSIRS, thus allowing better treatment interventions for subjects with symptoms of SIRS that stem at least in part from a viral infection.

[0101] The present inventors have determined that certain expression products are commonly, specifically and differentially expressed in humans, macaques and pigs during systemic inflammations with a range of viral etiologies (e.g., Groups I, II, III, IV, V, VI and VII viruses), underscoring the conserved nature of the host response to a VaSIRS. The results presented herein provide clear evidence that a unique biologically-relevant biomarker profile predicts VaSIRS with a remarkable degree of accuracy. This "pan-viral" systemic inflammation biomarker profile was validated in two independently derived external datasets (MARS, pediatric) and two publicly available datasets (HIV and PCV) (see, Table 4 for details) and used to distinguish VaSIRS from other SIRS conditions including bacterium associated SIRS (BaSIRS), autoimmune disease associated SIRS (ADaSIRS), cancer associated SIRS (CaSIRS) and trauma associated SIRS (TaSIRS). Overall, these findings provide compelling evidence that the expression products disclosed herein can function as biomarkers for VaSIRS and may potentially serve as a useful diagnostic for triaging treatment decisions for SIRS-affected subjects. In this regard, it is proposed that the methods, apparatus, compositions and kits disclosed herein that are based on these biomarkers may serve in the point-of-care diagnostics that allow for rapid and inexpensive

screening for VaSIRS, which may result in significant cost savings to the medical system as VaSIRS-affected subjects can be exposed to therapeutic agents that are suitable for treating VaSIRS as opposed to therapeutic agents for other SIRS conditions.

[0102] Thus, specific expression products are disclosed herein as VaSIRS biomarkers that provide a means for identifying VaSIRS and/or for distinguishing VaSIRS from other SIRS conditions including BaSIRS, ADaSIRS, CaSIRS and TaSIRS, and/or for providing a prognosis for a subject with VaSIRS. Evaluation of these VaSIRS biomarkers through analysis of their levels in a subject or in a sample taken from a subject provides a measured or derived biomarker value for determining an indicator that can be used for assessing the presence, absence or degree of VaSIRS in a subject or for providing a prognosis for VaSIRS in a subject.

[0103] Accordingly, biomarker values can be measured biomarker values, which are values of biomarkers measured for the subject, or alternatively could be derived biomarker values, which are values that have been derived from one or more measured biomarker values, for example by applying a function to the one or more measured biomarker values. As used herein, biomarkers to which a function has been applied are referred to as "derived markers".

[0104] The biomarker values may be determined in any one of a number of ways. An exemplary method of determining biomarker values is described by the present inventors in WO 2015/117204, which is incorporated herein by reference in its entirety. In one example, the process of determining biomarker values can include measuring the biomarker values, for example by performing tests on the subject or on sample(s) taken from the subject. More typically however, the step of determining the biomarker values includes having an electronic processing device receive or otherwise obtain biomarker values that have been previously measured or derived. This could include for example, retrieving the biomarker values from a data store such as a remote database, obtaining biomarker values that have been manually input, using an input device, or the like. The indicator is determined using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence, degree or prognosis of VaSIRS. Assuming the method is performed using an electronic processing device, an indication of the indicator is optionally displayed or otherwise provided to the user. In this regard, the indication could be a graphical or alphanumeric representation of an indicator value. Alternatively however, the indication could be the result of a comparison of the indicator value to predefined thresholds or ranges, or alternatively could be an indication of the presence, absence, degree of a VaSIRS or prognosis for a VaSIRS, derived using the indicator.

[0105] In some embodiments, biomarker values are combined, for example by adding, multiplying, subtracting, or dividing biomarker values to determine an indicator value. This step is performed so that multiple biomarker values can be combined into a single indicator value, providing a more useful and straightforward mechanism for allowing the indicator to be interpreted and hence used in diagnosing the presence, absence or degree of VaSIRS in the subject, or providing a prognosis for a VaSIRS in the subject.

[0106] In some embodiments in which a plurality of biomarkers and biomarker values are used, in order to ensure that an effective diagnosis or prognosis can be determined, at least two of the biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 . This requirement means that the two biomarkers are not entirely correlated in respect of each other when considered in the

context of the VaSIRS being diagnosed or prognosed. In other words, at least two of the biomarkers in the combination respond differently as the condition changes, which adds significantly to their ability when combined to discriminate between at least two conditions, to diagnose the presence, absence or degree of VaSIRS, and/or to provide a prognosis for the VaSIRS in or of the subject.

[0107] Typically, the requirement that biomarkers have a low mutual correlation means that the biomarkers may relate to different biological attributes or domains such as, but not limited, to different molecular functions, different biological processes and different cellular components. Illustrative examples of molecular function include addition of, or removal of, one of more of the following moieties to, or from, a protein, polypeptide, peptide, nucleic acid (*e.g.*, DNA, RNA): linear, branched, saturated or unsaturated alkyl (*e.g.*, C₁–C₂₄ alkyl); phosphate; ubiquitin; acyl; fatty acid, lipid, phospholipid; nucleotide base; hydroxyl and the like. Molecular functions also include signaling pathways, including without limitation, receptor signaling pathways and nuclear signaling pathways. Non-limiting examples of molecular functions also include cleavage of a nucleic acid, peptide, polypeptide or protein at one or more sites; polymerization of a nucleic acid, peptide, polypeptide or protein; translocation through a cell membrane (*e.g.*, outer cell membrane; nuclear membrane); translocation into or out of a cell organelle (*e.g.*, Golgi apparatus, lysosome, endoplasmic reticulum, nucleus, mitochondria); receptor binding, receptor signaling, membrane channel binding, membrane channel influx or efflux; and the like.

[0108] Illustrative examples of biological processes include: stages of the cell cycle such as meiosis, mitosis, cell division, prophase, metaphase, anaphase, telophase and interphase, stages of cell differentiation; apoptosis; necrosis; chemotaxis; immune responses including adaptive and innate immune responses, pro-inflammatory immune responses, autoimmune responses, tolerogenic responses and the like. Other illustrative examples of biological processes include generating or breaking down adenosine triphosphate (ATP), saccharides, polysaccharides, fatty acids, lipids, phospholipids, sphingolipids, glycolipids, cholesterol, nucleotides, nucleic acids, membranes (*e.g.*, cell plasma membrane, nuclear membrane), amino acids, peptides, polypeptides, proteins and the like. Representative examples of cellular components include organelles, membranes, as for example noted above, and others.

[0109] It will be understood that the use of biomarkers that have different biological attributes or domains provides further information than if the biomarkers were related to the same or common biological attributes or domains. In this regard, it will be appreciated if the at least two biomarkers are highly correlated to each other, the use of both biomarkers would add little diagnostic/prognostic improvement compared to the use of a single one of the biomarkers. Accordingly, an indicator-determining method of the present invention in which a plurality of biomarkers and biomarker values are used preferably employ biomarkers that are not well correlated with each other, thereby ensuring that the inclusion of each biomarker in the method adds significantly to the discriminative ability of the indicator.

[0110] Despite this, in order to ensure that the indicator can accurately be used in performing the discrimination between at least two conditions (*e.g.*, VaSIRS and healthy condition) or the diagnosis of the presence, absence or degree of VaSIRS or the provision of a prognosis for the VaSIRS, the indicator has a performance value that is greater than or equal to a performance

threshold. The performance threshold may be of any suitable form but is to be typically indicative of an explained variance of at least 0.3, or an equivalent value of another performance measure.

[0111] Suitably, a combination of biomarkers is employed, which biomarkers have a mutual correlation between ± 0.9 and which combination provides an explained variance of at least 0.3. This typically allows an indicator to be defined that is suitable for ensuring that an accurate discrimination, diagnosis or prognosis can be obtained whilst minimizing the number of biomarkers that are required. Typically the mutual correlation range is one of ± 0.8 ; ± 0.7 ; ± 0.6 ; ± 0.5 ; ± 0.4 ; ± 0.3 ; ± 0.2 ; and, ± 0.1 . Typically each VaSIRS biomarker has a condition correlation with the presence, absence or degree of VaSIRS, or with a prognosis for a VaSIRS that lies outside a condition correlation range, the condition correlation range being between ± 0.3 and more typically ± 0.9 ; ± 0.8 ; ± 0.7 ; ± 0.6 ; ± 0.5 ; and, ± 0.4 . Typically the performance threshold is indicative of an explained variance of at least one of 0.4; 0.5; 0.6; 0.7; 0.8; and 0.9.

[0112] It will be understood that in this context, the biomarkers used within the above-described method can define a biomarker profile for a VaSIRS, which includes a minimal number of biomarkers, whilst maintaining sufficient performance to allow the biomarker profile to be used in making a clinically relevant diagnosis, prognosis, or differentiation. Minimizing the number of biomarkers used minimizes the costs associated with performing diagnostic or prognostic tests and in the case of nucleic acid expression products, allows the test to be performed utilizing relatively straightforward techniques such as nucleic acid array, and polymerase chain reaction (PCR) processes, or the like, allowing the test to be performed rapidly in a clinical environment.

[0113] Furthermore, producing a single indicator value allows the results of the test to be easily interpreted by a clinician or other medical practitioner, so that test can be used for reliable diagnosis in a clinical environment.

[0114] Processes for generating suitable biomarker profiles are described for example in WO 2015/117204, which uses the term "biomarker signature" in place of "biomarker profile" as defined herein. It will be understood, therefore, that terms "biomarker profile" and "biomarker signature" are equivalent in scope. The biomarker profile-generating processes disclosed in WO 2015/117204 provide mechanisms for selecting a combination of biomarkers, and more typically derived biomarkers, that can be used to form a biomarker profile, which in turn can be used in diagnosing the presence, absence or degree of VaSIRS or in providing a prognosis for a VaSIRS. In this regard, the biomarker profile defines the biomarkers that should be measured (*i.e.*, the profile biomarkers), how derived biomarker values should be determined for measured biomarker values, and then how biomarker values should be subsequently combined to generate an indicator value. The biomarker profile can also specify defined indicator value ranges that indicate a particular presence, absence or degree of VaSIRS or that provide a prognosis for a VaSIRS.

[0115] Using the above-described methods a number of biomarkers have been identified that are particularly useful for assessing a likelihood that a subject has a presence, absence or degree of VaSIRS or for providing a prognosis for a VaSIRS in a subject. These biomarkers are referred to herein as "VaSIRS biomarkers". As used herein, the term "VaSIRS biomarker" refers to a biomarker of the host, generally a biomarker of the host's immune system, which is altered, or whose level of expression is altered, as part of an inflammatory response to damage or insult resulting from a viral infection. The VaSIRS biomarkers are suitably expression products of genes (also referred to interchangeably herein as "VaSIRS biomarker genes"), including

polynucleotide and polypeptide expression products. As used herein, polynucleotide expression products of VaSIRS biomarker genes are referred to herein as "VaSIRS biomarker polynucleotides." Polypeptide expression products of the VaSIRS biomarker genes are referred to herein as "VaSIRS biomarker polypeptides."

- 5 **[0116]** VaSIRS biomarker are suitably selected from expression products of any one or more of the following VaSIRS genes: *ZBP1, TMEM62, CD38, ISG15, IFI44, RSAD2, HERC5, MX1, HERC6, OAS2, XAF1, IFI6, PARP12, EIF2AK2, DHX58, UBE2L6, DDX60, USP18, RTP4, PHF11, IFIH1, ZBP1, STAT1, LAP3, TAP1, C19orf66, CUL1, POLB, ZC3HAV1, IL16, ITPKB, CAMK2G, CTDSP2, DPEP2, LTB, CBX7, FBNP1, FOXO1, MAST3, LDLRAP1, TMEM204, FAIM3, RGS14, IKBKB,*
- 10 *ZXDC, PHF20, DGKA, XPC, PPARD, C2orf68, NLRP1, IL27RA, ABLIM1, JAK1, METTL3, SAFB2, PPM1F, TYK2, BANP, CRTCS, ATM, PAFAH1B1, PIK3IP1, WDR37, TGFB2, ZNF274, STAT5B, MAML1, SATB1, DOCK9, CHMP7, BRD1, BTG1, ATF7IP2, DDO1, LEF1, TNRC6B, SERTAD2, CEP68, BCL2, VPS8, CHD3, PUM2, TGOLN2, NDE1, CCR7, PSTPIP1, TIAM1, PECAM1, PDE3B, MYC, FOXJ2, PRMT2, CSNK1D, RPL10A, SERINC5, ARHGEF2, HGSNAT, TRAK1, PHF2, PBX3, SESN1, DPF2, IL4R,*
- 15 *NOSIP, MPPE1, NR3C1, ABAT, GCC2, ZFC3H1, SETD2, ITSN2, R3HDM2, ARHGAP15, PCF11, MAPRE2, ST3GAL1, NACA, WDR47, SSBP2, CLK4, EIF3H, FRY, ZNF238, PTGER4, PCNX, NECAP2, CASC3, MSL1, VEZF1, KIAA0232, RASSF2, RPL22, ACAA1, MAP4K4, BEX4, NCBP2, LRMP, CAMK1D, UTP14A, STX6, RPS6KA3, PRKAA1, GOLGA7, ZNF143, SNRK, SYPL1, CYLD, PRUNE, CRLF3, CD93, GPS2, FBXO11, UBE2D2, USP10, CCNG2, SOS2, ARRB1, CEP170, SMAD4, CIAPIN1, KLF7,*
- 20 *PHF20L1, ALDH3A2, PDCD6IP, WASF2, TGFB1, GBBP1L1, PCBP2, DCP2, LYST, ERBB2IP, ANKRD49, NDFIP1, ATAD2B, ZNF292, CCNT2, MARCH7, ACAP2, MED13, IL6ST, PHF3, SP3, SEC62, ZFYVE16, NEK7, POLD4, GNA12, TRIB2, YTHDF3, PPP2R5A, PPP1R2, ZDHHC17, STK38L, ST13, FAM134A, PFDN5, MARCH8, POLR1D, OASL, N4BP1, NOD2, RNF19B, PRKAG2, IGSF6, MEF2A, LPIN2, PPP1R11, USP15, BACH1, SSFA2, MKLN1, FYB, NSUN3, MAX, STAM2, HHEX, CLEC4A, ZFAND5,*
- 25 *ABI1, MORC3, RC3H2, MAP1LC3B, TM2D3, CHST11, NAB1, KLF3, YPEL5, MXI1, CD97, CYTH4, HCK, ARHGAP26, RARA, XPO6, TNFRSF1A, SLCO3A1, ICAM3, PTPN6, PRKCD, RAB11FIP1, CSF2RB, LCP2, TYROBP, PHC2, RHOG, PSAP, LYN, TMEM127, LILRA2, AOA, FGR, PLEKHO2, ARAP1, RBM23, PTPRE, KLF6, LIMK2, LILRB3, TLR2, GPR97, GMIP, SIRPA, LRP10, LPAR2, TREM1, IL13RA1, ITGAX, ARHGAP25, SIRPB1, ZDHHC18, TLE3, ITGB2, SNX27, PGS1, ATP6V1B2, RAB31, MAP3K11,*
- 30 *PACSIN2, KIAA0513, EMR2, RERE, NUMB, RALB, ETS2, STAT5A, LST1, RIN3, TNK2, IQSEC1, PISD, SORL1, FES, KIAA0247, IL6R, LAPTM5, VAMP3, FAM65B, MAP3K5, TRIM8, ZYX, MAPK14, PLEKHO1, NCOA1, RNASET2, APBB1IP, RXRA, PTAFR, CNPY3, TNFSF13, RPS6KA1, OSBPL2, MTMR3, TMBIM1, TFEB, TFE3, RAF1, STX3, LAT2, GRB2, NDEL1, SEMA4D, FCGRT, DOK3, HIP1, UBN1, PLXNC1, NRBF2, INPP5D, SH2D3C, MMP25, IL10RB, FLOT2, PIAS1, PITPNA, APLP2, CTBP2, GPM3, RNF130,*
- 35 *DGCR2, ZMIZ1, CAP1, GSK3B, RGS19, RAB7A, CREBBP, RBMS1, IL1RAP, RTN3, PPP4R1, TRIOBP, GABARAP, MCTP2, NFKB1, CST3, ABHD2, SH2B3, STX10, TSC22D3, TLE4, HAL, ARRB2, MAP3K3, NPL, CCND3, SERINC3, GNAQ, USP4, PSEN1, KBTBD2, LYL1, AIF1, MBP, ACVR1B, RAB4B, PTEN, ASAP1, MANSC1, RYBP, CSAD, UBXN2B, TNIP1, WBP2, OGFR1, SNN, HPCAL1, CD37, RNF146, RAB14, TOPORS, NFYA, FOXO3, CREB1, MAPK1, SOAT1, UBQLN2, OSBPL11, KLHL2, VAV3, BRD4,*
- 40 *MARK3, BAZ2B, ZNF148, CASP8, CHMP1B, HPS1, RNF141, MOSPD2, PINK1, CDIPT, NCOA4, PPP3R1, MKRN1, GYPC, BMP2K and FBXO9.* Non-limiting examples of nucleotide sequences for these VaSIRS biomarkers are listed in SEQ ID NOs: 1-415. Non-limiting examples of amino acid sequences for these VaSIRS biomarkers are listed in SEQ ID NOs: 416-830.

[0117] Of the above VaSIRS biomarkers, expression products of *ZBP1*, *TMEM62* and *CD38* (e.g., RNA transcripts of these genes) have been found to have strong diagnostic performance on their own (as measured, for example, using area under curve (AUC)) for detecting VaSIRS, or for providing a prognosis for a VaSIRS and are referred to herein as "Group A VaSIRS biomarkers". Thus, in specific embodiments, Group A VaSIRS biomarkers, may be used either by themselves or in combination with other VaSIRS biomarkers including other Group A VaSIRS biomarkers for the determination of the indicator. Suitably, in these embodiments, a biomarker value is measured or derived for the Group A VaSIRS biomarker and optionally for the other VaSIRS biomarker(s) to determine the indicator.

[0118] The present inventors have also determined that other VaSIRS biomarkers have strong diagnostic performance when combined with one or more other VaSIRS biomarkers. In advantageous embodiments, pairs of VaSIRS biomarkers have been identified that can be used to determine the indicator. Accordingly, in representative examples of this type, an indicator is determined that correlates to a ratio of VaSIRS biomarkers, which can be used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS, or in providing a prognosis for a subject with VaSIRS.

[0119] In these examples, the indicator-determining methods suitably include determining a pair of biomarker values, wherein each biomarker value is a value measured or derived for at least one corresponding VaSIRS biomarker of the subject and is at least partially indicative of a concentration of the VaSIRS biomarker in a sample taken from the subject. The biomarker values are typically used to determine a derived biomarker value using the pair of biomarker values, wherein the derived biomarker value is indicative of a ratio of concentrations of the pair of VaSIRS biomarkers. Thus, if the biomarker values denote the concentrations of the VaSIRS biomarkers, then the derived biomarker value will be based on a ratio of the biomarker values. However, if the biomarker values are related to the concentrations of the biomarkers, for example if they are logarithmically related by virtue of the biomarker values being based on PCR cycle times, or the like, then the biomarker values may be combined in some other manner, such as by subtracting the cycle times to determine a derived biomarker value indicative of a ratio of the concentrations of the VaSIRS biomarkers.

[0120] The derived biomarker value is then used to determine the indicator, either by using the derived biomarker value as an indicator value, or by performing additional processing, such as comparing the derived biomarker value to a reference or the like, as will be described in more detail below.

[0121] In some embodiments in which pairs of VaSIRS biomarkers are used to determine a derived biomarker value, one biomarker of a biomarker pair is selected from Group B VaSIRS biomarkers and the other is selected from Group C VaSIRS biomarkers, wherein an individual Group B VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ISG15*, *IFI44*, *RSAD2*, *HERC5*, *MX1*, *HERC6*, *OAS2*, *XAF1*, *IFI6*, *PARP12*, *EIF2AK2*, *DHX58*, *UBE2L6*, *DDX60*, *USP18*, *RTP4*, *PHF11*, *IFIH1*, *ZBP1*, *STAT1*, *LAP3*, *TAP1*, *C19orf66*, *CUL1*, *POLB* and *ZC3HAV1*, and wherein an individual Group C VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *IL16*, *ITPKB*, *CAMK2G*, *CTDSP2*, *DPEP2*, *LTB*, *CBX7*, *FNBP1*, *FOXO1*, *MAST3*, *LDLRAP1*, *TMEM204*, *FAIM3*, *RGS14*, *IKBKB*, *ZXDC*, *PHF20*, *DGKA*, *XPC*, *PPARD*, *C2orf68*, *NLRP1*, *IL27RA*, *ABLIM1*, *JAK1*, *METTL3*, *SAFB2*, *PPM1F*, *TYK2*, *BANP*,

CRTC3, ATM, PAFAH1B1, PIK3IP1, WDR37, TGFB2, ZNF274, STAT5B, MAML1, SATB1, DOCK9, CHMP7, BRD1, BTG1, ATF7IP2, DIDO1, LEF1, TNRC6B, SERTAD2, CEP68, BCL2, VPS8, CHD3, PUM2, TGOLN2, NDE1, CCR7, PSTPIP1, TIAM1, PECAM1, PDE3B, MYC, FOXJ2, PRMT2, CSNK1D, RPL10A, SERINC5, ARHGEF2, HGSNAT, TRAK1, PHF2, PBX3, SESN1, DPF2, IL4R, NOSIP, MPPE1, NR3C1, ABAT, GCC2, ZFC3H1, SETD2, ITS2, R3HDM2, ARHGAP15, PCF11, MAPRE2, ST3GAL1, NACA, WDR47, SSBP2, CLK4, EIF3H, FRY, ZNF238, PTGER4, PCNX, NECAP2, CASC3, MSL1, VEZF1, KIAA0232, RASSF2, RPL22, ACAA1, MAP4K4, BEX4, NCBP2, LRMP, CAMK1D, UTP14A, STX6, RPS6KA3, PRKAA1, GOLGA7, ZNF143, SNRK, SYPL1, CYLD, PRUNE, CRLF3, CD93, GPS2, FBXO11, UBE2D2, USP10, CCNG2, SOS2, ARRB1, CEP170, SMAD4, CIAPIN1, KLF7, PHF20L1, ALDH3A2, PDCD6IP, WASF2, TGFBI, GPBP1L1, PCBP2, DCP2, LYST, ERBB2IP, ANKRD49, NDFIP1, ATAD2B, ZNF292, CCNT2, MARCH7, ACAP2, MED13, IL6ST, PHF3, SP3, SEC62, ZFYVE16, NEK7, POLD4, GNA12, TRIB2, YTHDF3, PPP2R5A, PPP1R2, ZDHHC17, STK38L, ST13, FAM134A, PFDN5, MARCH8 and POLR1D.

[0122] In other embodiments in which pairs of VaSIRS biomarkers are used to determine a derived biomarker value, one biomarker of a biomarker pair is selected from Group D VaSIRS biomarkers and the other is selected from Group E VaSIRS biomarkers, wherein an individual Group D VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *OASL, N4BP1, NOD2, RNF19B, PRKAG2, IGSF6, MEF2A, LPIN2, PPP1R11, USP15, BACH1, SSFA2, MKLN1, FYB, NSUN3, MAX, STAM2, HHEX, CLEC4A, ZFAND5, ABI1, MORC3, RC3H2, MAP1LC3B, TM2D3, CHST11, NAB1, KLF3, YPEL5 and MXI1*, and wherein an individual Group E VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *CD97, CYTH4, HCK, ARHGAP26, RARA, XPO6, TNFRSF1A, SLCO3A1, ICAM3, PTPN6, PRKCD, RAB11FIP1, CSF2RB, LCP2, TYROBP, PHC2, RHOG, PSAP, LYN, TMEM127, LILRA2, AOA, FGR, PLEKHO2, ARAP1, RBM23, PTPRE, KLF6, LIMK2, LILRB3, TLR2, GPR97, GMIP, SIRPA, LRP10, LPAR2, TREM1, IL13RA1, ITGAX, ARHGAP25, SIRPB1, ZDHHC18, TLE3, ITGB2, SNX27, PGS1, ATP6V1B2, RAB31, MAP3K11, PACSIN2, KIAA0513, EMR2, RERE, NUMB, RALB, ETS2, STAT5A, LST1, RIN3, TNK2, IQSEC1, PISD, SORL1, FES, KIAA0247, IL6R, LAPTM5, VAMP3, FAM65B, MAP3K5, TRIM8, ZYX, MAPK14, PLEKHO1, NCOA1, RNASET2, APBB1IP, RXRA, PTAFR, CNPY3, TNFSF13, RPS6KA1, OSBPL2, MTMR3, TMBIM1, TFEB, TFE3, RAF1, STX3, LAT2, GRB2, NDEL1, SEMA4D, FCGRT, DOK3, HIP1, UBN1, PLXNC1, NRBF2, INPP5D, SH2D3C, MMP25, IL10RB, FLOT2, PIAS1, PITPNA, APLP2, CTBP2, GPSM3, RNF130, DGCR2, ZMIZ1, CAP1, GSK3B, RGS19, RAB7A, CREBBP, RBMS1, IL1RAP, RTN3, PPP4R1, TRIOBP, GABARAP, MCTP2, NFKB1, CST3, ABHD2, SH2B3, STX10, TSC22D3, TLE4, HAL, ARRB2, MAP3K3, NPL, CCND3, SERINC3, GNAQ, USP4, PSEN1, KBTBD2, LYL1, AIF1, MBP, ACVR1B, RAB4B, PTEN, ASAP1, MANSC1, RYBP, CSAD, UBXN2B, TNIP1, WBP2, OGFR1, SNN, HPCAL1, CD37, RNF146, RAB14, TOPORS, NFYA, FOXO3, CREB1, MAPK1, SOAT1, UBQLN2, OSBPL11, KLHL2, VAV3, BRD4, MARK3, BAZ2B, ZNF148, CASP8, CHMP1B, HPS1, RNF141, MOSPD2, PINK1, CDIPT, NCOA4, PPP3R1, MKRN1, GYPC, BMP2K and FBXO9.*

[0123] In specific embodiments, the indicator-determining methods involve determining a first derived biomarker value using a first pair of biomarker values, the first derived biomarker value being indicative of a ratio of concentrations of first and second VaSIRS biomarkers, determining a second derived biomarker value using a second pair of biomarker values, the second derived biomarker value being indicative of a ratio of concentrations of third and fourth VaSIRS biomarkers and determining the indicator by combining the first and second derived biomarker

values. Thus, in these embodiments, two pairs of derived biomarker values can be used, which can assist in increasing the ability of the indicator to reliably determine the likelihood of a subject having or not having VaSIRS.

[0124] The derived biomarker values could be combined using a combining function such as an additive model; a linear model; a support vector machine; a neural network model; a random forest model; a regression model; a genetic algorithm; an annealing algorithm; a weighted sum; a nearest neighbor model; and a probabilistic model. In some embodiments, biomarker values are measured or derived for a Group B VaSIRS biomarker and for a Group C VaSIRS biomarker, and the indicator is determined by combining the biomarker values. In some embodiments, biomarker values are measured or derived for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values. In still other In some embodiments, biomarker values are measured or derived for a Group B VaSIRS biomarker, for a Group C VaSIRS biomarker, for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values.

[0125] In some embodiments, the indicator is compared to an indicator reference, with a likelihood being determined in accordance with results of the comparison. The indicator reference may be derived from indicators determined for a number of individuals in a reference population. The reference population typically includes individuals having different characteristics, such as a plurality of individuals of different sexes; and/or ethnicities, with different groups being defined based on different characteristics, with the subject's indicator being compared to indicator references derived from individuals with similar characteristics. The reference population can also include a plurality of healthy individuals, a plurality of individuals suffering from VaSIRS, a plurality of individuals suffering from a SIRS other than VaSIRS (e.g., ADaSIRS, CaSIRS and TaSIRS), a plurality of individuals showing clinical signs of VaSIRS, a plurality of individuals showing clinical signs of a SIRS other than VaSIRS (e.g., ADaSIRS, CaSIRS and TaSIRS), and/or first and second groups of individuals, each group of individuals suffering from a respective diagnosed SIRS.

[0126] The indicator can also be used for determining a likelihood of the subject having a first or second condition, wherein the first condition is VaSIRS and the second condition is a healthy condition or another SIRS (e.g., ADaSIRS, CaSIRS and TaSIRS); in other words to distinguish between these conditions. In this case, this would typically be achieved by comparing the indicator to first and second indicator references, the first and second indicator references being indicative of first and second conditions and determining the likelihood in accordance with the results of the comparison. In particular, this can include determining first and second indicator probabilities using the results of the comparisons and combining the first and second indicator probabilities, for example using a Bayes method, to determine a condition probability corresponding to the likelihood of the subject having one of the conditions. In this situation the first and second conditions could include VaSIRS and another SIRS conditions, or VaSIRS and a healthy condition. In this case, the first and second indicator references are distributions of indicators determined for first and second groups of a reference population, the first and second group consisting of individuals diagnosed with the first or second condition respectively.

[0127] In specific embodiments, the indicator-determining methods of the present invention are performed using at least one electronic processing device, such as a suitably programmed computer system or the like. In this case, the electronic processing device typically

obtains at least two pairs of measured biomarker values, either by receiving these from a measuring or other quantifying device, or by retrieving these from a database or the like. The processing device then determines a first derived biomarker value indicative of a ratio of concentrations of first and second immune system biomarkers and a second derived biomarker value indicative of a ratio of third and fourth immune system biomarkers. The processing device then determines the indicator by combining the first and second derived biomarker values.

[0128] The processing device can then generate a representation of the indicator, for example by generating an alphanumeric indication of the indicator, a graphical indication of a comparison of the indicator to one or more indicator references or an alphanumeric indication of a likelihood of the subject having at least one medical condition.

[0129] The indicator-determining methods of the present invention typically include obtaining a sample from a subject, who typically has at least one clinical sign of SIRS, wherein the sample includes one or more VaSIRS biomarkers (e.g., polynucleotide or polypeptide expression products of VaSIRS genes) and quantifying at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or more) of the VaSIRS biomarkers within the sample to determine biomarker values. This can be achieved using any suitable technique, and will depend on the nature of the VaSIRS biomarkers. Suitably, an individual measured or derived VaSIRS biomarker value corresponds to the level, abundance or amount of a respective VaSIRS biomarker or to a function that is applied to that level or amount. As used herein the terms "level", "abundance" and "amount" are used interchangeably herein to refer to a quantitative amount (e.g., weight or moles), a semi-quantitative amount, a relative amount (e.g., weight % or mole % within class), a concentration, and the like. Thus, these terms encompass absolute or relative amounts or concentrations of VaSIRS biomarkers in a sample. For example, if the indicator in some embodiments of the indicator-determining method of the present invention, which uses a plurality of VaSIRS biomarkers, is based on a ratio of concentrations of the polynucleotide expression products, this process would typically include quantifying polynucleotide expression products by amplifying at least some polynucleotide expression products in the sample, determining an amplification amount representing a degree of amplification required to obtain a defined level of each of a pair of polynucleotide expression products and determining the indicator by determining a difference between the amplification amounts. In this regard, the amplification amount is generally a cycle time, a number of cycles, a cycle threshold and an amplification time. In this case, the method includes determining a first derived biomarker value by determining a difference between the amplification amounts of a first pair of polynucleotide expression products, determining a second derived biomarker value by determining a difference between the amplification amounts of a second pair of polynucleotide expression products and determining the indicator by adding the first and second derived biomarker values.

[0130] In some embodiments, the presence, absence or degree of VaSIRS or prognosis for a VaSIRS in a subject is established by determining one or more of VaSIRS biomarker values, wherein an individual VaSIRS biomarker value is indicative of a value measured or derived for a VaSIRS biomarker in a subject or in a sample taken from the subject. These biomarkers are referred to herein as "sample VaSIRS biomarkers". In accordance with the present invention, a sample VaSIRS biomarker corresponds to a reference VaSIRS biomarker (also referred to herein as a "corresponding VaSIRS biomarker"). By "corresponding VaSIRS biomarker" is meant a VaSIRS biomarker that is structurally and/or functionally similar to a reference VaSIRS biomarker as set forth for example in SEQ ID NOs: 1-830. Representative corresponding VaSIRS biomarkers include

expression products of allelic variants (same locus), homologues (different locus), and orthologues (different organism) of reference VaSIRS biomarker genes. Nucleic acid variants of reference VaSIRS biomarker genes and encoded VaSIRS biomarker polynucleotide expression products can contain nucleotide substitutions, deletions, inversions and/or insertions. Variation can occur in either or both the coding and non-coding regions. The variations can produce both conservative and non-conservative amino acid substitutions (as compared in the encoded product). For nucleotide sequences, conservative variants include those sequences that, because of the degeneracy of the genetic code, encode the amino acid sequence of a reference VaSIRS polypeptide.

[0131] Generally, variants of a particular VaSIRS biomarker gene or polynucleotide will have at least about 40%, 45%, 50%, 51%, 52%, 53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or more sequence identity to that particular nucleotide sequence as determined by sequence alignment programs known in the art using default parameters. In some embodiments, the VaSIRS biomarker gene or polynucleotide displays at least about 40%, 45%, 50%, 51%, 52%, 53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99% or more sequence identity to a nucleotide sequence selected from any one of SEQ ID NO: 1-415.

[0132] Corresponding VaSIRS biomarkers also include amino acid sequences that display substantial sequence similarity or identity to the amino acid sequence of a reference VaSIRS biomarker polypeptide. In general, an amino acid sequence that corresponds to a reference amino acid sequence will display at least about 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 97, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99% or even up to 100% sequence similarity or identity to a reference amino acid sequence selected from any one of SEQ ID NO: 416-830.

[0133] In some embodiments, calculations of sequence similarity or sequence identity between sequences are performed as follows:

[0134] To determine the percentage identity of two amino acid sequences, or of two nucleic acid sequences, the sequences are aligned for optimal comparison purposes (*e.g.*, gaps can be introduced in one or both of a first and a second amino acid or nucleic acid sequence for optimal alignment and non-homologous sequences can be disregarded for comparison purposes). In some embodiments, the length of a reference sequence aligned for comparison purposes is at least 30%, usually at least 40%, more usually at least 50%, 60%, and even more usually at least 70%, 80%, 90%, 100% of the length of the reference sequence. The amino acid residues or nucleotides at corresponding amino acid positions or nucleotide positions are then compared. When a position in the first sequence is occupied by the same amino acid residue or nucleotide at the corresponding position in the second sequence, then the molecules are identical at that position. For amino acid sequence comparison, when a position in the first sequence is occupied by the same or similar amino acid residue (*i.e.*, conservative substitution) at the corresponding position in the second sequence, then the molecules are similar at that position.

[0135] The percentage identity between the two sequences is a function of the number of identical amino acid residues shared by the sequences at individual positions, taking into account the number of gaps, and the length of each gap, which need to be introduced for optimal alignment of the two sequences. By contrast, the percentage similarity between the two sequences is a function of the number of identical and similar amino acid residues shared by the sequences at individual positions, taking into account the number of gaps, and the length of each gap, which need to be introduced for optimal alignment of the two sequences.

[0136] The comparison of sequences and determination of percentage identity or percentage similarity between sequences can be accomplished using a mathematical algorithm. In certain embodiments, the percentage identity or similarity between amino acid sequences is determined using the Needleman and Wünsch, (1970, *J. Mol. Biol.* 48: 444-453) algorithm which has been incorporated into the GAP program in the GCG software package (available at <http://www.gcg.com>), using either a Blossum 62 matrix or a PAM250 matrix, and a gap weight of 16, 14, 12, 10, 8, 6, or 4 and a length weight of 1, 2, 3, 4, 5, or 6. In specific embodiments, the percent identity between nucleotide sequences is determined using the GAP program in the GCG software package (available at <http://www.gcg.com>), using a NWSgapdna.CMP matrix and a gap weight of 40, 50, 60, 70, or 80 and a length weight of 1, 2, 3, 4, 5, or 6. An non-limiting set of parameters (and the one that should be used unless otherwise specified) includes a Blossum 62 scoring matrix with a gap penalty of 12, a gap extend penalty of 4, and a frameshift gap penalty of 5.

[0137] In some embodiments, the percentage identity or similarity between amino acid or nucleotide sequences can be determined using the algorithm of E. Meyers and W. Miller (1989, *Cabios*, 4: 11-17) which has been incorporated into the ALIGN program (version 2.0), using a PAM120 weight residue table, a gap length penalty of 12 and a gap penalty of 4.

[0138] The nucleic acid and protein sequences described herein can be used as a "query sequence" to perform a search against public databases to, for example, identify other family members or related sequences. Such searches can be performed using the NBLAST and XBLAST programs (version 2.0) of Altschul, *et al.*, (1990, *J Mol Biol.*, 215: 403-10). BLAST nucleotide searches can be performed with the NBLAST program, score = 100, wordlength = 12 to obtain nucleotide sequences homologous to 53010 nucleic acid molecules of the invention. BLAST protein searches can be performed with the XBLAST program, score = 50, wordlength = 3 to obtain amino acid sequences homologous to protein molecules of the invention. To obtain gapped alignments for comparison purposes, Gapped BLAST can be utilized as described in Altschul *et al.*, (1997, *Nucleic Acids Res*, 25: 3389-3402). When utilizing BLAST and Gapped BLAST programs, the default parameters of the respective programs (*e.g.*, XBLAST and NBLAST) can be used.

[0139] Corresponding VaSIRS biomarker polynucleotides also include nucleic acid sequences that hybridize to reference VaSIRS biomarker polynucleotides, or to their complements, under stringency conditions described below. As used herein, the term "hybridizes under low stringency, medium stringency, high stringency, or very high stringency conditions" describes conditions for hybridization and washing. "Hybridization" is used herein to denote the pairing of complementary nucleotide sequences to produce a DNA-DNA hybrid or a DNA-RNA hybrid. Complementary base sequences are those sequences that are related by the base-pairing rules. In DNA, A pairs with T and C pairs with G. In RNA, U pairs with A and C pairs with G. In this regard,

the terms "match" and "mismatch" as used herein refer to the hybridization potential of paired nucleotides in complementary nucleic acid strands. Matched nucleotides hybridize efficiently, such as the classical A-T and G-C base pair mentioned above. Mismatches are other combinations of nucleotides that do not hybridize efficiently.

[0140] Guidance for performing hybridization reactions can be found in Ausubel *et al.*, (1998, *supra*), Sections 6.3.1-6.3.6. Aqueous and non-aqueous methods are described in that reference and either can be used. Reference herein to low stringency conditions include and encompass from at least about 1% v/v to at least about 15% v/v formamide and from at least about 1 M to at least about 2 M salt for hybridization at 42° C, and at least about 1 M to at least about 2 M salt for washing at 42° C. Low stringency conditions also may include 1% Bovine Serum Albumin (BSA), 1 mM EDTA, 0.5 M NaHPO₄ (pH 7.2), 7% SDS for hybridization at 65° C, and (i) 2 × SSC, 0.1% SDS; or (ii) 0.5% BSA, 1 mM EDTA, 40 mM NaHPO₄ (pH 7.2), 5% SDS for washing at room temperature. One embodiment of low stringency conditions includes hybridization in 6 × sodium chloride/sodium citrate (SSC) at about 45° C, followed by two washes in 0.2 × SSC, 0.1% SDS at least at 50° C (the temperature of the washes can be increased to 55° C for low stringency conditions). Medium stringency conditions include and encompass from at least about 16% v/v to at least about 30% v/v formamide and from at least about 0.5 M to at least about 0.9 M salt for hybridization at 42° C, and at least about 0.1 M to at least about 0.2 M salt for washing at 55° C. Medium stringency conditions also may include 1% Bovine Serum Albumin (BSA), 1 mM EDTA, 0.5 M NaHPO₄ (pH 7.2), 7% SDS for hybridization at 65° C, and (i) 2 × SSC, 0.1% SDS; or (ii) 0.5% BSA, 1 mM EDTA, 40 mM NaHPO₄ (pH 7.2), 5% SDS for washing at 60-65° C. One embodiment of medium stringency conditions includes hybridizing in 6 × SSC at about 45° C, followed by one or more washes in 0.2 × SSC, 0.1% SDS at 60° C. High stringency conditions include and encompass from at least about 31% v/v to at least about 50% v/v formamide and from about 0.01 M to about 0.15 M salt for hybridization at 42° C, and about 0.01 M to about 0.02 M salt for washing at 55° C. High stringency conditions also may include 1% BSA, 1 mM EDTA, 0.5 M NaHPO₄ (pH 7.2), 7% SDS for hybridization at 65° C, and (i) 0.2 × SSC, 0.1% SDS; or (ii) 0.5% BSA, 1 mM EDTA, 40 mM NaHPO₄ (pH 7.2), 1% SDS for washing at a temperature in excess of 65° C. One embodiment of high stringency conditions includes hybridizing in 6 × SSC at about 45° C, followed by one or more washes in 0.2 × SSC, 0.1% SDS at 65° C.

[0141] In certain embodiments, a corresponding VaSIRS biomarker polynucleotide is one that hybridizes to a disclosed nucleotide sequence under very high stringency conditions. One embodiment of very high stringency conditions includes hybridizing 0.5 M sodium phosphate, 7% SDS at 65° C, followed by one or more washes at 0.2 × SSC, 1% SDS at 65° C.

[0142] Other stringency conditions are well known in the art and a skilled addressee will recognize that various factors can be manipulated to optimize the specificity of the hybridization. Optimization of the stringency of the final washes can serve to ensure a high degree of hybridization. For detailed examples, see Ausubel *et al.*, *supra* at pages 2.10.1 to 2.10.16 and Sambrook *et al.* (1989, *supra*) at sections 1.101 to 1.104.

[0143] Generally, a sample is processed prior to VaSIRS biomarker detection or quantification. For example, nucleic acid and/or proteins may be extracted, isolated, and/or purified from a sample prior to analysis. Various DNA, mRNA, and/or protein extraction techniques are well known to those skilled in the art. Processing may include centrifugation,

ultracentrifugation, ethanol precipitation, filtration, fractionation, resuspension, dilution, concentration, *etc.* In some embodiments, methods and systems provide analysis (*e.g.*, quantification of RNA or protein biomarkers) from raw sample (*e.g.*, biological fluid such as blood, serum, *etc.*) without or with limited processing.

5 **[0144]** Methods may comprise steps of homogenizing a sample in a suitable buffer, removal of contaminants and/or assay inhibitors, adding a VaSIRS biomarker capture reagent (*e.g.*, a magnetic bead to which is linked an oligonucleotide complementary to a target VaSIRS nucleic acid biomarker), incubated under conditions that promote the association (*e.g.*, by hybridization) of the target biomarker with the capture reagent to produce a target
10 biomarker:capture reagent complex, incubating the target biomarker:capture complex under target biomarker-release conditions. In some embodiments, multiple VaSIRS biomarkers are isolated in each round of isolation by adding multiple VaSIRS biomarkers capture reagents (*e.g.*, specific to the desired biomarkers) to the solution. For example, multiple VaSIRS biomarker capture reagents, each comprising an oligonucleotide specific for a different target VaSIRS biomarker can be added to
15 the sample for isolation of multiple VaSIRS biomarker. It is contemplated that the methods encompass multiple experimental designs that vary both in the number of capture steps and in the number of target VaSIRS biomarker captured in each capture step. In some embodiments, capture reagents are molecules, moieties, substances, or compositions that preferentially (*e.g.*, specifically and selectively) interact with a particular biomarker sought to be isolated, purified, detected,
20 and/or quantified. Any capture reagent having desired binding affinity and/or specificity to the particular VaSIRS biomarker can be used in the present technology. For example, the capture reagent can be a macromolecule such as a peptide, a protein (*e.g.*, an antibody or receptor), an oligonucleotide, a nucleic acid, (*e.g.*, nucleic acids capable of hybridizing with the VaSIRS biomarkers), vitamins, oligosaccharides, carbohydrates, lipids, or small molecules, or a complex
25 thereof. As illustrative and non-limiting examples, an avidin target capture reagent may be used to isolate and purify targets comprising a biotin moiety, an antibody may be used to isolate and purify targets comprising the appropriate antigen or epitope, and an oligonucleotide may be used to isolate and purify a complementary oligonucleotide.

30 **[0145]** Any nucleic acids, including single-stranded and double-stranded nucleic acids, that are capable of binding, or specifically binding, to a target VaSIRS biomarker can be used as the capture reagent. Examples of such nucleic acids include DNA, RNA, aptamers, peptide nucleic acids, and other modifications to the sugar, phosphate, or nucleoside base. Thus, there are many strategies for capturing a target and accordingly many types of capture reagents are known to those in the art.

35 **[0146]** In addition, VaSIRS biomarker capture reagents may comprise a functionality to localize, concentrate, aggregate, *etc.* the capture reagent and thus provide a way to isolate and purify the target VaSIRS biomarker when captured (*e.g.*, bound, hybridized, *etc.*) to the capture reagent (*e.g.*, when a target:capture reagent complex is formed). For example, in some
40 embodiments the portion of the capture reagent that interacts with the VaSIRS biomarker (*e.g.*, an oligonucleotide) is linked to a solid support (*e.g.*, a bead, surface, resin, column, and the like) that allows manipulation by the user on a macroscopic scale. Often, the solid support allows the use of a mechanical means to isolate and purify the target:capture reagent complex from a heterogeneous solution. For example, when linked to a bead, separation is achieved by removing the bead from the heterogeneous solution, *e.g.*, by physical movement. In embodiments in which

the bead is magnetic or paramagnetic, a magnetic field is used to achieve physical separation of the capture reagent (and thus the target VaSIRS biomarker) from the heterogeneous solution.

[0147] The VaSIRS biomarkers may be quantified or detected using any suitable technique. In specific embodiments, the VaSIRS biomarkers are quantified using reagents that determine the level, abundance or amount of individual VaSIRS biomarkers. Non-limiting reagents of this type include reagents for use in nucleic acid- and protein-based assays.

[0148] In illustrative nucleic acid-based assays, nucleic acid is isolated from cells contained in the biological sample according to standard methodologies (Sambrook, *et al.*, 1989, *supra*; and Ausubel *et al.*, 1994, *supra*). The nucleic acid is typically fractionated (*e.g.*, poly A⁺ RNA) or whole cell RNA. Where RNA is used as the subject of detection, it may be desired to convert the RNA to a complementary DNA. In some embodiments, the nucleic acid is amplified by a template-dependent nucleic acid amplification technique. A number of template dependent processes are available to amplify the VaSIRS biomarker sequences present in a given template sample. An exemplary nucleic acid amplification technique is the polymerase chain reaction (referred to as PCR), which is described in detail in U.S. Pat. Nos. 4,683,195, 4,683,202 and 4,800,159, Ausubel *et al.* (*supra*), and in Innis *et al.*, ("PCR Protocols", Academic Press, Inc., San Diego Calif., 1990). Briefly, in PCR, two primer sequences are prepared that are complementary to regions on opposite complementary strands of the biomarker sequence. An excess of deoxynucleotide triphosphates are added to a reaction mixture along with a DNA polymerase, *e.g.*, *Taq* polymerase. If a cognate VaSIRS biomarker sequence is present in a sample, the primers will bind to the biomarker and the polymerase will cause the primers to be extended along the biomarker sequence by adding on nucleotides. By raising and lowering the temperature of the reaction mixture, the extended primers will dissociate from the biomarker to form reaction products, excess primers will bind to the biomarker and to the reaction products and the process is repeated. A reverse transcriptase PCR amplification procedure may be performed in order to quantify the amount of mRNA amplified. Methods of reverse transcribing RNA into cDNA are well known and described in Sambrook *et al.*, 1989, *supra*. Alternative methods for reverse transcription utilize thermostable, RNA-dependent DNA polymerases. These methods are described in WO 90/07641. Polymerase chain reaction methodologies are well known in the art. In specific embodiments in which whole cell RNA is used, cDNA synthesis using whole cell RNA as a sample produces whole cell cDNA.

[0149] In certain advantageous embodiments, the template-dependent amplification involves quantification of transcripts in real-time. For example, RNA or DNA may be quantified using the Real-Time PCR technique (Higuchi, 1992, *et al.*, *Biotechnology* 10: 413-417). By determining the concentration of the amplified products of the target DNA in PCR reactions that have completed the same number of cycles and are in their linear ranges, it is possible to determine the relative concentrations of the specific target sequence in the original DNA mixture. If the DNA mixtures are cDNAs synthesized from RNAs isolated from different tissues or cells, the relative abundance of the specific mRNA from which the target sequence was derived can be determined for the respective tissues or cells. This direct proportionality between the concentration of the PCR products and the relative mRNA abundance is only true in the linear range of the PCR reaction. The final concentration of the target DNA in the plateau portion of the curve is determined by the availability of reagents in the reaction mix and is independent of the original concentration of target DNA. In specific embodiments, multiplexed, tandem PCR (MT-PCR) is employed, which

uses a two-step process for gene expression profiling from small quantities of RNA or DNA, as described for example in US Pat. Appl. Pub. No. 20070190540. In the first step, RNA is converted into cDNA and amplified using multiplexed gene specific primers. In the second step each individual gene is quantitated by real time PCR.

5 **[0150]** In certain embodiments, target nucleic acids are quantified using blotting techniques, which are well known to those of skill in the art. Southern blotting involves the use of DNA as a target, whereas Northern blotting involves the use of RNA as a target. Each provides different types of information, although cDNA blotting is analogous, in many aspects, to blotting or RNA species. Briefly, a probe is used to target a DNA or RNA species that has been immobilized on
10 a suitable matrix, often a filter of nitrocellulose. The different species should be spatially separated to facilitate analysis. This often is accomplished by gel electrophoresis of nucleic acid species followed by "blotting" on to the filter. Subsequently, the blotted target is incubated with a probe (usually labeled) under conditions that promote denaturation and rehybridization. Because the probe is designed to base pair with the target, the probe will bind a portion of the target sequence
15 under renaturing conditions. Unbound probe is then removed, and detection is accomplished as described above. Following detection/quantification, one may compare the results seen in a given subject with a control reaction or a statistically significant reference group or population of control subjects as defined herein. In this way, it is possible to correlate the amount of VaSIRS biomarker nucleic acid detected with the progression or severity of the disease.

20 **[0151]** Also contemplated are biochip-based technologies such as those described by Hacia *et al.* (1996, *Nature Genetics* 14: 441-447) and Shoemaker *et al.* (1996, *Nature Genetics* 14: 450-456). Briefly, these techniques involve quantitative methods for analyzing large numbers of genes rapidly and accurately. By tagging genes with oligonucleotides or using fixed nucleic acid probe arrays, one can employ biochip technology to segregate target molecules as high-density
25 arrays and screen these molecules on the basis of hybridization. See also Pease *et al.* (1994, *Proc. Natl. Acad. Sci. U.S.A.* 91: 5022-5026); Fodor *et al.* (1991, *Science* 251: 767-773). Briefly, nucleic acid probes to VaSIRS biomarker polynucleotides are made and attached to biochips to be used in screening and diagnostic methods, as outlined herein. The nucleic acid probes attached to the biochip are designed to be substantially complementary to specific expressed VaSIRS biomarker
30 nucleic acids, *i.e.*, the target sequence (either the target sequence of the sample or to other probe sequences, for example in sandwich assays), such that hybridization of the target sequence and the probes of the present invention occur. This complementarity need not be perfect; there may be any number of base pair mismatches, which will interfere with hybridization between the target sequence and the nucleic acid probes of the present invention. However, if the number of
35 mismatches is so great that no hybridization can occur under even the least stringent of hybridization conditions, the sequence is not a complementary target sequence. In certain embodiments, more than one probe per sequence is used, with either overlapping probes or probes to different sections of the target being used. That is, two, three, four or more probes, with three being desirable, are used to build in a redundancy for a particular target. The probes can be
40 overlapping (*i.e.* have some sequence in common), or separate.

[0152] In an illustrative biochip analysis, oligonucleotide probes on the biochip are exposed to or contacted with a nucleic acid sample suspected of containing one or more VaSIRS biomarker polynucleotides under conditions favoring specific hybridization. Sample extracts of DNA or RNA, either single or double-stranded, may be prepared from fluid suspensions of biological

materials, or by grinding biological materials, or following a cell lysis step which includes, but is not limited to, lysis effected by treatment with SDS (or other detergents), osmotic shock, guanidinium isothiocyanate and lysozyme. Suitable DNA, which may be used in the method of the invention, includes cDNA. Such DNA may be prepared by any one of a number of commonly used protocols as
5 for example described in Ausubel, *et al.*, 1994, *supra*, and Sambrook, *et al.*, 1989, *supra*.

[0153] Suitable RNA, which may be used in the method of the invention, includes messenger RNA, complementary RNA transcribed from DNA (cRNA) or genomic or subgenomic RNA. Such RNA may be prepared using standard protocols as for example described in the relevant sections of Ausubel, *et al.* 1994, *supra* and Sambrook, *et al.* 1989, *supra*).

10 **[0154]** cDNA may be fragmented, for example, by sonication or by treatment with restriction endonucleases. Suitably, cDNA is fragmented such that resultant DNA fragments are of a length greater than the length of the immobilized oligonucleotide probe(s) but small enough to allow rapid access thereto under suitable hybridization conditions. Alternatively, fragments of cDNA may be selected and amplified using a suitable nucleotide amplification technique, as described for
15 example above, involving appropriate random or specific primers.

[0155] Usually the target VaSIRS biomarker polynucleotides are detectably labeled so that their hybridization to individual probes can be determined. The target polynucleotides are typically detectably labeled with a reporter molecule illustrative examples of which include chromogens, catalysts, enzymes, fluorochromes, chemiluminescent molecules, bioluminescent
20 molecules, lanthanide ions (*e.g.*, Eu³⁴), a radioisotope and a direct visual label. In the case of a direct visual label, use may be made of a colloidal metallic or non-metallic particle, a dye particle, an enzyme or a substrate, an organic polymer, a latex particle, a liposome, or other vesicle containing a signal producing substance and the like. Illustrative labels of this type include large colloids, for example, metal colloids such as those from gold, selenium, silver, tin and titanium
25 oxide. In some embodiments in which an enzyme is used as a direct visual label, biotinylated bases are incorporated into a target polynucleotide.

[0156] The hybrid-forming step can be performed under suitable conditions for hybridizing oligonucleotide probes to test nucleic acid including DNA or RNA. In this regard, reference may be made, for example, to NUCLEIC ACID HYBRIDIZATION, A PRACTICAL APPROACH
30 (Homes and Higgins, eds.) (IRL press, Washington D.C., 1985). In general, whether hybridization takes place is influenced by the length of the oligonucleotide probe and the polynucleotide sequence under test, the pH, the temperature, the concentration of mono- and divalent cations, the proportion of G and C nucleotides in the hybrid-forming region, the viscosity of the medium and the possible presence of denaturants. Such variables also influence the time required for
35 hybridization. The preferred conditions will therefore depend upon the particular application. Such empirical conditions, however, can be routinely determined without undue experimentation.

[0157] After the hybrid-forming step, the probes are washed to remove any unbound nucleic acid with a hybridization buffer. This washing step leaves only bound target
40 polynucleotides. The probes are then examined to identify which probes have hybridized to a target polynucleotide.

[0158] The hybridization reactions are then detected to determine which of the probes has hybridized to a corresponding target sequence. Depending on the nature of the reporter molecule associated with a target polynucleotide, a signal may be instrumentally detected by

irradiating a fluorescent label with light and detecting fluorescence in a fluorimeter; by providing for an enzyme system to produce a dye which could be detected using a spectrophotometer; or detection of a dye particle or a colored colloidal metallic or non-metallic particle using a reflectometer; in the case of using a radioactive label or chemiluminescent molecule employing a radiation counter or autoradiography. Accordingly, a detection means may be adapted to detect or scan light associated with the label which light may include fluorescent, luminescent, focused beam or laser light. In such a case, a charge couple device (CCD) or a photocell can be used to scan for emission of light from a probe:target polynucleotide hybrid from each location in the micro-array and record the data directly in a digital computer. In some cases, electronic detection of the signal may not be necessary. For example, with enzymatically generated color spots associated with nucleic acid array format, visual examination of the array will allow interpretation of the pattern on the array. In the case of a nucleic acid array, the detection means is suitably interfaced with pattern recognition software to convert the pattern of signals from the array into a plain language genetic profile. In certain embodiments, oligonucleotide probes specific for different VaSIRS biomarker polynucleotides are in the form of a nucleic acid array and detection of a signal generated from a reporter molecule on the array is performed using a 'chip reader'. A detection system that can be used by a 'chip reader' is described for example by Pirrung *et al.* (U.S. Patent No. 5,143,854). The chip reader will typically also incorporate some signal processing to determine whether the signal at a particular array position or feature is a true positive or maybe a spurious signal. Exemplary chip readers are described for example by Fodor *et al.* (U.S. Patent No., 5,925,525). Alternatively, when the array is made using a mixture of individually addressable kinds of labeled microbeads, the reaction may be detected using flow cytometry.

[0159] In certain embodiments, the VaSIRS biomarker is a target RNA (*e.g.*, mRNA) or a DNA copy of the target RNA whose level or abundance is measured using at least one nucleic acid probe that hybridizes under at least low, medium, or high stringency conditions to the target RNA or to the DNA copy, wherein the nucleic acid probe comprises at least 15 (*e.g.*, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, or more) contiguous nucleotides of VaSIRS biomarker polynucleotide. In some embodiments, the measured level or abundance of the target RNA or its DNA copy is normalized to the level or abundance of a reference RNA or a DNA copy of the reference RNA. Suitably, the nucleic acid probe is immobilized on a solid or semi-solid support. In illustrative examples of this type, the nucleic acid probe forms part of a spatial array of nucleic acid probes. In some embodiments, the level of nucleic acid probe that is bound to the target RNA or to the DNA copy is measured by hybridization (*e.g.*, using a nucleic acid array). In other embodiments, the level of nucleic acid probe that is bound to the target RNA or to the DNA copy is measured by nucleic acid amplification (*e.g.*, using a polymerase chain reaction (PCR)). In still other embodiments, the level of nucleic acid probe that is bound to the target RNA or to the DNA copy is measured by nuclease protection assay.

[0160] Sequencing technologies such as Sanger sequencing, pyrosequencing, sequencing by ligation, massively parallel sequencing, also called "Next-generation sequencing" (NGS), and other high-throughput sequencing approaches with or without sequence amplification of the target can also be used to detect or quantify the presence of VaSIRS nucleic acid biomarker in a sample. Sequence-based methods can provide further information regarding alternative splicing and sequence variation in previously identified genes. Sequencing technologies include a number of steps that are grouped broadly as template preparation, sequencing, detection and data

analysis. Current methods for template preparation involve randomly breaking genomic DNA into smaller sizes from which each fragment is immobilized to a support. The immobilization of spatially separated fragment allows thousands to billions of sequencing reaction to be performed simultaneously. A sequencing step may use any of a variety of methods that are commonly known in the art. One specific example of a sequencing step uses the addition of nucleotides to the complementary strand to provide the DNA sequence. The detection steps range from measuring bioluminescent signal of a synthesized fragment to four-color imaging of single molecule. In some embodiments in which NGS is used to detect or quantify the presence of VaSIRS nucleic acid biomarker in a sample, the methods are suitably selected from semiconductor sequencing (Ion Torrent; Personal Genome Machine); Helicos True Single Molecule Sequencing (tSMS) (Harris *et al.* 2008, *Science* 320:106-109); 454 sequencing (Roche) (Margulies *et al.* 2005, *Nature*, 437, 376-380); SOLiD technology (Applied Biosystems); SOLEXA sequencing (Illumina); single molecule, real-time (SMRT™) technology of Pacific Biosciences; nanopore sequencing (Soni and Meller, 2007. *Clin Chem* 53: 1996-2001); DNA nanoball sequencing; sequencing using technology from Dover Systems (Polonator), and technologies that do not require amplification or otherwise transform native DNA prior to sequencing (*e.g.*, Pacific Biosciences and Helicos), such as nanopore-based strategies (*e.g.*, Oxford Nanopore, Genia Technologies, and Nabsys).

[0161] In other embodiments, VaSIRS biomarker protein levels are assayed using protein-based assays known in the art. For example, when VaSIRS biomarker protein is an enzyme, the protein can be quantified based upon its catalytic activity or based upon the number of molecules of the protein contained in a sample. Antibody-based techniques may be employed including, for example, immunoassays, such as the enzyme-linked immunosorbent assay (ELISA) and the radioimmunoassay (RIA).

[0162] In specific embodiments, protein-capture arrays that permit simultaneous detection and/or quantification of a large number of proteins are employed. For example, low-density protein arrays on filter membranes, such as the universal protein array system (Ge, 2000 *Nucleic Acids Res.* 28(2):e3) allow imaging of arrayed antigens using standard ELISA techniques and a scanning charge-coupled device (CCD) detector. Immuno-sensor arrays have also been developed that enable the simultaneous detection of clinical analytes. It is now possible using protein arrays, to profile protein expression in bodily fluids, such as in sera of healthy or diseased subjects, as well as in subjects pre- and post-drug treatment.

[0163] Exemplary protein capture arrays include arrays comprising spatially addressed antigen-binding molecules, commonly referred to as antibody arrays, which can facilitate extensive parallel analysis of numerous proteins defining a proteome or subproteome. Antibody arrays have been shown to have the required properties of specificity and acceptable background, and some are available commercially (*e.g.*, BD Biosciences, Clontech, Bio-Rad and Sigma). Various methods for the preparation of antibody arrays have been reported (see, *e.g.*, Lopez *et al.*, 2003 *J. Chromatogram.* B 787:19-27; Cahill, 2000 *Trends in Biotechnology* 7:47-51; U.S. Pat. App. Pub. 2002/0055186; U.S. Pat. App. Pub. 2003/0003599; PCT publication WO 03/062444; PCT publication WO 03/077851; PCT publication WO 02/59601; PCT publication WO 02/39120; PCT publication WO 01/79849; PCT publication WO 99/39210). The antigen-binding molecules of such arrays may recognize at least a subset of proteins expressed by a cell or population of cells, illustrative examples of which include growth factor receptors, hormone receptors, neurotransmitter receptors, catecholamine receptors, amino acid derivative receptors, cytokine

receptors, extracellular matrix receptors, antibodies, lectins, cytokines, serpins, proteases, kinases, phosphatases, ras-like GTPases, hydrolases, steroid hormone receptors, transcription factors, heat-shock transcription factors, DNA-binding proteins, zinc-finger proteins, leucine-zipper proteins, homeodomain proteins, intracellular signal transduction modulators and effectors, apoptosis-related factors, DNA synthesis factors, DNA repair factors, DNA recombination factors and cell-surface antigens.

[0164] Individual spatially distinct protein-capture agents are typically attached to a support surface, which is generally planar or contoured. Common physical supports include glass slides, silicon, microwells, nitrocellulose or PVDF membranes, and magnetic and other microbeads.

[0165] Particles in suspension can also be used as the basis of arrays, providing they are coded for identification; systems include color coding for microbeads (*e.g.*, available from Luminex, Bio-Rad and Nanomics Biosystems) and semiconductor nanocrystals (*e.g.*, QDots™, available from Quantum Dots), and barcoding for beads (UltraPlex™, available from Smartbeads) and multimetal microrods (Nanobarcodes™ particles, available from Surromed). Beads can also be assembled into planar arrays on semiconductor chips (*e.g.*, available from LEAPS technology and BioArray Solutions). Where particles are used, individual protein-capture agents are typically attached to an individual particle to provide the spatial definition or separation of the array. The particles may then be assayed separately, but in parallel, in a compartmentalized way, for example in the wells of a microtiter plate or in separate test tubes.

[0166] In operation, a protein sample, which is optionally fragmented to form peptide fragments (see, *e.g.*, U.S. Pat. App. Pub. 2002/0055186), is delivered to a protein-capture array under conditions suitable for protein or peptide binding, and the array is washed to remove unbound or non-specifically bound components of the sample from the array. Next, the presence or amount of protein or peptide bound to each feature of the array is detected using a suitable detection system. The amount of protein bound to a feature of the array may be determined relative to the amount of a second protein bound to a second feature of the array. In certain embodiments, the amount of the second protein in the sample is already known or known to be invariant.

[0167] In specific embodiments, the VaSIRS biomarker is a target polypeptide whose level is measured using at least one antigen-binding molecule that is immuno-interactive with the target polypeptide. In these embodiments, the measured level of the target polypeptide is normalized to the level of a reference polypeptide. Suitably, the antigen-binding molecule is immobilized on a solid or semi-solid support. In illustrative examples of this type, the antigen-binding molecule forms part of a spatial array of antigen-binding molecule. In some embodiments, the level of antigen-binding molecule that is bound to the target polypeptide is measured by immunoassay (*e.g.*, using an ELISA).

[0168] All the essential reagents required for detecting and quantifying the VaSIRS biomarkers of the invention may be assembled together in a kit. In some embodiments, the kit comprises a reagent that permits quantification of at least one VaSIRS biomarker. In some embodiments the kit comprises: (i) a reagent that allows quantification (*e.g.*, determining the level or abundance) of a first VaSIRS biomarker; and (ii) a reagent that allows quantification (*e.g.*, determining the level or abundance) of a second VaSIRS biomarker, wherein the first and second biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation

range of between ± 0.9 , and wherein a combination of respective biomarker values for the first and second VaSIRS biomarkers that are measured for or derived from a subject has a performance value greater than or equal to a performance threshold representing the ability of the combination of the first and second VaSIRS biomarkers to diagnose the presence, absence or degree of the at least one condition, or to provide a prognosis for the at least one condition, the performance threshold being a variance explained of at least 0.3. In some embodiments, the kit further comprises (iii) a reagent that allows quantification (*e.g.*, determining the level or abundance) of a third VaSIRS biomarker; and (iv) a reagent that allows quantification (*e.g.*, determining the level or abundance) of a fourth VaSIRS biomarker, wherein the third and fourth VaSIRS biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range of between ± 0.9 , and wherein a combination of respective biomarker values for the third and fourth VaSIRS biomarkers that are measured for or derived from a subject has a performance value greater than or equal to a performance threshold representing the ability of the combination of the third and fourth VaSIRS biomarkers to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for a VaSIRS, the performance threshold being a variance explained of at least 0.3.

[0169] In the context of the present invention, "kit" is understood to mean a product containing the different reagents necessary for carrying out the methods of the invention packed so as to allow their transport and storage. Materials suitable for packing the components of the kit include crystal, plastic (polyethylene, polypropylene, polycarbonate and the like), bottles, vials, paper, envelopes and the like. Additionally, the kits of the invention can contain instructions for the simultaneous, sequential or separate use of the different components contained in the kit. The instructions can be in the form of printed material or in the form of an electronic support capable of storing instructions such that they can be read by a subject, such as electronic storage media (magnetic disks, tapes and the like), optical media (CD-ROM, DVD) and the like. Alternatively or in addition, the media can contain Internet addresses that provide the instructions.

[0170] Reagents that allow quantification of a VaSIRS biomarker include compounds or materials, or sets of compounds or materials, which allow quantification of the VaSIRS biomarker. In specific embodiments, the compounds, materials or sets of compounds or materials permit determining the expression level of a gene (*e.g.*, VaSIRS biomarker gene), including without limitation the extraction of RNA material, the determination of the level of a corresponding RNA, *etc.*, primers for the synthesis of a corresponding cDNA, primers for amplification of DNA, and/or probes capable of specifically hybridizing with the RNAs (or the corresponding cDNAs) encoded by the genes, TaqMan probes, *etc.*

[0171] The kits may also optionally include appropriate reagents for detection of labels, positive and negative controls, washing solutions, blotting membranes, microtiter plates, dilution buffers and the like. For example, a nucleic acid-based detection kit may include (i) a VaSIRS biomarker polynucleotide (which may be used as a positive control), (ii) a primer or probe that specifically hybridizes to a VaSIRS biomarker polynucleotide. Also included may be enzymes suitable for amplifying nucleic acids including various polymerases (reverse transcriptase, *Taq*, Sequenase™, DNA ligase *etc.* depending on the nucleic acid amplification technique employed), deoxynucleotides and buffers to provide the necessary reaction mixture for amplification. Such kits also generally will comprise, in suitable means, distinct containers for each individual reagent and enzyme as well as for each primer or probe. Alternatively, a protein-based detection kit may

include (i) a VaSIRS biomarker polypeptide (which may be used as a positive control), (ii) an antibody that binds specifically to a VaSIRS biomarker polypeptide. The kit can also feature various devices (*e.g.*, one or more) and reagents (*e.g.*, one or more) for performing one of the assays described herein; and/or printed instructions for using the kit to quantify the expression of a VaSIRS biomarker gene.

[0172] The reagents described herein, which may be optionally associated with detectable labels, can be presented in the format of a microfluidics card, a chip or chamber, a microarray or a kit adapted for use with the assays described in the examples or below, *e.g.*, RT-PCR or Q PCR techniques described herein.

[0173] The reagents also have utility in compositions for detecting and quantifying the biomarkers of the invention. For example, a reverse transcriptase may be used to reverse transcribe RNA transcripts, including mRNA, in a nucleic acid sample, to produce reverse transcribed transcripts, including reverse transcribed mRNA (also referred to as "cDNA"). In specific embodiments, the reverse transcribed mRNA is whole cell reverse transcribed mRNA (also referred to herein as "whole cell cDNA"). The nucleic acid sample is suitably derived from components of the immune system, representative examples of which include components of the innate and adaptive immune systems as broadly discussed for example above. In specific embodiments, the reverse transcribed RNA is derived blood cells (*e.g.*, peripheral blood cells). Suitably, the reverse transcribed RNA is derived leukocytes.

[0174] The reagents are suitably used to quantify the reverse transcribed transcripts. For example, oligonucleotide primers that hybridize to the reverse transcribed transcript can be used to amplify at least a portion of the reverse transcribed transcript *via* a suitable nucleic acid amplification technique, *e.g.*, RT-PCR or qPCR techniques described herein. Alternatively, oligonucleotide probes may be used to hybridize to the reverse transcribed transcript for the quantification, using a nucleic acid hybridization analysis technique (*e.g.*, microarray analysis), as described for example above. Thus, in some embodiments, a respective oligonucleotide primer or probe is hybridized to a complementary nucleic acid sequence of a reverse transcribed transcript in the compositions of the invention. The compositions typically comprise labeled reagents for detecting and/or quantifying the reverse transcribed transcripts. Representative reagents of this type include labeled oligonucleotide primers or probes that hybridize to RNA transcripts or reverse transcribed RNA, labeled RNA, labeled reverse transcribed RNA as well as labeled oligonucleotide linkers or tags (*e.g.*, a labeled RNA or DNA linker or tag) for labeling (*e.g.*, end labeling such as 3' end labeling) RNA or reverse transcribed RNA. The primers, probes, RNA or reverse transcribed RNA (*i.e.*, cDNA) (whether labeled or non-labeled) may be immobilized or free in solution. Representative reagents of this type include labeled oligonucleotide primers or probes that hybridize to reverse transcribed and transcripts as well as labeled reverse transcribed transcripts. The label can be any agent that is capable of providing a detectable signal or reporter molecule as known in the art, illustrative examples of which are described above and elsewhere herein.

[0175] The present invention also encompasses non-reverse transcribed RNA embodiments in which cDNA is not made and the RNA transcripts are directly the subject of the analysis. Thus, in other embodiments, reagents are suitably used to quantify RNA transcripts directly. For example, oligonucleotide probes can be used to hybridize to transcripts for quantification of immune system biomarkers of the invention, using a nucleic acid hybridization

analysis technique (e.g., microarray analysis), as described for example above. Thus, in some embodiments, a respective oligonucleotide probe is hybridized to a complementary nucleic acid sequence of an immune system biomarker transcript in the compositions of the invention. In illustrative examples of this type, the compositions may comprise labeled reagents that hybridize to transcripts for detecting and/or quantifying the transcripts. Representative reagents of this type include labeled oligonucleotide probes that hybridize to transcripts as well as labeled transcripts. The primers or probes may be immobilized or free in solution.

[0176] The present invention also extends to the management of VaSIRS, or prevention of further progression of VaSIRS, or assessment of the efficacy of therapies in subjects following positive diagnosis for the presence of VaSIRS, in a subject. Once a subject is positively identified as having VaSIRS, the subject may be administered a therapeutic agent for treating the VaSIRS such as an anti-viral agent, illustrative examples of which include abacavir, acyclovir, adefovir, amantadine, amprenavir, ampligen, arbidol, asunaprevir, atazanavir, atiprava, boceprevir, cidofovir, combivir, complera, daclatasvir, darunavir, delavirdine, didanosine, docosanol, dolutegravir, edoxudine, efavirenz, emtricitabine, enfuvirtide, entecavir, famciclovir, fomivirsen, fosamprenavir, foscarnet, fosfonet, ganciclovir, ibacitabine, immunovir, idoxuridine, imiquimod, indinavir, inosine, interferon type III, interferon type II, interferon type I, lamivudine, lopinavir, loviride, maraviroc, moroxydine, methisazone, nelfinavir, nevirapine, nexavir, neuraminidase blocking agents, oseltamivir, peginterferon alfa-2a, penciclovir, peramivir, pleconaril, podofilox, podophyllin, podophyllotoxin, raltegravir, monoclonal antibody respigams, ribavirin, inhaled rhinoviruses, rimantadine, ritonavir, pyrimidine, saquinavir, stavudine, stribild, tenofovir, tenofovir disoproxil, tenofovir alafenamide fumarate (TAF), tipranavir, trifluridine, trizivir, tromantadine, truvada, valaciclovir, valganciclovir, vicriviroc, vidarabine, viperin, viraamidine, zalcitabine, zanamivir, zidovudine, or salts and combinations thereof.

[0177] Typically, the therapeutic agents will be administered in pharmaceutical (or veterinary) compositions together with a pharmaceutically acceptable carrier and in an effective amount to achieve their intended purpose. The dose of active compounds administered to a subject should be sufficient to achieve a beneficial response in the subject over time such as a reduction in, or relief from, the symptoms of VaSIRS. The quantity of the pharmaceutically active compound(s) to be administered may depend on the subject to be treated inclusive of the age, sex, weight and general health condition thereof. In this regard, precise amounts of the active compound(s) for administration will depend on the judgment of the practitioner. In determining the effective amount of the active compound(s) to be administered in the treatment or prevention of VaSIRS, the medical practitioner or veterinarian may evaluate severity of any symptom or clinical sign associated with the presence of VaSIRS or degree of VaSIRS including, inflammation, blood pressure anomaly, tachycardia, tachypnea fever, chills, vomiting, diarrhea, skin rash, headaches, confusion, muscle aches, seizures. In any event, those of skill in the art may readily determine suitable dosages of the therapeutic agents and suitable treatment regimens without undue experimentation.

[0178] The therapeutic agents may be administered in concert with adjunctive (palliative) therapies to increase oxygen supply to major organs, increase blood flow to major organs and/or to reduce the inflammatory response. Illustrative examples of such adjunctive therapies include non-steroidal-anti-inflammatory drugs (NSAIDs), intravenous saline and oxygen.

[0179] The present invention also contemplates the use of the indicator-determining methods, apparatus, compositions and kits disclosed herein in methods of treating, preventing or inhibiting the development of VaSIRS in a subject. These methods (also referred to herein as "treatment methods") generally comprise: exposing the subject to a treatment regimen for treating VaSIRS, or avoiding exposing the subject to a treatment regimen for treating a SIRS other than VaSIRS based on an indicator obtained from an indicator-determining method as disclosed herein. In specific embodiments, these treatment methods comprise: (1) determining a biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of the subject; (2) determining the indicator using the biomarker value; and (3) administering to the subject, on the basis that the indicator indicates the presence of VaSIRS, an effective amount of an agent that treats or ameliorates the symptoms or reverses or inhibits the development of VaSIRS. In other embodiments, the treatment methods comprise: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarker of the subject; (b) determining an indicator using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence or degree of VaSIRS, wherein: (i) at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of the at least one condition that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3; and (c) administering to the subject, on the basis that the indicator indicates the presence of VaSIRS, an effective amount of an agent that treats or ameliorates the symptoms or reverses or inhibits the development of VaSIRS.

[0180] In advantageous embodiments, the treatment methods comprise: (1) determining a plurality of measured biomarker values, each measured biomarker value being a measured value of a VaSIRS biomarker of the subject; and (2) applying a function to at least one of the measured biomarker values to determine at least one derived biomarker value, the at least one derived biomarker value being indicative of a value of a corresponding derived VaSIRS biomarker. The function suitably includes at least one of: (a) multiplying two biomarker values; (b) dividing two biomarker values; (c) adding two biomarker values; (d) subtracting two biomarker values; (e) a weighted sum of at least two biomarker values; (f) a log sum of at least two biomarker values; and (g) a sigmoidal function of at least two biomarker values.

[0181] The present invention can be practiced in the field of predictive medicine for the purpose of diagnosis or monitoring the presence or development of VaSIRS in a subject, and/or monitoring response to therapy efficacy. The biomarker profiles and corresponding indicators of the present invention further enable determination of endpoints in pharmacotranslational studies. For example, clinical trials can take many months or even years to establish the pharmacological parameters for a medicament to be used in treating or preventing VaSIRS. However, these parameters may be associated with a biomarker profile and corresponding indicator of a health state (e.g., a healthy condition). Hence, the clinical trial can be expedited by selecting a treatment regimen (e.g., medicament and pharmaceutical parameters), which results in a biomarker profile associated with a desired health state (e.g., healthy condition). This may be determined for example by: (1) determining a biomarker value that is measured or derived for at least one (e.g.,

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a subject after treatment with a treatment regimen; (2) determining the indicator using the biomarker value; and (3) determining that the treatment regimen is effective for changing the health status of the subject to the desired health state (*e.g.*, healthy condition) on the basis that the indicator indicates the presence of a healthy condition or the presence of a condition of a lower degree relative to the degree of the condition in the subject before treatment with the treatment regimen. As used herein, the term "degree" refers to the extent or stage of a condition. Alternatively, selection of the treatment regimen may be determined by: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarker of a subject after treatment with a treatment regimen; (b) determining an indicator using a combination of the plurality of VaSIRS biomarker values, the indicator being at least partially indicative of the presence, absence or degree of at least one condition selected from a healthy condition, inSIRS, ipSIRS or a particular stage of ipSIRS, wherein: (i) at least two (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of the at least one condition that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of the at least one condition, or to provide a prognosis for the at least one condition, the performance threshold being indicative of an explained variance of at least 0.3, and (c) determining that the treatment regimen is effective for changing the health status of the subject to the desired health state (*e.g.*, healthy condition) on the basis that the indicator indicates the presence of a healthy condition or the presence of a condition of a lower degree relative to the degree of the condition in the subject before treatment with the treatment regimen. Accordingly, this aspect of the present invention advantageously provides methods of monitoring the efficacy of a particular treatment regimen in a subject (for example, in the context of a clinical trial) already diagnosed with VaSIRS. These methods take advantage of measured or derived biomarker values that correlate with treatment efficacy to determine, for example, whether measured or derived biomarker values of a subject undergoing treatment partially or completely normalize during the course of or following therapy or otherwise shows changes associated with responsiveness to the therapy.

[0182] Accordingly, the invention provides methods of correlating a biomarker profile with an effective treatment regimen for VaSIRS. In some embodiments, these methods comprise: (1) determining a biomarker profile defining a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a subject with VaSIRS and for whom an effective treatment has been identified; and (2) correlating the biomarker profile so determined with an effective treatment regimen for VaSIRS. In other embodiments, the biomarker profile-correlating methods comprise: (a) determining a biomarker profile defining a combination of at least two (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) biomarker values corresponding to values of at least two VaSIRS biomarkers that can be measured for or derived from a subject with VaSIRS and for whom an effective treatment has been identified, wherein: (i) the at least two VaSIRS biomarkers have a mutual correlation in respect of the condition that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the combination of at least two biomarker values has a performance value greater than or equal to a performance threshold representing the ability of the combination of at least two

biomarker values to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for the VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3; and (b) correlating the biomarker profile so determined with an effective treatment regimen for the condition. In specific embodiments, an indicator or biomarker profile is correlated to a global probability or a particular outcome, using receiver operating characteristic (ROC) curves.

[0183] The invention further provides methods of determining whether a treatment regimen is effective for treating a subject with VaSIRS. In some embodiments, these methods comprise: (1) determining a post-treatment biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a subject after treatment with a treatment regimen; (2) determining a post-treatment indicator using the post-treatment biomarker value, wherein the post-treatment indicator is at least partially indicative of the presence, absence or degree of VaSIRS, wherein the post-treatment indicator indicates whether the treatment regimen is effective for treating VaSIRS in the subject on the basis that post-treatment indicator indicates the presence of a healthy condition or the presence of VaSIRS of a lower degree relative to the degree of VaSIRS in the subject before treatment with the treatment regimen. In other embodiments, these methods comprise: (a) determining a plurality of post-treatment biomarker values, each post-treatment VaSIRS biomarker value being indicative of a value measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarker of a subject after treatment with the treatment regimen; (b) determining a post-treatment indicator using a combination of the plurality of post-treatment biomarker values, the post-treatment indicator being at least partially indicative of the presence, absence or degree of VaSIRS, wherein: (i) at the least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of the at least one condition that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the post-treatment indicator has a performance value greater than or equal to a performance threshold representing the ability of the post-treatment indicator to diagnose the presence, absence or degree of VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3, wherein the post-treatment indicator indicates whether the treatment regimen is effective for treating the VaSIRS in the subject on the basis that post-treatment indicator indicates the presence of a healthy condition or the presence of VaSIRS of a lower degree relative to the degree of VaSIRS in the subject before treatment with the treatment regimen.

[0184] The invention can also be practiced to evaluate whether a subject is responding (i.e., a positive response) or not responding (i.e., a negative response) to a treatment regimen. This aspect of the invention provides methods of correlating a biomarker profile with a positive or negative response to a treatment regimen. In some embodiments, these methods comprise: (1) determining a biomarker profile defining a biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a subject following commencement of the treatment regimen; and (2) correlating the biomarker profile so determined with a positive or negative response to the treatment regimen. In other embodiments, these methods comprise: (a) determining a biomarker profile defining a combination of at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) biomarker values corresponding to values of at least two VaSIRS biomarkers that can be measured for or derived from a subject following commencement of the treatment regimen, wherein: (i) the at least two VaSIRS biomarkers have a mutual

correlation in respect of VaSIRS, which lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the combination of at least two biomarker values has a performance value greater than or equal to a performance threshold representing the ability of the combination of at least two biomarker values to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for the VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3; and (b) correlating the biomarker profile so determined with a positive or negative response to the treatment regimen.

[0185] The invention also encompasses methods of determining a positive or negative response to a treatment regimen by a subject with VaSIRS. In some embodiments, these methods comprise: (1) correlating a reference biomarker profile with a positive or negative response to the treatment regimen, wherein the biomarker profile defines a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a control subject or control group; (2) determining a sample biomarker profile defining a biomarker value that is measured or derived for the at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of the subject following commencement of the treatment regimen, wherein the sample biomarker profile indicates whether the subject is responding positively or negatively to the treatment regimen, based on the correlation of the reference biomarker signature with the positive or negative response to the treatment regimen. In other embodiments, the methods comprise: (a) correlating a reference biomarker profile with a positive or negative response to the treatment regimen, wherein the biomarker profile defines a combination of at least two (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) biomarker values corresponding to values of at least two VaSIRS biomarkers that are measured for or derived from a control subject or control group, wherein: (i) the at least two VaSIRS biomarkers have a mutual correlation in respect of VaSIRS, which lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the combination of at least two biomarker values has a performance value greater than or equal to a performance threshold representing the ability of the combination of at least two biomarker values to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for the VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3; (b) determining a sample biomarker profile defining a combination of at least two (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) biomarker values corresponding to values of the at least two VaSIRS biomarkers that are measured or derived from the subject following commencement of the treatment regimen, wherein the sample biomarker profile indicates whether the subject is responding positively or negatively to the treatment regimen, based on the correlation of the reference biomarker profile with the positive or negative response to the treatment regimen.

[0186] In related embodiments, the present invention further contemplates methods of determining a positive or negative response to a treatment regimen by a subject. In some embodiments, these methods comprise: (1) determining a sample biomarker profile defining a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker of a subject following commencement of the treatment regimen, wherein the sample biomarker profile is correlated with a positive or negative response to the treatment regimen; and (2) determining whether the subject is responding positively or negatively to the treatment regimen based on the sample biomarker profile. In other embodiments, these methods comprise: (a) determining a sample biomarker profile defining a

combination of at least two (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) biomarker values corresponding to values of at least two VaSIRS biomarkers that are measured for or derived from a subject following commencement of the treatment regimen, wherein: (i) the at least two VaSIRS biomarkers have a mutual correlation in respect of VaSIRS, which lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the combination of at least two biomarker values has a performance value greater than or equal to a performance threshold representing the ability of the combination of at least two biomarker values to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for the VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3, wherein the sample biomarker profile is correlated with a positive or negative response to the treatment regimen; and (b) determining whether the subject is responding positively or negatively to the treatment regimen based on the sample biomarker profile.

[0187] The above methods can be practiced to identify responders or non-responders relatively early in the treatment process, *i.e.*, before clinical manifestations of efficacy. In this way, the treatment regimen can optionally be discontinued, a different treatment protocol can be implemented and/or supplemental therapy can be administered. Thus, in some embodiments, a sample VaSIRS biomarker profile is obtained within about 2 hours, 4 hours, 6 hours, 12 hours, 1 day, 2 days, 3 days, 4 days, 5 days, 1 week, 2 weeks, 3 weeks, 4 weeks, 6 weeks, 8 weeks, 10 weeks, 12 weeks, 4 months, six months or longer of commencing therapy.

[0188] The present invention also contemplates methods in which the indicator-determining method of the invention is implemented using one or more processing devices. In some embodiments, these methods comprise: (1) determining a pair of biomarker values, the pair of biomarker values being selected from the group consisting of: (a) a first pair of biomarker values indicative of a concentration of polynucleotide expression products of a Group B VaSIRS biomarker gene (*e.g.*, *ISG15*) and a Group C VaSIRS biomarker gene (*e.g.*, *IL16*); and (b) a second pair of biomarker values indicative of a concentration of polynucleotide expression products of a Group D VaSIRS biomarker gene (*e.g.*, *OASL*) gene and a Group E VaSIRS biomarker gene (*e.g.*, *CD97*); (2) determining an indicator indicative of a ratio of the concentrations of the polynucleotide expression products using the pair of biomarker values; (3) retrieving previously determined first and second indicator references from a database, the first and second indicator references being determined based on indicators determined from first and second groups of a reference population, one of the groups consisting of individuals diagnosed with VaSIRS; (4) comparing the indicator to the first and second indicator references; (5) using the results of the comparison to determine a probability indicative of the subject having or not having VaSIRS; and (6) generating a representation of the probability, the representation being displayed to a user to allow the user to assess the likelihood of a subject having VaSIRS.

[0189] Similarly apparatus can be provided for determining the likelihood of a subject having VaSIRS, the apparatus including: (A) a sampling device that obtains a sample taken from a subject, the sample including polynucleotide expression products; (B) a measuring device that quantifies polynucleotide expression products within the sample to determine a pair of biomarker values, the pair of biomarker values being selected from the group consisting of: (a) a first pair of biomarker values indicative of a concentration of polynucleotide expression products of a Group B VaSIRS biomarker gene (*e.g.*, *ISG15*) and a Group C VaSIRS biomarker gene (*e.g.*, *IL16*); and (b) a second pair of biomarker values indicative of a concentration of polynucleotide expression

products of a Group D VaSIRS biomarker gene (e.g., *OASL*) gene and a Group E VaSIRS biomarker gene (e.g., *CD97*); (C) at least one processing device that: (i) receives an indication of the pair of biomarker values from the measuring device; (ii) determines an indicator using a ratio of the concentration of the first and second polynucleotide expression products using the biomarker values; (iii) compares the indicator to at least one indicator reference; (iv) determines a likelihood of the subject having or not having VaSIRS condition using the results of the comparison; and (v) generates a representation of the indicator and the likelihood for display to a user.

[0190] The present invention also encompasses methods for differentiating between VaSIRS and another SIRS other than VaSIRS in a subject. These methods suitably comprise: (a) obtaining a sample taken from a subject showing a clinical sign of SIRS, the sample including polynucleotide expression products; (b) in a measuring device: (i) amplifying at least some polynucleotide expression products in the sample; (ii) determining an amplification amount representing a degree of amplification required to obtain a defined level of polynucleotide expression products including: amplification amounts for a first pair of polynucleotide expression products of a Group B VaSIRS biomarker gene (e.g., *ISG15*) and a Group C VaSIRS biomarker gene (e.g., *IL16*); and amplification amounts for a second pair of polynucleotide expression products of a Group D VaSIRS biomarker gene (e.g., *OASL*) gene and a Group E VaSIRS biomarker gene (e.g., *CD97*); (c) in a processing system: (i) retrieving the amplification amounts; (ii) determining an indicator by: determining a first derived biomarker value indicative of a ratio of concentrations of the first pair of polynucleotide expression products by determining a difference between the amplification amounts for the first pair; determining a second derived biomarker value indicative of a ratio of concentrations of the second pair of polynucleotide expression products by determining a difference between the amplification amounts for the second pair; (d) determining the indicator by adding the first and second derived biomarker values; (e) retrieving previously determined first and second indicator references from a database, wherein the first and second indicator references are distributions of indicators determined for first and second groups of a reference population, the first and second group consisting of individuals diagnosed with VaSIRS and the other SIRS, respectively; (f) comparing the indicator to the first and second indicator references; (g) using the results of the comparison to determine a probability of the subject being classified within the first or second group; (h) generating a representation at least partially indicative of the indicator and the probability; and (i) providing the representation to a user to allow the user to assess the likelihood of a subject having or not having VaSIRS or the other SIRS.

[0191] Additionally, methods can be provided for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS, or in providing a prognosis for a VaSIRS. These methods suitably include: (1) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one corresponding VaSIRS biomarker of the subject and being at least partially indicative of a concentration of the VaSIRS biomarker in a sample taken from the subject; (2) determining the indicator using a combination of the plurality of biomarker values, wherein: at least two biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for the VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3.

[0192] In order that the invention may be readily understood and put into practical effect, particular preferred embodiments will now be described by way of the following non-limiting examples.

EXAMPLES

5

EXAMPLE 1

GROUP A BIOMARKERS AND THEIR DIAGNOSTIC PERFORMANCE ACROSS VARIOUS DATASETS

[0193] Three individual biomarkers were discovered that had strong diagnostic performance (as measured using area under curve (AUC)) across all viral datasets, including ZBP1 (DNA SEQ ID NO: 399), TMEM62 (DNA SEQ ID NO: 414) and CD38 (DNA SEQ ID NO: 415). These biomarkers were discovered using four "core viral" datasets including dengue, Lassa fever, influenza and herpes virus infections. Ten "validation viral" datasets were then used to validate these biomarkers. These datasets included samples taken from patients with a broad range of virus infections including adenovirus, herpesvirus, enterovirus, rhinovirus, hepatitis C virus, measles, rotavirus and respiratory syncytial virus. "Non-viral inflammation" datasets included conditions that cause a systemic inflammation including, amongst others; bacterial infection, anaphylaxis and trauma, and potentially confounding factors such as obesity, age, gender and race. The AUC for each biomarker in each dataset is listed in Table 2., the three right hand columns.

EXAMPLE 2

GROUPS B, C, D AND E BIOMARKERS. BIOMARKERS ARE GROUPED BASED ON THEIR CORRELATION TO ISG15, IL16, OASL AND CD97

[0194] Two pairs of derived biomarkers (IL16 / ISG15; CD97 / OASL) were discovered that provided the highest AUC across all of the viral datasets studied. Biomarkers as ratios that provided AUC >0.8 (see Table 13 for full list of derived biomarkers) were then allocated to one of four Groups, as individual biomarkers, based on their correlation to either ISG15 (Group B), IL16 (Group C), OASL (Group D) or CD97 (Group E), as presented in Table 10.

EXAMPLE 3

VASIRS BIOMARKER DERIVATION (SINGLE AND DERIVED BIOMARKERS)

[0195] An illustrative process for the identification of VaSIRS biomarkers for use in diagnostic algorithms will now be described.

[0196] Gene expression data (derived from clinical trials performed by the inventors or from Gene Expression Omnibus) were analyzed using a variety of statistical approaches to identify individual and derived biomarkers (ratios) but largely follows the method described in WO 2015/117204. Individual and derived markers were graded based on performance (Area Under Curve).

[0197] Datasets used for training were derived from GEO (which are all MIAME-compliant) with the following restrictions; peripheral blood samples were used, appropriate controls were used, an appropriate number of samples were used to provide significance following False-Discovery Rate (FDR) adjustment, all data passed standard quality control metrics, principle component analysis did not reveal any artifacts or potential biases. The datasets were divided into two groups – "discovery" and "validation" listed in Table 3 and Table 4. Details of the types of viruses studied are included in Table 5. The datasets in the "discovery" group were deliberately

chosen to enable the identification of a specific VaSIRS biomarker profile that could be used for all viruses and across different species, and therefore included studies of; DNA and RNA viruses, multiple mammalian species (human and macaque), experimentally-infected subjects where a control sample was taken prior to inoculation, samples taken over time, in particular early-stage samples.

[0198] Prior to analysis each dataset was filtered to include only the top 6000 genes as measured by the mean gene expression level across all samples in the dataset. This ensured that only those genes with relatively strong expression were analysed and that a limited number of candidates were taken forward to the next compute-time intensive step. Receiver Operator Curve (ROC) and Area Under Curve (AUC) were then calculated across all derived biomarkers using the difference in the log 2 of the expression values for each derived biomarker. This resulted in approximately 36,000,000 derived biomarkers per dataset. An AUC > 0.5 was defined as a derived biomarker value being higher in cases than controls, *i.e.* where the numerator is potentially up-regulated in cases and/or the denominator is potentially down-regulated in cases. All four "discovery" datasets were combined by taking the mean AUC for each derived biomarker. Resulting derived biomarkers were then filtered by keeping only those with a mean AUC greater than or equal to 0.92 across all four datasets. The number of remaining derived biomarkers after this step was 856 (~0.003% of the original number). This same process was repeated except the search was performed using single biomarkers (rather than as derived biomarkers) and an AUC filter of 0.70 was applied. The number of remaining single biomarkers after this process was 11 (~0.18% of the original number of single biomarkers).

[0199] The 856 derived biomarkers were then tested (AUC calculated) on an additional 10 viral datasets ("validation" datasets – see Table 4).

[0200] To ensure that these 856 derived biomarkers were specific to viral inflammation (were not indicative of inflammation associated with bacterial infection, trauma, autoimmune disease, other non-viral systemic inflammatory conditions) a number of additional datasets (n=21, listed in Table 6) were used to identify derived biomarkers of generalized, non-viral inflammation. These datasets were subject to the same restrictions as the "discovery" and "validation" datasets including; peripheral blood samples were used, appropriate controls were used, an appropriate number of samples were used to provide significance following False-Discovery Rate (FDR) adjustment, all data passed standard quality control metrics, principle component analysis did not reveal any artifacts or potential biases. Only those samples relating to non-viral inflammation were analysed as part of this process of identifying derived biomarkers of generalized, non-viral inflammation. Derived biomarkers that had strong performance (based on AUC >0.8 in more than 3 of the 21 datasets) were removed (subtracted) from the list of identified pan-viral derived biomarkers (856) to ensure specificity.

[0201] A further filtering step was then applied. Only derived biomarkers with an AUC greater than 0.75 in at least 11 of the 14 viral datasets (the 4 discovery datasets and the 10 validation sets) were retained. A cut-off AUC of 0.75 was chosen for the following four reasons: 1). simple diagnostic heuristics for the diagnosis of influenza have an AUC between 0.7 and 0.79 (Ebell, M. H., & Afonso, A. (2011). A Systematic Review of Clinical Decision Rules for the Diagnosis of Influenza. The Annals of Family Medicine, 9(1), 69–77); 2). clinicians can predict patients that are ultimately blood culture positive from those with suspected infection with an AUC of 0.77

(Fischer, J. E., Harbarth, S., Agthe, A. G., Benn, A., Ringer, S. A., Goldmann, D. A., & Fanconi, S. (2004). Quantifying uncertainty: physicians' estimates of infection in critically ill neonates and children. *Clinical Infectious Diseases : an Official Publication of the Infectious Diseases Society of America*, 38(10), 1383–1390); 3). the use of polymerase chain reaction-based tests, compared to conventional tests, for respiratory pathogens in patients with suspected lower respiratory tract infections (LRTI) increased the diagnostic yield from 21% to 43% of cases (that is, molecular-based pathogen tests in this study only detected a pathogen in 43% of suspected LRTI) (Oosterheert, J. J., van Loon, A. M., Schuurman, R., Hoepelman, A. I. M., Hak, E., Thijsen, S., et al. (2005). Impact of rapid detection of viral and atypical bacterial pathogens by real-time polymerase chain reaction for patients with lower respiratory tract infection. *Clinical Infectious Diseases*, 41(10), 1438–1444); 4). the sensitivity of point-of-care tests for influenza is about 70% (Foo, H., & Dwyer, D. E. (2009). Rapid tests for the diagnosis of influenza. *Australian Prescriber* 32:64–67). Thus, current existing diagnostic procedures and tests for viral infections do not have good diagnostic performance, and in many instances no pathogen or antibody response is detected in samples taken at the time the patient presents with clinical signs. A pan-viral signature with an AUC of at least 0.75 will therefore have greater clinical utility than most existing viral diagnostic assays, and at the critical time when the patient presents with clinical signs. Following this filtering step, 473 derived biomarkers remained.

EXAMPLE 4

VASIRS BIOMARKER DERIVATION (COMBINATION OF DERIVED BIOMARKERS)

[0202] Next, a search for the best combination and number of derived biomarkers was performed with the aim of finding a minimal set of derived biomarkers with optimal commercial utility. Optimal commercial utility in this instance means consideration of the following non-limiting factors; diagnostic performance, clinical utility, diagnostic noise (introduced by using too many derived biomarkers), transferability to available molecular chemistries (e.g. PCR, microarray, DNA sequencing), transferability to available point-of-care platforms (e.g. Biocartis Idylla, Cepheid GeneXpert, Becton Dickinson BD Max, Curetis Unyvero, Oxford Nanopore Technologies MinION), cost of assay manufacture (the more reagents and biomarkers the larger the cost), ability to multiplex biomarkers, availability of suitable reporter dyes, complexity of results interpretation.

[0203] To be able to determine the best combination of derived markers all study datasets needed to be combined. As such, all 14 viral datasets were normalized individually using mean centering to zero and variance set to one. The mean of a biomarker in a dataset was calculated in three steps: (a) calculation of the mean of the cases, (b) calculation of the mean of the controls, and (c) calculation of the mean of the preceding two values. Once the mean for each biomarker had been calculated, the expression values for that biomarker in each sample was adjusted by subtracting the mean value. The values were further adjusted by dividing by the variance. This was performed for all biomarker expression values for every sample in every dataset. All 14 viral datasets were then combined into a single expression matrix.

[0204] Following normalization, a search (greedy) for the best performing pair of derived biomarkers was performed (by AUC in the normalized dataset). This was accomplished by first identifying the best performing derived biomarker. Each of the other remaining derived biomarkers was then added and, as long as neither biomarker in the newly added derived

biomarker was already part of the first derived biomarker, the AUC was calculated. This process continued and an AUC plot was generated based on sequential adding of derived biomarkers.

EXAMPLE 5

VASIRS BIOMARKER PERFORMANCE (SINGLE, DERIVED BIOMARKERS AND COMBINED DERIVED BIOMARKERS)

[0205] Following filtering of single biomarkers based on a mean AUC of 0.75 in at least 9 of the 14 viral data sets (instead of 11 for derived biomarkers) a total of three individual biomarkers with good performance in the combined dataset remained, including: TMEM62, ZBP1 and CD38 (Figures 1, 2 and 3). Performance of these three individual biomarkers in each of the core datasets is depicted in Figures 4, 5 and 6.

[0206] As discussed, following the final filtering step based on a mean AUC of 0.8 in at least 11 of the 14 viral datasets, 473 derived biomarkers remained. The performance of each of these 473 derived biomarkers, based on the decreasing mean AUC across 14 individual datasets, is shown in Table 7. The performance of an example eight derived biomarkers (with reduced redundancy – that is, unique numerators and denominators) across the various individual datasets (not combined) (“discovery”, “validation”, “non-viral”) is shown in Table 8.

[0207] Following normalization of all datasets and a greedy search the best performing individual derived biomarker was ISG15:IL16 with an AUC of 0.92. Note: the best performing derived biomarker for the combined, normalized dataset is different to the best performing derived biomarker listed in Table 7 because of the way in which AUC was calculated (mean of individual datasets versus mean of combined datasets). The best second unique derived biomarker to add to the first derived biomarker was OASL:CD97. The AUC obtained across the normalized dataset using these two derived biomarkers was 0.936, an 0.016 improvement over the use of a single derived biomarker (see Figure 7). The addition of a third derived biomarker (TAP1:TGFBR2) only improved the AUC by 0.009 and it is possible that this third derived biomarker created overfitting and noise. Thus, it was considered that the optimal commercial VIR “pan-viral” signature consists of the following two derived biomarkers: ISG15:IL16 / OASL:CD97. Figure 8 shows the effect on the overall AUC of sequentially adding derived biomarkers to ISG15:IL16.

[0208] Table 9 shows the performance (AUC) of the top eight derived biomarkers individually and when added sequentially to the top performing derived biomarkers for the combined datasets.

[0209] Figures 9 and 10 contain plots demonstrating the performance of the two top derived biomarkers in the “core” four datasets consisting of influenza virus-, Lassa fever virus-, cytomegalovirus- and dengue fever virus-infected subjects, and respective controls. In the influenza virus and Lassa virus time course studies, subjects with and without clinical signs post-inoculation are clearly separated based on the expression index of IL16 / ISG15 and CD97 / OASL independently. In these two time course studies these specific gene expression changes were apparent prior to the onset of peak clinical signs and persisted beyond the final sample collection time point of 100 hours (‘flu) or 12 days (Lassa). For influenza virus infection, the signature for both derived biomarkers peaks quickly and between 20 and 60 hours post-inoculation, whereas peak clinical signs were reported between 40 and 100 hours post-inoculation (Huang, Y., Zaas, A. K., Rao, A., Dobigeon, N., Woolf, P. J., Veldman, T., *et al.* (2011). Temporal Dynamics of Host

Molecular Responses Differentiate Symptomatic and Asymptomatic Influenza A Infection. PLoS Genetics, 7(8), e1002234). Similarly, for the Lassa fever virus infection, the signature for both derived biomarkers peaks quickly on Day 3 post-inoculation, whereas peak clinical signs (anorexia, neurological) were reported from Day 9 post-inoculation (Malhotra, S., Yen, J. Y., Honko, A. N., Garamszegi, S., Caballero, I. S., Johnson, J. C., *et al.* (2013). Transcriptional Profiling of the Circulating Immune Response to Lassa Virus in an Aerosol Model of Exposure. PLoS Neglected Tropical Diseases, 7(4), e2171). For Lassa fever virus infection the signature for both derived biomarkers also peaks prior to the detection of either viremia (4-12 days) or the presence of serum AST (aspartate transaminase) (5-12 days). In the dengue fever virus study subjects with fulminant dengue fever or hemorrhagic dengue fever are clearly separated from either convalescent or control subjects. Nonagenarian subjects with and without a titer to cytomegalovirus are less clearly separated using IL16 / ISG15 compared to CD97 / OASL, emphasizing the clinical utility and power of the combination of the two derived biomarkers as a VaSIRS biomarker profiles.

EXAMPLE 6

VASIRS BIOMARKER PROFILES (GROUPING)

[0210] The VaSIRS biomarker profiles can be grouped: individual biomarkers, derived biomarkers, combinations of derived biomarkers.

[0211] The three individual biomarkers are ZBP1, TMEM62, and CD38 (Group A).

[0212] There are four biomarkers in the best performing two derived biomarker signature: ISG15, IL16, OASL and CD97 and 413 unique biomarkers in the list of 473 biomarkers with an AUC > 0.7. For each unique biomarker, a correlation coefficient was calculated. Table 10 lists 413 unique biomarkers and their correlation to each of the four biomarkers in the top performing two-derived biomarker signature. Each set of biomarkers make up Groups B, C, D and E respectively.

[0213] The best combination of derived biomarkers was determined to be: IL16 / ISG15 and CD97 / OASL (Group F).

[0214] Numerators and denominators that occur more than twice in the total 473 derived biomarkers are listed in Table 11 and Table 12 respectively.

EXAMPLE 7

ANALYSIS OF DERIVED BIOMARKERS

[0215] Of the 473 derived biomarkers some individual biomarkers occur more frequently as either numerators or denominators in a derived biomarker. Tables 10 and 11 show the frequency of individual biomarkers in the numerator and denominator positions of the 473 derived biomarkers respectively. OASL and USP18 are the most frequent numerators appearing 344 and 50 times respectively, and ABLIM and IL16 are the most frequent denominators appearing 12 and 9 times respectively.

[0216] Performance (AUC) of the 473 derived biomarkers across the four core datasets is shown in Table 13. This set of derived biomarkers had a mean AUC >0.92 across the four core datasets following removal of top performing derived biomarkers in non-viral inflammation.

EXAMPLE 7**FURTHER VALIDATION OF DERIVED BIOMARKERS**

[0217] The two derived-biomarker signature (IL16 / ISG15; CD97 / OASL) was then further validated for its ability to identify human patients in a sepsis clinical trial that had evidence of a viral infection (Molecular Diagnosis and Risk Stratification of Sepsis (MARS) study (ClinicalTrials.gov Identifier NCT01905033)). In this trial, peripheral blood samples were obtained from 624 patients retrospectively diagnosed with either inSIRS or sepsis. Some patients, but not all, suspected of having a viral infection, were also tested for the presence of specific viral nucleic acid using PCR in body fluid samples, including blood, or the presence of specific anti-viral antibodies in plasma. It was known *a priori* that the detection of the presence of viral nucleic acid or plasma antibodies does not necessarily mean that such patients had an active viral infection at the time the sample was taken or that the detection of virus correlated to the presenting clinical signs (Jansen, R. R., Wieringa, J., Koekkoek, S. M., Visser, C. E., Pajkrt, D., Molenkamp, R., *et al.* (2011). Frequent detection of respiratory viruses without symptoms: toward defining clinically relevant cutoff values. *Journal of Clinical Microbiology*, 49(7), 2631–2636). Results of this further validation in samples from the independent MARS clinical trial are presented in the box and whisker plots in Figure 11 where the gene expression ratio index is plotted against patient groups for which gene expression data were available. Patients were categorized into five groups including;

- Virus: patients with viral infection only - those patients suspected of having a viral infection who were tested and were positive (30). No other positive microbiology,
- SIRS: those patients who were clinically diagnosed as having no infection and for which there were no positive microbiology results,
- Mixed condition: those patients who were clinically diagnosed as having possible, probable or definite infection and for which there were no positive microbiology results,
- Bacteria: Gram positive or Gram negative results - patients who had at least one positive microbiology results from any sample,
- Healthy: healthy subjects.

[0218] A large proportion of those patients positive for the presence of a virus are also positive using gene expression of IL16 / ISG15 and CD97 / OASL, with an AUC of 0.79. Again, it should be noted that detection of viral DNA, or antibodies to virus, does not necessarily mean that a patient has an active viral infection present.

[0219] A total of 38 biomarker ratios had an AUC above 0.80 in the MARS viral set – see Table 14. Approximately 70 of the total of 473 biomarker ratios have AUCs under 0.70 in this MARS dataset, and 358 biomarker ratios had an AUC between 0.70 and 0.80.

EXAMPLE 8**EXAMPLE APPLICATIONS OF VaSIRS BIOMARKER PROFILES**

[0220] Use of the above described biomarkers and resulting VaSIRS biomarker profiles in patient populations and benefits in respect of differentiating various conditions, will now be described.

[0221] An assay capable of differentiating patients with any viral infection can be used in multiple patient populations, and in conjunction with presenting clinical signs, including those patients located in: Intensive Care Units (medical and surgical ICU), medical wards, Emergency Departments (ED), medical clinics. An assay capable of differentiating patients with any viral infection can also be used to identify those patients that need to be isolated from others as part of managing spread of disease. Such an assay can also be used as part of efforts to ensure judicious use of antibiotics, detection of re-activation of latent viruses, determination of the severity of a VaSIRS, and determination of the etiology of a viral infection causing the presenting systemic inflammation.

Detecting an immune response to key viral pathogens in conjunction with clinical signs

[0222] Not all viruses can infect humans and, of those that can, many cause clinical signs that are restricted to certain organs. Table 15 lists key human viral pathogens (and virus type) based on major presenting clinical signs. Those virus types included in this patent as either part of the discovery or validation datasets are underlined. The biomarkers described herein may be used in conjunction with clinical signs to determine the presence and extent of a VaSIRS.

Detecting an immune response to key viral pathogens when patients present

[0223] There are a limited number of human viruses that cause viremia and of those that do a viremia is usually only present in blood for a short period as part of the pathogenesis, making direct detection of the pathogen difficult using blood as a sample. Further, it takes 10-14 days following an infection for specific immunoglobulin G antibodies to appear in blood. Infection with a pathogenic virus causes a detectable systemic immune response (VaSIRS) prior to, and during, the development of peak clinical signs. As such, VaSIRS biomarkers are useful for early diagnosis, diagnosis and monitoring in the key periods of viral incubation, and when patients present with clinical signs. Table 16 lists common human viruses that are known to cause SIRS and a viremia along with a supporting scientific reference.

Detecting an immune response to key viral pathogens for which there are tailored anti-viral therapies

[0224] Those viruses that cause a viremia and can be treated with an anti-viral agent, illustrative examples of which are listed in Table 17. It is important that viruses, as for example shown in Table 17, be detected and identified because 1) they can be treated with anti-viral medication 2) most other viral infections cause transient clinical signs and are not life-threatening. In such viral infections it is also important to know if there is a co-infection with bacteria so that antibiotics can be prescribed. The VaSIRS biomarkers described herein can determine the extent of systemic inflammation due to a viral infection and, as such, judgment can be made as to whether antibiotic prescription is appropriate. Further, once it has been determined that systemic inflammation is due to a virus, other more specific viral diagnostic tests can be used downstream to identify the pathogen.

Detecting an immune response to key viral pathogens that cause respiratory disease

[0225] Some of the most common viruses that cause infection in humans are respiratory viruses including, rhinovirus, influenza, respiratory syncytial virus and parainfluenza virus – see Table 18 (Peltola V, Waris M, Osterback R, Susi P, Ruuskanen O, Hyypia T. Rhinovirus transmission within families with children: incidence of symptomatic and asymptomatic infections. J Infect Dis 2008;197:382–389.). Most adults experience at least one rhinovirus infection per year

(Arruda E, Pitkaranta A, Witek TJ Jr, Doyle CA, Hayden FG. Frequency and natural history of rhinovirus infections in adults during autumn. J Clin Microbiol 1997;35:2864–2868.). Influenza infection remains seasonal and common, and places a significant burden on both healthcare and society (Thompson WW, Comanor L, Shay DK (2006) Epidemiology of seasonal influenza: use of surveillance data and statistical models to estimate the burden of disease. J Infect Dis 194 Suppl 2: S82–S91). Respiratory syncytial virus is ubiquitous, most infants have been infected by the age of two, and there are no effective vaccines available (Paes BA, Mitchell I, Banerji A, Lanctôt KL, Langley JM (2011) A decade of respiratory syncytial virus epidemiology and prophylaxis: translating evidence into everyday clinical practice. Canadian respiratory journal: journal of the Canadian Thoracic Society 18: e10). Fortunately most respiratory virus infections are self-limiting because there are few treatment options other than palliative care and the use of some anti-viral drugs early in the course of infection (e.g. ribavirin for respiratory syncytial virus; oseltamivir and amantadine for influenza). However, in some instances respiratory viral infections can lead to complications, including exacerbation of existing pathologies, or concurrent or subsequent viral or bacterial infections. Thus, patients presenting to medical facilities with respiratory virus infection(s) need to be differentiated from those with bacterial infection, or at least a determination has to be made as to whether a viral or a bacterial infection is contributing to the presenting clinical signs so that appropriate anti-viral or antibiotic therapy can be administered. A list of common viral pathogens that cause community acquired pneumonia in adults and children can be found in Table 18 (based on Pavia AT (2013) What is the Role of Respiratory Viruses in Community-Acquired Pneumonia? Infectious Disease Clinics of North America 27: 157–175). The biomarkers described in this patent can determine the presence and extent of systemic inflammation due to a respiratory viral infection and, as such, judgment can be made regarding appropriate management procedures, specific anti-viral treatments and/or antibiotic treatments.

Differentiating patients with a viral condition in ICU

[0226] It has been shown that greater than 50% of patients in medical ICUs have SIRS and greater than 80% in surgical ICUs have infection-negative SIRS (inSIRS) (Brun-Buisson C (2000) The epidemiology of the systemic inflammatory response. Intensive Care Med 26 Suppl 1: S64–S74). From a clinician's perspective these patients present with non-specific clinical signs and the source and type of infection, if there is one, must be determined quickly so that appropriate therapies can be administered. Patients with inSIRS have a higher likelihood of being infected with bacteria or fungi (compared to patients without SIRS), and have a much higher 28-day mortality (Comstedt P, Storgaard M, Lassen AT (2009) The Systemic Inflammatory Response Syndrome (SIRS) in acutely hospitalised medical patients: a cohort study. Scand J Trauma Resusc Emerg Med 17: 67. doi:10.1186/1757-7241-17-67). Further, patients with prolonged sepsis (BaSIRS) have a higher frequency of viral infections, possibly due to reactivation of latent viruses as a result of immunosuppression (Walton, A. H., Muenzer, J. T., Rasche, D., Boomer, J. S., & Sato, B. (2014). Reactivation of multiple viruses in patients with sepsis. PLoS ONE). The higher the prevalence of SIRS in ICU, the higher the risk of infection and death will be in SIRS-affected patients. The re-activation of viruses in ICU patients with BaSIRS, and the benefits of early intervention in patients with BaSIRS (Rivers EP (2010) Point: Adherence to Early Goal-Directed Therapy: Does It Really Matter? Yes. After a Decade, the Scientific Proof Speaks for Itself. Chest 138: 476–480) creates a need for triaging patients with clinical signs of SIRS to determine whether they have a viral or bacterial infection, or both. Monitoring intensive care patients on a regular basis with biomarkers of

the present invention will allow medical practitioners to determine the presence, or absence, of a viral infection. If positive, further diagnostic tests could then be performed on appropriate clinical samples to determine the type of viral infection so that appropriate therapy can be administered. For example, if a patient tested positive for a viral infection, and further testing demonstrated the presence of a herpes virus, then appropriate anti-herpes viral therapies could be administered.

[0227] In pediatric ICUs the incidence of viral infections is reportedly low (1%), consisting mostly of enterovirus, parechovirus and respiratory syncytial virus infections (Verboon-Maciolek, M. A., Krediet, T. G., Gerards, L. J., Fleer, A., & van Loon, T. M. (2005). Clinical and epidemiologic characteristics of viral infections in a neonatal intensive care unit during a 12-year period. *The Pediatric Infectious Disease Journal*, 24(10), 901–904). However, because the mortality rate of virus-infected patients is high, and they present with similar clinical signs to those with bacterial or fungal infections, it is important to rule out the possibility of a viral infection in pediatric patients so that other appropriate therapies can be administered, or to rule in a viral infection so that further, more specific, virus testing and therapy management can be performed.

[0228] Determining which patients have viral infections in the ICU will allow for early intervention, appropriate choice of therapies, when to start and stop therapies, whether a patient needs to be isolated, when to start and stop appropriate patient management procedures, and in determining how a patient is responding to therapy. Information provided by the VaSIRS biomarkers of the present invention will therefore allow medical intensivists to tailor and modify therapies and management procedures to ensure infected patients survive and spend less time in intensive care. Less time in intensive care leads to considerable savings in medical expenses including through less occupancy time and through appropriate use and timing of medications.

Differentiating patients with a viral condition in hospital wards

[0229] Viruses are an important cause of nosocomial infections in hospital where it has been reported that between 5 and 32% of all nosocomial infections are due to viruses, depending upon the hospital location and patient type (Aitken, C., & Jeffries, D. J. (2001). Nosocomial spread of viral disease. *Clinical Microbiology Reviews*, 14(3), 528–546); Valenti, W. M., Menegus, M. A., Hall, C. B., Pincus, P. H., & Douglas, R. G. J. (1980). Nosocomial viral infections: I. Epidemiology and significance. *Infection Control : IC*, 1(1), 33–37). Identification of those patients with a VaSIRS, especially early in the course of infection when there are non-specific clinical signs, would assist clinicians and hospital staff in determining appropriate measures (e.g quarantine, hygiene methods) to be put in place to reduce the risk of virus spread to other non-infected patients.

[0230] In a study in a US hospital of over 4000 inpatients over an 11 week period at least one episode of fever occurred in 1,194 patients (29%) (McGowan JEJ, Rose RC, Jacobs NF, Schaberg DR, Haley RW (1987) Fever in hospitalized patients. With special reference to the medical service. *Am J Med* 82: 580–586). The rate of fever was highest on medical and surgical services and the authors found that both infectious and non-infectious processes played important roles in the cause. However, determining the cause of fever was complicated by the fact that over 390 different factors were identified. In this study, a review of 341 episodes of fever in 302 patients on the medical service identified a single potential cause in 56%, multiple factors were present in 26%, and no potential causes were found in 18%. Of all factors identified, 44% were community-acquired infections, 9% were nosocomial infections, 20% possibly involved infection, and 26% were non-infectious processes. Thus, fever is common in hospital surgical and medical wards, there

are many causes including infectious and non-infectious, diagnosis is difficult and in many instances a cause is not found. The biomarkers outlined herein can differentiate viral infections from other causes of SIRS which will assist medical practitioners in determining the cause of fever, ensuring that resources are not wasted on unnecessary diagnostic procedures and that patients are managed and treated appropriately.

Differentiating patients with a viral condition in emergency departments

[0231] In 2010, approximately 130 million people presented to emergency departments in the USA and the third most common primary reason for the visit was fever (5.6 million people had a fever ($>38^{\circ}\text{C}$) and for 5 million people it was the primary reason for the visit) (Niska R, Bhuiya F, Xu J (2010) National hospital ambulatory medical care survey: 2007 emergency department summary. Natl Health Stat Report 26: 1–31). Of those patients with a fever, 664,000 had a fever of unknown origin – that is, the cause of the fever was not obvious at presentation. As part of diagnosing the reason for the emergency department visit 48,614,000 complete blood counts (CBC) were performed and 5.3 million blood cultures were taken. In 3.65 million patients presenting the primary diagnosis was “infectious” and in approximately 25% of cases (32.4 million) antibiotics were administered. 13.5% of all people presenting to emergency were admitted to hospital. Clinicians in emergency need to determine the answer to a number of questions quickly, including: what is the reason for the visit, is the reason for the visit an infection, does the patient need to be admitted? The diagnosis, treatment and management of patients with a fever, inSIRS, VaSIRS or BaSIRS are different. By way of example, a patient with a fever without other SIRS clinical signs and no obvious source of viral, or microbial infection may be sent home, or provided with other non-hospital services, without further hospital treatment. However, a patient with a fever may have early BaSIRS, and not admitting such a patient and aggressively treating with antibiotics may put their life at risk. Such a patient may also have VaSIRS and quickly deteriorate, or progress to BaSIRS without appropriate hospital care and/or the use of anti-viral agents. The difference in the number of patients presenting to emergency that are ultimately diagnosed with an “infection” (3.65 million) and the number treated with antibiotics (32.4 million) suggests the following; 1) diagnostic tools that determine the presence of an infection are not available, or are not being used, or are not accurate enough, or do not provide strong enough negative predictive value, or are not providing accurate information that can be acted on within a reasonable timeframe 2) when it comes to suspected infection, and because of the acute nature of infections, clinicians err on the side of caution by administering antibiotics. Further, in a study performed in the Netherlands on patients presenting to emergency with fever, 36.6% of patients admitted to hospital had a suspected bacterial infection (that is, it was not confirmed) (Limper M, Eeftinck Schattenkerk D, de Kruif MD, van Wissen M, Brandjes DPM, et al. (2011) One-year epidemiology of fever at the Emergency Department. Neth J Med 69: 124–128). This suggests that a large proportion of patients presenting to emergency are admitted to hospital without a diagnosis. The VaSIRS biomarkers described herein can identify those patients with a VaSIRS from those without a VaSIRS, assisting medical practitioners in triaging patients with fever or SIRS. Such effective triage tools make best use of scarce hospital resources, including staff, equipment and therapies. Accurate triage decision-making also ensures that patients requiring hospital treatment are given it, and those that don’t are provided with other appropriate services.

[0232] In a study performed in Argentina in patients presenting to emergency with influenza-like symptoms, only 37% of samples taken and analysed for the presence of viruses

(using immunofluorescence, RT-PCR and virus culture) were positive (Santamaria, C., Uruena, A., Videla, C., Suarez, A., Ganduglia, C., Carballal, G., *et al.* (2008). Epidemiological study of influenza virus infections in young adult outpatients from Buenos Aires, Argentina. *Influenza and Other Respiratory Viruses*, 2(4), 131–134). In a study based in Boston, USA, acute respiratory infections were a common reason children presented to emergency departments in Winter (Bourgeois, F. T., Valim, C., Wei, J. C., McAdam, A. J., & Mandl, K. D. (2006). Influenza and other respiratory virus-related emergency department visits among young children. *Pediatrics*, 118(1), e1–8). Using a respiratory classifier (based on clinical signs) these authors found that in children less than, or equal to, 7 years of age an acute respiratory infection was suspected in 39.8% of all emergency department visits (less at a whole city or state level). In this latter study only 55.5% of these patients had a virus isolated. Thus, a large percentage of patients with influenza-like symptoms presenting to emergency are likely not being diagnosed as having a viral infection using laboratory-based tests. The VaSIRS biomarkers outlined herein can identify those patients with a VaSIRS from those without a VaSIRS, assisting medical practitioners in making an accurate diagnosis of a viral infection in patients with influenza-like symptoms. Such patients can then be further tested to determine the presence of specific viruses amenable to anti-viral therapies. Accurate diagnosis of a VaSIRS also assists in ensuring that only those patients that need either anti-viral treatment or antibiotics receive them which may lead to fewer side effects and fewer days on antibiotics (Adcock, P. M., Stout, G. G., Hauck, M. A., & Marshall, G. S. (1997). Effect of rapid viral diagnosis on the management of children hospitalized with lower respiratory tract infection. *The Pediatric Infectious Disease Journal*, 16(9), 842–846).

Differentiating patients with a viral condition in medical clinics

[0233] Patients presenting to medical clinics as outpatients often have clinical signs of SIRS including abnormal temperature, heart rate or respiratory rate and there are many causes of these clinical signs. Such patients need to be assessed thoroughly to determine the cause of the clinical signs because in some instances it could be a medical emergency. By way of example, a patient with colic might present with clinical signs of increased heart rate. Differential diagnoses could be (but not limited to) appendicitis, urolithiasis, cholecystitis, pancreatitis, enterocolitis. In each of these conditions it would be important to determine if there was a non-infectious systemic inflammatory response (inSIRS) or whether an infection was contributing to the systemic response. The treatment and management of patients with non-infectious systemic inflammation and/or SIRS due to infectious causes are different. The VaSIRS biomarkers detailed herein can differentiate a VaSIRS from other causes of SIRS so that a medical practitioner can either rule in or rule out a systemic inflammation of viral etiology. As a result medical practitioners can more easily determine the next medical actions and procedure(s) to perform to satisfactorily resolve the patient issue.

Detection of reactivation of latent viruses

[0234] Reactivation of latent viruses is common in patients that are immunocompromised, including those with prolonged sepsis and those on immunosuppressive therapy (Walton AH, Muenzer JT, Rasche D, Boomer JS, Sato B, *et al.* (2014) Reactivation of multiple viruses in patients with sepsis. *PLoS ONE* 9: e98819; Andersen, H. K., and E. S. Spencer. 1969. Cytomegalovirus infection among renal allograft recipients. *Acta Med. Scand.* 186:7-19; Bustamante CI, Wade JC (1991) Herpes simplex virus infection in the immunocompromised cancer patient. *J Clin Oncol* 9: 1903–1915). For patients with sepsis (Walton *et al.*, 2014), cytomegalovirus (CMV), Epstein-Barr (EBV), herpes-simplex (HSV), human herpes virus-6 (HHV-

6), and anellovirus TTV were all detectable in blood at higher rates compared to control patients, and those patients with detectable CMV had higher 90-day mortality. However, because these viruses have only been detected in sepsis patients it is not known whether reactivated latent viruses contribute to pathology, morbidity and mortality.

5 **Determining the Extent of Systemic Inflammation in Patients With a VaSIRS**

[0235] Patients presenting to medical facilities often have any one of the four clinical signs of SIRS. However, many different conditions can present with one of the four clinical signs of SIRS and such patients need to be assessed to determine if they have inSIRS, and if so the extent of inSIRS, or VaSIRS, and if so the extent of VaSIRS, and to exclude other differential diagnoses.

10 [0236] By way of example, a patient with respiratory distress is likely to present with clinical signs of increased respiratory rate. Differential diagnoses could be (but not limited to) asthma, viral or bacterial pneumonia, congestive heart failure, physical blockage of airways, allergic reaction, collapsed lung, pneumothorax. In this instance it would be important to determine if there was a systemic inflammatory response (inSIRS) or whether an infection (viral, bacterial, 15 fungal or parasitic) was contributing to the condition. The treatment and management of patients with and without systemic inflammation and/or viral, bacterial, fungal or parasitic infections are different. Because the biomarkers described herein can determine the degree of systemic involvement, the use of them will allow medical practitioners to determine the next medical procedure(s) to perform to satisfactorily resolve the patient issue. Patients with a collapsed lung, 20 pneumothorax or a physical blockage are unlikely to have a systemic inflammatory response and patients with congestive heart failure, allergic reaction or asthma may have a large systemic inflammatory response but not due to infection. The extent of VaSIRS, as indicated by biomarkers presented herein, allows clinicians to determine a cause of the respiratory distress, to rule out other possible causes and provides them with information to assist in decision making on next 25 treatment and management steps. For example, a patient with respiratory distress and a strong marker response indicating VaSIRS is likely to be hospitalized and specific viral diagnostic tests performed to ensure that appropriate anti-viral therapy is administered.

Antibiotic stewardship

[0237] In patients suspected of having a systemic infection (inSIRS, BaSIRS, VaSIRS) a 30 clinical diagnosis and treatment regimen is provided by the physician(s) at the time the patient presents and often in the absence of any results from diagnostic tests. This is done in the interests of rapid treatment and positive patient outcomes. However, such an approach leads to over-prescribing of antibiotics irrespective of whether the patient has a microbial infection or not. Clinician diagnosis of BIR is reasonably reliable (0.88) in children but only with respect to 35 differentiating between patients ultimately shown to be blood culture positive and those that were judged to be unlikely to have an infection at the time antibiotics were administered (Fischer, J. E. *et al.* Quantifying uncertainty: physicians' estimates of infection in critically ill neonates and children. Clin. Infect. Dis. 38, 1383–1390 (2004)). In Fischer *et al.*, (2004), 54% of critically ill children were put on antibiotics during their hospital stay, of which only 14% and 16% had proven 40 systemic bacterial infection or localized infection respectively. In this study, 53% of antibiotic treatment courses for critically ill children were for those that had an unlikely infection and 38% were antibiotic treatment courses for critically ill children as a rule-out treatment episode. Clearly, pediatric physicians err on the side of caution with respect to treating critically ill patients by

placing all patients suspected of an infection on antibiotics – 38% of all antibiotics used in critically ill children are used on the basis of ruling out BIR, that is, are used as a precaution. Antibiotics are also widely prescribed and overused in adult patients as reported in Braykov *et al.*, 2014 (Braykov, N. P., Morgan, D. J., Schweizer, M. L., Uslan, D. Z., Kelesidis, T., Weisenberg, S. A., *et al.* (2014).

Assessment of empirical antibiotic therapy optimisation in six hospitals: an observational cohort study. *The Lancet Infectious Diseases*, 14(12), 1220–1227). In this study, across six US hospitals over four days in 2009 and 2010, 60% of all patients admitted received antibiotics. Of those patients prescribed antibiotics 30% were afebrile and had a normal white blood cell count and where therefore prescribed antibiotics as a precaution. As such, an assay that can accurately diagnose any VaSIRS in patients presenting with non-pathognomonic clinical signs of infection would be clinically useful and may lead to more appropriate use of antibiotics and anti-viral therapies.

Controlling the spread of a virus

[0238] For serious viral diseases that have no current treatment (*e.g.*, Severe Acute Respiratory Syndrome (SARS, coronavirus); Ebola virus) the best method of limiting viral spread is through a combination of accurate diagnosis and patient isolation (Chowell, G., Castillo-Chavez, C., Fenimore, P. W., Kribs-Zaleta, C. M., Arriola, L., & Hyman, J. M. (2004). Model parameters and outbreak control for SARS. *Emerging Infectious Diseases*, 10(7), 1258–1263.; Centers for Disease Control, Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure, December 24, 2014). The VaSIRS biomarkers detailed herein can be used to identify those people with early clinical signs that actually have a VaSIRS resulting from an active viral infection amongst the population at risk. For those people identified as having a VaSIRS appropriate testing and procedures can then be performed to obtain an accurate and specific diagnosis and to limit viral spread through isolation of patients and the use of appropriate protective measures.

EXAMPLE 9

FIRST EXAMPLE WORKFLOW FOR DETERMINING HOST RESPONSE

[0239] A first example workflow for measuring host response to VaSIRS will now be described. The workflow involves a number of steps depending upon availability of automated platforms. The assay uses quantitative, real-time determination of the amount of each host immune cell RNA transcript in the sample based on the detection of fluorescence on a qRT-PCR instrument (*e.g.* Applied Biosystems 7500 Fast Dx Real-Time PCR Instrument, Applied Biosystems, Foster City, CA, catalogue number 440685; K082562). Transcripts are each reverse-transcribed, amplified, detected, and quantified in a separate reaction well using a probe that is visualized in the FAM channel (by example). Such reactions can be run as single-plexes (one probe for one transcript per tube), multiplexed (multiple probes for multiple transcripts in one tube), one-step (reverse transcription and PCR are performed in the same tube), or two-step (reverse transcription and PCR performed as two separate reactions in two tubes). A score is calculated using interpretive software provided separately to the kit but designed to integrate with RT-PCR machines.

[0240] The workflow below describes the use of manual processing and a pre-prepared kit.

Pre-analytical**[0241]** Blood collection**[0242]** Total RNA isolationAnalytical5 **[0243]** Reverse transcription (generation of cDNA)**[0244]** qPCR preparation**[0245]** qPCR**[0246]** Software, Interpretation of Results and Quality Control**[0247]** Output.10 Kit Contents**[0248]** Diluent**[0249]** RT Buffer**[0250]** RT Enzyme Mix**[0251]** qPCR Buffer15 **[0252]** Primer/Probe Mix**[0253]** AmpliTaq Gold® (or similar)**[0254]** High Positive Control**[0255]** Low Positive Control**[0256]** Negative Control20 Blood Collection

[0257] The specimen used is a 2.5 mL sample of blood collected by venipuncture using the PAXgene® collection tubes within the PAXgene® Blood RNA System (Qiagen, kit catalogue # 762164; Becton Dickinson, Collection Tubes catalogue number 762165; K042613). An alternate collection tube is Tempus® (Life Technologies).

25 Total RNA Isolation

[0258] Blood (2.5 mL) collected into a PAXgene RNA tube is processed according to the manufacturer's instructions. Briefly, 2.5mL sample of blood collected by venipuncture using the PAXgene™ collection tubes within the PAXgene™ Blood RNA System (Qiagen, kit catalogue # 762164; Becton Dickinson, Collection Tubes catalogue number 762165; K042613). Total RNA isolation is performed using the procedures specified in the PAXgene™ Blood RNA kit (a component of the PAXgene™ Blood RNA System). The extracted RNA is then tested for purity and yield (for example by running an A_{260/280} ratio using a Nanodrop® (Thermo Scientific)) for which a minimum quality must be (ratio > 1.6). RNA should be adjusted in concentration to allow for a constant input volume to the reverse transcription reaction (below). RNA should be processed immediately or

35 stored in single-use volumes at or below -70°C for later processing.

Reverse Transcription

[0259] Determine the appropriate number of reaction equivalents to be prepared (master mix formulation) based on a plate map and the information provided directly below. Each clinical specimen is run in singleton.

5 **[0260]** Each batch run desirably includes the following specimens:

- High Control, Low Control, Negative Control, and No Template Control (Test Diluent instead of sample) in singleton each

[0261] Program the ABI 7500 Fast Dx Instrument as detailed below.

- Launch the software.
- 10 • Click Create New Document
- In the New Document Wizard, select the following options:
 - Assay: Standard Curve (Absolute Quantitation)
 - Container: 96-Well Clear
 - Template: Blank Document (or select a laboratory-defined template)
 - 15 iv. Run Mode: Standard 7500
 - v. Operator: Enter operator's initials
 - vi. Plate name: [default]
- Click Finish
- Select the Instrument tab in the upper left
- 20 • In the Thermal Cycler Protocol area, Thermal Profile tab, enter the following times:
 - i. 25° C for 10 minutes
 - ii. 45° C for 45 minutes
 - iii. 93° C for 10 minutes
 - iv. Hold at 25° C for 60 minutes

25 **[0262]** In a template-free area, remove the test Diluent and RT-qPCR Test RT Buffer to room temperature to thaw. Leave the RT-qPCR Test RT Enzyme mix in the freezer and/or on a cold block.

[0263] In a template-free area, assemble the master mix in the order listed below.

RT Master Mix – Calculation:

	Per well	× N
RT-qPCR Test RT Buffer	3.5 µL	3.5 × N
RT-qPCR Test RT Enzyme mix	1.5 µL	1.5 × N
Total Volume	5 µL	5 × N

30

[0264] Gently vortex the master mix then pulse spin. Add the appropriate volume (5 µL) of the RT Master Mix into each well at room temperature.

[0265] Remove clinical specimens and control RNAs to thaw. (If the specimens routinely take longer to thaw, this step may be moved upstream in the validated method.)

[0266] Vortex the clinical specimens and control RNAs, then pulse spin. Add 10 µL of control RNA or RT-qPCR Test Diluent to each respective control or negative well.

- 5 **[0267]** Add 10 µL of sample RNA to each respective sample well (150 ng total input for RT; OD₂₆₀/OD₂₈₀ ratio greater than 1.6). Add 10 µL of RT-qPCR Test Diluent to the respective NTC well.

[0268] Note: The final reaction volume per well is 15 µL.

RT Master Mix	Samples 5 µL
RNA sample	10 µL
Total Volume (per well)	15 µL

- 10 **[0269]** Mix by gentle pipetting. Avoid forming bubbles in the wells.

[0270] Cover wells with a seal.

[0271] Spin the plate to remove any bubbles (1 minute at 400 x g).

[0272] Rapidly transfer to ABI 7500 Fast Dx Instrument pre-programmed as detailed above.

- 15 **[0273]** Click Start. Click Save and Continue. Before leaving the instrument, it is recommended to verify that the run started successfully by displaying a time under Estimated Time Remaining.

[0274] qPCR master mix may be prepared to coincide roughly with the end of the RT reaction. For example, start about 15 minutes before this time. See below.

- 20 **[0275]** When RT is complete (*i.e.* resting at 25 °C; stop the hold at any time before 60 minutes is complete), spin the plate to collect condensation (1 minute at 400 x g).

qPCR Preparation

[0276] Determine the appropriate number of reaction equivalents to be prepared (master mix formulation) based on a plate map and the information provided in RT Preparation above.

- 25 **[0277]** Program the ABI 7500 Fast Dx with the settings below.

a) Launch the software.

b) Click Create New Document

c) In the New Document Wizard, select the following options:

- 30 i. Assay: Standard Curve (Absolute Quantitation)
 ii. Container: 96-Well Clear
 iii. Template: Blank Document (or select a laboratory-defined template)
 iv. Run Mode: Standard 7500
 v. Operator: Enter operator's initials

- vi. Plate name: Enter desired file name
- d) Click Next
- e) In the Select Detectors dialog box:
 - i. Select the detector for the first biomarker, and then click Add>>.
 - 5 ii. Select the detector second biomarker, and then click Add>>, etc.
 - iii. Passive Reference: ROX
- f) Click Next
- g) Assign detectors to appropriate wells according to plate map.
 - i. Highlight wells in which the first biomarker assay will be assigned
 - 10 ii. Click use for the first biomarker detector
 - iii. Repeat the previous two steps for the other biomarkers
 - iv. Click Finish
- h) Ensure that the Setup and Plate tabs are selected
- i) Select the Instrument tab in the upper left
- 15 j) In the Thermal Cycler Protocol area, Thermal Profile tab, perform the following actions, with the results shown in Figure XX:
 - i. Delete Stage 1 (unless this was completed in a laboratory-defined template).
 - ii. Enter sample volume of 25 µL.
 - 20 iii. 95 °C 10 minutes
 - iv. 40 cycles of 95 °C for 15 seconds, 63 °C for 1 minute
 - v. Run Mode: Standard 7500
 - vi. Collect data using the "stage 2, step 2 (63.0@1:00)" setting
- 25 k) Label the wells as below using this process: Right click over the plate map, then select Well Inspector. With the Well Inspector open, select a well or wells. Click back into the Well Inspector and enter the Sample Name. Close the Well Inspector when completed.
 - i. CONH for High Control
 - ii. CONL for Low Control
 - 30 iii. CONN for Negative Control
 - iv. NTC for No Template Control
 - v. [Accession ID] for clinical specimens
- l) Ensure that detectors and quenchers are selected as listed below.
 - i. FAM for ISG15 biomarker 1; quencher=none

- ii. FAM for IL16 biomarker 2; quencher=none
- iii. FAM for OASL; biomarker 3; quencher=none
- iv. FAM for CD97; biomarker 4; quencher=none
- v. Select "ROX" for passive reference

5 qPCR

[0278] In a template-free area, remove the assay qPCR Buffer and assay Primer/Probe Mixes for each target to room temperature to thaw. Leave the assay AmpliTaq Gold in the freezer and/or on a cold block.

[0279] Still in a template-free area, prepare qPCR Master Mixes for each target in the listed order at room temperature.

qPCR Master Mixes – Calculation Per Sample

	Per well	× N
qPCR Buffer	11 µL	11 × N
Primer/Probe Mix	3.4 µL	3.4 × N
AmpliTaq Gold®	0.6 µL	0.6 × N
Total Volume	15 µL	15 × N

[0280] Example forward (F) and reverse (R) primers and probes (P) and their final reaction concentration for measuring four host response transcripts to viral biomarkers are contained in the following table (F, forward; R, reverse; P, probe).

Reagent	5'-3' Sequence	Reaction mM
ISG15-F	CTTCGAGGGGAAGCCCCTGGAG	360
ISG15-R	CCTGCTCGGATGCTGGTGGAGC	360
ISG15-P	CATGAATCTGCGCCTGCGGGG	50
IL16-F	GCCCAGTGACCCAAACATCCCC	360
IL16-R	CAAAGCTATAGTCCATCCGAGCCTCG	360
IL16-P	GATAAAACACCCACTGCTTAAG	50
OASL-F	CCCTGGGGCCTTCTCTTCCCA	360
OASL-R	CCGCAGGCCTTGATCAGGC	360
OASL-P	CCCAGCCACCCCCTGAGGTC	50
CD97-F	CCATCCAGAATGTCATCAAATTGGTGA	360
CD97-R	GGACAGGTGGCGCCAGGG	360
CD97-P	GAACTGATGGAAGCTCCTGGAGAC	50

[0281] Gently mix the master mixes by flicking or by vortexing, and then pulse spin. Add 15 µL of qPCR Master Mix to each well at room temperature.

[0282] In a template area, add 130 µL of SeptiCytel Lab Test Diluent to each cDNA product from the RT Reaction. Reseal the plate tightly and vortex the plate to mix thoroughly.

[0283] Add 10 µL of diluted cDNA product to each well according to the plate layout.

[0284] Mix by gentle pipetting. Avoid forming bubbles in the wells.

[0285] Cover wells with an optical seal.

[0286] Spin the plate to remove any bubbles (1 minute at 400 × g).

[0287] Place on real-time thermal cycler pre-programmed with the settings above.

[0288] Click Start. Click Save and Continue. Before leaving the instrument, it is recommended to verify that the run started successfully by displaying a time under Estimated Time Remaining.

- 5 **[0289]** Note: Do not open the qPCR plate at any point after amplification has begun. When amplification has completed, discard the unopened plate.

Software, Interpretation of Results and Quality Control

- 10 **[0290]** Software is specifically designed to integrate with the output of PCR machines and to apply an algorithm based on the use of multiple biomarkers. The software takes into account appropriate controls and reports results in a desired format.

[0291] When the run has completed on the ABI 7500 Fast Dx Instrument, complete the steps below in the application 7500 Fast System with 21 CFR Part 11 Software, ABI software SDS v1.4.

[0292] Click on the Results tab in the upper left corner.

- 15 **[0293]** Click on the Amplification Plot tab in the upper left corner.

[0294] In the Analysis Settings area, select an auto baseline and manual threshold for all targets. Enter 0.01 as the threshold.

[0295] Click on the Analyse button on the right in the Analysis Settings area.

[0296] From the menu bar in the upper left, select File then Close.

- 20 **[0297]** Complete the form in the dialog box that requests a reason for the change. Click OK.

[0298] Transfer the data file (.sds) to a separate computer running the specific assay RT-qPCR Test Software.

[0299] Launch the assay RT-qPCR Test Software. Log in.

- 25 **[0300]** From the menu bar in the upper left, select File then Open.

[0301] Browse to the location of the transferred data file (.sds). Click OK.

[0302] The data file will then be analysed using the assay's software application for interpretation of results.

Interpretation of Results and Quality Control

- 30 *Results*

[0303] Launch the interpretation software. Software application instructions are provided separately.

[0304] Following upload of the .sds file, the Software will automatically generate classifier scores for controls and clinical specimens.

- 35 Controls

[0305] The Software compares each CON (control) specimen (CONH, CONL, CONN) to its expected result. The controls are run in singleton.

Control specimen		
Designation	Name	Expected result
CONH	High Control	Score range
CONL	Low Control	Score range
CONN	Negative Control	Score range
NTC	No Template Control	Fail (no Ct for all targets)

[0306] If CONH, CONL, and/or CONN fail the batch run is invalid and no data will be reported for the clinical specimens. This determination is made automatically by the interpretive software. The batch run should be repeated starting with either a new RNA preparation or starting at the RT reaction step.

[0307] If NTC yields a result other than Fail (no Ct for all targets), the batch run is invalid and no data may be reported for the clinical specimens. This determination is made by visual inspection of the run data. The batch run should be repeated starting with either a new RNA preparation or starting at the RT reaction step.

[0308] If a second batch run fails, please contact technical services. If both the calibrations and all controls are valid, then the batch run is valid and specimen results will be reported.

Specimens

[0309] Note that a valid batch run may contain both valid and invalid specimen results.

[0310] Analytical criteria (e.g. Ct values) that qualify each specimen as passing or failing (using pre-determined data) are called automatically by the software.

[0311] Scores out of range – reported.

Quality Control

[0312] Singletons each of the Negative Control, Low Positive Control, and High Positive Control must be included in each batch run. The batch is valid if no flags appear for any of these controls.

[0313] A singleton of the No Template Control is included in each batch run and Fail (no Ct for all targets) is a valid result indicating no amplifiable material was detectable in the well.

[0314] The negative control must yield a Negative result. If the negative control is flagged as Invalid, then the entire batch run is invalid.

[0315] The low positive and high positive controls must fall within the assigned ranges. If one or both of the positive controls are flagged as Invalid, then the entire batch run is invalid.

EXAMPLE 10

EXAMPLE OUTPUT

[0316] A possible example output from the software for a VaSIRS assay is presented below in Figure 12. The format of such a report depends on many factors including; quality control, regulatory authorities, cut-off values, the algorithm used, laboratory and clinician requirements, likelihood of misinterpretation.

[0317] In this instance the assay is called "SeptiCyt Viral". The result is reported as a number (6), a position on a 0-10 scale, and a probability of the patient having a VIR based on historical results and the use of a pre-determined cut-off (using results from clinical studies). Results of controls within the assay may also be reported. Other information that could be reported might include: previous results and date and time of such results, a prognosis, a scale that provides cut-off values for historical testing results that separate the conditions of healthy, inSIRS and VaSIRS such that those patients with higher scores are considered to have more severe VaSIRS.

EXAMPLE 11

SECOND EXAMPLE WORKFLOW

[0318] A second example workflow will now be described. Machines have been, and are being, developed that are capable of processing a patient sample at point-of-care, or near point-of-care. Such machines require few molecular biology skills to run and are aimed at non-technical users. The idea is that the sample would be pipetted directly into a disposable cartridge(s) that is/are then inserted into the machine. For determining a specific host response the cartridge will need to extract high quality RNA from the cells in the sample for use in reverse transcription followed by RT-PCR. The machines are designed for minimum user interaction such that the user presses "Start" and within 1-3 hours results are generated. The cartridges contains all of the required reagents to perform host cell nucleic acid extraction (RNA), reverse transcription, and qRT-PCR, and the machine has appropriate software incorporated to allow use of algorithms to interpret each result and combine results, and final interpretation and printing of results.

[0319] Fresh, whole, anti-coagulated blood can be pipetted into a specialized cartridge (e.g. cartridges designed for Enigma ML machine by Enigma Diagnostics Limited (Enigma Diagnostics Limited, Building 224, Tetricus Science Park, Dstl, Porton Down, Salisbury, Wiltshire SP4 0JQ) or similar (Unyvero, Curetis AG, Max-Eyth-Str. 42 71088 Holzgerlingen, Germany)), and on-screen instructions followed to test for differentiating a VIR from other forms of SIRS. Inside the machine RNA is first extracted from the whole blood and is then converted into cDNA. The cDNA is then used in qRT-PCR reactions. The reactions are followed in real time and Ct values calculated. On-board software generates a result output (see, Figure 12). Appropriate quality control measures for RNA quality, no template controls, high and low template controls and expected Ct ranges ensure that results are not reported erroneously.

EXAMPLE 12

EXAMPLE ALGORITHM COMBINING DERIVED BIOMARKERS FOR ASSESSING A VASIRS

[0320] Derived biomarkers can be used in combination to increase the diagnostic power for separating various conditions. Determining which markers to use, and how many, for separating various conditions can be achieved by calculating Area Under Curve (AUC).

[0321] As such, and by example, a 4-VaSIRS polynucleotide biomarker profile (AUC 0.936) offers the appropriate balance between simplicity, practicality and commercial risk for diagnosing VaSIRS. Further, an equation using four biomarkers weighs each biomarker equally which also provides additional robustness in cases of analytical or clinical variability.

[0322] One example equation (amongst others) that provides good diagnostic power for diagnosing a VaSIRS is:

Note: each marker in the Diagnostic Score above is the Log 2 transformed concentration of the marker in the sample.

5 **VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL**
ON PEDIATRIC PATIENT SAMPLE SET

EXAMPLE 14

[0324] The best performing pair of pan-viral biomarker ratios (IL16 / ISG15 + CD97 / OASL) was further validated on an independent sample set consisting of adult patients with human immunodeficiency virus infection (GSE29429 using platform GPL10558). HIV is a member of the Baltimore virus classification Group VII. A subset of GSE29429 patients (run on the platform GPL10558) was deliberately chosen for the following reasons: 1). It contained samples taken at an appropriate timepoint of infection when at least one clinical sign of SIRS might be present (at presentation or trial enrolment); 2). None of the patients were on anti-viral medication; 3). Appropriate healthy control patients were available. As such, a comparison was made between gene expression profiles of the derived biomarker combination of IL16 / ISG15 + CD97 / OASL for 17 healthy controls versus 30 patients with confirmed HIV infection at enrolment. Figure 14 shows

a box and whisker plot of the results of this analysis. Area Under Curve (AUC) for the combined derived biomarkers is 0.91 when comparing HIV-infected patients (right hand side) to healthy subjects (left hand side).

EXAMPLE 15

5 **VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / N4BP1 ON A PORCINE SAMPLE SET**

[0325] The pair of pan-viral biomarker ratios (IL16 / ISG15 + CD97 / N4BP1) was validated on an independent sample set (GSE14790) consisting of piglets deliberately infected with porcine circovirus (PCV). PCV is a member of the Baltimore virus classification Group II. Four
10 piglets inoculated with PCV (on Day 0) were followed over time and blood samples were taken on Days 0, 7, 14, 21 and 28. The gene OASL is not present on the microarray used in the GSE14790 study, most likely due to the fact that it is known that the OASL gene product is truncated in pigs (Perelygin, A. A., Zharkikh, A. A., Scherbik, S. V., & Brinton, M. A. (2006). The mammalian 2"-5" oligoadenylate synthetase gene family: evidence for concerted evolution of paralogous Oas1 genes
15 in Rodentia and Artiodactyla. Journal of Molecular Evolution, 63(4), 562-576). As such, the alternate biomarker N4BP1 was substituted for OASL in the derived biomarker of CD97 / OASL. N4BP1 is the biomarker with the highest correlation to OASL in Group D (see Table 10). Figure 15 shows a box and whisker plot of the results of this analysis when using this alternate derived biomarker. Areas Under Curve (AUCs) for the combined derived biomarkers were 0.812, 1.00, 1.00
20 and 1.00 for Days 0 vs 7, 0 vs 14, 0 vs 21 and 0 vs 29 respectively.

EXAMPLE 16

VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL ON PEDIATRIC PATIENT SAMPLE SETS WITH RSV AND HRV INFECTION

[0326] It is important to demonstrate that the pan-viral signature is not simply an
25 indicator of severity of inflammatory immune response. The present inventors demonstrated that the pan-viral signature is specific to viral infection, rather than severity of inflammation, by analysing two independent datasets in children. Respiratory Syncytial Virus (RSV) has high morbidity and mortality in children and infected children need to be identified, treated and isolated early in the course of the disease process. Human Rhinovirus (HRV) affects both adults and
30 children multiple times during a lifetime and an infection can result in hospitalization or it can be asymptomatic. Some people also act as carriers.

[0327] Pan-viral signature values were determined for children with acute RSV infection and following recovery (using dataset GSE69606) (Figure 16). The box and whisker plots in this figure show a difference (AUC = 0.903) between the pan-viral signature for those children with
35 acute RSV infection (left panel) compared to moderate and severely affected children in recovery 4-6 weeks later (right panel). Little difference can be seen in the pan-viral signature between children with acute mild (n=9), moderate (n=9) or severe (n=8) infection (left panel) indicating that the pan-viral signature is not affected by disease severity.

[0328] Pan-viral signature values were determined for children with and without
40 detectable human rhinovirus (using dataset GSE67059) (Figure 17). The box and whisker plots in this figure show the performance of the pan-viral signature in children (<2 years old) with and without detectable HRV. The children were pre-sorted into groups according to presence or absence

of HRV in nasopharyngeal swabs, and whether they were asymptomatic, or treated as an inpatient or outpatient. The pan-viral signature AUCs were as follows: 0.884 for all HRV+ versus all HRV-; 0.806 for healthy versus asymptomatic (but confirmed HRV+), 0.896 for healthy versus inpatient; 0.894 for healthy versus outpatient.

- 5 **[0329]** The results of the pan-viral signature in these two datasets demonstrate specificity for viral infection irrespective of disease severity.

EXAMPLE 17

VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL IN DATASETS INDICATING EARLY DIAGNOSTIC PERFORMANCE

- 10 **[0330]** Early diagnosis of a viral infection is important for a number of reasons including, 1) it enables early treatment, 2) affected patients can be isolated so that they do not infect others, 3) surveillance of a population can be performed in disease outbreaks to aid in containment. Some viral infections can be treated with anti-viral drugs – see Table 17. Earlier treatment in viral infections results in better outcomes. Early diagnosis therefore allows for earlier
15 treatment and better outcomes. Some subjects with viral infections are contagious and it is therefore important to identify and isolate them to reduce viral spread. For example, children with RSV can infect other hospitalized patients and they are therefore isolated. Early diagnosis of patients with a viral infection will allow for better disease containment. In a viral disease outbreak (e.g., Ebola virus in humans, virulent influenza in animals) a population encircling where a known
20 outbreak has occurred can be tested. Those subjects testing positive can be isolated and treated. Testing continues in an ever widening circle until all subjects test negative. Those subjects within the circle can then be vaccinated, or treated appropriately. The present inventors demonstrated early diagnostic performance of the pan-viral signature in two different viral infections (influenza and Marburg) in two species (humans and macaques).

- 25 **[0331]** Figure 18 shows time-course values for the pan-viral signature in otherwise healthy adult humans following intra-nasal infection with H3N2 influenza A (GSE30550). The box and whisker plot show the pan-viral signature over a 108 hour period following intra-nasal inoculation of influenza strain H3N2. A difference in pan-viral signature value compared to pre-inoculation can be seen as early as 36 hours which is earlier than first recorded clinical symptoms.

- 30 **[0332]** Figure 19 shows pan-viral signature values over time for macaques inoculated with Marburg virus (dataset GSE58287). The box and whisker plots show the pan-viral signature values over 9 days for 15 macaques exposed to aerosolized Marburg virus on day 0. Three macaques were euthanized every two days. Virus was first detected in regional lymph nodes on day 3 post-exposure, viremia was detected on day 4, and the first fever on day 5. A pan-viral
35 signature response can therefore be detected two days before first detectable antigen, 3 days before detectable viremia, and 4 days before first clinical signs in this animal model of Ebola virus infection. Early diagnosis of subjects infected with Ebola would be important in containment efforts.

[0333] The results of the pan-viral signature in these two datasets demonstrate early detection capabilities.

EXAMPLE 18**VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL
IN A DATASET INDICATING PERFORMANCE IN TISSUES OTHER THAN BLOOD**

[0334] Performance of a diagnostic signature in tissues other than blood may be important for clinical practical reasons, or for research purposes. For example, peripheral blood may be difficult to obtain in very low birth weight infants with meningitis. In this instance, cerebrospinal fluid may be easier and safer to obtain. In research, animal models and tissue culture are often used to study the effects of viruses and/or to develop vaccines. The present inventors demonstrated pan-viral signature diagnostic performance in liver biopsies from chimpanzees infected with hepatitis C and E.

[0335] Figure 20 show pan-viral signature values over time for liver biopsy tissue from chimpanzees inoculated with Hepatitis C Virus or Hepatitis E Virus. The box and whisker plots show the pan-viral signature values as a function of time in chimpanzees that were intravenously inoculated with either Hepatitis C virus (HCV; N=3) or Hepatitis E virus (HEV; N=4). Liver biopsy samples were analyzed for gene expression at various time points. The pan-viral signature had an AUC > 0.96 when comparing all time points post-inoculation to pre-inoculation.

[0336] The results of the pan-viral signature in this dataset demonstrates detection capabilities in tissues other than blood.

EXAMPLE 19**VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL
IN ADULTS PRESENTING TO EMERGENCY**

[0337] It is important for the pan-viral signature to have diagnostic performance in various clinical settings, including the emergency room (ER) which has a heterologous patient population with respect to type and prevalence of inflammatory conditions. The present inventors therefore ran a clinical trial that enrolled patients admitted to hospital that presented to ER with fever. Each patient was retrospectively diagnosed as having a bacterial or viral infection, or no infection.

[0338] Figure 21 shows the performance of the pan-viral signature in 93 adult patients presenting to ER with fever. The box and whisker plots for these patients shows clear separation for those retrospectively diagnosed with either bacterial sepsis (n=55), no infection (n=22), or viral infection (n=15). The AUCs were 0.934 (viral versus bacterial), 0.854 (viral versus uninfected) and 0.583 (bacterial versus uninfected).

[0339] The results of the pan-viral signature in this dataset demonstrates specificity in a heterologous adult population presenting to ER.

EXAMPLE 20**VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL
IN A DATASET INDICATING PERFORMANCE IN RESPONSE TO THERAPY**

[0340] It is important for the pan-viral signature to demonstrate diagnostic performance in response to patient therapy. Such performance can then be used to guide clinicians in choice and duration of anti-viral therapies.

[0341] Figure 22 shows the AUC for the pan-viral signature for two groups of patients diagnosed with HIV located in either Africa (n=43) or the USA (n=15). Patient samples were collected at study enrollment when they had a confirmed acute infection and at weeks 1, 2, 4, 12, and 24. The pan-viral signature AUC when comparing healthy controls to African patients who did not receive any treatment remained at or above 0.9 at all time points, whereas the AUCs when comparing healthy controls to USA patients receiving treatment dropped from above 0.9 at enrolment to less than 0.5 by Week 24. Also, the pan-viral signature scores over time largely reflect the mean HIV viral loads as described in GSE29429.

EXAMPLE 21

VALIDATION OF DERIVED BIOMARKERS IL16 / ISG15 AND CD97 / OASL IN A DATASET INDICATING PERFORMANCE IN RESPONSE TO THERAPY

[0342] It is important for the pan-viral signature to demonstrate diagnostic performance in response to live viral vaccination. Such performance can then be used to guide researchers in vaccine development and clinicians in determining whether a subject has had a suitable response to vaccination.

[0343] In a yellow fever vaccination study (Gaucher *et al.*, 2008) two geographically separated groups of volunteers (Lausanne, n=11; Montreal, n=15) were vaccinated subcutaneously on Day 0 with Stamaril (Sanofi-Pasteur YF17D-204 YF-VAX), a vaccine containing live attenuated yellow fever virus which affords protection from 10 days following vaccination. Whole blood samples were collected on days 0, 3 and 7 for the Lausanne cohort and on days 0, 3, 7, 10, 14, 28 and 60 for the Montreal cohort. The pan-viral signature value peaked on Day 7 following vaccination and dropped to pre-vaccination levels by Day 14 (Figure 23). The pan-viral signature value largely reflects viremia (viral particles per mL of plasma) as detailed in Gaucher *et al.* (2008) (Supplemental Material, Table 5). In this study a specific antibody response to vaccination was not detected until 14 days post-vaccination.

[0344] The results of the pan-viral signature in this dataset demonstrates diagnostic performance in response to vaccination.

[0345] The disclosure of every patent, patent application, and publication cited herein is hereby incorporated herein by reference in its entirety.

[0346] The citation of any reference herein should not be construed as an admission that such reference is available as "Prior Art" to the instant application.

[0347] Throughout the specification the aim has been to describe the preferred embodiments of the invention without limiting the invention to any one embodiment or specific collection of features. Those of skill in the art will therefore appreciate that, in light of the instant disclosure, various modifications and changes can be made in the particular embodiments exemplified without departing from the scope of the present invention. All such modifications and changes are intended to be included within the scope of the appended claims.

TABLE 1

DIFFERENT TYPES OF VIRUS ANTIGEN EXPOSURE

Antigen Exposure Type	Example Virus Families	Baltimore Classifications
Infection Type		
Cytolytic	Reoviridae Herpesviridae Poxviridae Paramyxoviridae Orthomyxoviridae Parvoviridae Flaviviridae Circoviridae	III I I V V II IV II
Persistent	Paramyxoviridae	V
Latent	Herpesviridae	I
Integrated	Retroviridae Herpesviridae	VI I
Mechanism of Spread		
1° Hematogenous	Flaviviridae Hepadnaviridae	IV VII
2° Hematogenous	Herpesviridae Reoviridae Parvoviridae Circoviridae	I III II II
Local	Rhinoviridae Reoviridae	IV III
Nervous	Herpesviridae	I
Virus Location		
Systemic	Paramyxoviridae Orthomyxoviridae Parvoviridae Circoviridae	V V II II
Local	Rhinoviridae Reoviridae	IV III

TABLE 2

GROUP A BIOMARKERS AND THEIR DIAGNOSTIC PERFORMANCE ACROSS VARIOUS DATASETS

Dataset Type	Parameter Description	Biomarker		
		ZBP1	TMEM62	CD38
		DNA SEQ ID NO: 399	DNA SEQ ID NO: 414	DNA SEQ ID NO: 415
		AUC		
	mean 4 core sets	0.891	0.897	0.744
	mean auc of all viral sets	0.768	0.77	0.74
	num viral lt75	3	5	5
	num non-viral gt80	3	1	0
core viral	viral GSE51808 dengue	0.948	0.98	1
core viral	viral GSE41752 lassa	0.88	0.938	0.928
core viral	viral GSE52428 flu	0.926	0.888	0.785
core viral	viral GSE40366 herpes	0.81	0.782	0.263
validation viral	viral GSE6269 peds_bact_viral	0.902	0.63	0.789
validation viral	viral GSE40396 peds_bact_viral	0.824	0.832	0.719
validation viral	viral GSE40012 pneumonia	0.931	0.784	0.904
validation viral	viral GSE18090 dengue	0.812	0.743	0.903
validation viral	viral GSE30550 flu	0.955	0.877	0.882
validation viral	viral GSE40224 HepC	0.888	0.981	0.619
validation viral	viral GSE5790 LCMV	0.327	0.564	0.173
validation viral	viral GSE34205 RSV	0.652	0.686	0.654
validation viral	viral GSE5808 measles	0.4	0.6	0.933
validation viral	viral GSE2729 rotavirus	0.5	0.5	0.808
non-viral inflammation	sirs GSE17755 autoimmune disease	0.845	0.5	0.5
non-viral inflammation	sirs GSE19301 asthma	0.536	0.488	0.603
non-viral inflammation	sirs GSE47655 anaphylaxis	0.5	0.5	0.7

Biomarker			
Dataset Type	Parameter Description	ZBP1 DNA SEQ ID NO: 399	CD38 DNA SEQ ID NO: 415
		TMEM62 DNA SEQ ID NO: 414	
		AUC	
non-viral inflammation	sirs GSE38485 schizophrrenia	0.466	0.392
non-viral inflammation	sirs GSE36809 trauma	0.394	0.066
non-viral inflammation	sirs GSE29532 coronary_artery	0.667	0.22
non-viral inflammation	sirs GSE40366 AGE_cmv herpes	0.815	0.323
non-viral inflammation	sirs GSE46743 depression_stress	0.649	0.571
non-viral inflammation	sirs GSE61672 anxiety	0.557	0.515
non-viral inflammation	sirs GSE64813 PTSD	0.575	0.466
non-viral inflammation	triage GSE11908 infections	0.298	0.629
non-viral inflammation	triage GSE16129 staph_peds	0.4	0.462
non-viral inflammation	triage GSE25504 bact_neonatal	0.522	0.365
non-viral inflammation	triage GSE30119 staph_healthy	0.51	0.504
non-viral inflammation	triage GSE33341 staph_ecoli_healthy	0.777	0.573
non-viral inflammation	triage GSE40012 pneumonia	0.473	0.358
non-viral inflammation	triage GSE40396 peds_bact_viral	0.48	0.254
non-viral inflammation	triage GSE40586 bact_peds	0.279	0.507
non-viral inflammation	triage GSE42834 infection	0.869	0.756
non-viral inflammation	triage GSE6269 peds_bact_viral	0.118	0.237
non-viral inflammation	healthy GSE35846.0 race	0.469	0.622
non-viral inflammation	healthy GSE35846.1 age	0.498	0.475
non-viral inflammation	healthy GSE35846.2 gender	0.615	0.528
non-viral inflammation	healthy GSE35846.3 obese	0.527	0.489

TABLE 3
DATASETS USED FOR "DISCOVERY" OF PAN-VIRAL BIOMARKERS AND BIOMARKER PROFILES

Dataset Identifier	Virus name, classification, genome	Study Description
GSE51808	Dengue, Flavivirus, RNA	28 human patients with naturally-acquired Dengue Fever or Dengue Hemorrhagic Fever. Samples collected at 2 and 9 days post onset of symptoms, and at four weeks (convalescent). Nine healthy controls.
GSE41752	Lassa, Arenavirus, RNA	11 macaques with experimentally-induced Lassa virus infection. Samples collected pre-infection and on Days 2, 3, 6, 8, 10 and 12 post-infection. Total 46 processed samples.
GSE52428	Influenza A, Orthomyxovirus, RNA	18 human subjects experimentally-infected with Influenza virus A (two strains). Samples taken pre-infection and every eight hours out to 108 hours post-infection. Symptomatic and asymptomatic responses.
GSE40366	Cytomegalovirus, Herpesvirus, DNA	Human subjects with and without a CMV titer (0- 42,000). 143 nonagenarians and 30 young subjects (< 30 years of age).

TABLE 4
DATASETS USED FOR "VALIDATION" OF PAN-VIRAL BIOMARKERS AND BIOMARKER PROFILES

Dataset Identifier	Virus name, classification, genome	Study Description
GSE6269	Influenza A, Orthomyxovirus, RNA	Human patients, single sample. Influenza A / B: 30 / 6 Staphylococcus aureus: 50 Escherichia coli: 29 Streptococcus pneumoniae: 22 Healthy: 6
GSE40396	Adenovirus, DNA. HHV6, Herpesvirus, DNA. Enterovirus, Picornavirus, RNA. Rhinovirus, Picornavirus, RNA.	Human patients, single sample. Adenovirus: 11 HHV6: 10 Enterovirus: 6 Rhinovirus: 8 Escherichia coli: 2 MRSA: 4 Controls: 19
GSE40012	Influenza A, Orthomyxovirus, RNA	Human patients, single sample. Influenza A : 34 Healthy: 38
GSE18090	Dengue, Flavivirus, RNA	26 patients with Dengue fever. Up to five days of clinical symptoms. Patients were afebrile 3 days post-sampling. 8 control patients without Dengue fever.
GSE30550	Influenza A, Orthomyxovirus, RNA	17 human subjects experimentally-infected with Influenza virus A (H3N2). Samples taken pre-infection and every eight hours out to 108 hours post-infection. Symptomatic and asymptomatic responses.

Dataset Identifier	Virus name, classification, genome	Study Description
GSE40224	Hepatitis C, Flavivirus, RNA	Human patients, single sample. Hepatitis C: 10 Healthy: 8
GSE5790	Lymphocytic choriomeningitis virus, Arenavirus, RNA	9 macaques experimentally-infected with lethal LCMV. Samples taken pre-infection and on Days 1, 2, 3, 4, 6 and 7 post-infection.
GSE34205	Respiratory syncytial virus, Paramyxovirus, RNA. Influenza A, Orthomyxovirus, RNA	Human patients, single sample. Healthy: 22 RSV: 51 Influenza: 28
GSE5808	Measles, Morbillivirus, RNA	5 patients with measles. Samples taken on hospital entry, at discharge and at one month follow-up. 3 healthy controls.
GSE2729	Rotavirus, Reovirus, RNA	Human patients, single sample. 10 acute infection 5 convalescent 8 healthy controls.
GSE14790	Porcine circovirus, Circovirus, DNA	Four piglets experimentally-infected with porcine circovirus. Samples taken on Days 0, 7, 14, 21 and 28.
GSE29429	Human Immunodeficiency Virus, Retrovirus, RNA	17 HIV-infected patients with samples taken on study enrolment. 30 healthy controls with samples taken on study enrolment.
GSE69606	Respiratory syncytial virus, Paramyxovirus, RNA.	9 mild, 9 moderate and 8 severe followed up 4-6 weeks later (for the severe and moderate)
GSE67059	Human rhinovirus, Picornaviridae, RNA	37 HRV- and 114 HRV+
GSE8287	Marburg virus, filoviridae, RNA	15 macaques followed over time
GSE22160	Hepatitis E, Hepeviridae, RNA Hepatitis C, Flaviviridae, RNA	3 and 4 chimpanzees respectively followed over time

TABLE 5

CLASSIFICATION OF VIRUS TYPES

Common Virus Name	Study Group	Genome	Classification (family)	Baltimore Group
Dengue	Core	+ssRNA	Flaviviridae	IV
Lassa	Core	+/- ssRNA	Arenaviridae	V
Influenza A	Core	-ssRNA	Orthomyxoviridae	V
Cytomegalovirus	Core	dsDNA	Herpesviridae	I
Influenza A	Validation	-ssRNA	Orthomyxoviridae	V
Dengue	Validation	+ssRNA	Flaviviridae	IV
Lymphocytic choriomeningitis virus	Validation	+/- ssRNA	Arenaviridae	V
Adenovirus	Validation	dsDNA	Adenoviridae	I
HHV6	Validation	dsDNA	Herpesviridae	I
Enterovirus	Validation	+ssRNA	Picornaviridae	IV
Rhinovirus	Validation	+ssRNA	Picornaviridae	IV
Hepatitis C	Validation	+ssRNA	Flaviviridae	IV
Metapneumovirus	Validation	-ssRNA	Paramyxoviridae	V
Respiratory Syncytial Virus (RSV)	Validation	-ssRNA	Paramyxoviridae	V
Measles	Validation	-ssRNA	Paramyxoviridae	V
Rotavirus	Validation	dsRNA	Reoviridae	III
Human Immunodeficiency Virus (HIV)	Validation	+ssRNA	Retroviridae	VI
Circovirus (PRV)	Validation	ssDNA	Circoviridae	II
Marburg virus	Validation	-ssRNA	Filoviridae	V
Hepatitis E	Validation	+ssRNA	Hepeviridae	IV
Hepatitis C	Validation	+ssRNA	Flaviviridae	IV
Influenza A	MARS	-ssRNA	Orthomyxoviridae	V
Respiratory Syncytial Virus (RSV)	MARS	-ssRNA	Paramyxoviridae	V
Metapneumovirus	MARS	-ssRNA	Paramyxoviridae	V
Adenovirus	MARS	dsDNA	Adenoviridae	I
Rhinovirus	MARS	+ssRNA	Picornaviridae	IV
BK virus	MARS	dsDNA	Polyomaviridae	I
Coronavirus	MARS	+ssRNA	Coronaviridae	IV
Hepatitis B	MARS	dsDNA-RT	Hepadnaviridae	VII
Rhinovirus	Pediatric	+ssRNA	Picornaviridae	IV
Enterovirus	Pediatric	+ssRNA	Picornaviridae	IV
Parainfluenza virus 3	Pediatric	-ssRNA	Paramyxoviridae	V
Coronavirus HKU1	Pediatric	+ssRNA	Coronaviridae	IV
Respiratory	Pediatric	-ssRNA	Paramyxoviridae	V

Common Virus Name	Study Group	Genome	Classification (family)	Baltimore Group
Syncytial Virus (RSV)				

TABLE 6
DATASETS USED TO IDENTIFY BIOMARKERS ASSOCIATED WITH NON-VIRAL INFLAMMATION

Dataset Identifier	Condition	Study Description
GSE33341	Bacteremia; Staphylococcus aureus or Escherichia coli	Human patients and subjects, single time point. Staphylococcus aureus: 34 Escherichia coli: 15 Healthy: 43
GSE40366	Age	143 nonagenarians and 30 young subjects. Comparison of those subjects without CMV titers.
GSE42834	Tuberculosis Sarcoidosis Lung cancer Pneumonia	Human subjects, single time point. Tuberculosis: 66 Sarcoidosis (active, 68; non-active, 22) Lung cancer: 16 Pneumonia: 16 Control: 147
GSE25504	Neonatal sepsis	Human subjects, single time point. Sepsis: 28 Controls: 35
GSE30119	Staphylococcus infection	Human subjects, single time point. Staphylococcus: 99 Control: 44
GSE17755	Autoimmune disease	Human subjects, single time point. Rheumatoid arthritis: 112 Systemic Lupus Erythematosus: 22 Poly juvenile idiopathic arthritis: 6 Systemic juvenile idiopathic arthritis: 51 Healthy: 53
GSE19301	Asthma	Human subjects, single time point. 500 samples. 113 patients, samples taken during quiet, exacerbation or follow-up time points.
GSE47655	Anaphylaxis	Human subjects, multiple time points. Six patients, three time points (arrival, one hour and three hours).
GSE38485	Schizophrenia	Human subjects, single time point. Schizophrenia: 15 Control: 22
GSE36809	Blunt trauma	Human subjects, multiple time points.

Dataset Identifier	Condition	Study Description
		Patients: 167, 7 time points (up to 28 days post) Controls: 37
GSE29532	Coronary artery disease	Human subjects, multiple time points. Patients: 49, six time points including admission and up to 48 hours post-treatment. Controls: 6.
GSE46743	Depression / stress	Human subjects, two time points. Patients: 160 males, pre and post dexamethasone.
GSE61672	Anxiety	Human subjects, single time point. Patients: 157 Controls: 179.
GSE64813	Post-traumatic stress disorder	Human subjects, two time points. Patients: 94 males, pre and post deployment, 50% with PTSD.
GSE11908	Systemic inflammation	Human subjects, single time point. Systemic juvenile idiopathic arthritis: 47 Systemic lupus erythematosus: 40 Type I diabetes: 20 Metastatic melanoma: 39 Escherichia coli: 22 Staphylococcus aureus: 18 Influenza A: 16 Liver-transplant recipients undergoing immunosuppressive therapy: 37
GSE16129	Staphylococcus infection	Human subjects, single time point. Staphylococcus aureus: 97 Controls: 29
GSE40012	Pneumonia	Human subjects, daily samples for up to 5 days. Influenza A: 8 Bacterial pneumonia: 16 Mixed bacterial and influenza A pneumonia: 3 SIRS: 13 Healthy: 36 (Days 1 and 5)
GSE40396	Bacterial infection	Human patients, single sample. Escherichia coli: 2 MRSA: 4 Controls: 19
GSE6269	Bacterial infection	Human patients, single sample. Staphylococcus aureus: 50 Escherichia coli: 29 Streptococcus pneumoniae: 22

Dataset Identifier	Condition	Study Description
GSE35846	Race, age, gender, obesity	Healthy: 6 Human patients, single sample. 189 subjects. 65 men and 124 women. Aged 26 and 79 (mean 51). 140 Caucasian, 37 African American, 11 Asian, 1 American Indian.

TABLE 7

DERIVED BIOMARKERS WITH A MEAN AUC OF AT LEAST 0.8 ACROSS AT LEAST 11 OF THE 14 VIRAL DATASETS

Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC
IFI6:IL16	0.916	OASL:ETS2	0.875	EIF2AK2:TNRC6B	0.858	OASL:TM2D3	0.838
OASL:NR3C1	0.915	OASL:POLB	0.875	OASL:FAM134A	0.858	OASL:KLHL2	0.837
OASL:EMR2	0.914	OASL:STK38L	0.875	OASL:FCGRT	0.858	OASL:MAPRE2	0.837
OASL:SORL1	0.908	OASL:TFE3	0.875	OASL:LPIN2	0.858	OASL:RNIF146	0.837
OASL:SERTAD2	0.907	OASL:ICAM3	0.874	OASL:PECAM1	0.858	USP18:RPL22	0.837
OASL:LPAR2	0.904	OASL:ITGB2	0.874	OASL:WBP2	0.858	DHX58:LTB	0.836
OASL:ITGAX	0.902	OASL:PI3D	0.874	OASL:ZNF148	0.858	OASL:GMIP	0.836
OASL:TGFBR2	0.901	OASL:PLXNC1	0.874	OASL:RTN3	0.857	DDX60:SYPL1	0.835
OASL:KIAA0247	0.9	OASL:SNX27	0.874	OASL:TYK2	0.857	EIF2AK2:IL6ST	0.835
OASL:ARHGAP26	0.899	OASL:TNIP1	0.874	USP18:LTB	0.857	EIF2AK2:PCF11	0.835
OASL:LYN	0.899	OASL:ZMIZ1	0.874	DHX58:IL16	0.856	ISG15:NOSIP	0.835
OASL:PCBP2	0.898	OASL:FOXO3	0.873	ISG15:IL4R	0.856	OASL:NRBF2	0.835
OASL:TOPORS	0.898	OASL:IL10RB	0.873	OASL:BRD4	0.856	OASL:RNIF141	0.835
EIF2AK2:IL16	0.896	OASL:MAP3K5	0.873	OASL:CCNT2	0.856	OASL:VAV3	0.835
OASL:NCOA1	0.896	OASL:POLD4	0.873	OASL:FGR	0.856	OASL:ZFAND5	0.835
OASL:PTGER4	0.896	OASL:ARAP1	0.872	OASL:ITSN2	0.856	USP18:NDFIP1	0.835
OASL:TLR2	0.895	OASL:CTBP2	0.872	OASL:LYL1	0.856	USP18:TMEM204	0.835
OASL:PACSIN2	0.894	OASL:DGKA	0.872	OASL:PHF3	0.856	USP18:UBE2D2	0.835
OASL:IL1RA2	0.893	OASL:NFYA	0.872	OASL:PSAP	0.856	OASL:CAMK1D	0.834
OASL:PTPRE	0.893	OASL:PCNX	0.872	OASL:STX3	0.856	OASL:CLK4	0.834
OASL:RPS6KA1	0.893	OASL:PFN5	0.872	OASL:TNK2	0.856	OASL:MCTP2	0.834
OASL:CASC3	0.892	OASL:R3HDM2	0.872	EIF2AK2:ZNF274	0.855	OASL:MOSPD2	0.834
OASL:VEZF1	0.892	OASL:STX6	0.872	OASL:ACAA1	0.855	OASL:TSC22D3	0.834
OASL:CRLF3	0.891	EIF2AK2:SYPL1	0.871	OASL:CHD3	0.855	USP18:CRLF3	0.834
OASL:NDEL1	0.891	ISG15:ABLIM1	0.871	OASL:FRY	0.855	USP18:SESNI	0.834

Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC
OASL:RASSF2	0.891	OASL:FOXJ2	0.871	OASL:GRB2	0.855	USP18:ZC3HAV1	0.834
OASL:TLE4	0.891	OASL:IQSEC1	0.871	OASL:MAP3K11	0.855	OASL:MSL1	0.833
OASL:CD97	0.89	OASL:LRMP	0.871	OASL:NEK7	0.855	OASL:TREM1	0.833
OASL:CEP68	0.89	OASL:NAB1	0.871	OASL:PPP2R5A	0.855	OASL:YPEL5	0.833
OASL:RXRA	0.89	OASL:RAB31	0.871	USP18:ST13	0.855	USP18:CIAPIN1	0.833
OASL:SP3	0.89	OASL:WASF2	0.871	XAF1:LEF1	0.855	USP18:PDCD6IP	0.833
OASL:ABLIM1	0.889	OASL:ZNF274	0.871	OASL:CASP8	0.854	HERC5:ABLIM1	0.832
OASL:AOAH	0.889	OAS2:LEF1	0.87	OASL:PCF11	0.854	OASL:OSBPL11	0.832
OASL:MBP	0.889	OASL:BRD1	0.87	OASL:PRKCD	0.854	OASL:PLEKHO1	0.832
OASL:NLRP1	0.889	OASL:GNAQ	0.87	OASL:PSTPIP1	0.854	USP18:CRTC3	0.832
OASL:PBX3	0.889	OASL:GSK3B	0.87	OASL:SLCO3A1	0.854	HERC6:ATM	0.831
OASL:PTPN6	0.889	OASL:IL6R	0.87	OASL:ZDHHHC17	0.854	ISG15:SESN1	0.831
OASL:RYBP	0.889	OASL:MAPK14	0.87	USP18:FOXO1	0.854	OAS2:MYC	0.831
OASL:IL13RA1	0.888	USP18:TGFBR2	0.87	OASL:ASAP1	0.853	OASL:OGFRL1	0.831
OASL:LCP2	0.888	ISG15:LTB	0.869	OASL:BAZ2B	0.853	OASL:ZXDC	0.831
OASL:LRP10	0.888	OASL:INPP5D	0.869	OASL:FAM65B	0.853	USP18:CCR7	0.831
OASL:SYPL1	0.888	OASL:MED13	0.869	OASL:HHEX	0.853	OASL:APBB1IP	0.83
OASL:VAMP3	0.888	OASL:MORC3	0.869	OASL:MAX	0.853	OASL:CHST11	0.83
IFI44:LTB	0.887	OASL:PTAFR	0.869	OASL:PHF2	0.853	OASL:GPBP1L1	0.83
OASL:ARHGEF2	0.887	OASL:RBM23	0.869	OASL:RNF130	0.853	USP18:SSBP2	0.83
OASL:CTDSP2	0.887	OASL:SNR	0.869	OASL:SOS2	0.853	OASL:RC3H2	0.829
OASL:LST1	0.887	OASL:ST13	0.869	OASL:STAM2	0.853	USP18:UTP14A	0.829
OASL:MAPK1	0.887	OASL:TFEB	0.869	OASL:ZFC3H1	0.853	OASL:GCC2	0.828
OASL:N4BP1	0.887	OASL:ZFYVE16	0.869	IFI44:CYLD	0.852	USP18:LRMP	0.828
OASL:STAT5B	0.887	EIF2AK2:SATB1	0.868	IFIH1:CRLF3	0.852	USP18:TRIB2	0.828
IFI44:ABLIM1	0.886	OASL:ABAT	0.868	OASL:BANP	0.852	OASL:GPR97	0.827
IFI44:IL6ST	0.886	OASL:ABI1	0.868	OASL:CCND3	0.852	EIF2AK2:BTG1	0.826
OASL:BACH1	0.886	OASL:ACVR1B	0.868	OASL:DGCR2	0.852	EIF2AK2:CYLD	0.826

Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC
OASL:KLF7	0.886	OASL:GSPM3	0.868	OASL:USP15	0.852	OASL:PAFAH1B1	0.826
OASL:PRMT2	0.886	OASL:MPPE1	0.868	USP18:EIF3H	0.852	USP18:BTG1	0.826
OASL:HCK	0.885	OASL:PTEN	0.868	OASL:LAT2	0.851	USP18:NCBP2	0.826
OASL:ITPKB	0.885	OASL:SEC62	0.868	OASL:ZYX	0.851	USP18:PPP1R2	0.826
OASL:MAP4K4	0.885	IFI6:MYC	0.867	USP18:CAMK1D	0.851	LAP3:MAP4K4	0.825
OASL:PPM1F	0.885	IFI6:PCF11	0.867	ZBP1:NDE1	0.851	OASL:ERBB2IP	0.825
OASL:RAB14	0.885	OASL:AIF1	0.867	EIF2AK2:IL4R	0.85	OASL:NOD2	0.825
IFI6:ABLIM1	0.884	OASL:CSNK1D	0.867	IFI44:SESN1	0.85	OASL:RIN3	0.825
OAS2:FAIM3	0.884	OASL:GABARAP	0.867	OASL:CD37	0.85	OASL:TMBIM1	0.825
OASL:ARHGAP25	0.884	OASL:HAL	0.867	OASL:CST3	0.85	ZBP1:XPO6	0.825
OASL:GNA12	0.884	OASL:LAPTM5	0.867	OASL:DREP2	0.85	ISG15:LDLRAP1	0.824
OASL:NUMB	0.884	OASL:XPC	0.867	OASL:MYC	0.85	OASL:CHMP1B	0.824
OASL:CREBBP	0.883	USP18:NFKB1	0.867	OASL:RERE	0.85	OASL:LILRB3	0.824
OASL:PINK1	0.883	OASL:ACAP2	0.866	OASL:USP10	0.85	OASL:PHF20L1	0.823
OASL:PITPNA	0.883	OASL:CLEC4A	0.866	USP18:LEF1	0.85	USP18:PCF11	0.823
OASL:SEMA4D	0.883	OASL:HIP1	0.866	OASL:MX1	0.849	OASL:ANKRD49	0.822
OASL:TGFBI	0.883	OASL:PIAS1	0.866	OASL:PRUNE	0.849	OASL:DOK3	0.822
OASL:APLP2	0.882	OASL:PPP3R1	0.866	OASL:VPS8	0.849	OASL:PRKAG2	0.822
OASL:CCNG2	0.882	OASL:RALB	0.866	OASL:CYTH4	0.848	OASL:SOAT1	0.822
OASL:MKRN1	0.882	OASL:RGS19	0.866	OASL:FBXO11	0.848	USP18:IL6ST	0.822
OASL:RGS14	0.882	OASL:TRIOBP	0.866	OASL:PRKAA1	0.848	USP18:RPL10A	0.822
OASL:LYST	0.881	EIF2AK2:PDE3B	0.865	OASL:SERINC3	0.848	LAP3:SYPL1	0.82
OASL:TNRC6B	0.881	OASL:NCOA4	0.865	OASL:UBXN2B	0.848	OASL:MARCH8	0.819
OASL:TYROBP	0.881	OASL:RARA	0.865	USP18:DPF2	0.848	TAP1:TNRC6B	0.819
OASL:WDR37	0.881	OASL:RPS6KA3	0.865	USP18:NACA	0.848	OASL:KLF3	0.818
OASL:WDR47	0.881	OASL:SIRPA	0.865	USP18:SYPL1	0.848	PHF11:ZNF274	0.818
UBE2L6:IL16	0.881	OASL:TLE3	0.865	ISG15:DGKA	0.847	OASL:PGS1	0.817
OASL:BTG1	0.88	OASL:TNFRSF1A	0.865	OASL:MARK3	0.847	OASL:ZNF238	0.817

Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC
OASL:CD93	0.88	DDX60:TGFBR2	0.864	USP18:DIDO1	0.846	STAT1:PCBP2	0.817
OASL:DCP2	0.88	OASL:FLOT2	0.864	CUL1:IL16	0.845	OASL:SH2D3C	0.816
OASL:FYB	0.88	OASL:FBNBP1	0.864	OASL:DOCK9	0.845	USP18:SAFB2	0.816
OASL:MAML1	0.88	OASL:MAP3K3	0.864	USP18:PIK3IP1	0.845	EIF2AK2:CAMK1D	0.815
OASL:SNRK	0.88	OASL:STX10	0.864	OASL:FBXO9	0.844	LAP3:CNPY3	0.815
OASL:USP4	0.88	OASL:ZDHHC18	0.864	OASL:MKLN1	0.844	LAP3:NDFIP1	0.815
OASL:YTHDF3	0.88	OASL:ZNF143	0.864	OASL:PPP1R11	0.844	LAP3:TRAK1	0.815
OASL:CEP170	0.879	TAP1:TGFBR2	0.864	USP18:DGKA	0.844	OASL:NPL	0.815
OASL:PLEKHO2	0.879	OAS2:ABLIM1	0.863	USP18:ZNF274	0.844	OASL:NSUN3	0.815
OASL:SMAD4	0.879	OASL:ARRB2	0.863	OASL:POLR1D	0.843	OASL:ATAD2B	0.814
OASL:ST3GAL1	0.879	OASL:IKBKB	0.863	OASL:SETD2	0.843	ZBP1:KLF7	0.813
OASL:ZNF292	0.879	OASL:KBTBD2	0.863	DDX60:ABLIM1	0.842	ZBP1:PCF11	0.813
IFI44:TL4R	0.878	OASL:PHC2	0.863	OASL:ARHGAP15	0.842	LAP3:ABLIM1	0.812
OASL:HPCAL1	0.878	OASL:PUM2	0.863	OASL:BCL2	0.842	OASL:CSAD	0.812
OASL:IGSF6	0.878	OASL:SSFA2	0.863	OASL:GOLGA7	0.842	PHF11:IL16	0.812
OASL:MTMR3	0.878	IFI44:MYC	0.862	OASL:KIAA0513	0.842	USP18:BEX4	0.812
OASL:PHF20	0.878	OASL:ABHD2	0.862	OASL:MARCH7	0.842	USP18:METTL3	0.812
OASL:PPARD	0.878	OASL:CYLD	0.862	USP18:LDLRAP1	0.842	RTP4:ABLIM1	0.811
OASL:PPP4R1	0.878	OASL:MAST3	0.862	C19orf66:IL16	0.841	HERC6:MYC	0.81
OASL:RBMS1	0.878	OASL:UBN1	0.862	OASL:ARRB1	0.841	USP18:ALDH3A2	0.81
OASL:RHOG	0.878	IFI6:TL6ST	0.861	OASL:BMP2K	0.841	OASL:RAB4B	0.809
OASL:TIAM1	0.878	IFIH1:TGFBR2	0.861	OASL:LIMK2	0.841	USP18:ATF7IP2	0.809
USP18:IL16	0.878	OASL:CNPY3	0.861	OASL:RNASET2	0.841	TAP1:TGOLN2	0.807
OASL:CBX7	0.877	OASL:KIAA0232	0.861	USP18:ATM	0.841	PARP12:ABLIM1	0.806
OASL:RAF1	0.877	USP18:CHMP7	0.861	USP18:CYLD	0.841	RSAD2:CAMK1D	0.806
OASL:SERINC5	0.877	USP18:NECAP2	0.861	USP18:NOSIP	0.841	ZBP1:CYLD	0.806
OASL:UBQLN2	0.877	OASL:CAP1	0.86	OASL:TNFSF13	0.84	STAT1:FBXO11	0.805
OASL:XPO6	0.877	OASL:HPS1	0.86	OASL:TRIM8	0.84	ZBP1:ZFC3H1	0.805

Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC	Derived Biomarker	Mean AUC
OASL:ATP6V1B2	0.876	OASL:IL1RAP	0.86	XAF1:IL4R	0.84	OASL:SIRPB1	0.804
OASL:CSF2RB	0.876	OASL:MEF2A	0.86	DHX58:ABLIM1	0.839	OASL:C2orf68	0.802
OASL:GYPC	0.876	OASL:RNF19B	0.86	OASL:MANSC1	0.839	RTP4:SYPL1	0.802
OASL:IL4R	0.876	OASL:TMEM127	0.86	OASL:MAP1LC3B	0.839	LAP3:JAK1	0.801
OASL:MMP25	0.876	USP18:IL27RA	0.86	OASL:OSBPL2	0.839		
OASL:PSEN1	0.876	OASL:CDIPT	0.859	OASL:RAB7A	0.839		
OASL:SH2B3	0.876	OASL:CREB1	0.859	EIF2AK2:ZFC3H1	0.838		
OASL:STAT5A	0.876	OASL:GPS2	0.859	IFIH1:LTB	0.838		
ISG15:IL16	0.875	OASL:NDE1	0.859	OASL:FES	0.838		
MX1:LEF1	0.875	OASL:RAB11FIP1	0.859	OASL:HGSNAT	0.838		
OASL:CAMK2G	0.875	USP18:ABLIM1	0.859	OASL:KLF6	0.838		

TABLE 8

PERFORMANCE OF EIGHT EXAMPLE DERIVED BIOMARKERS WITH UNIQUE NUMERATORS AND DENOMINATORS (OF A TOTAL OF 473 DERIVED BIOMARKERS) ACROSS THE VARIOUS INDIVIDUAL DATASETS ("DISCOVERY", "VALIDATION", "NON-VIRAL")

		Derived Biomarker							
		IFI6: IL16	OASL: EMR2	EIF2AK2: IL16	IFI44: ABLIM1	OAS2: FAIM3	ISG15: IL16	MX1: LEF1	USP18: NFKB1
Statistic	Data Type / Dataset	0.916	0.914	0.896	0.886	0.884	0.875	0.875	0.867
Statistic	Mean AUC over all viral datasets	0	0	1	0	1	1	0	0
Statistic	Number viral datasets with mean AUC less than 0.75	3	0	3	2	3	2	3	1
Core Viral	Number of non-viral datasets with a mean AUC greater than 0.8	1	1	0.992	0.996	0.948	1	0.976	1
Core Viral	GSE51808	0.971	0.928	0.933	0.986	0.995	0.986	0.967	0.947
Core Viral	GSE41752	0.947	0.97	0.978	0.932	0.943	0.966	0.913	0.951
Core Viral	GSE52428	0.829	0.807	0.823	0.842	0.827	0.782	0.851	0.87
Core Viral	GSE40366	0.845	0.916	0.913	0.927	0.847	0.909	0.906	0.965
Validation	GSE6269	0.787	0.818	0.737	0.771	0.838	0.792	0.781	0.769
Validation	GSE40396	0.988	0.974	0.961	0.952	0.937	0.981	0.897	0.807
Validation	GSE40012	0.799	0.799	0.812	0.764	0.819	0.785	0.778	0.792
Validation	GSE18090	0.946	0.94	0.951	0.95	0.959	0.95	0.944	0.953
Validation	GSE30550	0.875	0.938	0.888	0.9	0.875	0.888	0.875	0.862
Validation	GSE40224	1	1	0.955	0.755	1	0.6	0.973	0.982
Validation	GSE5790	0.843	0.871	0.793	0.824	0.81	0.792	0.816	0.812
Validation	GSE34205	1	0.933	0.933	0.933	0.867	0.867	0.8	0.933
Validation	GSE5808	1	0.908	0.869	0.877	0.715	0.954	0.777	N/A
Validation	GSE2729	0.864	0.647	0.91	0.924	0.911	0.824	0.898	0.296
Non-viral	GSE33341	0.924	0.667	0.901	0.922	0.93	0.863	0.937	0.86
Non-viral	GSE40366	0.787	0.631	0.799	0.795	0.866	0.799	0.826	0.503
Non-viral	GSE42834	0.628	0.414	0.788	0.778	0.709	0.728	0.718	N/A
Non-viral	GSE25504	0.432	0.28	0.727	0.632	0.723	0.448	0.636	0.456
Non-viral	GSE30119								

		Derived Biomarker							
Category	Data Type / Dataset	IFI6: IL16	OASL: EMR2	EIF2AK2: IL16	IFI44: ABLI1	OAS2: FAIM3	ISG15: IL16	MX1: LEF1	USP18: NFKB1
Non-viral	GSE17755	0.885	N/A	0.636	N/A	N/A	N/A	N/A	N/A
Non-viral	GSE19301	0.614	0.536	0.598	0.636	0.592	0.637	0.612	0.6
Non-viral	GSE47655	N/A	0.667	N/A	0.6	0.633	N/A	0.733	N/A
Non-viral	GSE38485	0.517	0.447	0.532	0.577	0.494	0.488	0.436	N/A
Non-viral	GSE36809	0.464	0.302	0.867	0.445	0.234	0.401	0.522	0.243
Non-viral	GSE29532	N/A	N/A	N/A	0.54	0.46	N/A	0.6	N/A
Non-viral	GSE46743	0.545	0.478	0.743	0.763	0.469	0.452	0.647	N/A
Non-viral	GSE61672	0.528	0.534	0.515	0.511	0.438	0.562	0.463	N/A
Non-viral	GSE64813	N/A	0.535	N/A	0.631	0.659	N/A	0.641	0.477
Non-viral	GSE11908	0.589	0.536	0.421	0.242	0.398	0.383	0.287	0.356
Non-viral	GSE16129	0.712	0.355	0.595	0.481	0.645	0.586	0.476	0.236
Non-viral	GSE40012	0.479	0.41	0.513	0.649	0.585	0.604	0.552	N/A
Non-viral	GSE40396	0.303	0.226	0.544	0.616	0.421	0.316	0.511	0.16
Non-viral	GSE40586	N/A	0.189	N/A	0.618	0.697	N/A	0.717	0.172
Non-viral	GSE6269	0.33	0.184	0.255	0.224	0.319	0.216	0.199	0.099
Non-viral	GSE35846 (race)	0.575	0.488	0.632	0.534	0.45	0.589	0.559	N/A
Non-viral	GSE35846 (age)	0.537	0.445	0.514	0.543	0.591	0.523	0.563	N/A
Non-viral	GSE35846 (gender)	0.554	0.56	0.56	0.529	0.46	0.561	0.527	N/A
Non-viral	GSE35846 (obesity)	0.523	0.523	0.539	0.482	0.451	0.513	0.489	N/A

TABLE 9

PERFORMANCE (AUC) OF THE TOP EIGHT DERIVED BIOMARKERS INDIVIDUALLY AND WHEN ADDED SEQUENTIALLY TO THE TOP PERFORMING DERIVED BIOMARKERS FOR THE COMBINED DATASETS

N	Derived Biomarker	Individual AUC	Combined AUC
1	ISG15:IL16	0.92	0.92
2	OASL:CD97	0.865	0.936
3	TAP1:TGFBR2	0.879	0.945
4	IFIH1:CRLF3	0.873	0.946
5	IFI44:IL4R	0.867	0.947
6	EIF2AK2:SYPL1	0.859	0.947
7	OAS2:LEF1	0.875	0.946
8	STAT1:PCBP2	0.844	0.944

TABLE 10

LIST OF 413 INDIVIDUAL BIOMARKERS (THAT ARE PART OF A DERIVED BIOMARKER WITH AN AUC > 0.8) AND THEIR RESPECTIVE CORRELATION COEFFICIENT TO THE COMPONENT BIOMARKERS OF THE TOP PERFORMING TWO DERIVED-BIOMARKER SIGNATURE OF ISG15, IL16, OASL AND CD97 . EACH LIST OF BIOMARKERS CONSTITUTES GROUPS B, C, D AND E

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
1.000	ISG15	142	1.000	IL16	134	1.000	OASL	227	1.000	CD97	49
0.915	IFI44	127	0.661	ITPKB	145	0.529	N4BP1	205	0.634	CYTH4	73
0.915	RSAD2	308	0.600	CAMK2G	38	0.460	NOD2	219	0.599	HCK	118
0.913	HERC5	119	0.567	CTDSP2	70	0.455	RNF19B	303	0.582	ARHGAP26	17
0.906	MX1	202	0.555	DPEP2	82	0.437	PRKAG2	268	0.555	RARA	289
0.895	HERC6	120	0.551	LTB	170	0.413	IGSF6	130	0.547	XPO6	396
0.894	OAS2	226	0.549	CBX7	42	0.352	MEF2A	192	0.534	TNFRSF1A	362
0.894	XAF1	394	0.535	FBNP1	98	0.343	LPIN2	166	0.527	SLCO3A1	326
0.892	IFI6	128	0.534	FOXO1	100	0.341	PPP1R11	262	0.526	ICAM3	126
0.873	PARP12	233	0.531	MAST3	187	0.316	USP15	382	0.521	PTPN6	278
0.872	EIF2AK2	84	0.529	LDLRAP1	160	0.308	BACH1	26	0.519	PRKCD	269
0.849	DHX58	78	0.529	TMEM204	361	0.307	SSFA2	336	0.518	RAB11FIP1	282
0.844	UBE2L6	377	0.526	FAIM3	89	0.299	MKLN1	194	0.514	CSF2RB	66
0.838	DDX60	75	0.516	RGS14	295	0.270	FYB	103	0.512	LCP2	159
0.819	USP18	383	0.516	IKKB	131	0.250	NSUN3	224	0.509	TYROBP	375
0.817	RTP4	310	0.516	ZXDC	412	0.232	MAX	188	0.499	PHC2	243
0.815	PHF11	244	0.508	PHF20	246	0.218	STAM2	339	0.496	RHOG	297
0.812	IFIH1	129	0.507	DGKA	77	0.209	HHEX	122	0.496	PSAP	272
0.792	ZBP1	399	0.501	XPC	395	0.207	CLEC4A	58	0.496	LYN	172
0.766	STAT1	340	0.499	PPARD	260	0.197	ZFAND5	404	0.494	TMEM127	360
0.765	LAP3	156	0.499	C2orf68	36	0.188	ABI1	3	0.492	LILRA2	162

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
0.755	TAP1	348	0.494	NLRP1	218	0.144	MORC3	197	0.485	AOAH	11
0.741	C19orf66	35	0.488	IL27RA	136	0.142	RC3H2	293	0.476	FGR	96
0.617	CUL1	71	0.480	ABLIM1	4	0.137	MAP1LC3B	176	0.470	PLEKHO2	255
0.453	POLB	257	0.477	JAK1	147	0.120	TM2D3	358	0.470	ARAP1	14
0.395	ZC3HAV1	401	0.475	METTL3	193	0.100	CHST11	56	0.468	RBM23	291
			0.474	SAFB2	313	0.097	NAB1	206	0.462	PTPRE	279
			0.474	PPM1F	261	0.014	KLF3	152	0.459	KLF6	153
			0.473	TYK2	374	-0.030	YPEL5	397	0.458	LIMK2	164
			0.471	BANP	27	-0.063	MXI1	203	0.456	LILRB3	163
			0.470	CRTC3	64				0.454	TLR2	357
			0.468	ATM	24				0.451	GPR97	111
			0.453	PAFAH1B1	232				0.451	GMIP	106
			0.447	PIK3IP1	250				0.446	SIRPA	324
			0.445	WDR37	392				0.444	LRP10	168
			0.444	TGFB2	352				0.444	LPAR2	165
			0.442	ZNF274	410				0.442	TREM1	369
			0.429	STAT5B	342				0.441	IL13RA1	133
			0.427	MAML1	174				0.439	ITGAX	143
			0.420	SATB1	314				0.435	ARHGAP25	16
			0.419	DOCK9	80				0.433	SIRPB1	325
			0.417	CHMP7	55				0.433	ZDHC18	403
			0.413	BRD1	32				0.433	TLE3	355
			0.410	BTG1	34				0.432	ITGB2	144
			0.408	ATF7IP2	23				0.432	SNX27	330
			0.408	DIDO1	79				0.431	PGS1	242
			0.407	LEF1	161				0.429	ATP6V1B2	25
			0.407	TNRC6B	366				0.428	RAB31	284

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
			0.405	SERTAD2	319				0.427	MAP3K11	177
			0.405	CEP68	52				0.427	PACSIN2	231
			0.398	BCL2	29				0.427	KIAA0513	151
			0.397	VPS8	389				0.426	EMR2	86
			0.396	CHD3	53				0.426	RERE	294
			0.393	PUM2	280				0.426	NUMB	225
			0.390	TGOLN2	353				0.425	RALB	288
			0.383	NDE1	211				0.425	ETS2	88
			0.382	CCR7	46				0.422	STAT5A	341
			0.381	PSTPIP1	274				0.421	LST1	169
			0.379	TIAM1	354				0.417	RIN3	298
			0.376	PECAM1	240				0.417	TNK2	365
			0.374	PDE3B	239				0.416	IQSEC1	141
			0.374	MYC	204				0.413	PISD	252
			0.371	FOXJ2	99				0.412	SORL1	332
			0.370	PRMT2	270				0.412	FES	95
			0.370	CSNK1D	67				0.411	KIAA0247	150
			0.357	RPL10A	304				0.404	IL6R	138
			0.356	SERINC5	318				0.404	LPTM5	157
			0.354	ARHGEF2	18				0.402	VAMP3	386
			0.352	HGSNAT	121				0.400	FAM65B	91
			0.350	TRAK1	368				0.398	MAP3K5	179
			0.350	PHF2	245				0.396	TRIM8	371
			0.349	PBX3	234				0.396	ZYX	413
			0.349	SESN1	320				0.388	MAPK14	182
			0.341	DPF2	83				0.387	PLEKHO1	254
			0.338	IL4R	137				0.387	NCOA1	209

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
			0.334	NOSIP	220				0.384	RNASET2	299
			0.331	MPPE1	199				0.383	APBB1IP	12
			0.321	NR3C1	222				0.381	RXRA	311
			0.320	ABAT	1				0.375	PTAFR	275
			0.320	GCC2	105				0.373	CNPY3	60
			0.316	ZFC3H1	405				0.373	TNFSF13	363
			0.311	SETD2	321				0.368	RPS6KA1	306
			0.308	ITSN2	146				0.367	OSBPL2	230
			0.306	R3HDM2	281				0.367	MTMR3	201
			0.302	ARHGAP15	15				0.362	TMBIM1	359
			0.301	PCF11	236				0.359	TFEB	350
			0.301	MAPRE2	183				0.359	TFE3	349
			0.299	ST3GAL1	338				0.358	RAF1	287
			0.299	NACA	207				0.357	STX3	345
			0.299	WDR47	393				0.357	LAT2	158
			0.298	SSBP2	335				0.356	GRB2	114
			0.293	CLK4	59				0.355	NDEL1	212
			0.289	EIF3H	85				0.355	SEMA4D	316
			0.287	FRY	102				0.353	FCGRT	94
			0.286	ZNF238	409				0.353	DOK3	81
			0.286	PTGER4	277				0.353	HIP1	123
			0.285	PCNX	237				0.353	UBN1	378
			0.283	NECAP2	214				0.352	PLXNC1	256
			0.279	CASC3	40				0.351	NRBF2	223
			0.279	MSL1	200				0.348	INPP5D	140
			0.278	VEZF1	388				0.347	SH2D3C	323
			0.275	KIAA0232	149				0.347	MMP25	196

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
			0.274	RASSF2	290				0.342	IL10RB	132
			0.268	RPL22	305				0.340	FLOT2	97
			0.265	ACAA1	5				0.339	PIAS1	249
			0.263	MAP4K4	180				0.338	PITPNA	253
			0.263	BEX4	30				0.334	APLP2	13
			0.263	NCBP2	208				0.333	CTBP2	69
			0.262	LRMP	167				0.332	GPSM3	113
			0.259	CAMK1D	37				0.331	RNF130	300
			0.257	UTP14A	385				0.326	DGCR2	76
			0.253	STX6	346				0.326	ZMIZ1	407
			0.253	RPS6KA3	307				0.320	CAP1	39
			0.249	PRKAA1	267				0.319	GSK3B	115
			0.240	GOLGA7	109				0.318	RGS19	296
			0.239	ZNF143	408				0.317	RAB7A	286
			0.237	SNRK	329				0.316	CREBBP	62
			0.233	SYPL1	347				0.313	RBMS1	292
			0.229	CYLD	72				0.310	IL1RAP	135
			0.228	PRUNE	271				0.308	RTN3	309
			0.224	CRLF3	63				0.308	PPP4R1	266
			0.223	CD93	48				0.307	TRIOBP	372
			0.223	GPS2	112				0.306	GABARAP	104
			0.221	FBXO11	92				0.305	MCTP2	190
			0.217	UBE2D2	376				0.304	NFKB1	216
			0.217	USP10	381				0.303	CST3	68
			0.216	CCNG2	44				0.292	ABHD2	2
			0.212	SOS2	333				0.285	SH2B3	322
			0.211	ARRB1	19				0.284	STX10	344

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
			0.207	CEP170	51				0.282	TSC22D3	373
			0.206	SMAD4	327				0.280	TLE4	356
			0.205	CIAPIN1	57				0.277	HAL	117
			0.204	KLF7	154				0.277	ARRB2	20
			0.198	PHF20L1	247				0.276	MAP3K3	178
			0.194	ALDH3A2	9				0.274	NPL	221
			0.193	PDCD6IP	238				0.265	CCND3	43
			0.185	WASF2	390				0.265	SERINC3	317
			0.184	TGFB1	351				0.263	GNAQ	108
			0.175	GPBP1L1	110				0.262	USP4	384
			0.174	PCBP2	235				0.261	PSEN1	273
			0.166	DCP2	74				0.256	KBTBD2	148
			0.165	LYST	173				0.254	LYL1	171
			0.154	ERBB2IP	87				0.241	AIF1	8
			0.146	ANKRD49	10				0.239	MBP	189
			0.145	NDFIP1	213				0.238	ACVR1B	7
			0.141	ATAD2B	22				0.238	RAB4B	285
			0.138	ZNF292	411				0.232	PTEN	276
			0.137	CCNT2	45				0.231	ASAP1	21
			0.134	MARCH7	184				0.231	MANSC1	175
			0.133	ACAP2	6				0.228	RYBP	312
			0.132	MED13	191				0.225	CSAD	65
			0.131	IL6ST	139				0.223	UBXN2B	380
			0.131	PHF3	248				0.223	TNIP1	364
			0.129	SP3	334				0.222	WBP2	391
			0.110	SEC62	315				0.211	OGFRL1	228
			0.098	ZFYVE16	406				0.209	SNN	328

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
			0.095	NEK7	215				0.205	HPICAL1	124
			0.094	POLD4	258				0.196	CD37	47
			0.091	GNA12	107				0.194	RNF146	302
			0.087	TRIB2	370				0.184	RAB14	283
			0.086	YTHDF3	398				0.177	TOPORS	367
			0.082	PPP2R5A	264				0.176	NFYA	217
			0.081	PPP1R2	263				0.172	FOXO3	101
			0.076	ZDHHC17	402				0.171	CREB1	61
			0.060	STK38L	343				0.170	MAPK1	181
			0.057	ST13	337				0.170	SOAT1	331
			0.046	FAM134A	90				0.168	UBQLN2	379
			0.022	PFDN5	241				0.166	OSBPL11	229
			0.015	MARCH8	185				0.165	KLHL2	155
			-0.041	POLR1D	259				0.153	VAV3	387
									0.135	BRD4	33
									0.130	MARK3	186
									0.114	BAZ2B	28
									0.112	ZNF148	409
									0.110	CASP8	41
									0.108	CHMP1B	54
									0.105	HPS1	125
									0.099	RNF141	301
									0.096	MOSPD2	198
									0.081	PINK1	251
									0.080	CDIPT	50
									0.060	NCOA4	210
									0.059	PPP3R1	265

Group B			Group C			Group D			Group E		
Correlation to ISG15	HUGO Gene Name	SEQ ID	Correlation to IL16	HUGO Gene Name	SEQ ID	Correlation to OASL	HUGO Gene Name	SEQ ID	Correlation to CD97	HUGO Gene Name	SEQ ID
									0.014	MKRN1	195
									0.005	GYPC	116
									-0.021	BMP2K	31
									-0.058	FBXO9	93

TABLE 11

FREQUENCY OF NUMERATORS (N > 2) IN THE 473 DERIVED BIOMARKERS

Numerator	Count
OASL	344
USP18	50
EIF2AK2	13
ISG15	8
IFI44	7
LAP3	7
ZBP1	6
IFI6	5
OAS2	4
DDX60	3
DHX58	3
IFIH1	3
TAP1	3
12 other biomarkers	17 derived biomarkers

TABLE 12

FREQUENCY OF DENOMINATORS (N > 2) IN THE 473 DERIVED BIOMARKERS

Denominator	Count
ABLIM1	12
IL16	9
SYPL1	6
CYLD	5
IL4R	5
LTB	5
MYC	5
PCF11	5
TGFBR2	5
CAMK1D	4
IL6ST	4
LEF1	4
ZNF274	4
BTG1	3
CRLF3	3
DGKA	3
SESN1	3
TNRC6B	3
ZFC3H1	3
369 other biomarkers	382 derived biomarkers

TABLE 13

PERFORMANCE (AUC) OF THE 473 DERIVED BIOMARKERS ACROSS THE FOUR CORE DATASETS

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:DPEP2	0.973	1.000	0.995	0.974	0.922	OASL:CDIPT	0.936	0.905	0.995	0.957	0.887
OASL:KLF7	0.969	0.996	1.000	0.969	0.912	OASL:ZFC3H1	0.936	0.889	0.990	0.961	0.904
OASL:RARA	0.969	1.000	1.000	0.958	0.916	OAS2:MYC	0.936	0.976	1.000	0.900	0.868
OASL:XPO6	0.967	0.992	0.995	0.971	0.911	EIF2AK2:IL6ST	0.936	0.948	0.986	0.916	0.893
OASL:CYLD	0.966	0.972	0.986	0.959	0.945	OASL:C2orf68	0.936	0.913	0.976	0.960	0.894
OASL:TLR2	0.965	1.000	1.000	0.961	0.900	OASL:LPAR2	0.936	0.996	0.990	0.958	0.799
OASL:CAMK1D	0.963	0.980	0.981	0.939	0.952	USP18:PCF11	0.936	1.000	0.976	0.947	0.820
OASL:ITGAX	0.963	0.996	0.986	0.953	0.916	OASL:VAMP3	0.936	0.933	0.986	0.957	0.866
OASL:PINK1	0.963	1.000	0.990	0.937	0.924	OASL:CD93	0.936	1.000	0.895	0.966	0.881
OASL:ARHGAP26	0.962	1.000	0.981	0.962	0.906	OASL:RPS6KA3	0.936	0.925	0.976	0.954	0.887
OASL:LMK2	0.961	0.988	0.986	0.958	0.913	OASL:MCTP2	0.936	0.905	0.976	0.952	0.909
OASL:FRY	0.961	0.992	0.976	0.966	0.910	PHF11:ZNF274	0.936	0.992	0.957	0.975	0.818
OASL:RGS14	0.960	0.964	0.990	0.961	0.926	OASL:PCNX	0.935	0.944	0.976	0.975	0.846
OASL:PLXNC1	0.960	1.000	0.995	0.966	0.880	OASL:ACAP2	0.935	0.937	0.928	0.953	0.923
OASL:TNFRSF1A	0.960	0.996	1.000	0.949	0.895	USP18:PPP1R2	0.935	0.992	1.000	0.927	0.822
OASL:PBX3	0.960	0.972	0.990	0.954	0.923	OASL:ATP6V1B2	0.935	0.937	0.971	0.956	0.876
OASL:GPR97	0.959	1.000	0.967	0.967	0.903	OASL:IQSEC1	0.935	0.929	0.981	0.967	0.862
OASL:PGS1	0.959	0.976	0.995	0.958	0.908	USP18:FOXO1	0.935	1.000	0.947	0.947	0.845
OASL:RAB11FIP1	0.959	1.000	0.995	0.966	0.875	USP18:UBE2D2	0.935	1.000	0.971	0.944	0.824
OASL:CLEC4A	0.959	0.992	0.995	0.960	0.888	ZBP1:PCF11	0.935	0.972	0.943	0.908	0.916
OASL:GYPC	0.958	1.000	0.990	0.947	0.893	OASL:MED13	0.935	0.921	0.957	0.950	0.910
OASL:SIRPB1	0.958	0.996	0.986	0.968	0.880	OASL:PHF3	0.935	0.881	0.981	0.963	0.913
OASL:LILRB3	0.957	0.988	0.995	0.967	0.879	OASL:LRP10	0.935	0.925	0.995	0.959	0.859
OASL:ABLM1	0.957	0.964	0.976	0.957	0.930	OASL:TNFSF13	0.935	0.909	1.000	0.959	0.870
OASL:BTG1	0.957	0.937	0.976	0.967	0.947	OASL:LPIN2	0.934	0.960	0.947	0.972	0.858
OASL:TGFBR2	0.957	0.972	0.967	0.969	0.918	OASL:RC3H2	0.934	0.901	0.976	0.961	0.899
OASL:MKNR1	0.956	1.000	0.990	0.933	0.902	OASL:ANKRD49	0.934	0.913	0.981	0.961	0.882
OASL:LYL1	0.956	1.000	1.000	0.952	0.873	OASL:LILRA2	0.934	0.996	0.967	0.971	0.802
OASL:CAMK2G	0.956	0.988	0.981	0.972	0.882	OASL:XPC	0.934	0.845	0.981	0.965	0.945
OASL:BACH1	0.956	0.976	0.990	0.942	0.914	OASL:KLF6	0.934	0.952	0.995	0.968	0.821
OASL:PTEN	0.956	0.964	0.986	0.962	0.910	OASL:DOK3	0.934	0.960	0.909	0.959	0.908
OASL:WBP2	0.956	0.992	0.996	0.934	0.906	OASL:PFN5	0.934	0.917	0.990	0.921	0.907
OASL:MXI1	0.956	1.000	0.981	0.936	0.905	OASL:RGS19	0.934	0.929	0.995	0.970	0.841
OASL:SERINC5	0.955	0.948	0.995	0.957	0.921	OASL:PRKCD	0.934	0.913	0.986	0.952	0.884
OASL:ITPKB	0.955	0.948	0.986	0.967	0.918	USP18:LDLRAP1	0.934	1.000	0.962	0.955	0.818
OASL:ZNF238	0.955	0.984	0.967	0.955	0.912	USP18:TRIB2	0.934	1.000	0.957	0.936	0.842

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:TOPORS	0.954	0.980	0.995	0.949	0.893	PHF11:IL16	0.934	1.000	0.986	0.986	0.763
OASL:BANP	0.954	0.952	0.990	0.971	0.904	ISG15:IL16	0.934	1.000	0.986	0.966	0.782
OASL:CYTH4	0.954	0.996	0.981	0.967	0.872	OASL:WASE2	0.934	0.929	0.967	0.961	0.877
OASL:RNF141	0.954	0.988	0.995	0.952	0.881	USP18:NACA	0.934	1.000	0.957	0.944	0.833
USP18:LEF1	0.954	1.000	0.990	0.923	0.902	OASL:MANSCI	0.934	0.984	0.885	0.955	0.910
OASL:IL4R	0.954	0.944	0.986	0.951	0.934	USP18:LRMP	0.934	1.000	0.952	0.956	0.826
OASL:HGSNAT	0.954	0.948	0.981	0.973	0.912	OASL:CNPY3	0.933	0.921	1.000	0.966	0.846
OASL:MPPE1	0.953	0.984	0.976	0.975	0.878	EIF2AK2:TNRC6B	0.933	1.000	0.986	0.970	0.777
OASL:ABHD2	0.953	0.940	1.000	0.974	0.898	USP18:EIF3H	0.933	1.000	0.971	0.927	0.835
OASL:PTPN6	0.953	0.933	0.990	0.967	0.921	OASL:FOXJ2	0.933	0.913	0.967	0.969	0.884
OASL:LRMP	0.953	0.929	0.967	0.974	0.941	USP18:CYLD	0.933	1.000	0.976	0.942	0.814
OASL:GNAQ	0.953	0.996	0.995	0.958	0.862	OASL:MAML1	0.933	0.929	0.967	0.972	0.864
OASL:CEP68	0.953	0.937	0.995	0.956	0.922	USP18:RPL10A	0.933	1.000	0.962	0.931	0.839
OASL:MAP4K4	0.952	0.940	1.000	0.964	0.903	LAP3:SYPL1	0.933	0.996	0.933	0.971	0.832
OASL:KIAA0247	0.951	0.972	0.967	0.966	0.899	OASL:KLF3	0.933	0.937	0.952	0.956	0.887
OASL:NDEL1	0.951	0.964	1.000	0.967	0.873	OASL:DCP2	0.933	0.917	0.986	0.951	0.877
OASL:MSL1	0.951	0.992	0.976	0.961	0.875	USP18:CHMP7	0.933	1.000	0.971	0.941	0.819
OASL:BMP2K	0.951	0.996	0.971	0.946	0.890	OASL:RNF146	0.933	0.948	0.967	0.955	0.861
OASL:NR3C1	0.951	0.972	0.990	0.958	0.883	OASL:CTDSP2	0.933	0.940	0.952	0.964	0.874
OASL:STAT5B	0.951	0.984	0.986	0.965	0.868	USP18:IL16	0.933	1.000	0.971	0.969	0.790
OASL:KIAA0232	0.951	0.968	0.962	0.967	0.906	OASL:SNX27	0.933	0.913	0.986	0.961	0.870
OASL:GPSM3	0.951	0.948	0.986	0.966	0.902	OASL:PIAS1	0.933	0.905	0.971	0.967	0.887
OASL:TFEB	0.951	0.972	0.990	0.951	0.889	ISG15:NOSIP	0.933	0.972	0.981	0.951	0.826
OASL:NDE1	0.951	0.960	0.990	0.967	0.885	USP18:CRLF3	0.933	1.000	0.962	0.937	0.831
OASL:SOS2	0.950	0.956	0.981	0.959	0.905	OASL:GPBP1L1	0.933	0.877	0.990	0.964	0.899
OASL:PACSIN2	0.950	0.980	0.947	0.963	0.908	OASL:NRBF2	0.932	0.972	0.947	0.930	0.880
OASL:CLK4	0.950	0.948	0.957	0.971	0.922	EIF2AK2:ZNF274	0.932	1.000	0.957	0.970	0.802
OASL:CD97	0.950	0.976	1.000	0.970	0.852	OASL:SSFA2	0.932	0.929	0.990	0.934	0.875
OASL:PI3D	0.950	0.988	0.962	0.972	0.876	OASL:PPP1R11	0.932	0.869	1.000	0.957	0.902
TAP1:TGFBR2	0.950	1.000	0.986	0.944	0.868	OASL:RXRA	0.932	0.960	0.962	0.954	0.852
OASL:MARCH8	0.949	1.000	0.947	0.945	0.905	OAS2:LEF1	0.932	0.988	0.986	0.885	0.869
EIF2AK2:CYLD	0.949	1.000	0.990	0.959	0.846	OASL:APLP2	0.932	0.929	1.000	0.969	0.829
OASL:TLE3	0.949	0.964	0.967	0.971	0.892	OASL:TYROBP	0.932	0.964	0.976	0.962	0.825
C19orf66:IL16	0.949	0.992	0.986	0.973	0.843	OASL:SERINC3	0.932	0.893	0.990	0.959	0.885
OASL:ZNF274	0.949	0.940	0.976	0.969	0.909	LAP3:CNPY3	0.932	1.000	0.995	0.974	0.758
OASL:PCF11	0.948	0.913	0.990	0.956	0.934	LAP3:ABLM1	0.932	0.996	0.947	0.967	0.817
OASL:CHST11	0.948	0.925	1.000	0.958	0.910	OASL:TGFBI	0.932	0.944	0.967	0.949	0.867
OASL:SORL1	0.948	0.988	0.981	0.962	0.860	OASL:USP15	0.932	0.937	0.990	0.964	0.836
OASL:BAZ2B	0.948	0.996	0.962	0.962	0.871	USP18:SSBP2	0.932	1.000	0.962	0.942	0.823
OASL:CRLF3	0.948	0.921	0.971	0.959	0.939	ZBP1:ZFC3H1	0.932	0.984	0.976	0.923	0.844
OASL:UBXN2B	0.948	0.968	0.976	0.956	0.890	EIF2AK2:IL16	0.932	0.992	0.933	0.978	0.823

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:TFE3	0.947	0.944	1.000	0.959	0.886	OASL:MORC3	0.932	0.933	0.976	0.934	0.883
ISG15:ABLM1	0.947	1.000	0.986	0.956	0.846	IFI6:PCF11	0.932	1.000	1.000	0.927	0.799
OASL:CTBP2	0.947	0.960	0.995	0.969	0.864	ZBP1:NDE1	0.932	0.980	0.990	0.954	0.802
USP18:RPL22	0.947	1.000	1.000	0.928	0.860	OASL:DOCK9	0.932	0.909	0.943	0.951	0.923
OASL:RAB4B	0.947	0.937	1.000	0.964	0.887	OASL:GOLGA7	0.932	0.909	0.986	0.956	0.875
OASL:SYPL1	0.947	0.944	0.957	0.961	0.925	DHX58:LTB	0.932	0.976	0.986	0.939	0.825
OASL:RTN3	0.947	0.964	1.000	0.963	0.859	USP18:PDCD6IP	0.932	1.000	0.971	0.960	0.795
OASL:CCNG2	0.946	0.968	0.957	0.959	0.901	EIF2AK2:BTG1	0.932	0.992	0.962	0.969	0.803
OASL:RNFI9B	0.946	1.000	0.990	0.944	0.850	USP18:BTG1	0.932	1.000	0.971	0.962	0.793
OASL:NCOA1	0.946	0.984	0.976	0.970	0.854	ZBP1:XPO6	0.932	0.992	0.962	0.943	0.829
OASL:PITPNA	0.946	0.913	1.000	0.967	0.903	OASL:MBP	0.931	0.984	0.990	0.949	0.802
OASL:RNASET2	0.946	0.976	0.995	0.929	0.882	IFI44:IL6ST	0.931	0.944	1.000	0.921	0.860
OASL:PRMT2	0.946	0.940	0.995	0.971	0.876	OASL:RAB31	0.931	0.980	0.962	0.965	0.818
OASL:MAST3	0.946	0.980	0.995	0.976	0.831	OASL:FBNP1	0.931	0.897	0.981	0.967	0.880
OASL:FAM65B	0.946	0.976	0.943	0.974	0.889	OASL:RBMS1	0.931	0.937	0.967	0.952	0.869
OASL:LAT2	0.946	0.972	0.976	0.959	0.875	OASL:INP5D	0.931	0.889	0.967	0.968	0.901
OASL:SERTAD2	0.945	0.976	0.990	0.957	0.858	OASL:TRIOBP	0.931	0.929	0.981	0.962	0.853
OASL:POLD4	0.945	0.913	1.000	0.948	0.920	ISG15:LDLRAP1	0.931	0.968	0.981	0.951	0.825
OASL:ABAT	0.945	0.956	0.962	0.958	0.905	USP18:LTB	0.931	1.000	0.967	0.934	0.823
OASL:HHX	0.945	0.984	0.976	0.941	0.880	USP18:CAMK1D	0.931	1.000	0.957	0.926	0.841
OASL:IL13RA1	0.945	1.000	0.990	0.965	0.825	OASL:MARK3	0.931	0.933	0.981	0.956	0.854
OASL:FYB	0.945	0.948	0.967	0.958	0.907	DDX60:ABLM1	0.931	0.968	0.990	0.928	0.838
OASL:NUMB	0.945	0.960	0.981	0.972	0.867	USP18:CRTC3	0.931	1.000	0.962	0.958	0.804
OASL:HIP1	0.945	0.913	0.995	0.970	0.901	OASL:MAP3K11	0.931	0.869	0.990	0.969	0.896
OASL:RALB	0.945	0.972	0.990	0.948	0.869	EIF2AK2:PCF11	0.931	0.988	0.952	0.958	0.826
OASL:ZDHHC18	0.945	0.996	0.990	0.967	0.826	OASL:POLB	0.931	0.917	0.967	0.938	0.901
OASL:FAM134A	0.945	0.976	0.995	0.956	0.852	OASL:SEC62	0.931	0.877	0.967	0.959	0.920
OASL:TNIP1	0.945	0.972	0.995	0.961	0.850	OASL:CSNK1D	0.931	0.937	0.990	0.967	0.829
OASL:RBM23	0.945	0.909	0.990	0.963	0.916	USP18:NOSIP	0.931	1.000	0.962	0.930	0.831
OASL:USP10	0.945	0.972	0.976	0.960	0.870	OASL:CHMP1B	0.931	0.972	1.000	0.957	0.794
OASL:FOXO3	0.944	0.976	1.000	0.964	0.837	IFI6:ABLM1	0.931	1.000	0.952	0.931	0.839
OASL:STAT5A	0.944	0.956	0.981	0.961	0.879	OASL:STX3	0.931	0.996	0.900	0.966	0.860
OASL:SH2B3	0.944	0.948	0.981	0.959	0.888	OASL:MARCH7	0.931	0.893	0.986	0.941	0.902
OASL:ITSN2	0.944	0.909	0.995	0.959	0.913	OASL:ZFAND5	0.931	0.897	0.986	0.961	0.878
OASL:RAB7A	0.944	0.940	0.990	0.959	0.887	OASL:OSBPL11	0.931	0.937	0.971	0.964	0.850
OASL:MYC	0.944	0.905	0.986	0.950	0.934	OASL:ZNF292	0.931	0.925	0.971	0.933	0.893
OASL:HCK	0.944	0.996	0.981	0.962	0.836	OASL:LYN	0.930	0.964	0.990	0.941	0.826
OASL:STX6	0.944	0.933	0.971	0.961	0.910	OASL:ZMIZ1	0.930	0.897	0.990	0.956	0.878
OASL:FCGRT	0.944	1.000	0.986	0.965	0.824	OASL:FES	0.930	0.897	1.000	0.955	0.869
OASL:TIAM1	0.944	0.944	0.990	0.958	0.882	OASL:RASSF2	0.930	0.980	0.981	0.954	0.805
OASL:STK38L	0.944	0.925	0.990	0.946	0.913	OASL:ST3GAL1	0.930	0.889	0.990	0.959	0.882

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:ZDHC17	0.944	0.948	0.986	0.955	0.885	OASL:CASP8	0.930	0.956	0.986	0.936	0.842
OASL:PLEKHO1	0.944	0.964	0.976	0.959	0.875	OASL:TRIM8	0.930	0.917	0.990	0.967	0.846
OASL:CST3	0.943	0.940	0.995	0.957	0.881	ZBP1:KLF7	0.930	0.992	0.971	0.950	0.807
OASL:BRD1	0.943	0.937	0.986	0.967	0.882	STAT1:FBXO11	0.930	1.000	0.957	0.951	0.812
OASL:CCNT2	0.943	0.913	0.976	0.942	0.941	OASL:PPP2R5A	0.930	0.901	0.981	0.944	0.893
DHX58:ABLM1	0.943	0.980	0.995	0.942	0.854	OASL:WDR47	0.930	0.937	0.967	0.951	0.864
OASL:OSBPL2	0.943	0.921	0.990	0.971	0.889	USP18:BEX4	0.930	1.000	0.976	0.927	0.816
OASL:TM6IM1	0.943	0.940	0.995	0.965	0.871	OASL:PHF20	0.930	0.929	0.919	0.971	0.899
HERC6:MYC	0.943	0.976	0.995	0.916	0.884	USP18:PIK3IP1	0.930	1.000	0.957	0.956	0.805
OASL:SNR	0.943	0.992	0.995	0.966	0.817	OASL:MAP1LC3B	0.930	0.937	0.976	0.961	0.844
OASL:CASC3	0.943	0.964	0.938	0.968	0.900	STAT1:PCBP2	0.930	1.000	0.990	0.947	0.781
OASL:HPCAL1	0.943	0.933	1.000	0.962	0.875	USP18:ALDH3A2	0.930	0.937	0.976	0.941	0.864
OASL:R3HDM2	0.943	0.940	0.995	0.951	0.884	LAP3:JAK1	0.930	0.996	0.990	0.977	0.755
OASL:APBB1IP	0.943	0.940	0.981	0.956	0.893	DDX60:TGFBR2	0.929	0.980	0.990	0.936	0.811
OASL:SEMA4D	0.942	0.956	0.919	0.972	0.922	OASL:ZNF148	0.929	0.921	0.971	0.959	0.866
OASL:ACVR1B	0.942	0.897	0.986	0.971	0.915	XAF1:LEF1	0.929	0.956	0.967	0.911	0.883
OASL:FLOT2	0.942	0.960	0.995	0.950	0.864	OASL:PRKAA1	0.929	0.913	0.990	0.956	0.858
OASL:BRD4	0.942	0.937	0.990	0.952	0.890	OASL:IL1RAP	0.929	1.000	0.880	0.964	0.873
USP18:UTP14A	0.942	0.980	0.957	0.949	0.883	USP18:DGKA	0.929	1.000	0.952	0.952	0.813
OASL:RAF1	0.942	0.940	0.976	0.962	0.890	OAS2:ABLM1	0.929	0.992	0.990	0.933	0.801
USP18:NFKB1	0.942	1.000	0.947	0.951	0.870	IFIH1:TGFBR2	0.929	0.996	0.967	0.971	0.782
OASL:CD37	0.942	0.933	0.976	0.948	0.911	DHX58:IL16	0.929	0.972	0.995	0.954	0.795
OASL:VPS8	0.942	0.933	0.962	0.959	0.914	OASL:N4BP1	0.929	0.952	0.938	0.960	0.866
OASL:FBXO11	0.942	0.948	0.976	0.954	0.890	OASL:LAPTM5	0.929	0.889	0.995	0.956	0.876
OASL:GMIP	0.942	0.933	0.981	0.970	0.884	OASL:SOAT1	0.929	0.921	0.952	0.947	0.896
OASL:PLEKHO2	0.942	0.996	0.957	0.968	0.847	OASL:IL10RB	0.929	0.877	0.981	0.959	0.898
OASL:SH2D3C	0.942	0.948	0.923	0.955	0.942	OASL:PTAFR	0.929	0.996	0.995	0.959	0.765
OASL:RPS6KA1	0.942	0.948	0.990	0.964	0.865	OASL:KBTBD2	0.929	0.933	0.976	0.956	0.850
OASL:ARHGEF2	0.942	0.913	0.986	0.956	0.912	OASL:ARRB2	0.929	0.996	0.990	0.942	0.787
OASL:ARAP1	0.942	0.952	1.000	0.962	0.853	OASL:CAP1	0.929	0.857	0.990	0.961	0.907
OASL:PPM1F	0.942	0.980	0.995	0.966	0.825	OASL:MEF2A	0.929	0.857	0.986	0.962	0.910
USP18:ABLM1	0.942	1.000	0.962	0.951	0.853	OASL:TNK2	0.929	0.897	0.986	0.964	0.868
OASL:RERE	0.942	0.956	0.971	0.968	0.871	OASL:PSTPIP1	0.929	0.913	0.990	0.967	0.845
OASL:ATAD2B	0.942	0.929	0.986	0.945	0.906	OASL:MAX	0.929	0.944	0.995	0.934	0.841
IFI44:MYC	0.941	0.968	0.995	0.910	0.892	IFI44:LTB	0.929	0.980	0.995	0.929	0.810
OASL:LCP2	0.941	0.964	0.981	0.966	0.854	OASL:IGSF6	0.929	0.992	0.986	0.949	0.787
OASL:GNA12	0.941	0.913	0.995	0.949	0.908	OASL:DGCR2	0.929	0.905	0.981	0.964	0.864
OASL:SMAD4	0.941	0.901	0.986	0.949	0.929	LAP3:NDP1	0.929	0.996	0.981	0.971	0.766
OASL:DGKA	0.941	0.929	0.962	0.958	0.915	OASL:AIF1	0.929	0.968	0.957	0.952	0.837
OASL:UBN1	0.941	0.944	0.986	0.957	0.877	OASL:ZNF143	0.929	0.897	0.967	0.957	0.893
OASL:CBX7	0.941	0.968	0.986	0.966	0.844	OAS2:FAIM3	0.928	0.948	0.995	0.943	0.827

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:YPEL5	0.941	0.952	1.000	0.949	0.863	OASL:USP4	0.928	0.905	0.976	0.966	0.866
USP18:IL6ST	0.941	1.000	0.981	0.911	0.872	OASL:CEP170	0.928	0.917	0.957	0.952	0.887
USP18:CCR7	0.941	0.992	0.947	0.942	0.882	OASL:PECAM1	0.928	0.929	0.995	0.971	0.818
OASL:ICAM3	0.941	0.956	1.000	0.966	0.841	OASL:PHF2	0.928	0.897	0.981	0.961	0.874
OASL:NFYA	0.941	0.905	0.990	0.959	0.909	EIF2AK2:IL4R	0.928	1.000	0.900	0.948	0.865
OASL:NAB1	0.941	0.921	0.990	0.959	0.893	OASL:GABARAP	0.928	0.897	0.995	0.957	0.864
OASL:PRKAG2	0.941	0.960	0.986	0.959	0.858	IFI44:IL4R	0.928	0.996	0.995	0.924	0.797
OASL:CSAD	0.941	0.968	0.981	0.948	0.866	TAP1:TGOLN2	0.928	0.996	0.986	0.957	0.773
USP18:SYPL1	0.941	1.000	0.957	0.938	0.868	OASL:LST1	0.928	0.992	0.990	0.964	0.766
OASL:SLCO3A1	0.941	0.988	0.990	0.972	0.812	OASL:GSK3B	0.928	0.905	0.986	0.964	0.857
OASL:ZYX	0.941	1.000	1.000	0.966	0.796	USP18:TGFBR2	0.928	1.000	0.957	0.956	0.799
OASL:PCBP2	0.941	0.909	0.995	0.956	0.902	OASL:PSAP	0.928	0.865	1.000	0.967	0.880
OASL:PTPRE	0.941	0.956	0.986	0.962	0.858	OASL:KLHL2	0.928	0.996	0.967	0.961	0.788
OASL:CSF2RB	0.941	0.984	0.914	0.958	0.906	LAP3:TRAK1	0.928	0.988	0.986	0.971	0.767
OASL:SNRK	0.941	0.940	0.990	0.967	0.865	OASL:MMP25	0.928	1.000	0.981	0.964	0.766
OASL:SIRPA	0.940	0.992	0.981	0.974	0.814	EIF2AK2:PDE3B	0.928	0.996	0.957	0.955	0.803
OASL:VAV3	0.940	0.960	0.995	0.967	0.839	CUL1:IL16	0.928	1.000	0.943	0.953	0.815
OASL:WDR37	0.940	0.933	0.981	0.959	0.887	OASL:POLR1D	0.928	0.905	0.971	0.935	0.900
OASL:SP3	0.940	0.901	0.995	0.946	0.918	USP18:ATM	0.928	1.000	0.967	0.949	0.795
OASL:MAPK1	0.940	0.948	0.986	0.965	0.861	OASL:NLRP1	0.928	0.980	0.923	0.969	0.838
OASL:RAB14	0.940	0.909	0.986	0.959	0.905	OASL:PPARD	0.928	0.869	0.976	0.960	0.905
USP18:ST13	0.940	1.000	0.986	0.942	0.831	IFI6:IL6ST	0.928	0.972	0.967	0.908	0.863
OASL:BCL2	0.940	0.913	0.990	0.957	0.899	IFIH1:CRLF3	0.928	0.921	0.957	0.957	0.875
OASL:MTMR3	0.940	0.976	0.990	0.968	0.824	IFI44:SESN1	0.928	0.996	0.976	0.936	0.802
OASL:PPP4R1	0.940	1.000	0.971	0.964	0.823	OASL:TREM1	0.928	1.000	0.995	0.955	0.760
OASL:MKLN1	0.940	0.937	0.986	0.959	0.876	OASL:NOD2	0.928	1.000	0.861	0.941	0.908
OASL:LYST	0.939	0.984	0.981	0.966	0.826	TAP1:TNRC6B	0.928	1.000	1.000	0.946	0.764
OASL:ITGB2	0.939	0.909	0.990	0.970	0.888	USP18:ATF7IP2	0.928	0.992	0.971	0.952	0.795
ISG15:LTB	0.939	1.000	0.976	0.952	0.829	USP18:ZNF274	0.927	1.000	0.952	0.960	0.797
IFI44:ABLM1	0.939	0.996	0.986	0.932	0.842	USP18:INDFIP1	0.927	1.000	0.986	0.946	0.777
EIF2AK2:SYPL1	0.939	0.992	0.962	0.950	0.852	RTP4:SYPL1	0.927	1.000	0.885	0.944	0.880
OASL:NCOA4	0.939	0.956	0.967	0.954	0.879	EIF2AK2:SATB1	0.927	0.996	0.947	0.962	0.803
OASL:FGR	0.939	0.976	0.957	0.957	0.866	OASL:ACAA1	0.927	0.837	1.000	0.962	0.909
OASL:PHF20L1	0.939	0.929	0.947	0.961	0.919	ISG15:SESN1	0.927	1.000	0.962	0.950	0.796
OASL:ABI1	0.939	0.893	0.990	0.956	0.916	OASL:UBQLN2	0.927	0.893	0.962	0.950	0.903
OASL:STAM2	0.939	0.940	0.957	0.950	0.908	OASL:SETD2	0.927	0.857	0.976	0.971	0.904
OASL:PHC2	0.939	0.996	0.990	0.972	0.796	OASL:RYBP	0.927	0.889	0.990	0.967	0.861
OASL:TLE4	0.939	0.913	0.957	0.973	0.911	UBE2L6:IL16	0.927	1.000	0.904	0.970	0.833
PARP12:ABLM1	0.939	0.960	0.990	0.945	0.859	MX1:LEF1	0.927	0.976	0.967	0.913	0.851
OASL:TMEM127	0.938	0.921	0.995	0.975	0.862	USP18:IL27RA	0.927	1.000	0.952	0.956	0.799
OASL:OGFRL1	0.938	1.000	0.995	0.968	0.790	OASL:ARHGAP15	0.927	0.873	0.986	0.943	0.905

Derived Biomarkers # 1-237	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes	Derived Biomarkers # 238-473	Mean	GSE 51808 dengue	GSE 41752 lassa	GSE 52428 flu	GSE 40366 herpes
OASL:CREB1	0.938	0.968	0.947	0.959	0.878	USP18:SESN1	0.927	1.000	0.952	0.946	0.809
OASL:ST13	0.938	0.905	0.967	0.952	0.928	RSAD2:CAMK1D	0.927	0.929	1.000	0.935	0.843
OASL:ARRB1	0.938	0.940	0.995	0.964	0.853	XAF1:IL4R	0.927	0.992	0.986	0.927	0.801
OASL:TSC22D3	0.938	0.996	0.990	0.974	0.792	USP18:METTL3	0.927	1.000	0.947	0.958	0.801
OASL:RIN3	0.938	0.925	0.967	0.972	0.888	OASL:MAP3K5	0.927	0.925	0.995	0.972	0.814
OASL:CREBBP	0.938	0.937	0.986	0.969	0.859	OASL:ZXDC	0.927	0.865	0.971	0.971	0.899
OASL:MAP3K3	0.938	0.956	0.990	0.963	0.842	OASL:HPS1	0.927	0.921	0.995	0.942	0.848
OASL:GCC2	0.938	0.893	0.995	0.952	0.911	OASL:GRB2	0.927	0.881	0.995	0.961	0.869
OASL:NSUN3	0.938	0.901	0.976	0.963	0.911	USP18:DPF2	0.927	1.000	0.957	0.962	0.787
OASL:STX10	0.938	0.940	0.976	0.959	0.875	OASL:EMR2	0.926	1.000	0.928	0.970	0.807
OASL:IKKB	0.938	0.929	0.971	0.962	0.888	IFI6:MYC	0.926	0.988	0.923	0.911	0.882
OASL:ASAP1	0.938	0.988	0.971	0.958	0.833	OASL:GPS2	0.926	0.833	0.990	0.956	0.925
OASL:RNF130	0.938	0.992	0.990	0.959	0.809	USP18:SAFB2	0.926	1.000	0.971	0.965	0.768
OASL:FBXO9	0.938	0.972	0.947	0.932	0.899	OASL:HAL	0.926	1.000	0.914	0.959	0.830
OASL:TM2D3	0.938	0.921	0.990	0.948	0.891	USP18:DIDO1	0.926	1.000	0.971	0.956	0.776
OASL:TNRC6B	0.937	0.893	0.976	0.966	0.914	ISG15:DGKA	0.926	1.000	0.957	0.951	0.795
OASL:PRUNE	0.937	0.901	0.990	0.963	0.895	HERC5:ABLM1	0.926	0.881	0.990	0.953	0.879
OASL:PTGER4	0.937	0.980	0.995	0.971	0.802	HERC6:ATM	0.926	0.980	0.990	0.946	0.787
OASL:PSEN1	0.937	0.913	0.990	0.952	0.893	OASL:CHD3	0.926	0.877	0.981	0.954	0.890
OASL:IL6R	0.937	0.929	0.981	0.956	0.882	OASL:MAPRE2	0.926	0.837	0.990	0.971	0.904
OASL:KIAA0513	0.937	0.937	0.976	0.974	0.861	USP18:ZC3HAV1	0.926	1.000	0.976	0.951	0.775
EIF2AK2:ZFC3H1	0.937	0.996	1.000	0.967	0.785	IFIH1:LTB	0.925	0.980	0.976	0.934	0.811
LAP3:MAP4K4	0.937	1.000	1.000	0.976	0.772	DDX60:SYPL1	0.925	0.937	0.990	0.911	0.863
OASL:AOAH	0.937	1.000	0.990	0.967	0.791	OASL:PAFAH1B1	0.925	0.873	0.981	0.961	0.886
OASL:RHOG	0.937	0.940	0.990	0.962	0.856	OASL:CCND3	0.925	0.849	1.000	0.971	0.881
IFI6:IL16	0.937	1.000	0.971	0.947	0.829	USP18:NECAP2	0.925	1.000	0.981	0.942	0.777
OASL:ARHGAP25	0.937	0.968	0.981	0.972	0.826	USP18:NCBP2	0.925	1.000	0.971	0.937	0.792
ISG15:IL4R	0.937	1.000	0.995	0.939	0.813	OASL:TYK2	0.925	0.905	0.981	0.962	0.852
OASL:MAPK14	0.937	0.885	0.990	0.967	0.904	OASL:PUM2	0.925	0.841	0.981	0.953	0.924
OASL:ZFYVE16	0.937	0.980	0.962	0.956	0.848	USP18:TMEM204	0.924	1.000	0.943	0.922	0.832
OASL:PPP3R1	0.936	0.933	0.995	0.934	0.883	IFI44:CYLD	0.924	1.000	0.995	0.929	0.772
OASL:NEK7	0.936	0.944	0.990	0.944	0.867	OASL:ERBB2IP	0.924	0.861	0.971	0.952	0.912
USP18:CIAPIN1	0.936	0.992	0.971	0.943	0.839	EIF2AK2:CAMK1D	0.924	1.000	0.933	0.922	0.841
OASL:NPL	0.936	0.996	0.986	0.966	0.797	OASL:YTHDF3	0.924	0.861	0.981	0.952	0.901
ZBP1:CYLD	0.936	0.984	0.962	0.902	0.897	OASL:ETS2	0.923	0.992	1.000	0.960	0.741
OASL:MOSPD2	0.936	0.984	0.947	0.951	0.862	RTP4:ABLM1	0.923	1.000	0.890	0.941	0.861
OASL:VEZF1	0.936	0.901	0.990	0.961	0.892						

TABLE 14

LIST OF BIOMARKER RATIOS WITH AN AUC GREATER THAN 0.8 IN THE MARS DATASET

Biomarker Ratio	AUC
IFIH1:LTB	0.863
OASL:TGFBI	0.859
DDX60:ABLIM1	0.850
IFI44:IL4R	0.843
OASL:NLRP1	0.842
DDX60:TGFBR2	0.836
OAS2:ABLIM1	0.833
IFI6:IL16	0.831
IFI44:LTB	0.829
OASL:TREM1	0.825
OASL:ZDHHC18	0.823
IFI44:ABLIM1	0.821
RSAD2:CAMK1D	0.820
USP18:BTG1	0.820
IFIH1:TGFBR2	0.818
OASL:CST3	0.817
PHF11:IL16	0.817
USP18:CRTC3	0.816
ISG15:LTB	0.815

Biomarker Ratio	AUC
USP18:IL16	0.815
OASL:SNN	0.815
HERC5:ABLIM1	0.815
OASL:UBN1	0.814
XAF1:IL4R	0.814
ISG15:IL16	0.811
IFI6:ABLIM1	0.809
ISG15:ABLIM1	0.808
IFIH1:CRLF3	0.807
ISG15:IL4R	0.805
OASL:TIAM1	0.805
OASL:TLE3	0.805
USP18:NOSIP	0.804
ISG15:NOSIP	0.804
UBE2L6:IL16	0.804
OASL:LPAR2	0.803
OASL:FCGRT	0.801
OASL:MAST3	0.800
ISG15:LDLRAP1	0.800

TABLE 15

KEY HUMAN VIRAL PATHOGENS (By Virus Name and Type) That are Known to Cause Systemic Inflammation Grouped Based on Major Clinical Signs. Underlined Virus Types are Those Demonstrably Detected Using the VIR Biomarker Signature

Clinical Signs	Virus Name	Virus Type
Respiratory	Respiratory Syncytial Virus Influenza A and B Adenovirus Parainfluenza virus 1, 2, 3 and 4 Human Coronavirus types 229e, OC43, HKU1, NL-63 Rhinovirus SARS Coronavirus Enterovirus BK virus Polyomavirus	<u>Paramyxovirus</u> <u>Orthomyxovirus</u> <u>Adenovirus</u> <u>Paramyxovirus</u> <u>Coronavir</u> Rhinovirus <u>Coronavir</u> <u>Picovirus</u> Polyomavirus
Respiratory / Gastrointestinal	Bocavirus Rotavirus	Parvovirus <u>Reovirus</u>
Fever / Rash / Aches / Generalised	Measles Hantavirus Cytomegalovirus Varicella Zoster Virus Herpes Simplex Virus Epstein Barr Virus Parechovirus Human immunodeficiency virus Hepatitis B virus HTLV1 and 2 Vaccinia virus West Nile Virus Coxsackie virus Parvovirus B19 Dengue	<u>Morbillivirus</u> Bunyavirus <u>Herpesvirus</u> <u>Herpesvirus</u> <u>Herpesvirus</u> <u>Herpesvirus</u> Picornavirus Lentivirus <u>Orthohepadnavirus</u> Retrovirus Poxvirus Flavivirus Picornavirus Parvovirus <u>Flavivirus</u>
Few Clinical Signs	TTV (torque teno virus) Hepatitis C virus	Anellovirus <u>Flavivirus</u>

TABLE 16

COMMON HUMAN VIRUSES THAT CAUSE SIRS AND A VIREMIA AS PART OF THEIR PATHOGENESIS AND AN ASSOCIATED REFERENCE

Virus	Reference
Measles	de Vries RD, Mesman AW, Geijtenbeek TBH, Duprex WP, de Swart RL (2012) The pathogenesis of measles. <i>Curr Opin Virol</i> 2: 248–255.
Respiratory Syncytial Virus (RSV)	Rohwedder A, Keminer O, Forster J, Schneider K, Schneider E, et al. (1998) Detection of respiratory syncytial virus RNA in blood of neonates by polymerase chain reaction. <i>J Med Virol</i> 54: 320–327.
Influenza A and B	Wootton SH, Aguilera EA, Wanger A, Jewell A, Patel K, et al. (2014) Detection of NH1N1 influenza virus in nonrespiratory sites among children. <i>Pediatr Infect Dis J</i> 33: 95–96.
Hepatitis B virus Hepatitis C virus Human immunodeficiency virus 1 and 2 HTLV1 and 2 Vaccinia virus West Nile Virus	Pripuzova N, Wang R, Tsai S, Li B, Hung G-C, et al. (2012) Development of Real-Time PCR Array for Simultaneous Detection of Eight Human Blood-Borne Viral Pathogens. <i>PLoS ONE</i> 7: e43246.
Cytomegalovirus Varicella Zoster Virus Herpes Simplex Virus Epstein Barr Virus	Johnson G, Nelson S, Petric M, Tellier R (2000) Comprehensive PCR-based assay for detection and species identification of human herpesviruses. <i>Journal of Clinical Microbiology</i> 38: 3274–3279.
Rhinovirus	Xatzipsalti M, Kyrana S, Tsolia M, Psarras S, Bossios A, et al. (2005) Rhinovirus viremia in children with respiratory infections. <i>American Journal of Respiratory and Critical Care Medicine</i> 172: 1037–1040.
Adenovirus Bocavirus Human Coronavirus types 229e, OC43, HKU1, NL-63 SARS coronavirus	Dunn JJ, Miller MB (2014) Emerging respiratory viruses other than influenza. <i>Clin Lab Med</i> 34: 409–430.
Hantavirus	Evander M, Eriksson I, Pettersson L, Juto P, Ahlm C, et al. (2007) Puumala Hantavirus Viremia Diagnosed by Real-Time Reverse Transcriptase PCR Using Samples from Patients with Hemorrhagic Fever and Renal Syndrome. <i>Journal of Clinical Microbiology</i> 45: 2491–2497.
Enterovirus	Cheng H-Y, Huang Y-C, Yen T-Y, Hsia S-H, Hsieh Y-C, et al. (2014) The correlation between the presence of viremia and clinical severity in patients with enterovirus 71 infection: a multi-center cohort study. <i>BMC Infect Dis</i> 14: 417.
Parechovirus	Abad Y, Boivin G (2006) Human parechovirus infections in Canada. <i>Emerging Infectious Diseases</i> 12: 969.
BK virus	Erard V, Storer B, Corey L, Nollkamper J, Huang M-L, et al. (2004) BK virus infection in hematopoietic stem cell transplant

Virus	Reference
Parainfluenza virus 1, 2, 3 and 4	recipients: frequency, risk factors, and association with postengraftment hemorrhagic cystitis. Clin Infect Dis 39: 1861–1865. Gerkowicz T, Szajner-Milart I, Szczygielska J, Blaszyńska M, Karska M, <i>et al.</i> (1979) [Clinical manifestations of viremia during infections caused by adenoviruses and parainfluenza viruses]. Pediatr Pol 54: 41–45.
SARS coronavirus	Wang WK, Fang CT, Chen HL, Yang CF, Chen YC, <i>et al.</i> (2005) Detection of Severe Acute Respiratory Syndrome Coronavirus RNA in Plasma during the Course of Infection. Journal of Clinical Microbiology 43: 962–965.
TTV (torque teno virus)	Walton AH, Muenzer JT, Rasche D, Boomer JS, Sato B, <i>et al.</i> (2014) Reactivation of multiple viruses in patients with sepsis. PLoS ONE 9: e98819.
Coxsackie virus	Clem AL, Sims J, Telang S, Eaton JW, Chesney J (2007) Virus detection and identification using random multiplex (RT)-PCR with 3'-locked random primers. Virol J 4: 65.
Parvovirus B19	Juhl D, Steppat D, Görg S, Hennig H (2014) Parvovirus B19 Infections and Blood Counts in Blood Donors. Transfus Med Hemother 41: 6–6.
Dengue	La Cruz Hernandez De SI, Flores-Aguilar H, Gonzalez-Mateos S, Lopez-Martinez I, Ortiz-Navarrete V, <i>et al.</i> (2013) Viral load in patients infected with dengue is modulated by the presence of anti-dengue IgM antibodies. J Clin Virol 58: 258–261.

TABLE 17

COMMON HUMAN VIRUSES THAT CAUSE SIRS AND A VIREMIA AS PART OF THEIR PATHOGENESIS AND FOR WHICH THERE ARE SPECIFIC ANTI-VIRAL TREATMENTS

Virus	Reference
Influenza A and B	Wootton SH, Aguilera EA, Wanger A, Jewell A, Patel K, et al. (2014) Detection of NH1N1 influenza virus in nonrespiratory sites among children. <i>Pediatr Infect Dis J</i> 33: 95–96.
Hepatitis B virus Hepatitis C virus Human immunodeficiency virus 1 and 2	Pripuzova N, Wang R, Tsai S, Li B, Hung G-C, et al. (2012) Development of Real-Time PCR Array for Simultaneous Detection of Eight Human Blood-Borne Viral Pathogens. <i>PLoS ONE</i> 7: e43246.
Cytomegalovirus Varicella Zoster Virus Herpes Simplex Virus Epstein Barr Virus	Johnson G, Nelson S, Petric M, Tellier R (2000) Comprehensive PCR-based assay for detection and species identification of human herpesviruses. <i>Journal of Clinical Microbiology</i> 38: 3274–3279.

TABLE 18

COMMON AND LESS COMMON VIRUSES ASSOCIATED WITH PNEUMONIA IN ADULTS AND CHILDREN

Common	Less Common (or in specific hosts or settings)
Respiratory Syncytial Virus (RSV) Influenza A and B Human Metapneumovirus Adenovirus Parainfluenza virus 1, 2, 3 and 4 Human Coronavirus types 229e, OC43, HKU1, NL-63 Rhinovirus Bocavirus	Measles Cytomegalovirus Varicella Zoster Virus Herpes Simplex Virus Epstein Barr Virus Hantavirus Enterovirus Parechovirus SARS Coronavirus

TABLE 19

SEQUENCE ID NUMBERS, BIOMARKER GENE SYMBOLS AND ENSEMBL TRANSCRIPT IDS

SEQ ID	Gene Symbol	Ensembl Transcript ID	SEQ ID	Gene Symbol	Ensembl Transcript ID	SEQ ID	Gene Symbol	Ensembl Transcript ID
1	ABAT	ENST00000396600	34	BTG1	ENST00000256015	67	CSNK1D	ENST00000314028
2	ABHD2	ENST00000565973	35	C19orf66	ENST00000253110	68	CST3	ENST00000376925
3	ABI1	ENST00000376142	36	C2orf68	ENST00000306336	69	CTBP2	ENST00000337195
4	ABLIM1	ENST00000277895	37	CAMK1D	ENST00000378845	70	CTDSP2	ENST00000398073
5	ACAA1	ENST00000333167	38	CAMK2G	ENST00000351293	71	CUL1	ENST00000325222
6	ACAP2	ENST000003326793	39	CAP1	ENST00000372797	72	CYLD	ENST00000311559
7	ACVR1B	ENST00000257963	40	CASC3	ENST00000264645	73	CYTH4	ENST00000248901
8	AIF1	ENST00000413349	41	CASP8	ENST00000264275	74	DCP2	ENST00000389063
9	ALDH3A2	ENST00000579855	42	CBX7	ENST00000216133	75	DDX60	ENST00000393743
10	ANKRD49	ENST00000544612	43	CCND3	ENST00000372991	76	DGCR2	ENST00000263196
11	AOAH	ENST00000617537	44	CCNG2	ENST00000316355	77	DGKA	ENST00000331886
12	APBB1IP	ENST00000376236	45	CCNT2	ENST00000295238	78	DHX58	ENST00000251642
13	APLP2	ENST00000263574	46	CCR7	ENST00000246657	79	DIDO1	ENST00000370371
14	ARAP1	ENST00000334211	47	CD37	ENST00000323906	80	DOCK9	ENST00000376460
15	ARHGAP15	ENST00000295095	48	CD93	ENST00000246006	81	DOK3	ENST00000357198
16	ARHGAP25	ENST00000409030	49	CD97	ENST00000358600	82	DPEP2	ENST00000393847
17	ARHGAP26	ENST00000274498	50	CDIPT	ENST00000219789	83	DPF2	ENST00000528416
18	ARHGEF2	ENST00000313695	51	CEP170	ENST00000612450	84	EIF2AK2	ENST00000395127
19	ARRB1	ENST00000420843	52	CEP68	ENST00000377990	85	EIF3H	ENST00000521861
20	ARRB2	ENST00000269260	53	CHD3	ENST00000358181	86	EMR2	ENST00000315576
21	ASAP1	ENST00000518721	54	CHMP1B	ENST00000526991	87	ERBB2IP	ENST00000380943
22	ATAD2B	ENST00000238789	55	CHMP7	ENST00000397677	88	ETS2	ENST00000360938
23	ATF7IP2	ENST00000396560	56	CHST11	ENST00000303694	89	FAIM3	ENST00000367091
24	ATM	ENST00000278616	57	CIAPIN1	ENST00000394391	90	FAM134A	ENST00000430297
25	ATP6V1B2	ENST00000276390	58	CLEC4A	ENST00000229332	91	FAM65B	ENST00000259698
26	BACH1	ENST00000286800	59	CLK4	ENST00000316308	92	FBXO11	ENST00000402508
27	BANP	ENST00000355022	60	CNPY3	ENST00000372836	93	FBXO9	ENST00000244426
28	BAZ2B	ENST00000392783	61	CREB1	ENST00000353267	94	FCGRT	ENST00000426395
29	BCL2	ENST00000398117	62	CREBBP	ENST00000262367	95	FES	ENST00000328850
30	BEX4	ENST00000372695	63	CRLF3	ENST00000324238	96	FGR	ENST00000374005
31	BMP2K	ENST00000502871	64	CRTC3	ENST00000268184	97	FLOT2	ENST00000394908
32	BRD1	ENST00000216267	65	CSAD	ENST00000267085	98	FNBP1	ENST00000446176
33	BRD4	ENST00000371835	66	CSF2RB	ENST00000403662	99	FOXJ2	ENST00000162391

SEQ ID	Gene Symbol	Ensembl Transcript ID
174	MAML1	ENST00000292599
175	MANSC1	ENST00000535902
176	MAP1LC3B	ENST00000268607
177	MAP3K11	ENST00000309100
178	MAP3K3	ENST00000361733
179	MAP3K5	ENST00000359015
180	MAP4K4	ENST00000350198
181	MAPK1	ENST00000215832
182	MAPK14	ENST00000229795
183	MAPRE2	ENST00000300249
184	MARCH7	ENST00000259050
185	MARCH8	ENST00000319836
186	MARK3	ENST00000303622
187	MAST3	ENST00000262811
188	MAX	ENST00000358664
189	MBP	ENST00000359645
190	MCTP2	ENST00000357742
191	MED13	ENST00000397786
192	MEF2A	ENST00000354410
193	METTL3	ENST00000298717
194	MKLN1	ENST00000352689
195	MKRN1	ENST00000255977
196	MMP25	ENST00000336577
197	MORC3	ENST00000400485
198	MOSPD2	ENST00000380492
199	MPPE1	ENST00000588072
200	MSL1	ENST00000579565
201	MTMR3	ENST00000401950
202	MX1	ENST00000398598
203	MXI1	ENST00000239007
204	MYC	ENST00000613283
205	N4BP1	ENST00000262384
206	NAB1	ENST00000337386
207	NACA	ENST00000356769
208	NCBP2	ENST00000321256
209	NCOA1	ENST00000348332
210	NCOA4	ENST00000585132

SEQ ID	Gene Symbol	Ensembl Transcript ID
137	IL4R	ENST00000395762
138	IL6R	ENST00000368485
139	IL6ST	ENST00000381298
140	INPP5D	ENST00000359570
141	IQSEC1	ENST00000273221
142	ISG15	ENST00000379389
143	ITGAX	ENST00000268296
144	ITGB2	ENST00000302347
145	ITPKB	ENST00000429204
146	ITSN2	ENST00000355123
147	JAK1	ENST00000342505
148	KBTBD2	ENST00000304056
149	KIAA0232	ENST00000307659
150	KIAA0247	ENST00000342745
151	KIAA0513	ENST00000258180
152	KLF3	ENST00000261438
153	KLF6	ENST00000497571
154	KLF7	ENST00000309446
155	KLHL2	ENST00000226725
156	LAP3	ENST00000618908
157	LAPTM5	ENST00000294507
158	LAT2	ENST00000344995
159	LCP2	ENST00000046794
160	LDLRAP1	ENST00000374338
161	LEF1	ENST00000265165
162	LILRA2	ENST00000251376
163	LILRB3	ENST00000617251
164	LIMK2	ENST00000331728
165	LPAR2	ENST00000407877
166	LPIN2	ENST00000261596
167	LRMP	ENST00000354454
168	LRP10	ENST00000359591
169	LST1	ENST00000376093
170	LTB	ENST00000429299
171	LYL1	ENST00000264824
172	LYN	ENST00000519728
173	LYST	ENST00000389793

SEQ ID	Gene Symbol	Ensembl Transcript ID
100	FOXO1	ENST00000379561
101	FOXO3	ENST00000406360
102	FRY	ENST00000542859
103	FYB	ENST00000505428
104	GABARAP	ENST00000302386
105	GCC2	ENST00000309863
106	GMIP	ENST00000203556
107	GNA12	ENST00000275364
108	GNAQ	ENST00000286548
109	GOLGA7	ENST00000520817
110	GPBP1L1	ENST00000355105
111	GPR97	ENST00000333493
112	GPS2	ENST00000389167
113	GPSM3	ENST00000383269
114	GRB2	ENST00000316804
115	GSK3B	ENST00000316626
116	GYPC	ENST00000259254
117	HAL	ENST00000261208
118	HCK	ENST00000534862
119	HERC5	ENST00000264350
120	HERC6	ENST00000264346
121	HGSNAT	ENST00000379644
122	HHEX	ENST00000282728
123	HIP1	ENST00000336926
124	HPCAL1	ENST00000307845
125	HPS1	ENST00000325103
126	ICAM3	ENST00000160262
127	IFI44	ENST00000370747
128	IFI6	ENST00000361157
129	IFIH1	ENST00000263642
130	IGSF6	ENST00000268389
131	IKKB	ENST00000520810
132	IL10RB	ENST00000290200
133	IL13RA1	ENST00000371666
134	IL16	ENST00000394652
135	IL1RAP	ENST00000447382
136	IL27RA	ENST00000263379

SEQ ID	Gene Symbol	Ensembl Transcript ID
285	RAB4B	ENST00000357052
286	RAB7A	ENST00000265062
287	RAF1	ENST00000251849
288	RALB	ENST00000272519
289	RARA	ENST00000254066
290	RASSF2	ENST00000379400
291	RBM23	ENST00000399922
292	RBMS1	ENST00000348849
293	RC3H2	ENST00000423239
294	REER	ENST00000337907
295	RGS14	ENST00000408923
296	RGS19	ENST00000395042
297	RHOG	ENST00000351018
298	RIN3	ENST00000216487
299	RNASET2	ENST00000508775
300	RNF130	ENST00000521389
301	RNF141	ENST00000265981
302	RNF146	ENST00000608991
303	RNF19B	ENST00000373456
304	RPL10A	ENST00000322203
305	RPL22	ENST00000234875
306	RPS6KA1	ENST00000374168
307	RPS6KA3	ENST00000379565
308	RSAD2	ENST00000382040
309	RTN3	ENST00000537981
310	RTP4	ENST00000259030
311	RXRA	ENST00000481739
312	RYBP	ENST00000477973
313	SAFB2	ENST00000252542
314	SATB1	ENST00000338745
315	SEC62	ENST00000337002
316	SEMA4D	ENST00000438547
317	SERINC3	ENST00000342374
318	SERINC5	ENST00000509193
319	SERTAD2	ENST00000313349
320	SESN1	ENST00000436639
321	SETD2	ENST00000409792

SEQ ID	Gene Symbol	Ensembl Transcript ID
248	PHF3	ENST00000393387
249	PIAS1	ENST00000249636
250	PIK3IP1	ENST00000215912
251	PINK1	ENST00000321556
252	PISD	ENST00000266095
253	PITPNA	ENST00000313486
254	PLEKHO1	ENST00000369124
255	PLEKHO2	ENST00000323544
256	PLXNC1	ENST00000258526
257	POLB	ENST00000265421
258	POLD4	ENST00000312419
259	POLR1D	ENST00000302979
260	PPARD	ENST00000360694
261	PPM1F	ENST00000263212
262	PPP1R11	ENST00000448378
263	PPP1R2	ENST00000618156
264	PPP2R5A	ENST00000261461
265	PPP3R1	ENST00000234310
266	PPP4R1	ENST00000400555
267	PRKAA1	ENST00000397128
268	PRKAG2	ENST00000287878
269	PRKCD	ENST00000330452
270	PRMT2	ENST00000397638
271	PRUNE	ENST00000271620
272	PSAP	ENST00000394936
273	PSEN1	ENST00000324501
274	PSTPIP1	ENST00000558012
275	PTAFR	ENST00000373857
276	PTEN	ENST00000371953
277	PTGER4	ENST00000302472
278	PTPN6	ENST00000318974
279	PTPRE	ENST00000254667
280	PUM2	ENST00000338086
281	R3HDM2	ENST00000358907
282	RAB11FIP1	ENST00000287263
283	RAB14	ENST00000373840
284	RAB31	ENST00000578921

SEQ ID	Gene Symbol	Ensembl Transcript ID
211	NDE1	ENST00000396354
212	NDEL1	ENST00000334527
213	NDFIP1	ENST00000253814
214	NECAP2	ENST00000337132
215	NEK7	ENST00000367385
216	NFKB1	ENST00000226574
217	NFYA	ENST00000341376
218	NLRP1	ENST00000269280
219	NOD2	ENST00000300589
220	NOSIP	ENST00000596358
221	NPL	ENST00000367553
222	NR3C1	ENST00000394464
223	NRBF2	ENST00000277746
224	NSUN3	ENST00000314622
225	NUMB	ENST00000557597
226	OAS2	ENST00000392583
227	OASL	ENST00000257570
228	OGFR1	ENST00000370435
229	OSBPL11	ENST00000296220
230	OSBPL2	ENST00000358053
231	PACSLN2	ENST00000403744
232	PAFAH1B1	ENST00000397195
233	PARP12	ENST00000263549
234	PBX3	ENST00000373489
235	PCBP2	ENST00000359462
236	PCF11	ENST00000298281
237	PCNX	ENST00000304743
238	PDCD6IP	ENST00000307296
239	PDE3B	ENST00000282096
240	PECAM1	ENST00000563924
241	PFDN5	ENST00000551018
242	PGS1	ENST00000262764
243	PHC2	ENST00000373418
244	PHF11	ENST00000378319
245	PHF2	ENST00000359246
246	PHF20	ENST00000374012
247	PHF20L1	ENST00000395386

SEQ ID	Gene Symbol	Ensembl Transcript ID
386	VAMP3	ENST000000054666
387	VAV3	ENST000000370056
388	VEZF1	ENST000000581208
389	VPS8	ENST000000436792
390	WASF2	ENST000000618852
391	WBP2	ENST000000254806
392	WDR37	ENST000000263150
393	WDR47	ENST000000369965
394	XAF1	ENST000000361842
395	XPC	ENST000000285021
396	XPO6	ENST000000304658
397	YPEL5	ENST000000261353
398	YTHDF3	ENST000000539294
399	ZBP1	ENST000000371173
400	ZBTB18	ENST000000622512
401	ZC3HAV1	ENST000000242351
402	ZDHHC17	ENST000000426126
403	ZDHHC18	ENST000000374142
404	ZFAND5	ENST000000376960
405	ZFC3H1	ENST000000378743
406	ZFYVE16	ENST000000338008
407	ZMIZ1	ENST000000334512
408	ZNF143	ENST000000396602
409	ZNF148	ENST000000360647
410	ZNF274	ENST000000424679
411	ZNF292	ENST000000369577
412	ZXDC	ENST000000389709
413	ZYX	ENST000000322764
414	TMEM62	ENST000000260403
415	CD38	ENST000000226279

SEQ ID	Gene Symbol	Ensembl Transcript ID
354	TIAM1	ENST000000286827
355	TLE3	ENST000000558939
356	TLE4	ENST000000376552
357	TLR2	ENST000000260010
358	TM2D3	ENST000000347970
359	TMBIM1	ENST000000258412
360	TMEM127	ENST000000258439
361	TMEM204	ENST000000566264
362	TNFRSF1A	ENST000000162749
363	TNFSF13	ENST000000338784
364	TNIP1	ENST000000521591
365	TNK2	ENST000000333602
366	TNRC6B	ENST000000335727
367	TOPORS	ENST000000360538
368	TRAK1	ENST000000341421
369	TREM1	ENST000000244709
370	TRIB2	ENST000000155926
371	TRIM8	ENST000000302424
372	TRIOBP	ENST000000403663
373	TSC22D3	ENST000000372397
374	TYK2	ENST000000525621
375	TYROBP	ENST000000262629
376	UBE2D2	ENST000000398733
377	UBE2L6	ENST000000287156
378	UBN1	ENST000000262376
379	UBQLN2	ENST000000338222
380	UBXN2B	ENST000000399598
381	USP10	ENST000000219473
382	USP15	ENST000000353364
383	USP18	ENST000000215794
384	USP4	ENST000000265560
385	UTP14A	ENST000000394422

SEQ ID	Gene Symbol	Ensembl Transcript ID
322	SH2B3	ENST000000341259
323	SH2D3C	ENST000000373277
324	SIRPA	ENST000000356025
325	SIRPB1	ENST000000381605
326	SLCO3A1	ENST000000318445
327	SMAD4	ENST000000342988
328	SNN	ENST000000329565
329	SNRK	ENST000000296088
330	SNX27	ENST000000368843
331	SOAT1	ENST000000367619
332	SORL1	ENST000000260197
333	SOS2	ENST000000216373
334	SP3	ENST000000310015
335	SSBP2	ENST000000320672
336	SSFA2	ENST000000320370
337	ST13	ENST000000216218
338	ST3GAL1	ENST000000521180
339	STAM2	ENST000000263904
340	STAT1	ENST000000361099
341	STAT5A	ENST000000345506
342	STAT5B	ENST000000293328
343	STK38L	ENST000000389032
344	STX10	ENST000000587230
345	STX3	ENST000000337979
346	STX6	ENST000000258301
347	SYPL1	ENST000000011473
348	TAP1	ENST000000428324
349	TFE3	ENST000000315869
350	TFEB	ENST000000230323
351	TGFB1	ENST000000442011
352	TGFB2	ENST000000295754
353	TGOLN2	ENST000000377386

TABLE 20

SEQUENCE ID NUMBERS AND GENBANK ACCESSION NUMBERS

416	NP_000654	449	NP_001722	482	NP_001884	515	NP_002006
417	NP_008942	450	NP_060851	483	NP_000090	516	NP_001446
418	NP_005461	451	NP_001013671	484	NP_001320	517	NP_075463
419	NP_002304	452	NP_065130	485	NP_005721	518	NP_001456
420	NP_001598	453	NP_001213	486	NP_003583	519	NP_009209
421	NP_036419	454	NP_006358	487	NP_056062	520	NP_852118
422	NP_004293	455	NP_031385	488	NP_037517	521	NP_057657
423	NP_001614	456	NP_001219	489	NP_689837	522	NP_031379
424	NP_000373	457	NP_783640	490	NP_060101	523	NP_002063
425	NP_060174	458	NP_001751	491	NP_005128	524	NP_057183
426	NP_001628	459	NP_004345	492	NP_001336	525	NP_067652
427	NP_061916	460	NP_001232	493	NP_077024	526	NP_740746
428	NP_001633	461	NP_001829	494	NP_071388	527	NP_004480
429	NP_056057	462	NP_001765	495	NP_056111	528	NP_071390
430	NP_060930	463	NP_036204	496	NP_079148	529	NP_002077
431	NP_055697	464	NP_001775	497	NP_071750	530	NP_002084
432	NP_055886	465	NP_006310	498	NP_006259	531	NP_002092
433	NP_004714	466	NP_055627	499	NP_002750	532	NP_002099
434	NP_004032	467	NP_055962	500	NP_003747	533	NP_002101
435	NP_004304	468	NP_005843	501	NP_038475	534	NP_057407
436	NP_060952	469	NP_065145	502	NP_061165	535	NP_060382
437	NP_060022	470	NP_689485	503	NP_005230	536	NP_689632
438	NP_079273	471	NP_060883	504	NP_005440	537	NP_002720
439	NP_000042	472	NP_064709	505	NP_077269	538	NP_005329
440	NP_001684	473	NP_057268	506	NP_055537	539	NP_002140
441	NP_001177	474	NP_065717	507	NP_079409	540	NP_000186
442	NP_060339	475	NP_006577	508	NP_036479	541	NP_002153
443	NP_038478	476	NP_004370	509	NP_004098	542	NP_006408
444	NP_000624	477	NP_004371	510	NP_001996	543	NP_002029
445	NP_001073894	478	NP_057070	511	NP_005239	544	NP_071451
446	NP_060063	479	NP_073606	512	NP_004466	545	NP_005840
447	NP_055392	480	NP_057073	513	NP_055848	546	NP_001547
448	NP_055114	481	NP_000386	514	NP_060886	547	NP_000619

SEQ ID	GenBank Accession	SEQ ID	GenBank Accession
662	NP_057102	662	NP_057102
663	NP_055968	663	NP_055968
664	NP_057250	664	NP_057250
665	NP_443112	665	NP_443112
666	NP_115785	666	NP_115785
667	NP_055153	667	NP_055153
668	NP_006215	668	NP_006215
669	NP_057358	669	NP_057358
670	NP_079477	670	NP_079477
671	NP_005752	671	NP_005752
672	NP_002681	672	NP_002681
673	NP_066996	673	NP_066996
674	NP_057056	674	NP_057056
675	NP_006229	675	NP_006229
676	NP_055449	676	NP_055449
677	NP_068778	677	NP_068778
678	NP_006232	678	NP_006232
679	NP_006234	679	NP_006234
680	NP_000936	680	NP_000936
681	NP_005125	681	NP_005125
682	NP_006242	682	NP_006242
683	NP_057287	683	NP_057287
684	NP_006245	684	NP_006245
685	NP_001526	685	NP_001526
686	NP_067045	686	NP_067045
687	NP_002769	687	NP_002769
688	NP_000012	688	NP_000012
689	NP_003969	689	NP_003969
690	NP_000943	690	NP_000943
691	NP_000305	691	NP_000305
692	NP_000949	692	NP_000949
693	NP_002822	693	NP_002822
694	NP_006495	694	NP_006495
695	NP_056132	695	NP_056132
696	NP_055740	696	NP_055740
697	NP_079427	697	NP_079427
698	NP_057406	698	NP_057406
699	NP_006859	699	NP_006859

SEQ ID	GenBank Accession	SEQ ID	GenBank Accession
624	NP_003734	624	NP_003734
625	NP_005428	625	NP_005428
626	NP_060138	626	NP_060138
627	NP_110435	627	NP_110435
628	NP_085048	628	NP_085048
629	NP_060560	629	NP_060560
630	NP_598001	630	NP_598001
631	NP_003989	631	NP_003989
632	NP_002496	632	NP_002496
633	NP_055737	633	NP_055737
634	NP_071445	634	NP_071445
635	NP_057037	635	NP_057037
636	NP_110396	636	NP_110396
637	NP_000167	637	NP_000167
638	NP_110386	638	NP_110386
639	NP_071355	639	NP_071355
640	NP_003735	640	NP_003735
641	NP_002526	641	NP_002526
642	NP_003724	642	NP_003724
643	NP_078852	643	NP_078852
644	NP_073613	644	NP_073613
645	NP_055650	645	NP_055650
646	NP_009160	646	NP_009160
647	NP_000421	647	NP_000421
648	NP_073587	648	NP_073587
649	NP_006186	649	NP_006186
650	NP_005007	650	NP_005007
651	NP_056969	651	NP_056969
652	NP_055797	652	NP_055797
653	NP_037506	653	NP_037506
654	NP_000913	654	NP_000913
655	NP_000433	655	NP_000433
656	NP_002615	656	NP_002615
657	NP_077733	657	NP_077733
658	NP_004418	658	NP_004418
659	NP_001035533	659	NP_001035533
660	NP_005383	660	NP_005383
661	NP_057520	661	NP_057520

SEQ ID	GenBank Accession	SEQ ID	GenBank Accession
586	NP_005574	586	NP_005574
587	NP_002341	587	NP_002341
588	NP_000072	588	NP_000072
589	NP_055572	589	NP_055572
590	NP_060520	590	NP_060520
591	NP_073729	591	NP_073729
592	NP_002410	592	NP_002410
593	NP_002392	593	NP_002392
594	NP_005914	594	NP_005914
595	NP_004825	595	NP_004825
596	NP_002736	596	NP_002736
597	NP_001306	597	NP_001306
598	NP_055083	598	NP_055083
599	NP_073737	599	NP_073737
600	NP_659458	600	NP_659458
601	NP_002367	601	NP_002367
602	NP_055581	602	NP_055581
603	NP_002373	603	NP_002373
604	NP_002376	604	NP_002376
605	NP_060819	605	NP_060819
606	NP_005112	606	NP_005112
607	NP_005578	607	NP_005578
608	NP_062826	608	NP_062826
609	NP_037387	609	NP_037387
610	NP_038474	610	NP_038474
611	NP_071913	611	NP_071913
612	NP_056173	612	NP_056173
613	NP_689794	613	NP_689794
614	NP_075563	614	NP_075563
615	NP_001012241	615	NP_001012241
616	NP_066576	616	NP_066576
617	NP_002453	617	NP_002453
618	NP_005953	618	NP_005953
619	NP_002458	619	NP_002458
620	NP_694574	620	NP_694574
621	NP_005957	621	NP_005957
622	NP_001106673	622	NP_001106673
623	NP_031388	623	NP_031388

SEQ ID	GenBank Accession	SEQ ID	GenBank Accession
548	NP_001551	548	NP_001551
549	NP_004504	549	NP_004504
550	NP_002173	550	NP_002173
551	NP_004834	551	NP_004834
552	NP_000409	552	NP_000409
553	NP_000556	553	NP_000556
554	NP_002175	554	NP_002175
555	NP_005532	555	NP_005532
556	NP_055684	556	NP_055684
557	NP_005092	557	NP_005092
558	NP_000878	558	NP_000878
559	NP_000202	559	NP_000202
560	NP_002212	560	NP_002212
561	NP_006268	561	NP_006268
562	NP_002218	562	NP_002218
563	NP_056298	563	NP_056298
564	NP_055558	564	NP_055558
565	NP_055549	565	NP_055549
566	NP_055547	566	NP_055547
567	NP_057615	567	NP_057615
568	NP_001291	568	NP_001291
569	NP_003700	569	NP_003700
570	NP_009177	570	NP_009177
571	NP_056991	571	NP_056991
572	NP_006753	572	NP_006753
573	NP_054865	573	NP_054865
574	NP_005556	574	NP_005556
575	NP_056442	575	NP_056442
576	NP_057353	576	NP_057353
577	NP_006857	577	NP_006857
578	NP_006855	578	NP_006855
579	NP_005560	579	NP_005560
580	NP_004711	580	NP_004711
581	NP_055461	581	NP_055461
582	NP_006143	582	NP_006143
583	NP_054764	583	NP_054764
584	NP_009092	584	NP_009092
585	NP_002332	585	NP_002332

SEQ ID	GenBank Accession
814	NP_110403
815	NP_006343
816	NP_064504
817	NP_056151
818	NP_115659
819	NP_005998
820	NP_659419
821	NP_055548
822	NP_065071
823	NP_003433
824	NP_068799
825	NP_057408
826	NP_055836
827	NP_079388
828	NP_003452
829	NP_079232
830	NP_001766

SEQ ID	GenBank Accession
776	NP_078876
777	NP_001056
778	NP_003799
779	NP_006049
780	NP_005772
781	NP_055903
782	NP_005793
783	NP_055780
784	NP_061113
785	NP_067675
786	NP_112174
787	NP_008963
788	NP_004080
789	NP_003322
790	NP_003323
791	NP_003330
792	NP_004214
793	NP_001072982
794	NP_038472
795	NP_001071087
796	NP_005144
797	NP_006304
798	NP_059110
799	NP_003354
800	NP_006640
801	NP_004772
802	NP_006104
803	NP_009077
804	NP_056118
805	NP_008921
806	NP_036610
807	NP_054742
808	NP_055784
809	NP_059993
810	NP_004619
811	NP_055986
812	NP_057145
813	NP_689971

SEQ ID	GenBank Accession
738	NP_005480
739	NP_542970
740	NP_006056
741	NP_037404
742	NP_005350
743	NP_003489
744	NP_060189
745	NP_112180
746	NP_003092
747	NP_003096
748	NP_008870
749	NP_003102
750	NP_036578
751	NP_006742
752	NP_003923
753	NP_003024
754	NP_005834
755	NP_009330
756	NP_003143
757	NP_036580
758	NP_055815
759	NP_003756
760	NP_004168
761	NP_005810
762	NP_006745
763	NP_000584
764	NP_006512
765	NP_009093
766	NP_000349
767	NP_003233
768	NP_006455
769	NP_003244
770	NP_005069
771	NP_008936
772	NP_003255
773	NP_079417
774	NP_071435
775	NP_060319

SEQ ID	GenBank Accession
700	NP_057238
701	NP_004628
702	NP_002871
703	NP_002872
704	NP_000955
705	NP_055552
706	NP_060577
707	NP_002888
708	NP_061323
709	NP_036234
710	NP_006471
711	NP_005864
712	NP_001656
713	NP_079108
714	NP_003721
715	NP_060904
716	NP_057506
717	NP_112225
718	NP_699172
719	NP_009035
720	NP_000974
721	NP_002944
722	NP_004577
723	NP_542388
724	NP_006045
725	NP_071430
726	NP_002948
727	NP_036366
728	NP_055464
729	NP_002962
730	NP_003253
731	NP_006369
732	NP_006802
733	NP_840060
734	NP_055570
735	NP_055269
736	NP_054878
737	NP_005466

WHAT IS CLAIMED IS:

1. A method for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS, the method comprising, consisting or consisting essentially of: (1) determining a biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker in a sample taken from the subject and that is at least partially indicative of a level of the VaSIRS biomarker in the sample; and (2) determining the indicator using the biomarker value, wherein the subject has at least one clinical sign of SIRS and the at least one VaSIRS biomarker is not a biomarker of at least one other SIRS condition selected from the group consisting of: bacterium associated SIRS, autoimmune disease associated SIRS, cancer associated SIRS and trauma associated SIRS.

2. A method according to claim 1, wherein the at least one VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ZBP1*, *TMEM62*, *CD38*, *ISG15*, *IFI44*, *RSAD2*, *HERC5*, *MX1*, *HERC6*, *OAS2*, *XAF1*, *IFI6*, *PARP12*, *EIF2AK2*, *DHX58*, *UBE2L6*, *DDX60*, *USP18*, *RTP4*, *PHF11*, *IFIH1*, *ZBP1*, *STAT1*, *LAP3*, *TAP1*, *C19orf66*, *CUL1*, *POLB*, *ZC3HAV1*, *IL16*, *ITPKB*, *CAMK2G*, *CTDSP2*, *DPEP2*, *LTB*, *CBX7*, *FNBP1*, *FOXO1*, *MAST3*, *LDLRAP1*, *TMEM204*, *FAIM3*, *RGS14*, *IKBKB*, *ZXDC*, *PHF20*, *DGKA*, *XPC*, *PPARD*, *C2orf68*, *NLRP1*, *IL27RA*, *ABLIM1*, *JAK1*, *METTL3*, *SAFB2*, *PPM1F*, *TYK2*, *BANP*, *CRTC3*, *ATM*, *PAFAH1B1*, *PIK3IP1*, *WDR37*, *TGFBR2*, *ZNF274*, *STAT5B*, *MAML1*, *SATB1*, *DOCK9*, *CHMP7*, *BRD1*, *BTG1*, *ATF7IP2*, *DIDO1*, *LEF1*, *TNRC6B*, *SERTAD2*, *CEP68*, *BCL2*, *VPS8*, *CHD3*, *PUM2*, *TGOLN2*, *NDE1*, *CCR7*, *PSTPIP1*, *TIAM1*, *PECAM1*, *PDE3B*, *MYC*, *FOXJ2*, *PRMT2*, *CSNK1D*, *RPL10A*, *SERINC5*, *ARHGEF2*, *HGSNAT*, *TRAK1*, *PHF2*, *PBX3*, *SESN1*, *DPF2*, *IL4R*, *NOSIP*, *MPPE1*, *NR3C1*, *ABAT*, *GCC2*, *ZFC3H1*, *SETD2*, *ITSN2*, *R3HDM2*, *ARHGAP15*, *PCF11*, *MAPRE2*, *ST3GAL1*, *NACA*, *WDR47*, *SSBP2*, *CLK4*, *EIF3H*, *FRY*, *ZNF238*, *PTGER4*, *PCNX*, *NECAP2*, *CASC3*, *MSL1*, *VEZF1*, *KIAA0232*, *RASSF2*, *RPL22*, *ACAA1*, *MAP4K4*, *BEX4*, *NCBP2*, *LRMP*, *CAMK1D*, *UTP14A*, *STX6*, *RPS6KA3*, *PRKAA1*, *GOLGA7*, *ZNF143*, *SNRK*, *SYPL1*, *CYLD*, *PRUNE*, *CRLF3*, *CD93*, *GPS2*, *FBXO11*, *UBE2D2*, *USP10*, *CCNG2*, *SOS2*, *ARRB1*, *CEP170*, *SMAD4*, *CIAPIN1*, *KLF7*, *PHF20L1*, *ALDH3A2*, *PDCD6IP*, *WASF2*, *TGFBI*, *GPBP1L1*, *PCBP2*, *DCP2*, *LYST*, *ERBB2IP*, *ANKRD49*, *NDFIP1*, *ATAD2B*, *ZNF292*, *CCNT2*, *MARCH7*, *ACAP2*, *MED13*, *IL6ST*, *PHF3*, *SP3*, *SEC62*, *ZFYVE16*, *NEK7*, *POLD4*, *GNA12*, *TRIB2*, *YTHDF3*, *PPP2R5A*, *PPP1R2*, *ZDHHC17*, *STK38L*, *ST13*, *FAM134A*, *PFDN5*, *MARCH8*, *POLR1D*, *OASL*, *N4BP1*, *NOD2*, *RNF19B*, *PRKAG2*, *IGSF6*, *MEF2A*, *LPIN2*, *PPP1R11*, *USP15*, *BACH1*, *SSFA2*, *MKLN1*, *FYB*, *NSUN3*, *MAX*, *STAM2*, *HHEX*, *CLEC4A*, *ZFAND5*, *ABI1*, *MORC3*, *RC3H2*, *MAP1LC3B*, *TM2D3*, *CHST11*, *NAB1*, *KLF3*, *YPEL5*, *MXI1*, *CD97*, *CYTH4*, *HCK*, *ARHGAP26*, *RARA*, *XPO6*, *TNFRSF1A*, *SLCO3A1*, *ICAM3*, *PTPN6*, *PRKCD*, *RAB11FIP1*, *CSF2RB*, *LCP2*, *TYROBP*, *PHC2*, *RHOG*, *PSAP*, *LYN*, *TMEM127*, *LILRA2*, *AOAH*, *FGR*, *PLEKHO2*, *ARAP1*, *RBM23*, *PTPRE*, *KLF6*, *LIMK2*, *LILRB3*, *TLR2*, *GPR97*, *GMIP*, *SIRPA*, *LRP10*, *LPAR2*, *TREM1*, *IL13RA1*, *ITGAX*, *ARHGAP25*, *SIRPB1*, *ZDHHC18*, *TLE3*, *ITGB2*, *SNX27*, *PGS1*, *ATP6V1B2*, *RAB31*, *MAP3K11*, *PACSIN2*, *KIAA0513*, *EMR2*, *RERE*, *NUMB*, *RALB*, *ETS2*, *STAT5A*, *LST1*, *RIN3*, *TNK2*, *IQSEC1*, *PISD*, *SORL1*, *FES*, *KIAA0247*, *IL6R*, *LAPTM5*, *VAMP3*, *FAM65B*, *MAP3K5*, *TRIM8*, *ZYX*, *MAPK14*, *PLEKHO1*, *NCOA1*, *RNASET2*, *APBB1IP*, *RXRA*, *PTAFR*, *CNPY3*, *TNFSF13*, *RPS6KA1*, *OSBPL2*, *MTMR3*, *TMBIM1*, *TFEB*, *TFE3*, *RAF1*, *STX3*, *LAT2*, *GRB2*, *NDEL1*, *SEMA4D*, *FCGRT*, *DOK3*, *HIP1*, *UBN1*, *PLXNC1*, *NRBF2*, *INPP5D*, *SH2D3C*, *MMP25*, *IL10RB*, *FLOT2*, *PIAS1*, *PITPNA*, *APLP2*, *CTBP2*, *GPSM3*, *RNF130*, *DGCR2*, *ZMIZ1*, *CAP1*, *GSK3B*, *RGS19*, *RAB7A*, *CREBBP*, *RBMS1*, *IL1RAP*, *RTN3*, *PPP4R1*, *TRIOBP*, *GABARAP*, *MCTP2*, *NFKB1*, *CST3*, *ABHD2*, *SH2B3*, *STX10*, *TSC22D3*, *TLE4*, *HAL*, *ARRB2*, *MAP3K3*, *NPL*, *CCND3*, *SERINC3*, *GNAQ*,

USP4, PSEN1, KBTBD2, LYL1, AIF1, MBP, ACVR1B, RAB4B, PTEN, ASAP1, MANSC1, RYBP, CSAD, UBXN2B, TNIP1, WBP2, OGFR1, SNN, HPCAL1, CD37, RNF146, RAB14, TOPORS, NFYA, FOXO3, CREB1, MAPK1, SOAT1, UBQLN2, OSBPL11, KLHL2, VAV3, BRD4, MARK3, BAZ2B, ZNF148, CASP8, CHMP1B, HPS1, RNF141, MOSPD2, PINK1, CDIPT, NCOA4, PPP3R1, MKRN1, GYPC, BMP2K and FBXO9.

3. A method according to claim 2, wherein an individual VaSIRS biomarker is selected from the group consisting of: (a) a polynucleotide expression product comprising a nucleotide sequence that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence identity with the sequence set forth in any one of SEQ ID NO: 1-415, or a complement thereof; (b) a polynucleotide expression product comprising a nucleotide sequence that encodes a polypeptide comprising the amino acid sequence set forth in any one of SEQ ID NO: 416-830; (c) a polynucleotide expression product comprising a nucleotide sequence that encodes a polypeptide that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence similarity or identity with at least a portion of the sequence set forth in SEQ ID NO: 416-830; (d) a polynucleotide expression product comprising a nucleotide sequence that hybridizes to the sequence of (a), (b), (c) or a complement thereof, under medium or high stringency conditions; (e) a polypeptide expression product comprising the amino acid sequence set forth in any one of SEQ ID NO: 416-830; and (f) a polypeptide expression product comprising an amino acid sequence that shares at least 70% (or at least 71% to at least 99% and all integer percentages in between) sequence similarity or identity with the sequence set forth in any one of SEQ ID NO: 416-830..

4. A method according to any one of claims 1 to 3, wherein the at least one VaSIRS biomarker is selected from Group A VaSIRS biomarkers, wherein an individual Group A VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ZBP1, TMEM62 and CD38.*

5. A method according to claim 4, wherein the biomarker value is measured or derived for a single Group A VaSIRS biomarker and the indicator is determined using the biomarker value.

6. A method according to claim 4, wherein biomarker values are measured or derived for at least 2 or each of the Group A VaSIRS biomarkers, and the indicator is determined by combining the biomarker values.

7. A method according to any one of claims 1 to 3, wherein pairs of biomarkers are used to determine the indicator.

8. A method according to claim 7, wherein one biomarker of a biomarker pair is selected from Group B VaSIRS biomarkers and the other is selected from Group C VaSIRS biomarkers, wherein an individual Group B VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *ISG15, IFI44, RSAD2, HERC5, MX1, HERC6, OAS2, XAF1, IFI6, PARP12, EIF2AK2, DHX58, UBE2L6, DDX60, USP18, RTP4, PHF11, IFIH1, ZBP1, STAT1, LAP3, TAP1, C19orf66, CUL1, POLB and ZC3HAV1*, and wherein an individual Group C VaSIRS biomarker is an expression product of a gene selected from the group consisting of: *IL16, ITPKB, CAMK2G, CTDSP2, DPEP2, LTB, CBX7, FBNP1, FOXO1, MAST3, LDLRAP1, TMEM204, FAIM3, RGS14, IKBKB, ZXDC, PHF20, DGKA, XPC, PPARD, C2orf68, NLRP1, IL27RA, ABLIM1, JAK1, METTL3, SAFB2, PPM1F, TYK2, BANP, CRTCL3, ATM, PAFAH1B1, PIK3IP1, WDR37, TGFB2, ZNF274, STAT5B, MAML1, SATB1, DOCK9, CHMP7, BRD1, BTG1, ATF7IP2, DIDO1, LEF1, TNRC6B, SERTAD2, CEP68, BCL2, VPS8, CHD3, PUM2, TGOLN2, NDE1, CCR7, PSTPIP1,*

TIAM1, PECAM1, PDE3B, MYC, FOXJ2, PRMT2, CSNK1D, RPL10A, SERINC5, ARHGEF2, HGSNAT, TRAK1, PHF2, PBX3, SESN1, DPF2, IL4R, NOSIP, MPPE1, NR3C1, ABAT, GCC2, ZFC3H1, SETD2, ITS2, R3HDM2, ARHGAP15, PCF11, MAPRE2, ST3GAL1, NACA, WDR47, SSBP2, CLK4, EIF3H, FRY, ZNF238, PTGER4, PCNX, NECAP2, CASC3, MSL1, VEZF1, KIAA0232, RASSF2, RPL22, ACAA1, MAP4K4, BEX4, NCBP2, LRMP, CAMK1D, UTP14A, STX6, RPS6KA3, PRKAA1, GOLGA7, ZNF143, SNRK, SYPL1, CYLD, PRUNE, CRLF3, CD93, GPS2, FBXO11, UBE2D2, USP10, CCNG2, SOS2, ARRB1, CEP170, SMAD4, CIAPIN1, KLF7, PHF20L1, ALDH3A2, PDCD6IP, WASF2, TGFBI, GPBP1L1, PCBP2, DCP2, LYST, ERBB2IP, ANKRD49, NDFIP1, ATAD2B, ZNF292, CCNT2, MARCH7, ACAP2, MED13, IL6ST, PHF3, SP3, SEC62, ZFYVE16, NEK7, POLD4, GNA12, TRIB2, YTHDF3, PPP2R5A, PPP1R2, ZDHHC17, STK38L, ST13, FAM134A, PFDN5, MARCH8 and POLR1D.

9. A method according to claim 7 wherein one biomarker of a biomarker pair is selected from Group D VaSIRS biomarkers and the other is selected from Group E VaSIRS biomarkers, wherein an individual Group D VaSIRS biomarker is an expression product of a gene selected from the group consisting of: OASL, N4BP1, NOD2, RNF19B, PRKAG2, IGSF6, MEF2A, LPIN2, PPP1R11, USP15, BACH1, SSFA2, MKLN1, FYB, NSUN3, MAX, STAM2, HHEX, CLEC4A, ZFAND5, ABI1, MORC3, RC3H2, MAP1LC3B, TM2D3, CHST11, NAB1, KLF3, YPEL5 and MXI1, and wherein an individual Group E VaSIRS biomarker is an expression product of a gene selected from the group consisting of: CD97, CYTH4, HCK, ARHGAP26, RARA, XPO6, TNFRSF1A, SLCO3A1, ICAM3, PTPN6, PRKCD, RAB11FIP1, CSF2RB, LCP2, TYROBP, PHC2, RHOG, PSAP, LYN, TMEM127, LILRA2, AOA, FGR, PLEKHO2, ARAP1, RBM23, PTPRE, KLF6, LIMK2, LILRB3, TLR2, GPR97, GMIP, SIRPA, LRP10, LPAR2, TREM1, IL13RA1, ITGAX, ARHGAP25, SIRPB1, ZDHHC18, TLE3, ITGB2, SNX27, PGS1, ATP6V1B2, RAB31, MAP3K11, PACSIN2, KIAA0513, EMR2, RERE, NUMB, RALB, ETS2, STAT5A, LST1, RIN3, TNK2, IQSEC1, PISD, SORL1, FES, KIAA0247, IL6R, LAPTM5, VAMP3, FAM65B, MAP3K5, TRIM8, ZYX, MAPK14, PLEKHO1, NCOA1, RNASET2, APBB1IP, RXRA, PTAFR, CNPY3, TNFSF13, RPS6KA1, OSBPL2, MTMR3, TMBIM1, TFEB, TFE3, RAF1, STX3, LAT2, GRB2, NDEL1, SEMA4D, FCGRT, DOK3, HIP1, UBN1, PLXNC1, NRBF2, INPP5D, SH2D3C, MMP25, IL10RB, FLOT2, PIAS1, PITPNA, APLP2, CTBP2, GPSM3, RNF130, DGCR2, ZMIZ1, CAP1, GSK3B, RGS19, RAB7A, CREBBP, RBMS1, IL1RAP, RTN3, PPP4R1, TRIOBP, GABARAP, MCTP2, NFKB1, CST3, ABHD2, SH2B3, STX10, TSC22D3, TLE4, HAL, ARRB2, MAP3K3, NPL, CCND3, SERINC3, GNAQ, USP4, PSEN1, KBTBD2, LYL1, AIF1, MBP, ACVR1B, RAB4B, PTEN, ASAP1, MANSC1, RYBP, CSAD, UBXN2B, TNIP1, WBP2, OGRL1, SNN, HPCAL1, CD37, RNF146, RAB14, TOPORS, NFYA, FOXO3, CREB1, MAPK1, SOAT1, UBQLN2, OSBPL11, KLHL2, VAV3, BRD4, MARK3, BAZ2B, ZNF148, CASP8, CHMP1B, HPS1, RNF141, MOSPD2, PINK1, CDIPT, NCOA4, PPP3R1, MKRN1, GYPC, BMP2K and FBXO9.

10. A method according to claim 8, wherein biomarker values are measured or derived for a Group B VaSIRS biomarker and for a Group C VaSIRS biomarker, and the indicator is determined by combining the biomarker values.

11. A method according to claim 9, wherein biomarker values are measured or derived for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values.

12. A method according to any one of claims 7 to 11, wherein biomarker values are measured or derived for a Group B VaSIRS biomarker, for a Group C VaSIRS biomarker, for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker, and the indicator is determined by combining the biomarker values.

13. A method according to any one of claims 7 to 12, wherein the method comprises combining the biomarker values using a combining function, wherein the combining function is at least one of: an additive model; a linear model; a support vector machine; a neural network model; a random forest model; a regression model; a genetic algorithm; an annealing
5 algorithm; a weighted sum; a nearest neighbor model; and a probabilistic model.

14. A method according to any one of claims 7 to 13, wherein the method comprises:
(a) determining a pair of biomarker values, each biomarker value being a value measured or derived for at least one corresponding VaSIRS biomarker; (b) determining a derived biomarker value using the pair of biomarker values, the derived biomarker value being indicative of a ratio
10 of concentrations of the pair of VaSIRS biomarkers; and determining the indicator using the derived marker value.

15. A method according to claim 14, wherein biomarker values are measured or derived for a Group B VaSIRS biomarker and for a Group C VaSIRS biomarker to obtain the pair of biomarker values and the derived biomarker value is determined using the pair of biomarker values.

16. A method according to claim 14, wherein biomarker values are measured or derived for a Group D VaSIRS biomarker and for a Group E VaSIRS biomarker to obtain the pair of biomarker values and the derived biomarker value is determined using the pair of biomarker values.

20 17. A method according to any one of claims 7 to 16, wherein the method comprises:
(a) determining a first derived biomarker value using a first pair of biomarker values, the first derived biomarker value being indicative of a ratio of concentrations of first and second VaSIRS biomarkers; (b) determining a second derived biomarker value using a second pair of biomarker values, the second derived biomarker value being indicative of a ratio of concentrations of third
25 and fourth VaSIRS biomarkers; and (c) determining the indicator by combining the first and second derived biomarker values.

18. A method according to claim 17, wherein the first VaSIRS biomarker is selected from Group B VaSIRS biomarkers, the second VaSIRS biomarker is selected from Group C VaSIRS biomarkers, the third VaSIRS biomarker is selected from Group D VaSIRS biomarkers,
30 and the fourth VaSIRS biomarker is selected from Group E VaSIRS biomarkers.

19. A method according to claim 18, wherein the method comprises combining the biomarker values using a combining function, wherein the combining function is at least one of: an additive model; a linear model; a support vector machine; a neural network model; a random forest model; a regression model; a genetic algorithm; an annealing algorithm; a
35 weighted sum; a nearest neighbor model; and a probabilistic model.

20. A method according to any one of claims 7 to 19, wherein an individual pair of VaSIRS biomarkers has a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 (or between ± 0.8 , ± 0.7 , ± 0.6 , ± 0.5 , ± 0.4 , ± 0.3 , ± 0.2 or ± 0.1) and the indicator has a performance value greater than
40 or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, wherein the performance threshold is indicative of an explained variance of at least 0.3.

21. A method according to any one of claims 18 to 20, wherein an individual VaSIRS biomarker has a condition correlation with the presence, absence or degree of VaSIRS that lies
45 outside a condition correlation range, wherein the condition correlation range is between ± 0.3 .

22. A method according to any one of claims 7 to 21, wherein the Group B VaSIRS biomarker is an expression product of *ISG15*, the Group C VaSIRS biomarker is an expression product of *IL16*, the Group D VaSIRS biomarker is an expression product of *OASL*, and the Group E VaSIRS biomarker is an expression product of *CD97*.

5 23. A method according to any one of claims 7 to 22, wherein the virus associated with the VaSIRS is suitably selected from any one of Baltimore virus classification Groups I, II, III, IV, V, VI and VII, which is capable of inducing at least one of the clinical signs of SIRS.

24. A method according to any one of claims 7 to 23, wherein the pairs of biomarkers are selected from biomarker pairs listed in Table 13 or Table 14.

10 25. An apparatus for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS, the apparatus comprises at least one electronic processing device that:

- determines a pair of biomarker values, each biomarker value being a value measured or derived for at least one corresponding VaSIRS biomarker, as broadly described above and elsewhere herein, of a sample taken from the subject and being at least partially indicative of a concentration of the VaSIRS biomarker in the sample;
- determines a derived biomarker value using the pair of biomarker values, the derived biomarker value being indicative of a ratio of concentrations of the pair of VaSIRS biomarkers; and
- determines the indicator using the derived biomarker value.

20 26. A composition for determining an indicator used in assessing a likelihood of a subject having a presence, absence or degree of VaSIRS, the composition comprising, consisting or consisting essentially of at least one pair of cDNAs and at least one oligonucleotide primer or probe that hybridizes to an individual one of the cDNAs, wherein the at least one pair of cDNAs is selected from pairs of cDNA including a first pair and a second pair of cDNAs, wherein the first pair comprises a Group B VaSIRS biomarker cDNA and a Group C VaSIRS biomarker cDNA and wherein the second pair comprises a Group D VaSIRS biomarker cDNA and a Group E VaSIRS biomarker cDNA.

27. A composition according to claim 26, wherein the composition comprises a population of cDNAs corresponding to mRNA derived from a cell or cell population.

28. A composition according to claim 27, wherein the cell is a cell of the immune system, suitably a leukocyte.

29. A composition according to claim 27 or claim 28, wherein the cell population is blood, suitably peripheral blood.

30 30. A composition according to any one of claim 26 to 29, wherein the at least one oligonucleotide primer or probe is hybridized to an individual one of the cDNAs.

31. A composition according to any one of claim 26 to 29, wherein the composition further comprises a labeled reagent for detecting the cDNA.

32. A composition according to claim 31, wherein the labeled reagent is a labeled said at least one oligonucleotide primer or probe.

33. A composition according to claim 31, wherein the labeled reagent is a labeled said cDNA.

34. A composition according to any one of claim 26 to 33, wherein the at least one oligonucleotide primer or probe is in a form other than a high-density array.

35. A kit for determining an indicator indicative of the likelihood of the presence, absence or degree of VaSIRS, the kit comprising, consisting or consisting essentially of at least one pair of reagents selected from reagent pairs including a first pair of reagents and a second pair of reagents, wherein the first pair of reagents comprises (i) a reagent that allows
5 quantification of a Group B VaSIRS biomarker; and (ii) a reagent that allows quantification of a Group C VaSIRS biomarker, wherein the second pair of reagents comprises: (iii) a reagent that allows quantification of a Group D VaSIRS biomarker; and (iv) a reagent that allows quantification of a Group E VaSIRS biomarker.

36. A method for managing a subject with VaSIRS, the method comprising, consisting or consisting essentially of: exposing the subject to a treatment regimen for treating VaSIRS, or
10 avoiding exposing the subject to a treatment regimen for treating a SIRS other than VaSIRS based on an indicator obtained from an indicator-determining method, wherein the indicator is indicative of the presence of VaSIRS in the subject, and wherein the indicator-determining method is an indicator-determining method as defined in any one of claims 1 to 24.

37. A method according to claim 36, wherein the method further comprises taking a sample from the subject and determining an indicator indicative of the likelihood of the presence, absence or degree of VaSIRS using the an indicator-determining method.

38. A method according to claim 36, wherein the method further comprises sending a sample taken from the subject to a laboratory at which the indicator is determined according to
20 the indicator-determining method.

39. A method according to claim 38, wherein the method further comprises receiving the indicator from the laboratory.

40. A method of monitoring the efficacy of a particular treatment regimen in a subject towards a desired health state (*e.g.*, absence of VaSIRS), the method comprising, consisting or
25 consisting essentially of: (1) determining a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as defined in any one of claims 1 to 24 in a sample taken from the subject and that is at least partially indicative of a level of the VaSIRS biomarker in the sample, wherein the sample is taken after treatment of the subject with the treatment regimen; (2) determining an indicator
30 using the biomarker value, wherein the indicator is used in assessing a likelihood of the subject having a presence, absence or degree of VaSIRS, and (3) assessing the likelihood of the subject having a presence, absence or degree of VaSIRS using the indicator to thereby determine whether the treatment regimen is effective for changing the health status of the subject to the desired health state.

41. A method of determining whether a treatment regimen is effective for treating a subject with VaSIRS, the method comprising, consisting or consisting essentially of: (a) correlating a biomarker value that is measured or derived for at least one (*e.g.*, 1, 2, 3, 4, 5, 6,
35 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as defined in any one of claim 1 to 24 with an effective treatment regimen; (b) determining a biomarker value that is measured or derived for the at least one corresponding VaSIRS biomarker in a sample taken from the subject after treatment with the treatment regimen; (c) determining an indicator using the biomarker value, wherein the indicator is used in assessing a likelihood of the subject having a presence, absence or degree of VaSIRS, (d) assessing the likelihood of the subject having a presence, absence or degree of VaSIRS using the indicator to thereby determine whether the treatment
40 regimen is effective for treating VaSIRS in the subject.

42. A method of correlating a biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as defined in any one of claim 1 to 24 with a positive or negative response to a treatment regimen, the method comprising, consisting or consisting essentially of: (a) determining a biomarker value
5 for the at least one corresponding VaSIRS biomarker in a sample taken from a subject with VaSIRS following commencement of the treatment regimen, wherein the biomarker value is at least partially indicative of a level of the VaSIRS biomarker in the sample; and (c) correlating the sample VaSIRS biomarker value with a positive or negative response to the treatment regimen.

10 43. A method of determining a positive or negative response to a treatment regimen by a subject with VaSIRS, the method comprising, consisting or consisting essentially of: (a) correlating a reference biomarker value that is measured or derived for at least one (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) corresponding VaSIRS biomarker as defined in any one of claim 1 to 24 with a positive or negative response to the treatment regimen; and (b) determining a
15 biomarker value for the at least one corresponding VaSIRS biomarker in a sample taken from a subject with VaSIRS, wherein the sample biomarker value indicates whether the subject is responding to the treatment regimen.

44. A method according to claim 43, wherein the method further comprises: (i) determining a first sample biomarker value for the at least one corresponding VaSIRS biomarker
20 as defined in any one of claim 1 to 24 in a sample taken from the subject prior to commencing the treatment regimen; and (ii) comparing the first sample biomarker value with a second sample biomarker value for the at least one corresponding VaSIRS biomarker taken from the subject after commencement of the treatment regimen, to thereby determine a positive or negative response to the treatment regimen.

25 45. A method of treating, preventing or inhibiting the development of VaSIRS in a subject, the method comprising, consisting or consisting essentially of: exposing the subject to a treatment regimen for treating VaSIRS, or avoiding exposing the subject to a treatment regimen for treating a SIRS other than VaSIRS based on an indicator obtained from an indicator-determining method, the indicator-determining method comprising, consisting or
30 consisting essentially of: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one VaSIRS biomarker of the subject, wherein the at least one VaSIRS biomarker is as defined in any one of claim 1 to 24; (b) determining an indicator using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence or degree of VaSIRS,
35 wherein: (i) at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, the performance threshold being indicative of an
40 explained variance of at least 0.3.

46. A method according to claim 45, wherein the method further comprises: (1) determining a plurality of measured biomarker values, each measured biomarker value being a measured value of VaSIRS biomarker of the subject; and (2) applying a function to at least one of the measured biomarker values to determine at least one derived biomarker value, the at

least one derived biomarker value being indicative of a value of a corresponding derived VaSIRS biomarker.

47. A method according to claim 46, wherein the function includes at least one of: (a) multiplying two biomarker values; (b) dividing two biomarker values; (c) adding two biomarker values; (d) subtracting two biomarker values; (e) a weighted sum of at least two biomarker values; (f) a log sum of at least two biomarker values; and (g) a sigmoidal function of at least two biomarker values.

48. A method for monitoring the efficacy of a particular treatment regimen in a subject towards a desired health state, the method comprising, consisting or consisting essentially of: (a) determining a plurality of biomarker values, each biomarker value being indicative of a value measured or derived for at least one VaSIRS biomarker of the subject after treatment with a treatment regimen, wherein the at least one VaSIRS biomarker is as defined in any one of claim 1 to 24; (b) determining an indicator using a combination of the plurality of biomarker values, the indicator being at least partially indicative of the presence, absence or degree of VaSIRS, wherein: (i) at least two (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, or more) VaSIRS biomarkers have a mutual correlation in respect of VaSIRS that lies within a mutual correlation range, the mutual correlation range being between ± 0.9 ; and (ii) the indicator has a performance value greater than or equal to a performance threshold representing the ability of the indicator to diagnose the presence, absence or degree of VaSIRS, or to provide a prognosis for a VaSIRS, the performance threshold being indicative of an explained variance of at least 0.3, and (c) determining that the treatment regimen is effective for changing the health status of the subject to the desired health state on the basis that the indicator indicates the presence of VaSIRS or the presence of VaSIRS of a lower degree relative to the degree of VaSIRS in the subject before treatment with the treatment regimen.

49. Use of an indicator-determining method according to any one of claims 1 to 24 in methods for correlating a biomarker profile with an effective treatment regimen for VaSIRS, or for determining whether a treatment regimen is effective for treating a subject with VaSIRS, or for correlating a biomarker profile with a positive or negative response to a treatment regimen, or for determining a positive or negative response to a treatment regimen by a subject with VaSIRS.

1/20

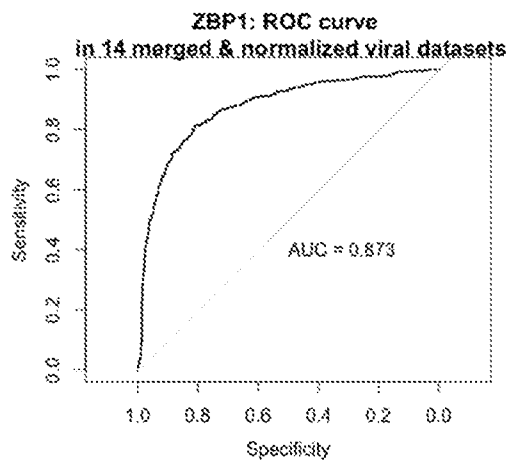


FIGURE 1

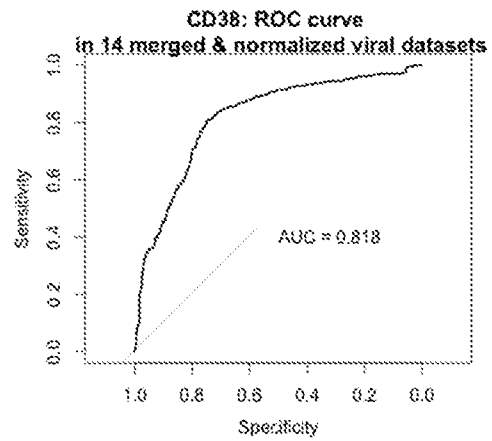


FIGURE 2

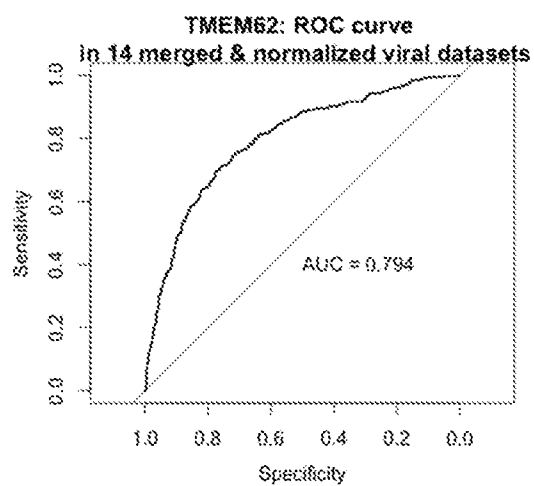


FIGURE 3

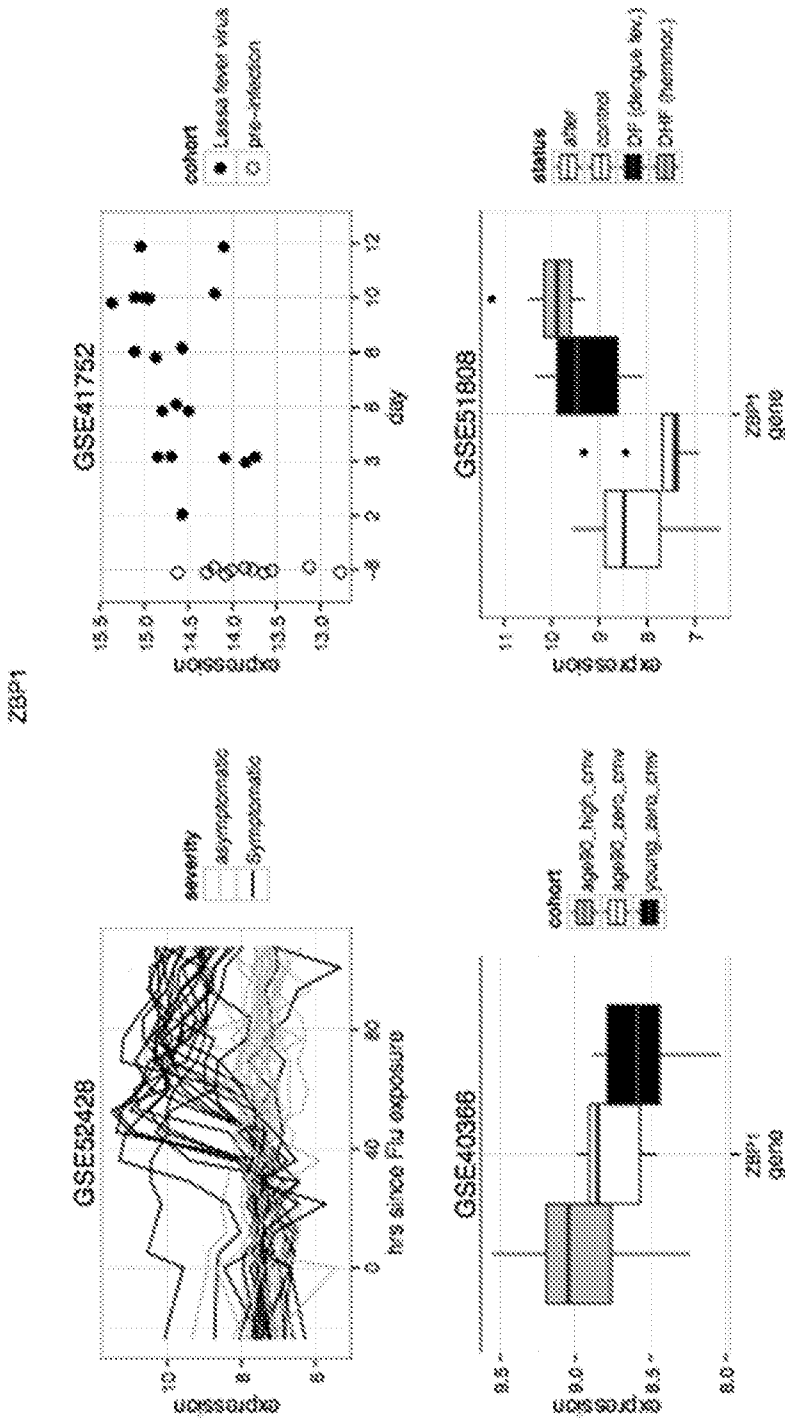


FIGURE 4

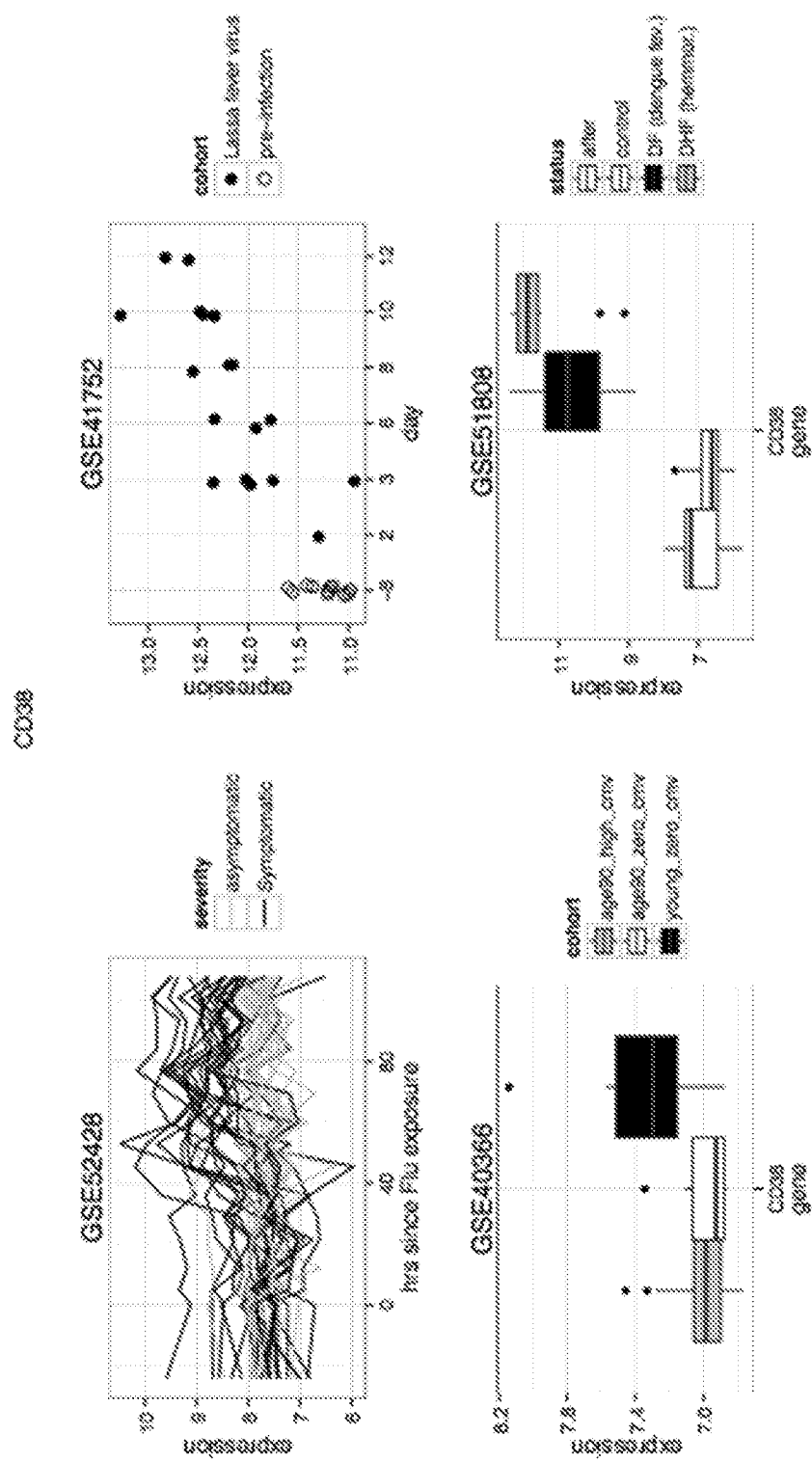


FIGURE 5

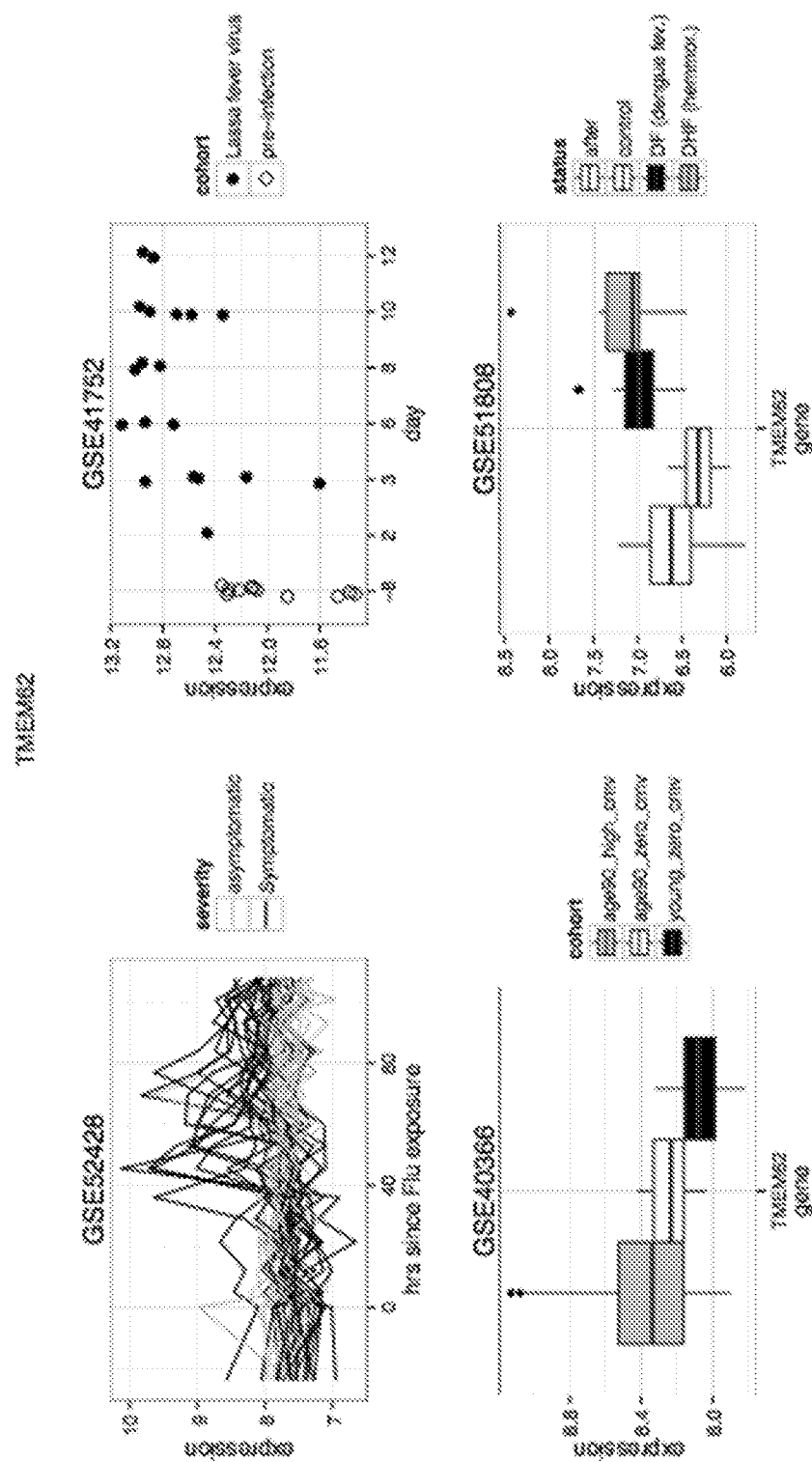


FIGURE 6

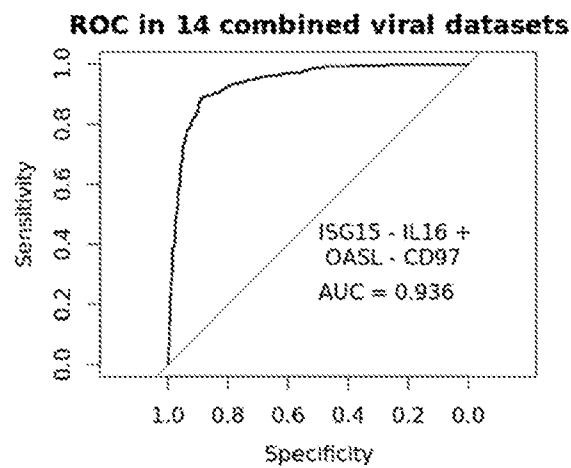


FIGURE 7

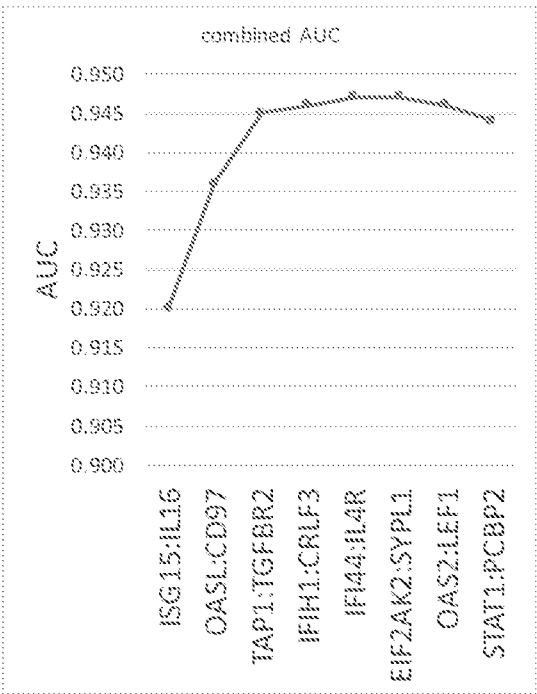


FIGURE 8

ISG15:IL16

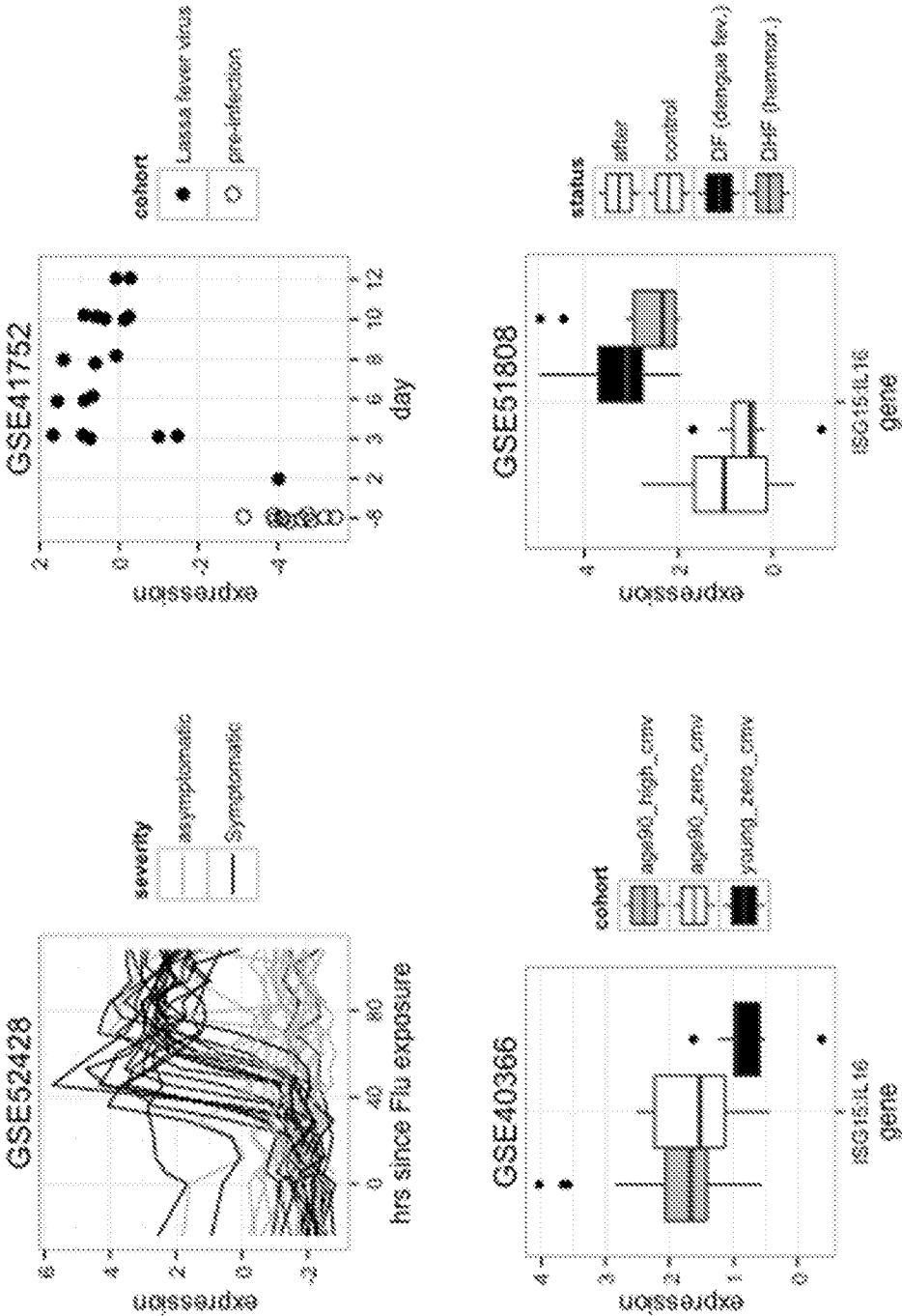


FIGURE 9

OASL.CD97

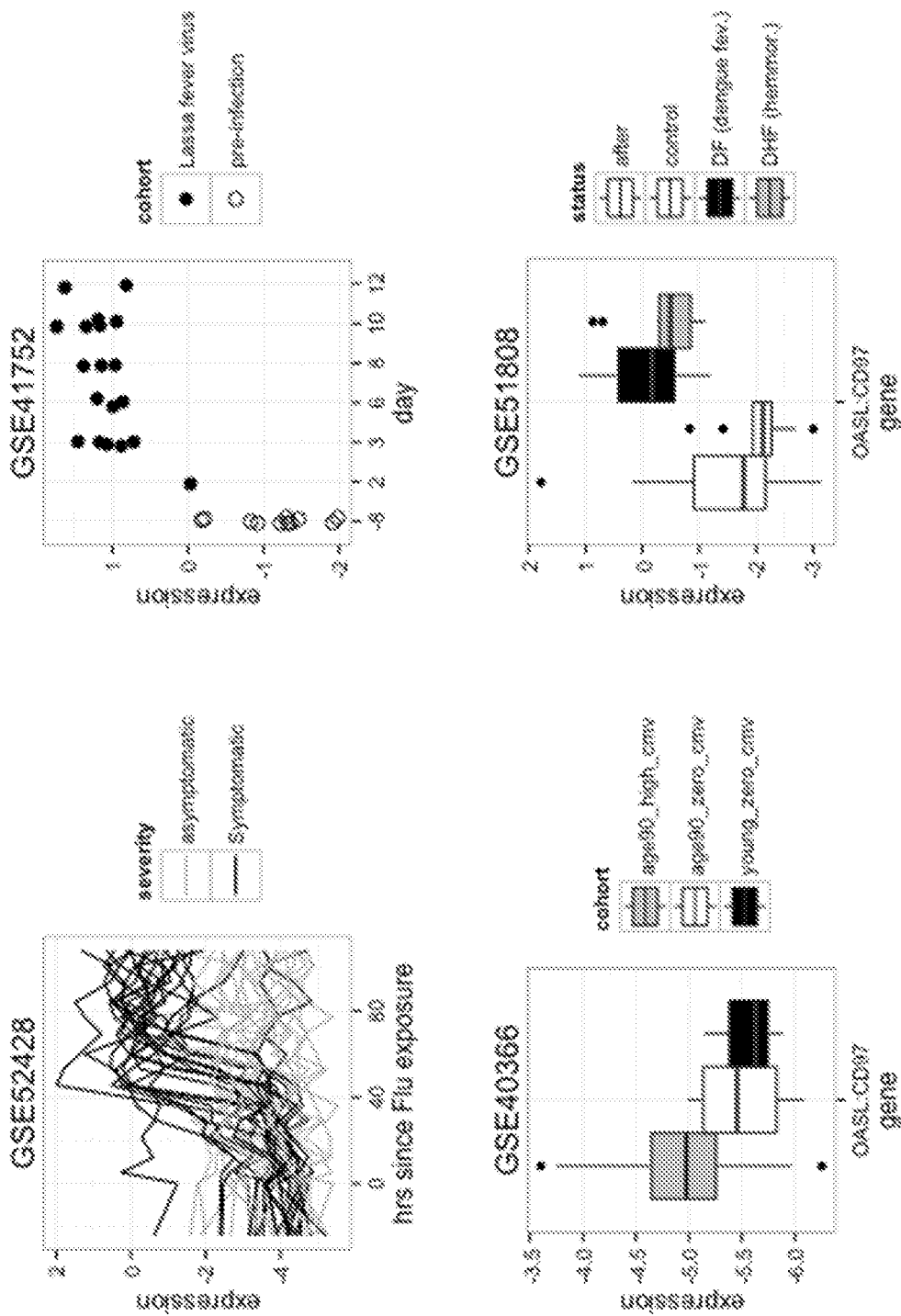


FIGURE 10

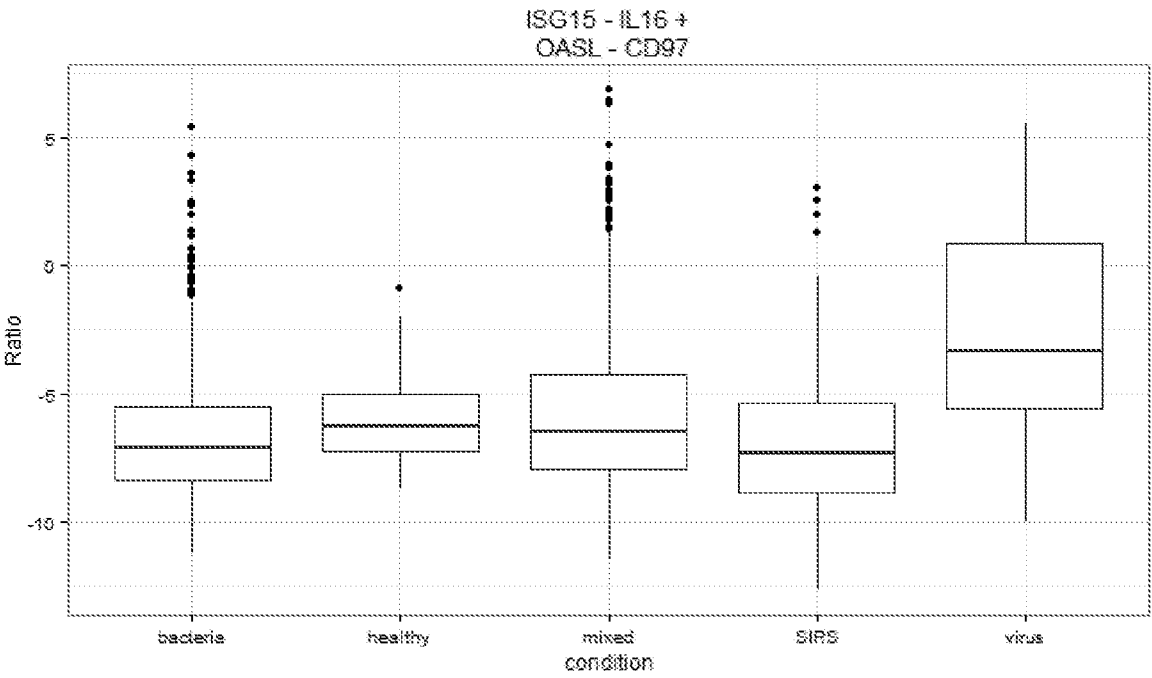


FIGURE 11

9/20

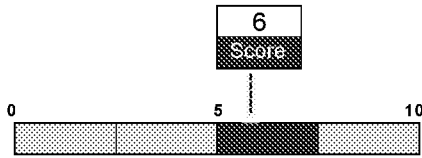
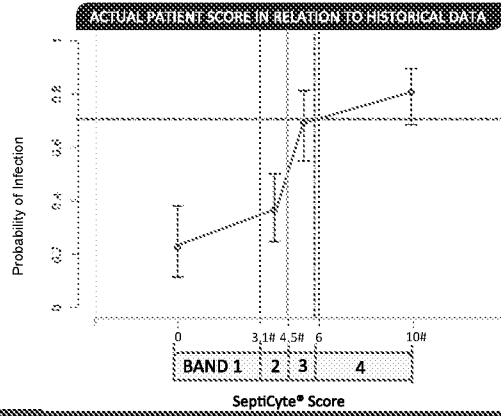
PATIENT REPORT																					
SeptiCyt [®] Viral																					
Patient Name Jane Doe	Medical Report # 1000000	Blood Collection Date 28-Jul-2014	Sample ID IXP100000																		
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="background-color: #333; color: white; text-align: center;">Score Interpretation Bands</th> </tr> <tr> <th style="width: 25%;">BAND</th> <th style="width: 50%;">LIKELIHOOD</th> <th style="width: 25%;">RATIO</th> </tr> </thead> <tbody> <tr> <td>Band 1</td> <td>Virus <10% likely</td> <td>0.05</td> </tr> <tr> <td>Band 2</td> <td>Virus >40% likely</td> <td>0.46</td> </tr> <tr> <td>Band 3</td> <td>Virus >80% likely</td> <td>6</td> </tr> <tr> <td>Band 4</td> <td>Virus >90% likely</td> <td>9</td> </tr> </tbody> </table>		Score Interpretation Bands			BAND	LIKELIHOOD	RATIO	Band 1	Virus <10% likely	0.05	Band 2	Virus >40% likely	0.46	Band 3	Virus >80% likely	6	Band 4	Virus >90% likely	9
Score Interpretation Bands																					
BAND	LIKELIHOOD	RATIO																			
Band 1	Virus <10% likely	0.05																			
Band 2	Virus >40% likely	0.46																			
Band 3	Virus >80% likely	6																			
Band 4	Virus >90% likely	9																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #333; color: white; text-align: center;">Probability of Viral Infection</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">>80% 73-86% (80% CI)</td> </tr> </tbody> </table>		Probability of Viral Infection	>80% 73-86% (80% CI)																		
Probability of Viral Infection																					
>80% 73-86% (80% CI)																					
TEST DESCRIPTION: The SeptiCyt[®] Viral test is an aid in the diagnosis of an active viral infection in patients with signs and symptoms consistent with local or systemic response to viral infections. Increasing values of the SeptiCyt[®] Viral Score is associated with an increased likelihood that systemic inflammation is attributable to an active viral infection and relative to other causes. The SeptiCyt[®] Viral Score is a quantitative blood test that combines the results of four RNA transcripts (ISG15, IL16, OASL and CD97) as a single numerical Patient Score. TEST RESULT INFORMATION: The SeptiCyt[®] Viral test should only be used in patients when active viral infection is suspected. Individual patient values should be interpreted only in the context of all other clinical and laboratory information. LIMITATIONS: The reported probability of a virus infection for the SeptiCyt[®] Viral test was determined in a sample of XX European and US patients aged – X assessed for herpes virus infection. Patients were classified by retrospective physician assessment in conjunction with specific virus detection or antibody assays (PCR, serum IgG, IgM).																					
PHYSICIAN COMMENTS:																					
		425 PONTIUS AVE N, SUITE 430 SEATTLE, WA 98104 P: 206.273.7975 www.immunexpress.com																			

FIGURE 12

10/20

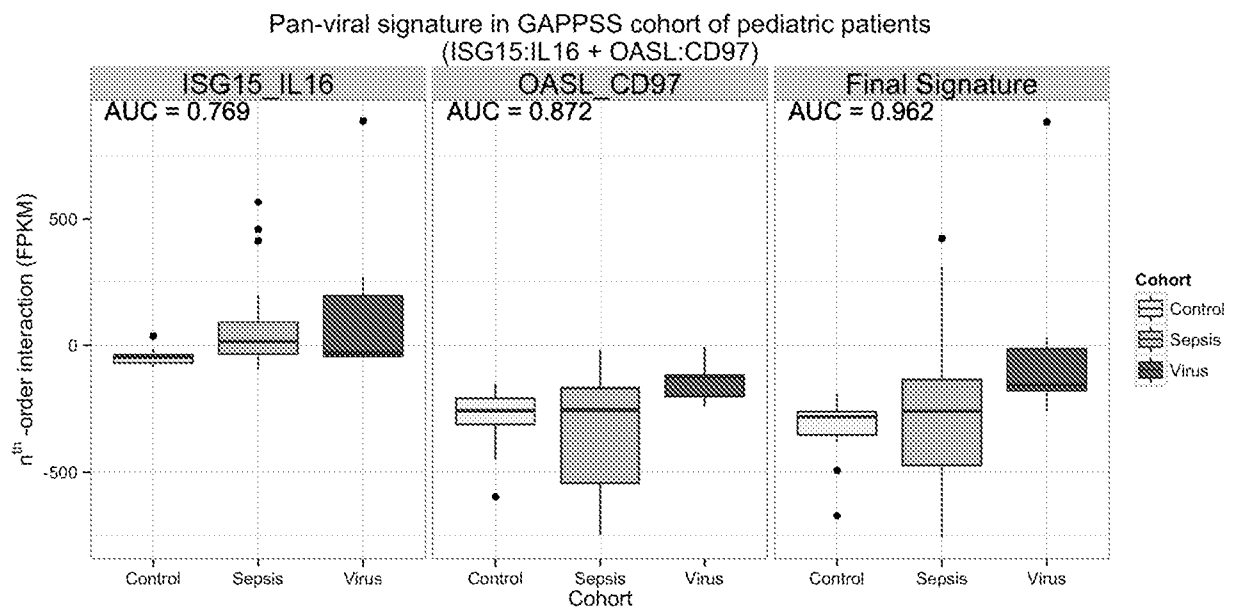


FIGURE 13

11/20

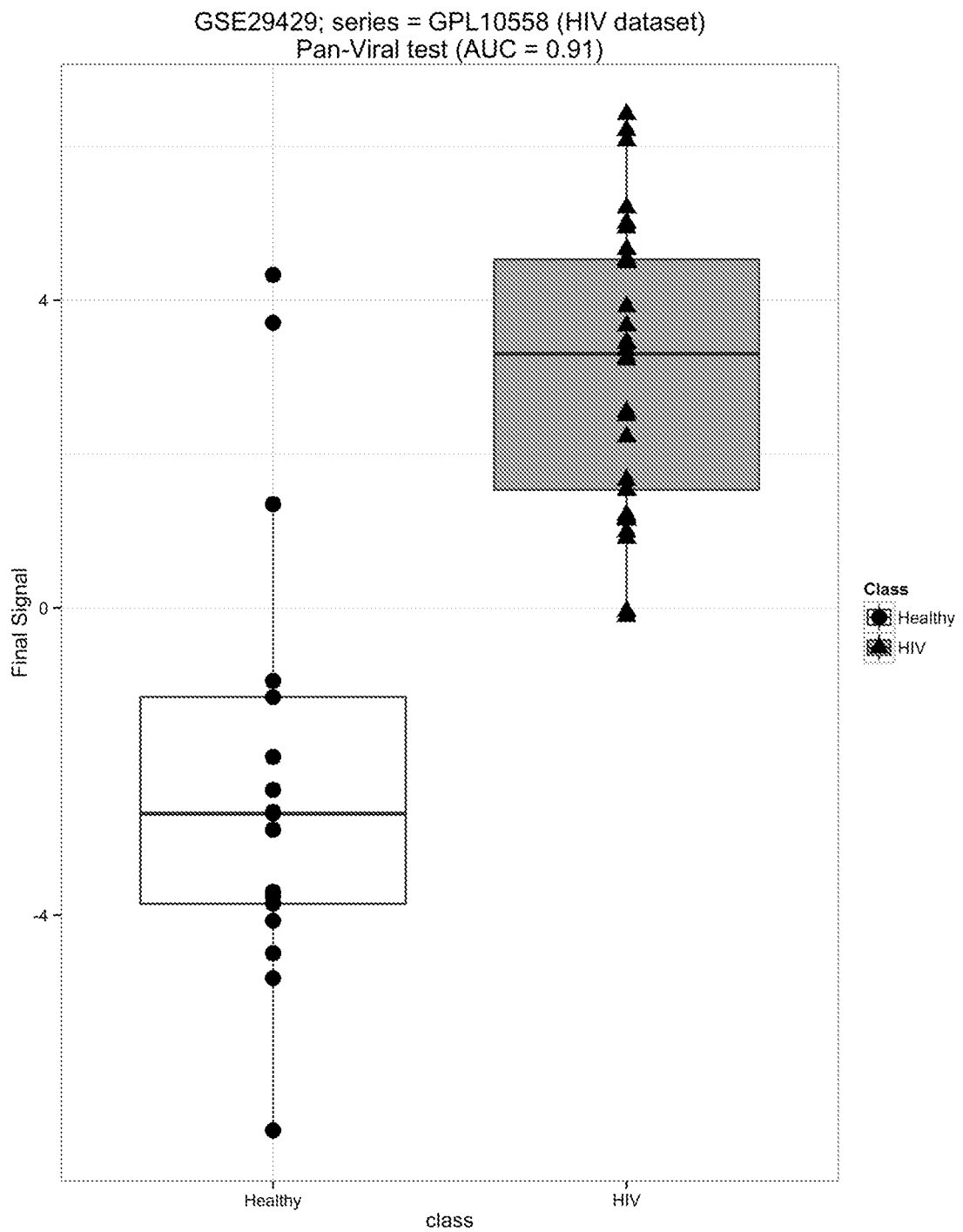


FIGURE 14

12/20

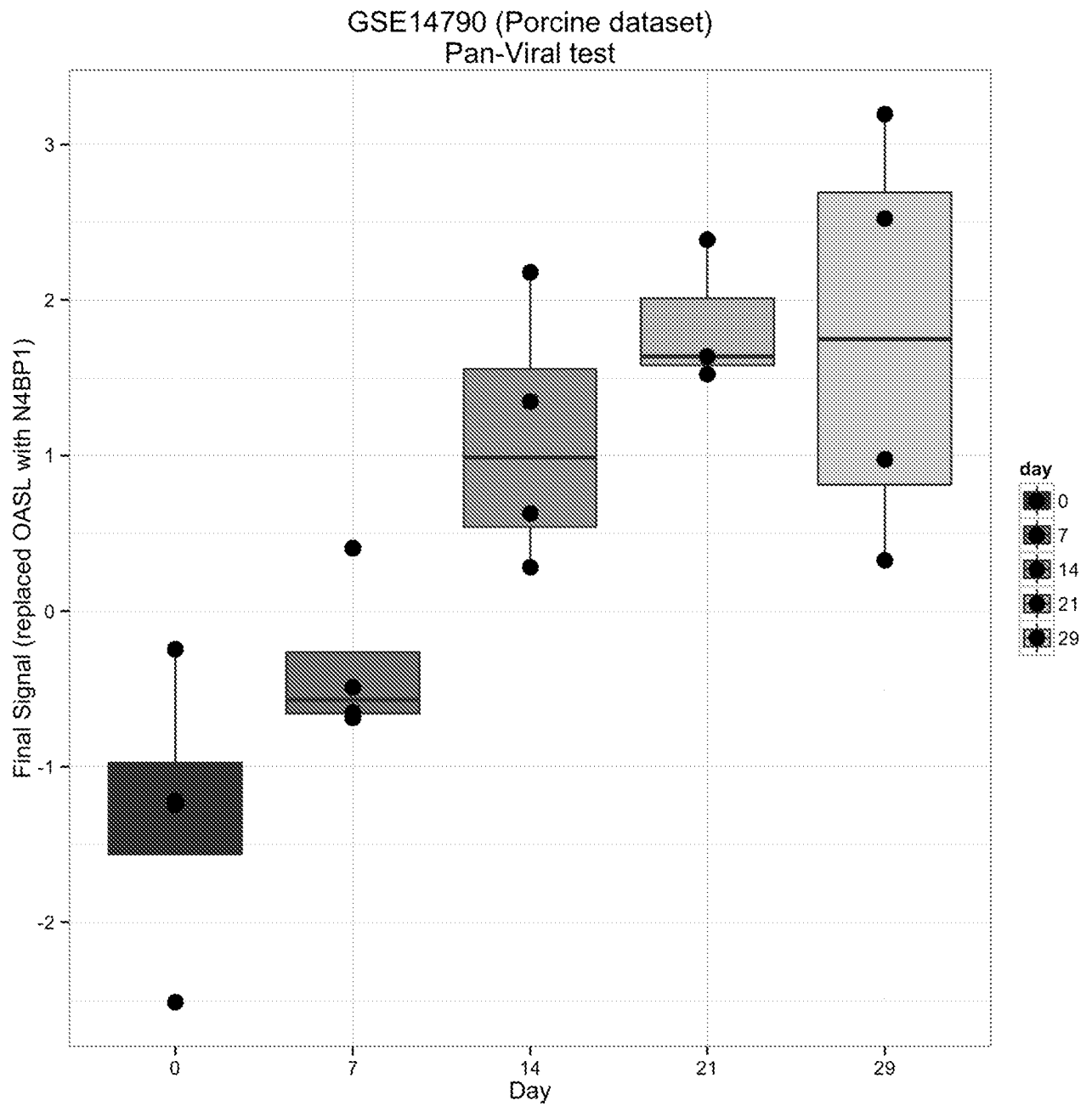


FIGURE 15

13/20

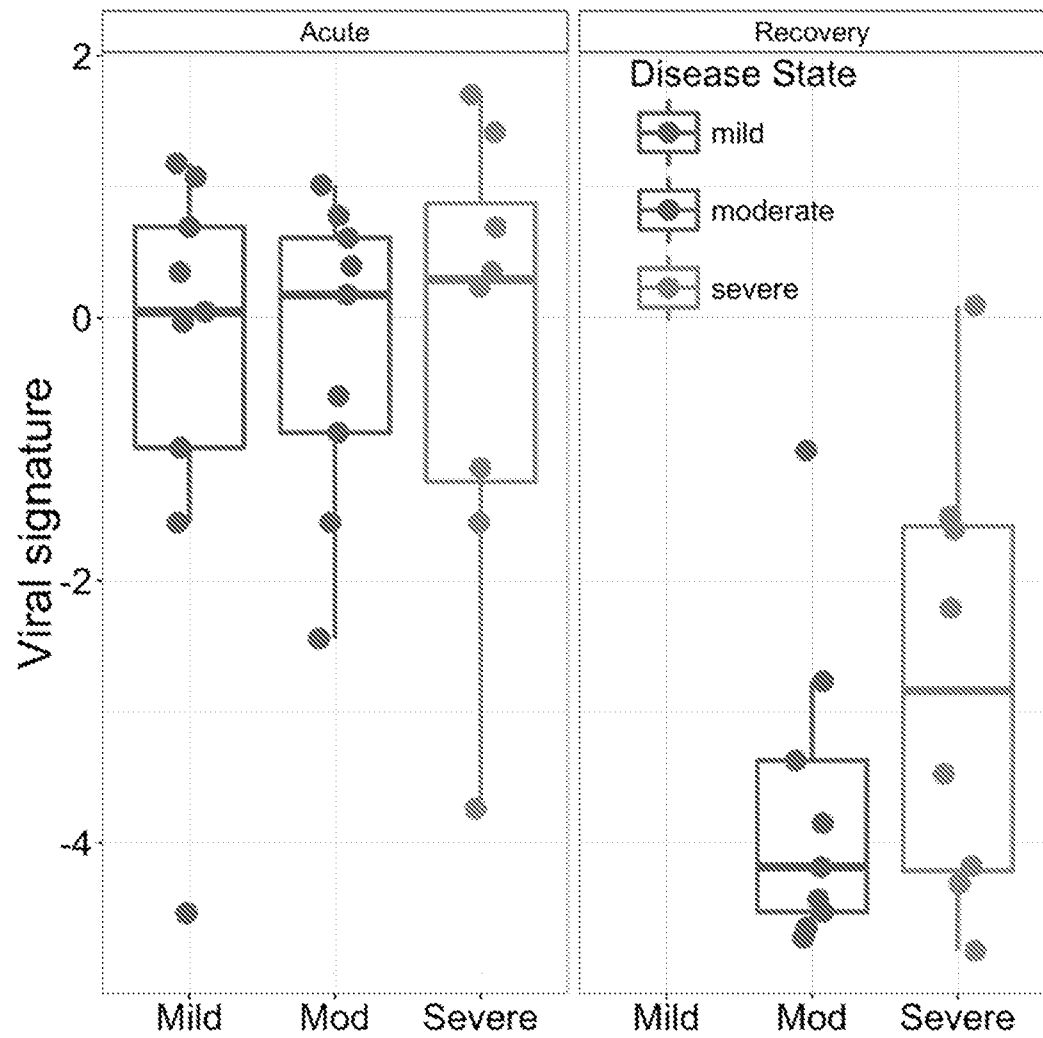


FIGURE 16

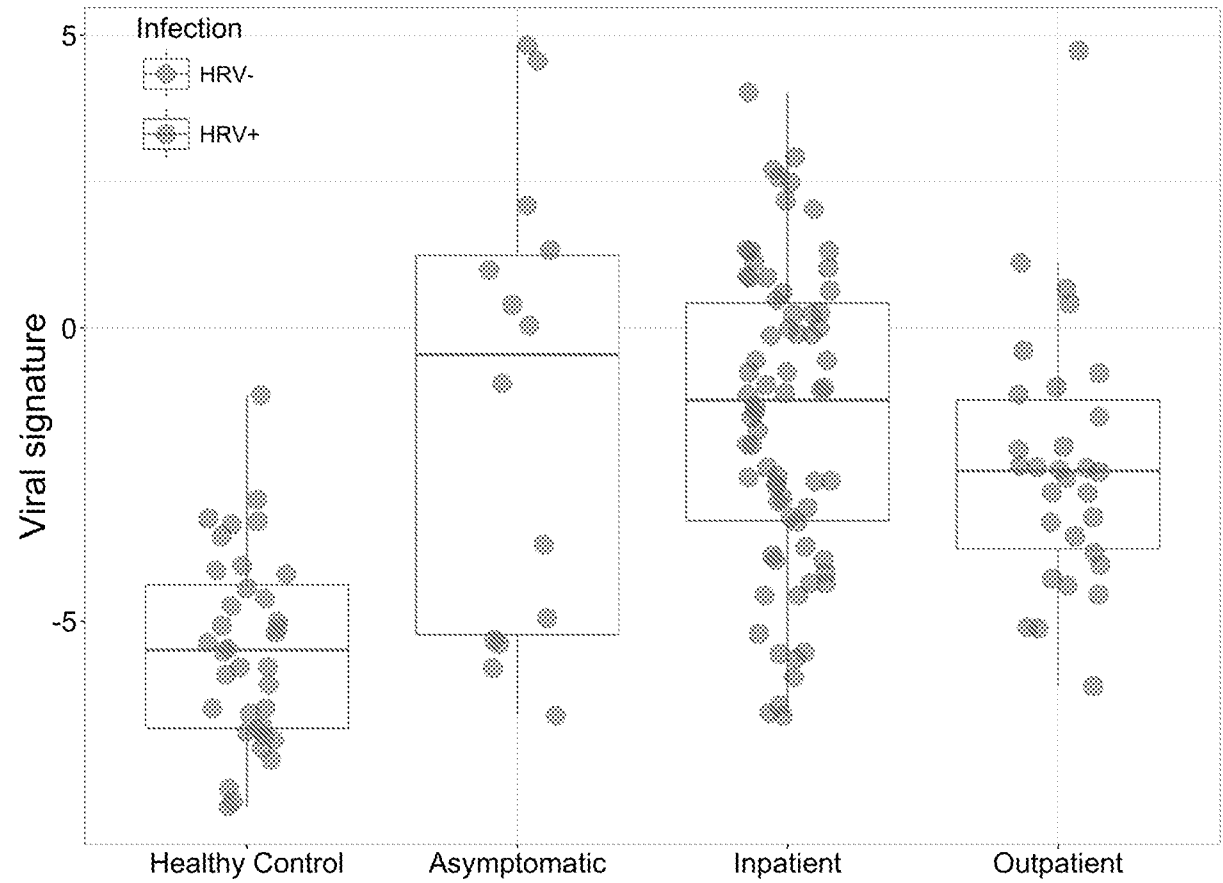


FIGURE 17

15/20

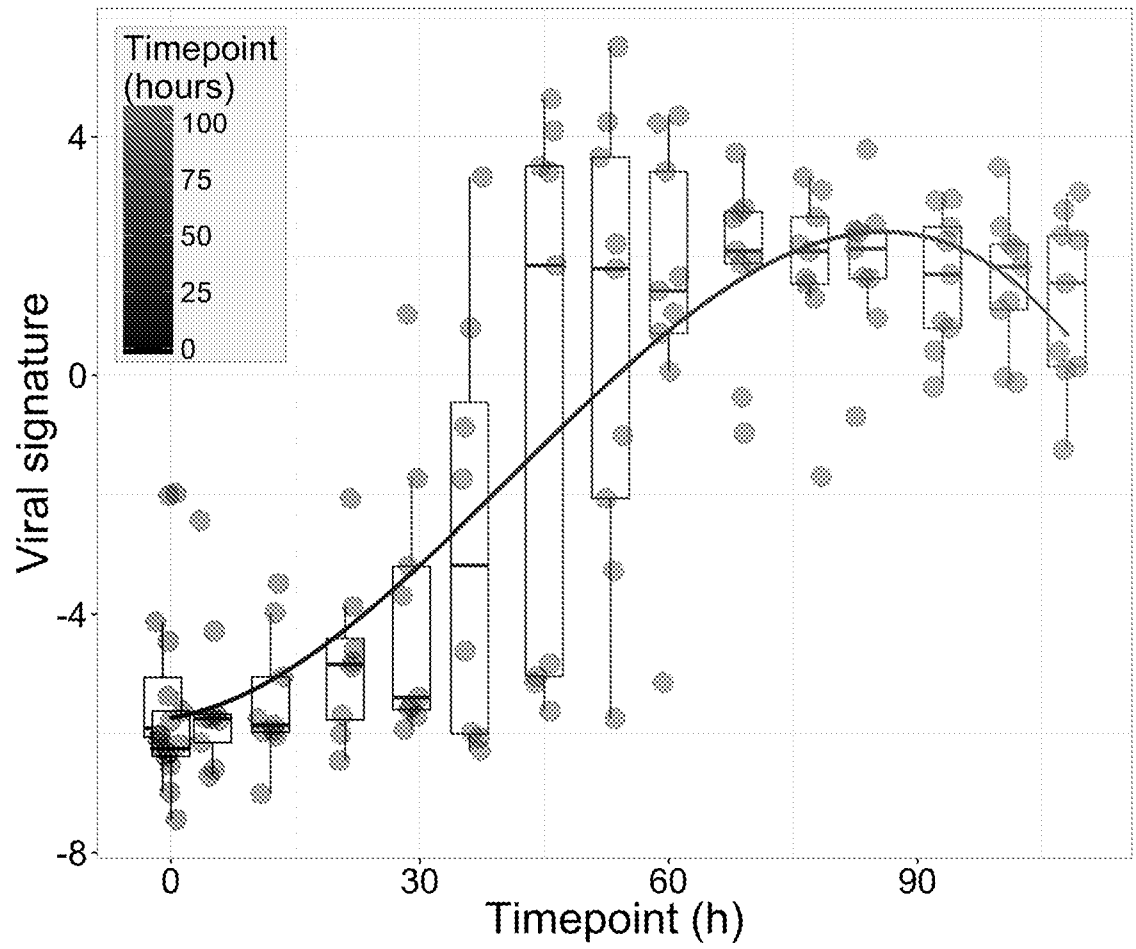


FIGURE 18

16/20

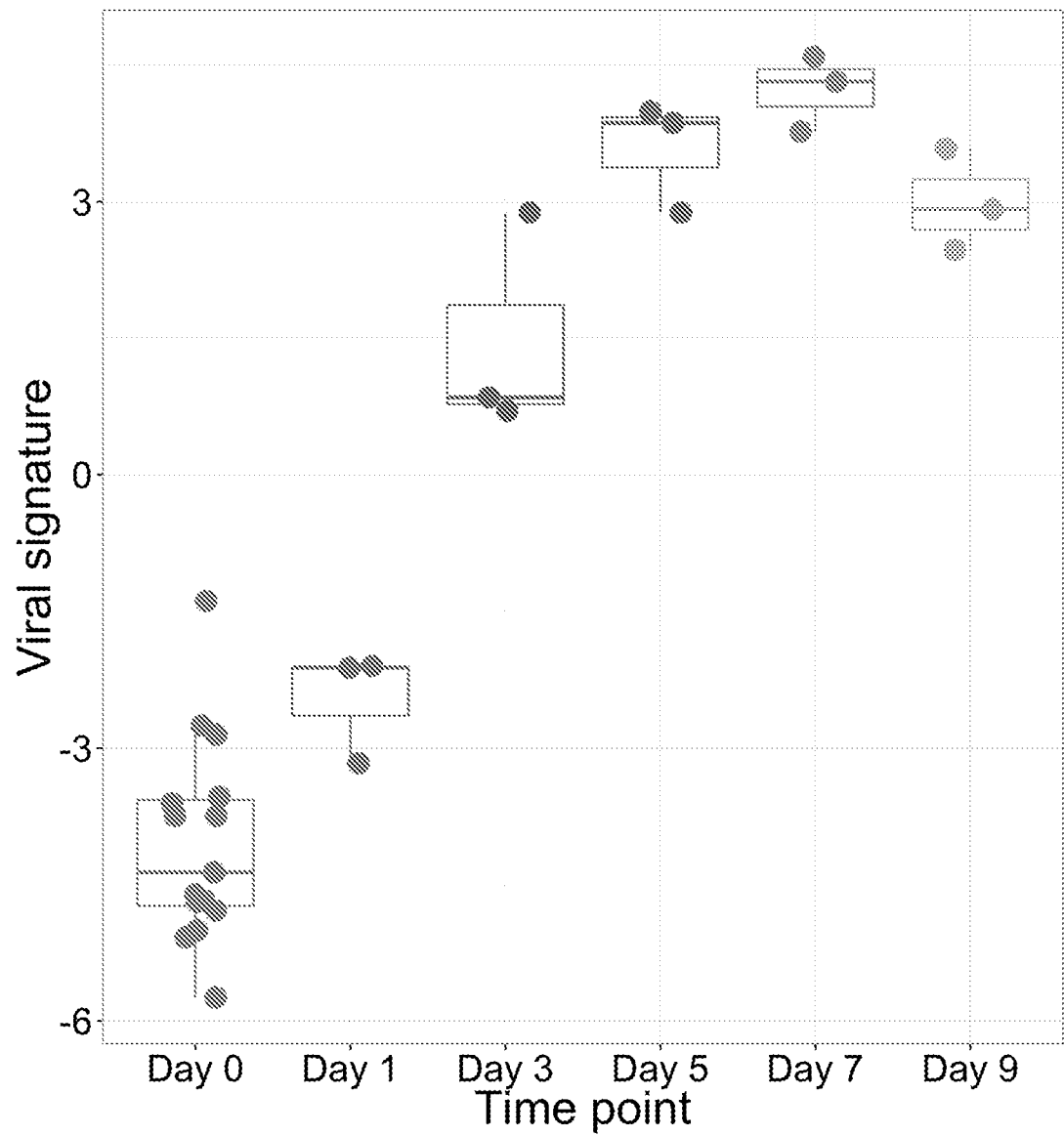


FIGURE 19

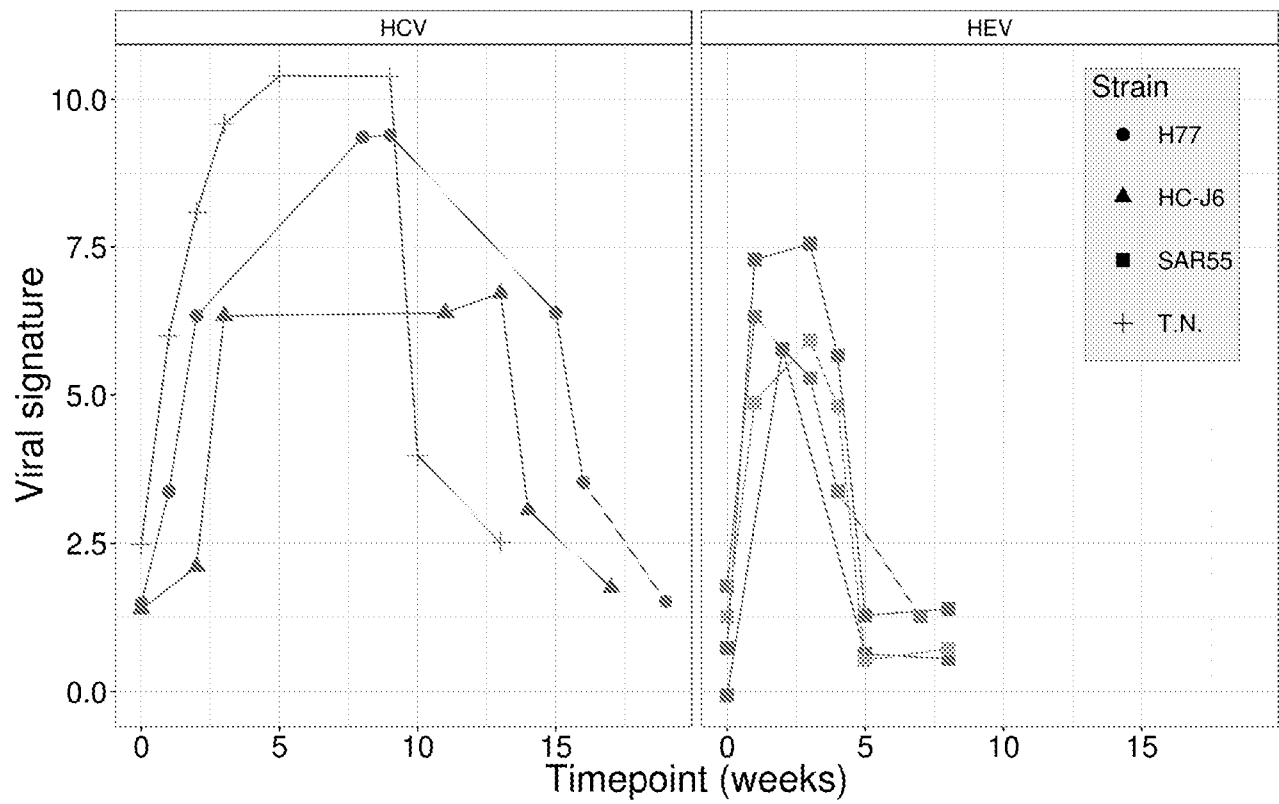


FIGURE 20

18/20

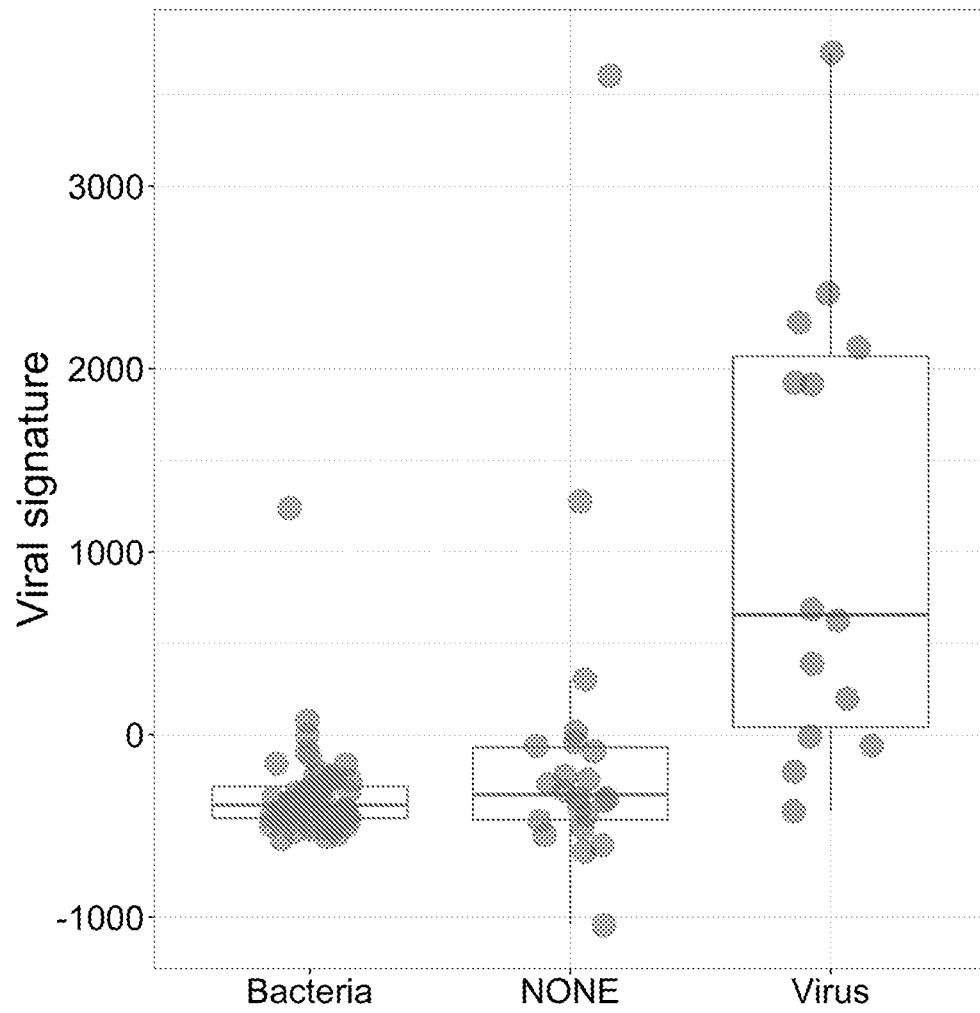


FIGURE 21

19/20

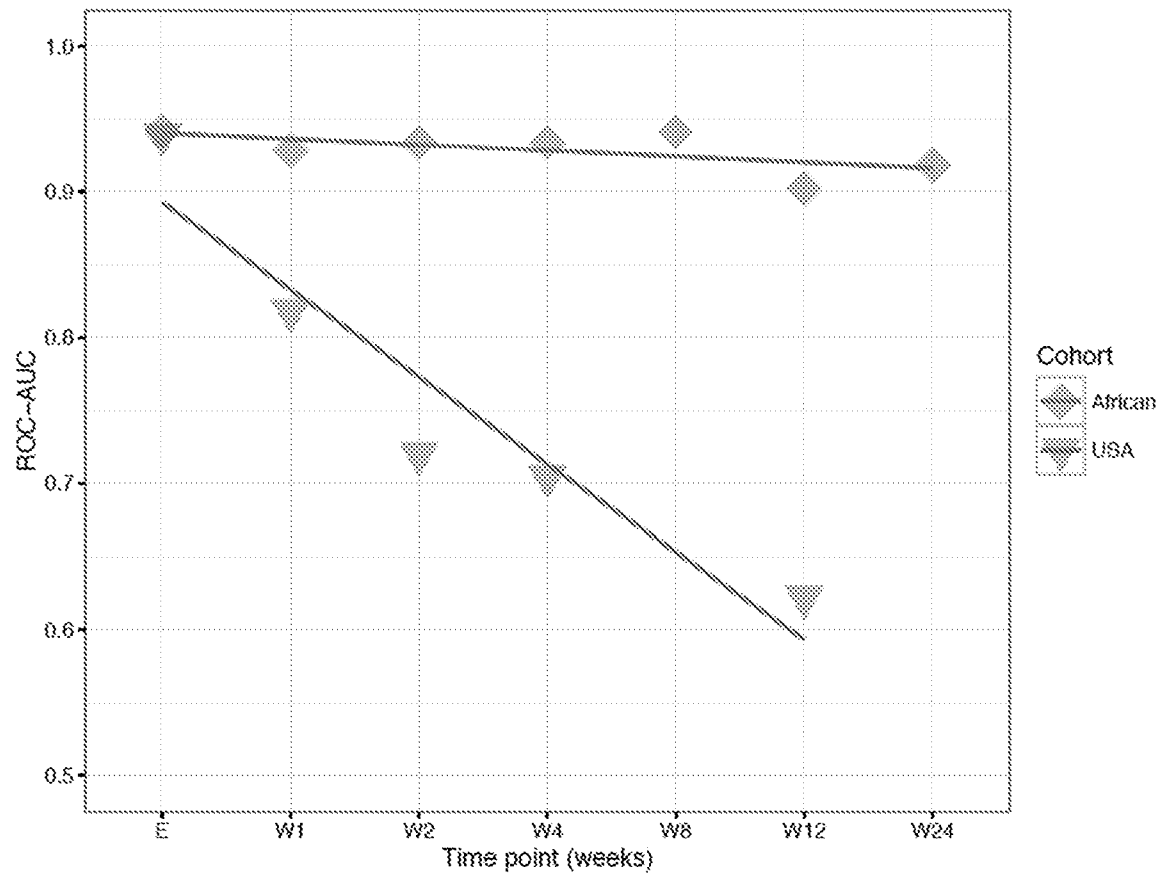


FIGURE 22

20/20

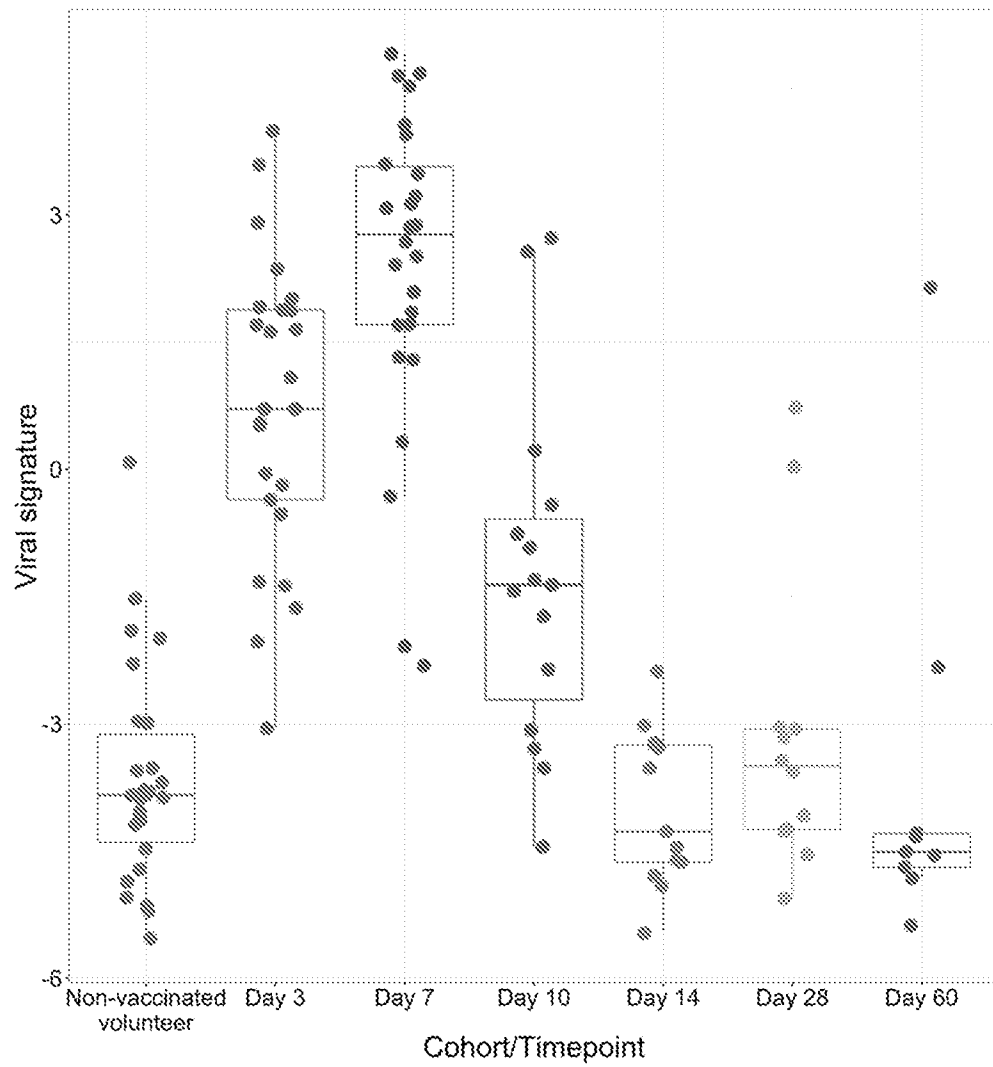


FIGURE 23

PCTAU2016050927-seq1-000001-EN-20161013
SEQUENCE LISTING

<110> ImmuneXpress Pty Ltd
<120> Pathogen biomarkers and uses therefor
<130> 35256588/VPA
<160> 830
<170> PatentIn version 3.5
<210> 1
<211> 1503
<212> DNA
<213> Homo sapiens

<400> 1
atggcctcca tgttgctcgc ccagcgcctg gcctgcagct tccagcacag ctaccgcctg 60
ctggtgcctg gatccagaca cattagtcaa gctgcagcca aagtcgacgt tgaatttgat 120
tatgatgggc ctctgatgaa gacggaagtc ccagggccta gatctcagga gttaatgaaa 180
cagctgaata taattcagaa tgcagaggct gtgcattttt tctgcaatta cgaagagagc 240
cgaggcaatt acctgggtga tgtggacggc aaccgaatgc tggatcttta ttcccagatc 300
tcctctgtcc ccataggtta cagccacccc gccctgtctga aactcatcca acagcctcaa 360
aatgcgagca tgtttgtcaa cagacccgcc ctcggaatcc tgcctccgga gaactttgtg 420
gagaagctcc ggcagtcctt gctctcggtg gctcccaaag ggatgtccca gctcatcacc 480
atggcctgcg gtcctgtctc caatgaaaac gccttaaaga ccatcttcat gtggtaccgg 540
agcaaggaaa gagggcagag gggcttctcc caggaggagc tggagacgtg catgattaac 600
cagggccctg gctgccccga ctacagcatc ctctccttca tgggcgcgtt ccatgggagg 660
accatgggtt gcttagcgac cacgcactct aaagccattc acaagatcga catcccttcc 720
tttgactggc ccatcgcacc gttcccacgg ctgaaatacc ctctggaaga gtttgtgaaa 780
gagaaccaac aggaggaggc ccgctgtctg gaagagggtg aggatctgat tgtgaaatat 840
cgaaaaaaga agaagacggt ggccgggatc atcgtggagc ccatccagtc cgagggtgga 900
gacaaccacg catccgatga cttctttcgg aagctgagag acatcgccag gaagcatggc 960
tgcgcttctt tgggtggacga ggtccagacc ggaggaggct gcacgggcaa gttctggggc 1020
catgagcact ggggcctgga tgaccagca gacgtgatga ccttcagcaa gaagatgatg 1080
actgggggct tcttcacaa ggaggagttc aggcctaattg ctccctaccg gatcttcaac 1140
acctggctgg gggaccgctc caagaacctg ttgctggctg aggtcatcaa catcatcaag 1200
cgaggaggacc tgctaaataa tgcagcccat gccgggaagg ccctgctcac aggactgctg 1260
gacctccagg cccggtaccc ccagttcatc agcagggtga gaggacgagg caccttttgc 1320
tccttcgata ctcccgatga ttccatacgg aataagctca ttttaattgc cagaaacaaa 1380
ggtgtggtgt tgggtggctg tggtgacaaa tccattcggt tccgtccac gctggtcttc 1440
agggatcacc acgctcacct gttcctcaat attttcagtg acatcttagc agacttcaag 1500

taa

1503

<210> 2
 <211> 1278
 <212> DNA
 <213> Homo sapiens

<400> 2
 atgaatgccca tgctggagac tcccgaactc ccagccgtgt ttgatggagt gaagctggct 60
 gcagtggctg ctgtgctgta cgtgatcgtc cgggtgtttga acctgaagag cccacagacc 120
 ccacctgacc tctacttcca ggactcgggg ctctcacgct ttctgctcaa gtcctgtcct 180
 cttctgacca aagaatacat tccaccgttg atctggggga aaagtggaca catccagaca 240
 gccttgtatg ggaagatggg aagggtgagg tcgccacatc cttatgggca ccggaagttc 300
 atcactatgt ctgatggagc cacttctaca ttgacctct tcgagccctt ggctgagcac 360
 tgtgttggag atgatatcac catggtcatc tgccctggaa ttgccaatca cagcgagaag 420
 caatacatcc gcactttcgt tgactacgcc cagaaaaatg gctatcgggtg cgccgtgctg 480
 aaccacctgg gtgccctgcc caacattgaa ttgacctcgc cacgcatgtt cacctatggc 540
 tgcacgtggg aatttggagc catggtgaac tacatcaaga agacatatcc cctgaccag 600
 ctggtcgtcg tgggcttcag cctgggtggg aacatttgtt gcaaatactt gggggagact 660
 caggcaaacc aagagaaggt cctgtgctgc gtcagcgtgt gccaggggta cagtgcactg 720
 agggcccagg aaaccttcat gcaatgggat cagtgccggc ggttctacaa cttcctcatg 780
 gctgacaaca tgaagaagat catcctctcg cacaggcaag ctcttttttg agaccatgtt 840
 aagaaacccc agagcctgga agacacggac ttgagccggc tctacacagc aacatccctg 900
 atgcagattg atgacaatgt gatgaggaag ttacacggct ataactccct gaaggaatac 960
 tatgaggaag aaagttgcat gcggtacctg cacaggattt atgttctct catgctgggt 1020
 aatgcagctg acgatccgtt ggtgcatgaa agtcttctaa ccattccaaa atctctttca 1080
 gagaaacgag agaacgtcat gtttgtgctg cctctgcatg ggggccactt gggcttcttt 1140
 gagggctctg tgctgttccc cgagcccctg acatggatgg ataagctggg ggtggagtac 1200
 gccaacgcca tttgccaatg ggagcgtaac aagttgcagt gctctgacac ggagcagggtg 1260
 gaggccgacc tggagtga 1278

<210> 3
 <211> 1527
 <212> DNA
 <213> Homo sapiens

<400> 3
 atggcagagc tgcagatgtt actagaggag gagatcccgt ctggcaagag ggcgctgac 60
 gagagttacc agaacctgac tcgggtggca gactactgtg aaaacaacta catacaggct 120
 acagacaaga gaaaagcttt agaggagacc aaagcctata caaccaatc tctagctagt 180
 gttgcttata aaataaatgc attggccaac aatgtactcc agttgctgga tatccaagcc 240

PCTAU2016050927-seq1-000001-EN-20161013

tctcagcttc	ggagaatgga	gtcttccatc	aatcatatct	cacagactgt	ggatattcat	300
aaggagaaa	tggcacgaag	agagattggt	attttgacaa	caaataagaa	tacatcaaga	360
actcacaaaa	taatagcacc	tgcgaatatg	gagcgccctg	taaggtatat	tcggaaacct	420
atcgattaca	cagttctgga	tgatgtgggc	catgggtgtca	agtggctaaa	agccaagcat	480
ggaaataacc	agcctgcaag	aactggcaca	ctgtcgagaa	caaatcctcc	tactcagaaa	540
ccgccaagtc	ctcccatgtc	aggccgggga	acactgggac	ggaatactcc	ttataaaaacc	600
ctggaacctg	ttaaaccccc	aacagttcct	aatgactata	tgaccagtcc	tgctaggctt	660
ggaagtcagc	atagtccagg	caggacagca	tctttaaatc	agagaccaag	gacacacagt	720
ggaagtagtg	gaggaagtgg	aagtcgagaa	aacagtggta	gcagtagtat	tggcattccc	780
attgctgtgc	ctacaccttc	gccaccact	attggaccag	aaaacatttc	tgtccctcct	840
ccttctggag	ctccaccagc	accacctctg	gcaccacttc	tcccagttag	cactgtgata	900
gcagccccgg	gctcagctcc	tggttcccag	tatggcacia	tgaccaggca	gatattctga	960
cacaactcta	ctacttcttc	gacatcttct	ggtggatata	gacgaactcc	ctctgtgact	1020
gctcaatttt	ctgctcagcc	tcatgttaat	ggaggtccac	tttatttctca	aaattcaatt	1080
tctattgctc	caccccctcc	ccctatgcct	cagttgactc	cacagatacc	tctcacaggc	1140
ttcgtggcca	gggtgcagga	aaacattgct	gatagtccaa	ctccaccgcc	accacctcca	1200
ccagatgaca	ttcccatggt	tgatgactct	ccacctcccc	caccaccacc	accagtggat	1260
tatgaagatg	aggaggctgc	agtagttcag	tataatgatc	catatgcaga	tggggatcct	1320
gcttggggcc	ccaagaatta	tattgagaaa	gttgttgcaa	tatatgatta	tacaaaagac	1380
aaggatgatg	agctgtcatt	tatggagggt	gcaatcattt	atgttataaa	gaagaatgat	1440
gatggctggt	atgaaggagt	ctgcaatcga	gtgactggtc	tgttccctgg	gaactatggt	1500
gaatcaatca	tgactatac	tgattaa				1527

<210> 4
 <211> 2337
 <212> DNA
 <213> Homo sapiens

<400> 4						
atgcctgcct	tccttggctt	aaagtgtctg	gggaaattgt	gcagctctga	gaaaagcaaa	60
gtcacctcat	ctgagagaac	cagtgccagg	ggctcgaaca	gaaagagact	gattgttgag	120
gaccggaggg	tctctgggac	ctccttcacc	gctcataggc	gtgccactat	cactcatttg	180
ctgtatctct	gtcccaagga	ctactgccca	cgtgggcgtg	tatgtaacag	cgttgatcct	240
tttgtggccc	accctcagga	ccctcaccac	ccatcagaga	agcctgtcat	tactgccat	300
aaatgtgggg	agccttgcaa	gggtgaagtg	cttcgggtcc	agaccaaaca	tttcacatc	360
aagtgtttca	cctgcaaagt	gtgtggctgt	gacctggcac	aagggggctt	cttcataaag	420
aacggagagt	atctctgcac	cctggactac	cagcggatgt	acgggacacg	ctgccatggc	480
tgtggggagt	tcgtggaggg	cgaagtgggt	actgctctgg	gcaagacctt	ccatcccaat	540

PCTAU2016050927-seq1-000001-EN-20161013

tgctttgctt	gtactatctg	caagcgcccc	tttccacccg	gagaccgagt	cacattcaat	600
gggagagact	gcctttgtca	actctgtgca	cagccgatgt	cgtccagtcc	gaaagaaacc	660
accttctcca	gcaattgtgc	cggctgcgga	agagatatca	agaatgggca	ggcgctgctg	720
gcgctggata	agcagtggca	cttgggggtgc	tttaaagtca	agtcctgcgg	gaaggtcctc	780
accggggagt	acatcagcaa	ggatggtgct	ccgtactgtg	aaaaggacta	ccagggactc	840
tttgggggtga	aatgtgaggc	gtgtcaccag	tttatcacag	ggaaagtcct	ggaggcaggt	900
gacaaacatt	accaccccag	ctgtgcacga	tgcagcagat	gcaaccagat	gttcacagaa	960
ggagaggaaa	tgtatcttca	aggctccacc	gtttggcatc	ccgactgtaa	gcaatctacg	1020
aagaccgagg	aaaagctgcg	gcctaccagg	acatcctcgg	aaagtattta	ttctaggcca	1080
ggctccagta	ttcctggctc	accaggtcac	actatctatg	caaaagtaga	caatgagatc	1140
ctggattaca	aggatttagc	agccattccg	aagggtcaagg	caatttatga	cattgaacgt	1200
ccagatctta	ttacctatga	gcctttctac	acttcgggct	atgatgacaa	acaggagaga	1260
cagagccttg	gagagtctcc	gaggactttg	tctcctactc	catcagcaga	agggtaccag	1320
gatgttcggg	atcggatgat	ccatcgggtc	acgagccagg	gctccatcaa	ctcccctgtg	1380
tacagccgcc	acagctacac	tccaaccacg	tcccgctctc	cccagcattt	ccacagacct	1440
ggcaatgagc	cgtccagcgg	ccggaactcc	cctctccctt	accggccaga	cagccgcctt	1500
ctaactccaa	cttacgtca	ggcccctaaa	catttccatg	ttccagatca	aggaatcaac	1560
atttaccgaa	agccacccat	ctacaaacag	catgctgcct	tggcagccca	gagcaagtcc	1620
tcagaagata	tcatcaagtt	ttccaagttc	ccagcagccc	aggcaccaga	ccccagcgag	1680
acaccaaaga	ttgagacgga	ccactggcct	ggccccccct	catttgctgt	cgtaggacct	1740
gacatgaaac	gcagatctag	tggcagagag	gaagatgatg	aggaacttct	gagacgtcgg	1800
cagcttcaag	aagagcaatt	aatgaagctt	aactcaggcc	tgggacagtt	gatcttgaaa	1860
gaagagatgg	agaaagagag	ccgggaaagg	tcatctctgt	tagccagtcg	ctacgattct	1920
cccatcaact	cagcttcaca	tattccatca	tctaaaactg	catctctccc	tggctatgga	1980
agaaatgggc	ttcaccggcc	tgtttctacc	gacttcgctc	agtataacag	ctatggggat	2040
gtcagcgggg	gagtgcgaga	ttaccagaca	ctcccagatg	gccacatgcc	tgcaatgaga	2100
atggaccgag	gagtgtctat	gcccacatg	ttggaaccaa	agatatttcc	atatgaaatg	2160
ctcatggtga	ccaacagagg	gcgaaacaaa	atcctcagag	aggtggacag	aaccaggctg	2220
gagcgccact	tagcccctga	agtgtttcgg	gaaatctttg	gaatgtccat	acaggagttt	2280
gacaggttac	ctctttggag	acgcaacgac	atgaagaaaa	aagcaaaact	cttctaa	2337

<210> 5
 <211> 1275
 <212> DNA
 <213> Homo sapiens

<400> 5

atgcagagggc tgcaggtagt gctggggccac ctgagggggtc cggccgattc cggctggatg	60
ccgcaggccg cgccttgcc tgcagggtgcc ccgcaggcct cggccgcgga cgtggtggtg	120
gtgcacgggc ggcgcacggc catctgccg gcgggccgcg gcggttcaa ggacaccacc	180
cccgacgagc ttctctcggc agtcatgacc gcggttctca aggacgtgaa tctgaggccg	240
gaacagctgg gggacatctg tgtcggaat gtgctgcagc ctggggccg ggcaatcatg	300
gcccgaatcg cccagtttct gagtgacatc ccggagactg tgcctttgtc cactgtcaat	360
agacagtgtt cgtcggggct acaggcagtg gccagcatag cagggtggcat cagaaatggg	420
tcttatgaca ttggcatggc ctgtggggtg gagtccatgt ccctggctga cagagggaac	480
cctggaaata ttacttcgcg cttgatggag aaggagaagg ccagagattg cctgattcct	540
atggggataa cctctgagaa tgtggctgag cggtttgga tttcacggga gaagcaggat	600
acctttgccc tggcttccca gcagaaggca gcaagagccc agagcaaggg ctgtttccaa	660
gctgagattg tgcctgtgac caccacggtc catgatgaca agggcaccaa gaggagcatc	720
actgtgacct aggatgaggg tatccgcccc agcaccacca tggagggcct ggccaaactg	780
aagcctgcct tcaagaaaga tggttctacc acagctggaa actctagcca ggtgagtgt	840
ggggcagctg ccatcctgct ggcccggagg tccaaggcag aagagttggg ctttcccatc	900
cttgggtgcc tgaggtctta tgcagtgggt ggggtccac ctgacatcat gggcattgga	960
cctgcctatg ccatcccagt agctttgcaa aaagcagggc tgacagtgag tgacgtggac	1020
atcttcgaga tcaatgaggc ctttgcaagc caggctgcct actgtgtgga gaagctacga	1080
ctccccctg agaaggtgaa cccctgggg ggtgcagtgg ccttagggca cccactgggc	1140
tgcactgggg cagcagagt catcacgtg ctcaatgagc tgaagcgccg tgggaagagg	1200
gcatacggag tgggtgtccat gtgcatcggg actggaatgg gagccgctgc cgtctttgaa	1260
taccctggga actga	1275

<210> 6
 <211> 2337
 <212> DNA
 <213> Homo sapiens

<400> 6	
atgaagatga ctgtggattt cgaggagtgt ctgaaggact cgccccgctt cagggcagct	60
ttggaagaag tagaaggtga tgtggcagaa ttggaactaa aacttgataa gcttgtgaaa	120
ctttgtattg caatgattga tactggaaaa gccttttgtg ttgcaaataa acagttcatg	180
aatgggattc gagacctggc tcagtattct agtaatgatg ctgtcgttga gacaagtttg	240
accaagtttt ctgacagtct tcaagaaatg ataaattttc acacaatcct gtttgaccaa	300
actcagagat caattaaggc acagcttcag aactttgtta aagaagatct tagaaaattc	360
aaagatgcc aagaagcaatt cgaaaaagtc agtgaagaaa aagaaaatgc gttagtaaaa	420
aatgcccaag taaaagaaa caaacaacat gaagttgaag aagccaccaa cattctgaca	480
gcaacaagaa aatgtttccg acacatagcc ctcgattatg tgcttcagat taatgttctt	540

PCTAU2016050927-seq1-000001-EN-20161013

caatcaaaaa	ggagatcaga	aatcctaaaa	tcaatgtttg	catttatgta	tgcccatttg	600
gccttctttc	atcaaggata	tgatctgttt	agtgaacttg	gaccctacat	gaaggatctt	660
ggtgcacagt	tggatcgact	ggttgtggat	gcagcaaagg	agaaaagaga	aatggagcaa	720
aaacattcca	ccattcaaca	aaaggatttc	tccagtgatg	attctaagtt	agaatataac	780
gtagatgctg	caaatggcat	agttatggaa	ggatatctgt	tcaaacgagc	cagcaatgcc	840
ttcaaaaactt	ggaacaggcg	ctggttttca	atacagaata	atcagttggt	ttaccagaaa	900
aaatttaagg	ataatccgac	tgtggtagtt	gaagacctca	ggctttgcac	agtgaacat	960
tgtgaagaca	tagagcgacg	attctgcttt	gaggtggtct	cgccaacaaa	aagttgcatg	1020
ctccaggcag	attccgaaaa	gctgcgccag	gcatggatta	aggctgttca	gaccagtatt	1080
gctactgctt	atagagagaa	gggtgatgaa	tcagagaagc	tggataagaa	atcatctcca	1140
tccacaggaa	gcctagattc	tggaaatgag	tccaaagaga	aattattgaa	aggagaaagt	1200
gcgcttcagc	gggtccagtg	tatccctggc	aatgccagct	gttgtgactg	tggcctggca	1260
gatccacggt	gggccagcat	caacctgggc	atcaccttgt	gtatcgagtg	ctccggaatt	1320
caccggagcc	ttggggttca	tttttcaaaa	gtacgatctt	taactttaga	cacctgggag	1380
ccagaacttt	taaagcttat	gtgtgagttg	gggaatgatg	ttataaatcg	agtttatgaa	1440
gctaattgtg	aaaaaatggg	aataaagaaa	ccccaaccag	gacaaagaca	ggagaaggag	1500
gcatatatca	gagcaaaaata	tgtggagagg	aaattttgtg	ataaatattc	tatatcatta	1560
tcacctcctg	agcagcaaaa	aaagtttgtc	tctaaaagtt	ctgaagaaaa	gaggctgagc	1620
atttctaaat	ttggggccagg	ggaccaagtc	agagcatctg	cccaaagttc	agtcagaagt	1680
aatgacagtg	gaattcagca	gagctctgat	gatggaagag	aatctttacc	ctccacggtg	1740
tcagccaata	gtttatatga	gcctgaagga	gaaaggcaag	attctttctat	gtttcttgac	1800
tcgaaacatc	ttaatccagg	acttcagctt	tatagggcgt	catatgaaaa	aaaccttcct	1860
aaaatggctg	aggctttggc	tcatggtgca	gacgtgaact	gggccaattc	agaggaaaac	1920
aaagcgacac	cacttattca	ggctgtatta	gggggctctt	tggtgacgtg	tgagttcctc	1980
ctacagaatg	gtgctaattg	caaccaaaga	gatgtccaag	ggcggggacc	attgcaccat	2040
gccaccgtct	tagggcacac	agggcaggta	tgttttattcc	taaaacgagg	tgccaatcaa	2100
catgccactg	atgaagaagg	gaaagaccct	ttgagcatag	ctgtggaagc	agccaatgct	2160
gatatagtca	ccttgttacg	tttagcaaga	atgaatgaag	agatgcggga	atcagaagga	2220
ctttatggac	agccagggtg	tgaaacttat	caggacatat	ttcgtgattt	ttcccaaattg	2280
gcatccaata	atccagagaa	actaaatcgt	ttccagcaag	attcacagaa	attctga	2337

<210> 7
 <211> 1518
 <212> DNA
 <213> Homo sapiens

<400> 7

atggcggagtc	cgcccgaggc	ctcctccttc	ttcccccttg	ttgtcctcct	gctcgccggc	60
agcggcgggt	ccgggccccg	gggggtccag	gctctgctgt	gtgctgtcac	cagctgcctc	120
caggccaact	acacgtgtga	gacagatggg	gcctgcatgg	tttccatttt	caatctggat	180
gggatggagc	accatgtgcg	cacctgcata	cccaaagtgg	agctgggtccc	tgccgggaag	240
cccttctact	gcctgagctc	ggaggacctg	cgcaacaccc	actgctgcta	caactgactac	300
tgcaacagga	tcgacttgag	ggtgcccagt	ggtcacctca	aggagcctga	gcacccgtcc	360
atgtggggcc	cggtggagct	ggtaggcata	atcgccggcc	cggtgttcct	cctgttcctc	420
atcatcatca	ttgttttcct	tgtcattaac	tatcatcagc	gtgtctatca	caaccgccag	480
agactggaca	tggaagatcc	ctcatgtgag	atgtgtctct	ccaaagacaa	gacgctccag	540
gatcttgtct	acgatctctc	cacctcaggg	tctggctcag	ggttaccctt	ctttgtccag	600
cgcacagtgg	cccgaacctt	cgttttacaa	gagattattg	gcaaggggtcg	gtttggggaa	660
gtatggcggg	gccgctggag	gggtggtgat	gtggctgtga	aaatattctc	ttctcgtgaa	720
gaacggtctt	ggttcagggg	agcagagata	taccagacgg	tcattgctgcg	ccatgaaaac	780
atccttggat	ttattgctgc	tgacaataaa	gataatggca	cctggacaca	gctgtggctt	840
gtttctgact	atcatgagca	cgggtccctg	tttgattatc	tgaaccggta	cacagtgaca	900
attgagggga	tgattaagct	ggccttgtct	gctgctagtg	ggctggcaca	cctgcacatg	960
gagatcgtgg	gcaccaagg	gaagcctgga	attgctcata	gagacttaaa	gtcaaagaac	1020
attctggtga	agaaaaatgg	catgtgtgcc	atagcagacc	tgggcctggc	tgtccgtcat	1080
gatgcagtca	ctgacacat	tgacattgcc	ccgaatcaga	gggtggggac	caaacgatac	1140
atggcccctg	aagtacttga	tgaaccatt	aatatgaaac	actttgactc	ctttaaatgt	1200
gctgatattt	atgccctcgg	gcttgatat	tgggagattg	ctcgaagatg	caattctgga	1260
ggagtccatg	aagaatatca	gctgccatat	tacgacttag	tgccctctga	cccttccatt	1320
gaggaaatgc	gaaaggttgt	atgtgatcag	aagctgcgtc	ccaacatccc	caactggtgg	1380
cagagttatg	aggcactgcg	ggtgatgggg	aagatgatgc	gagagtgttg	gtatgccaac	1440
ggcgagccc	gcctgacggc	cctgcgcata	aagaagaccc	tctcccagct	cagcgtgcag	1500
gaagacgtga	agatctaa					1518

<210> 8

<211> 444

<212> DNA

<213> Homo sapiens

<400> 8

atgagccaaa	ccagggattt	acagggagga	aaagctttcg	gactgctgaa	ggcccagcag	60
gaagagaggc	tggatgagat	caacaagcaa	ttcctagacg	atcccaaata	tagcagtgat	120
gaggatctgc	cctccaaact	ggaaggcttc	aaagagaaat	acatggagtt	tgaccttaat	180
ggaaatggcg	atattgatat	catgtccctg	aaacgaatgc	tggagaaact	tggagtcccc	240
aagactcacc	tagagctaaa	gaaattaatt	ggagaggtgt	ccagtggctc	cggggagacg	300

PCTAU2016050927-seq1-000001-EN-20161013

ttcagctacc ctgactttct caggatgatg ctgggcaaga gatctgccat cctaaaaatg	360
atcctgatgt atgaggaaaa agcgagagaa aaggaaaagc caacaggccc cccagccaag	420
aaagctatct ctgagttgcc ctga	444

<210> 9
 <211> 1458
 <212> DNA
 <213> Homo sapiens

<400> 9	
atggagctcg aagtccggcg ggtccgacag gcgttcctgt cgggccggtc gcgacctctg	60
cggtttcggc tgcagcagct ggaggccctg cggaggatgg tgcaggagcg cgagaaggat	120
atcctgacgg ccatcgccgc cgacctgtgc aagagtgaat tcaatgtgta cagtcaggaa	180
gtcattactg tccttgggga aattgatttt atgcttgaga atcttcctga atgggttact	240
gctaaaccag ttaagaagaa cgtgctcacc atgctggatg aggcctatat tcagccacag	300
cctctgggag tgggtgctgat aatcggagct tggaattacc ccttcgttct caccattcag	360
ccactgatag gagccatcgc tgcaggaaat gctgtgatta taaagccttc tgaactgagt	420
gaaaatacag ccaagatctt ggcaaagctt ctccctcagt atttagacca ggatctctat	480
attgttatta atggtggtgt tgaggaaacc acggagctcc tgaagcagcg atttgaccac	540
attttctata cgggaaacac tgcggttggc aaaattgtca tggaagctgc tgccaagcat	600
ctgacccttg tgactcttga actgggaggg aaaagtccat gttatattga taaagattgt	660
gacctggaca ttgtttgcag acgcataacc tggggaaaat acatgaattg tggccaaacc	720
tgcattgcac ccgactatat tctctgtgaa gcatccctcc aaaatcaa at tgtatggaag	780
attaaggaaa cagtgaagga attttatgga gaaaatataa aagagtctcc tgattatgaa	840
aggatcatca atcttcgtca ttttaagagg atactaagtt tgcttgaagg acaaaagata	900
gcttttgggtg gggagactga tgaggccaca cgctacatag cccaacagt acttaccgat	960
gttgatccta aaaccaaggt gatgcaagaa gaaatttttg gaccaattct tccaatagtg	1020
cctgtgaaaa atgtagatga ggccataaat ttcataaatg aacgtgaaaa gcctctggct	1080
ctttatgtat tttcgcataa ccataagctc atcaaacgga tgattgatga gacatccagt	1140
ggaggtgtca caggcaatga cgtcattatg cacttcacgc tcaactcttt cccatttgga	1200
ggagtgggtt ccagtgggat gggagcttat cacggaaaac atagttttga tactttttct	1260
catcagcgtc cctgtttatt aaaaagttaa aagagagaag gtgctaacaa actcagatat	1320
cctcccaaca gccagtcaaa ggtggattgg ggaaaatttt ttctcttgaa acggttcaac	1380
aaagaaaaac tcggtctcct gttgctcact ttcctgggta ttgtagccgc tgtgcttgtc	1440
aaggcagaat attactga	1458

<210> 10
 <211> 720
 <212> DNA

<213> Homo sapiens

<400> 10

atggaaaaag	aaaaaggaaa	tgatgatgga	ataccagacc	aagagaattc	cttggatttt	60
tctgaacact	ttaaccaact	tgaattgttg	gaaacacatg	gacaccttat	tcctactggt	120
actcaaagtc	tttgggtagg	caattctgat	gaagatgagg	agcaagatga	caaaaatgaa	180
gagtgggtatc	gattgcaaga	aaaaaaaaatg	gaaaaagacc	caagcagatt	gcttcttttg	240
gctgctgaaa	aaaatcggct	taccacagtg	cggagactcc	tttctgaaaa	ggccactcac	300
gtgaacacta	gggatgaaga	tgagtatacc	cctcttcac	gagcagccta	cagtggacac	360
ttagatattg	ttcaggagct	cattgcacag	ggggccgatg	ttcatgcagt	gactgtggat	420
ggctggacgc	ccctgcacag	tgcttgtaag	tggaataata	ccagagtggc	ttctttctta	480
ctgcagcatg	atgcagatat	caatgcccaa	acaaaaggcc	tcttgacccc	cttgcattct	540
gctgctggga	acagagacag	caaggatacc	ctagaactcc	tcctgatgaa	ccgttacgtc	600
aaaccagggc	tgaaaaacaa	cttgaagaa	actgcatttg	atattgccag	gaggacaagt	660
atctatcact	acctctttga	aattgtggaa	ggctgtacaa	attcttcacc	tcagtcttaa	720

<210> 11

<211> 1728

<212> DNA

<213> Homo sapiens

<400> 11

atgcagtccc	cctggaaaat	ccttacggtg	gcgcctctat	tcttgctcct	gtctcttcag	60
tcctcggcct	ctccagccaa	cgatgaccag	tccaggccca	gcctctcgaa	tgggcacacc	120
tgtgtagggg	gtgtgctggg	ggtgtctgta	atagaacagc	ttgctcaagt	tcacaactcg	180
acgggtccagg	cctcgatgga	gagactgtgc	agctacctgc	ctgaaaaact	gttcttgaaa	240
accacctgct	atttagtcat	tgacaagttt	ggatcagaca	tcataaaaact	gcttagcgca	300
gatatgaatg	ctgatgtggg	atgtcacact	ctggagtttt	gtaaacagaa	cactggccaa	360
ccattgtgtc	atctctaccc	tcttcccaag	gagacatgga	aatttacact	acagaaggca	420
agacaaaattg	tcaagaagtc	cccgattctg	aaatattcta	gaagtgggtc	tgacatttgt	480
tcactcccgg	ttttggccaa	gatctgccag	aaaattaaat	tagctatgga	acagtctgtg	540
ccattcaaag	atgtggattc	agacaaatac	agcgttttcc	caacactgcg	gggctatcac	600
tggcggggga	gagactgtaa	tgacagcgac	gagtcagtgt	accaggtag	aaggccgaac	660
aactgggatg	tccatcagga	ttcaaactgt	aatggcattt	ggggtgtcga	tccaaaagat	720
ggagttccat	atgagaagaa	attctgtgaa	ggttcacagc	ccaggggaat	cattttgctg	780
ggagactcag	ctggggctca	ttttcacatc	tctcctgaat	ggatcacagc	gtcgcagatg	840
tctttgaact	ctttcatcaa	tctaccaaca	gcccttacca	acgagcttga	ctggccccaa	900
ctctctggtg	ctacaggatt	tctggactcc	actgttggaa	ttaaagaaaa	atctattttac	960
cttcgcttat	ggaaaagaaa	ccactgtaat	cacagggact	accagaatat	ttcaagaat	1020

ggtgcatctt	cccgaacct	gaagaaattt	atagaaagct	tgtctagaaa	caaggtgttg	1080
gactatcccc	ccatcgttat	atatgccatg	attggaaatg	atgtctgcag	tggaagagt	1140
gaccagttcc	cagccatgac	cactcctgag	aaactctact	ccaacgtcat	gcagactctg	1200
aagcatctaa	attcccacct	gccaatggc	agccatgtta	ttttgtatgg	cttaccagat	1260
ggaacctttc	tctgggataa	tttgacaaac	agatatcatc	ctctcggcca	gctaaataaa	1320
gacatgacct	atgcgcagtt	gtactccttc	ctgaactgcc	tccaggtcag	cccctgccac	1380
ggctggatgt	cttccaacaa	gacgttgccg	actctcactt	cagagagagc	agagcaactc	1440
tccaacacac	tgaaaaaaat	tgcagccagt	gagaaattta	caaacttcaa	tcttttctac	1500
atggattttg	ccttccatga	aatcatacag	gagtggcaga	agagaggcgg	acagccctgg	1560
cagctcatcg	agcccgtgga	tggattccac	cccaacgagg	tggctttgct	gttgttggcg	1620
gatcatttct	ggaaaaaggt	gcagctccag	tggcccaaaa	tcctgggaaa	ggagaatccg	1680
ttcaaccccc	agattaaaca	ggtgtttgga	gaccaaggcg	ggcactga		1728

<210> 12
 <211> 2001
 <212> DNA
 <213> Homo sapiens

<400> 12	
atgggtgagt	caagtgaaga catagaccaa atgttcagca ctttgctggg agagatggat 60
cttctgactc	agagtttagg agttgacact ctccctcctc ctgaccctaa tccaccacaga 120
gctgaattta	actacagtgt ggggttttaa gatttaaagt agtccttaaa tgcactggaa 180
gaccaagatt	tagatgctct catggcagat ctggtagcag acataagtga ggctgagcag 240
aggacaatcc	aggcacagaa agagtccttg cagaatcaac atcattcagc atctctacaa 300
gcatcaatth	tcagtgggtgc agcctctctt ggttatggaa caaatgttgc tgccactggt 360
atcagccaat	atgaggatga cttaccacct ccaccagccg atcctgtgtt agaccttcca 420
ctgccaccac	cacctcctga acctctctct caggaagagg aagaagccca agccaaggct 480
gataaaatta	agctggcgct ggaaaaactg aaggaggcca aggttaagaa gctcgtcgtc 540
aagggtgcac	tgaatgataa cagcacaaag tcaactgatg tggatgagcg gcagctggcc 600
cgagatgttc	tggacaacct ttctgagaaa actcattgtg actgcaatgt agactggtgt 660
ctttatgaaa	tctaccggga actacaaatt gagaggtttt ttgaagacca tgaaaatgtt 720
gttgaagtct	tatcagactg gacaagagac acagaaaata aaatactatt tttggagaaa 780
gaggagaaat	atgctgtatt taaaaacccc cagaatttct acttggataa cagaggaaaa 840
aaagaaagca	aggaaactaa tgagaaaatg aatgctaaga acaaggaatc cttacttgag 900
gaaagtttct	gtggaacatc tatcattgta ccagaactgg aaggagctct ttatttgaaa 960
gaagatggaa	agaaatcctg gaaaaggcgc tattttcttt tacgggcttc tggaatttat 1020
tatgtaccca	aaggaaagac taagacatct cgagatctgg cgtgttttat acagtttgaa 1080
aatgtcaaca	tttactatgg gactcagcat aaaatgaaat ataaagcgcc cactgactat 1140

tgctttgttt taaagcacc	ccaaattcag aaggagtccc	agtatatcaa gtatctctgc	1200
tgtgatgaca caagaaccct	taaccagtgg gtcatgggaa	tacggatagc caagtatggg	1260
aagactctct atgataacta	ccagcgggct gtggcaaagg	ctggacttgc ctctcggtgg	1320
acaaacttgg ggacagtcaa	tgcagctgca ccagctcagc	catctacagg acctaaaaca	1380
ggcaccaccc agcccaatgg	acagattccc caggctacac	attctgtcag tgctgtttctc	1440
caagaggccc agagacatgc	tgaaacatcg aaggataaga	agccagccct cgggaaccac	1500
cacgaccggg cagtgtcccg	ggccccgcac gcccacaagt	ccagcctgcc cccgccccct	1560
ccggtgcgga ggtcctccga	caccagcggc agtcccgcc	cgccccctca ggccaagggc	1620
acaggcggcg ggggcttgcc	cgccccaccc gacgacttcc	tgccgccgcc gccaccgccg	1680
ccgccccctg atgaccctga	gctcccgccg ccgcccccg	acttcatgga gccgccccca	1740
gacttcgtgc ccccgcccc	gccgtcgtac gcagggatcg	cgggctcaga gctgcccccg	1800
ccgccgccgc cgccgcccc	gcccgcgcc gcccctgcc	ccgactccgc caggccgccc	1860
cccgcggtgg ccaagaggcc	tcctgtgccc cccaagaggc	aagagaaccc agggcacccc	1920
ggcggagcag gaggcgggga	gcaagatttc atgtcagacc	tcataaaagc ttgcaaaag	1980
aagagaggca acgtgtccta	g		2001

<210> 13
 <211> 2292
 <212> DNA
 <213> Homo sapiens

<400> 13		
atggcggcca ccgggaccgc	ggccgccgca gccacgggca	ggctcctgct tctgctgctg
gtggggctca cggcgccctg	cttggcgctg gccggctaca	tcgaggctct tgcagccaat
gccggaacag gatttctgt	tgctgagcct caaatcgcaa	tgttttgtgg gaagttaaat
atgcatgtga acattcagac	tgggaaatgg gaacctgac	caacaggcac caagagctgc
tttgaaacaa aagaagaagt	tcttcagtac tgtcaggaga	tgtatccaga gctacagatc
acaaatgtga tggaggcaaa	ccagcgggtt agtattgaca	actggtgccg gagggacaaa
aagcaatgca agagtcgctt	tgttacacct ttcaagtgtc	tcgtgggtga atttgtaagt
gatgtcctgc tagttccaga	aaagtgccag tttttccaca	aagagcggat ggaggtgtgt
gagaatcacc agcactggca	cacggtagtc aaagaggcat	gtctgactca gggaatgacc
ttatatagct acggcatgct	gctcccatgt ggggtagacc	agttccatgg cactgaatat
gtgtgctgcc ctcagacaaa	gattattgga tctgtgtcaa	aagaagagga agaggaagat
gaagaggaag aggaagagga	agatgaagag gaagactatg	atgtttataa aagtgaattt
cctactgaag cagatctgga	agacttcaca gaagcagctg	tggatgagga tgatgaggat
gaggaagaag gggaggaagt	ggtggaggac cgagattact	actatgacac cttcaaagga
gatgactaca atgaggagaa	tcctactgaa cccggcagcg	acggcaccat gtcagacaag
		900

gaaattactc atgatgtcaa agctgtctgc tcccaggagg cgatgacggg gccctgccgg	960
gccgtgatgc ctcgttggtta cttcgacctc tccaagggaa agtgcgtgcg ctttatatat	1020
gggtggctgcg gcggcaacag gaacaatttt gagtctgagg attattgtat ggctgtgtgt	1080
aaagcgatga ttcttccaac tcctctgccca accaatgatg ttgatgtgta tttcgagacc	1140
tctgcagatg ataatgagca tgctcgcttc cagaaggcta aggagcagct ggagattcgg	1200
caccgcaacc gaatggacag ggtaaagaag gaatgggaag aggcagagct tcaagctaag	1260
aacctcccca aagcagagag gcagactctg attcagcact tccaagccat ggttaaagct	1320
ttagagaagg aagcagccag tgagaagcag cagctggtgg agaccacact ggcccagagt	1380
gaagctatgc tgaatgaccg ccgtcggatg gctctggaga actacctggc tgccttgcat	1440
tctgaccgcg cacggcctca tcgcattctc caggccttac ggcgttatgt ccgtgctgag	1500
aacaaagatc gttacatac catccgtcat taccagcatg tgttggtgtg tgaccagaa	1560
aaggcggccc agatgaaatc ccaggtgatg acacatctcc acgtgattga agaaaggagg	1620
aaccaaagcc tctctctgct ctacaaagta ctttatgtag cccaagaaat tcaagaggaa	1680
attgatgagc tccttcagga gcagcgtgca gatatggacc agttcactgc ctcaatctca	1740
gagaccctg tggacgtccg ggtgagctct gaggagagtg aggagatccc accgttccac	1800
cccttccacc ccttcccagc cctacctgag aacgaagaca ctgagccgga gttgtaccac	1860
ccaatgaaaa aaggatctgg agtgggagag caggatgggg gactgatcgg tgccgaagag	1920
aaagtgatta acagtaagaa taaagtggat gaaaacatgg tcattgacga gactctggat	1980
gttaaggaaa tgattttcaa tgccgagaga gttggaggcc tcgaggaaga gcgggaatcc	2040
gtgggcccac tgccgggagga cttcagtctg agtagcagtg ctctcattgg cctgctggtc	2100
atcgcagtgg ccattgccac ggtcatcgtc atcagcctgg tgatgctgag gaagaggcag	2160
tatggcacca tcagccacgg gatcgtggag gttgatccaa tgctcaccac agaagagcgt	2220
cacctgaaca agatgcagaa ccatggctat gagaacccca cctacaaata cctggagcag	2280
atgcagattt ag	2292

<210> 14
 <211> 3618
 <212> DNA
 <213> Homo sapiens

<400> 14	
atgaccaaga aggaggagcc cccaccgagc cgagtccac gggccgtgcg cgtggccagt	60
ctgctgagcg agggagagga actgtctggg gacgaccaag gggatgagga agaggatgac	120
cacgcctatg agggcgtccc caatggcgga tggcatacca gcagcctgag cttgtccttg	180
cccagcacaa tagctgcgcc acaccccatg gacggggcgc ctgggggctc caccctcgtc	240
acaccagtca tcaaggctgg ctggctggac aagaaccac cgcagggatc ttacatctat	300
cagaaacgat gggtagact ggatactgat cacctgcgat actttgacag taacaaggac	360
gcttactcta agcgctttat ctctgtggcc tgcattctcc acgtggctgc catcggggac	420

cagaagtttg aagtgatcac aaacaaccga acctttgcct tccgggcaga gagtgatgtg	480
gagcgggaagg agtggatgca ggccctgcag caggccatgg ctgagcagcg tgccccgggcc	540
cggctctcta gcgcttatct gctgggagtt ccaggctcag agcagcctga ccgcgctggc	600
agcctggagc ttcgtggctt caagaataag ctgtacgtgg ccgtggtcgg ggacaaagtg	660
cagctctaca agaatctaga ggagtaccac ctgggcattg gcatcacctt catcgacatg	720
agcgtgggca acgtgaagga agtggaccgg cgcagcttcg acctcaccac gccctaccgc	780
atcttcagct tctctgctga ctcagagcta gagaaggagc agtggttgga ggccatgcag	840
ggagccatcg ctgaggccct gtctacctcg gaggtggccg agcgcatctg ggctgcagcc	900
cccaacaggt tctgtgctga ctgcggggct cctcagcctg actgggcctc catcaacctc	960
tgtgttgta tctgaagcg ctgtgcaggg gagcaccgtg gcctgggcgc tggcgtctcc	1020
aaggtgcgga gcctgaagat ggacaggaag gtgtggacag aaacacttat cgagctcttc	1080
ttacagctgg ggaatggcg tgggaaccgc ttctgggcag ccaacgtgcc cccagtgag	1140
gccctgcagc ccagcagcag cccagcacc cggcgggtgcc acctggaggc caagtaccgt	1200
gagggcaagt accgccgcta ccaccgcctc tttggcaacc aggaggagct ggacaaggcc	1260
ctgtgtgctg cagtcaccac cacagacctg gctgagacct aggcgctcct gggctgtggg	1320
gctgggatca actgcttctc gggggaccct gagggcccca cggccctggc tcttgcagag	1380
caggcggggc agacgctgca gatggaattc cttcggaaca accggaccac agaggtgcct	1440
cggctggact cgatgaagcc cctggaaaag cactactcag ttgtcctgcc gaccgtgagc	1500
cacagtggct tcctctacaa gactgcctct gccggcaagc tgctacagga ccgccgggcc	1560
cgggaagagt tcagccggcg ctggtgtgtc cttggtgacg gggtcctgag ctactttgag	1620
aatgagcggg cagtgacccc caatggagag attcgggccca gcgagattgt gtgcctggca	1680
gtgccccctc ctgacaccca tggctttgag cacaccttg aggtgtacac ggaggagaaa	1740
cggctgtacc tgtttgggct ggagagtgcg gagcaggctc atgagtgggt caagtgtatt	1800
gctaaggcat tcgtgcctcc cctagccgag gatctgctgg cccgggattt tgagcggctg	1860
ggacgcctac cctacaaagc tggcctgagc ctacagcggg cccaggaggg ctggttctct	1920
ctcagtggct cggagctccg tgctgtcttc ccggaggggc cctgcgaaga gccgtgcaa	1980
ctacggaaac tgcaggagct ttccatccag ggggacagtg agaaccagg tctggtgctg	2040
gtggagcgaa ggaggacact gtacatacag ggcgagcggc ggctggactt catgggttgg	2100
ctggggggcca tccagaaagc agccgccagc atgggggaca cgctgtcgga gcagcagctt	2160
ggggactcgg atatcccgt gatcgtgtac cgctgtgtgg actacatcac gcagtgcggc	2220
ctgacctccg agggcatcta ccgcaagtgt gggcagacat cgaagacaca gcggctgctg	2280
gagagcctgc ggcaggatgc gcgctctgtg cacctcaagg agggcgagca gcacgtggat	2340
gatgtttcct cggcgctcaa gcgcttcctg cgcgacctgc ctgatgggct cttcactcgc	2400
gcccagcgcc taacctggct ggaggcctca gagattgagg acgaggagga gaaggctctc	2460

PCTAU2016050927-seq1-000001-EN-20161013

aggtaccgag	agctgctggt	gcggctgccc	cctgtcaacc	gggccacagt	gaaggccctt	2520
atcagccacc	tgtactgtgt	tcagtgtctt	tcagacacga	accagatgaa	cgtgcacaac	2580
ctggcaattg	tgtttgggcc	cacgctcttc	cagacagatg	ggcaggacta	caaggctggc	2640
cgtgtggtgg	aagacctcat	taaccactat	gtggtggtgt	ttagtgtgga	tgaggaagag	2700
ctcaggaagc	agcgggagga	gatcactgcc	attgtgaaga	tgcgcgtggc	tggcactgcc	2760
agtgggaccc	agcatgccgg	tgacttcata	tgcacagtgt	atctggaaga	gaagaaggca	2820
gagactgagc	agcatatcaa	ggtcccagca	tccatgactg	ctgaggagct	caccctggag	2880
atcctggatc	gccggaacgt	gggcatcagg	gagaaggact	attggacctg	ctttgaggtc	2940
aacgagaggg	aggaggcaga	gcgccccctg	cactttgcgg	agaagggtgt	gcccatacctg	3000
cacgggctgg	gcacggacag	ccacctggtg	gtgaagaagc	accaggccat	ggaggccatg	3060
ctgctgtacc	tggccagccg	tgtcggtgac	accaagcatg	gcatgatgaa	gttccgtgag	3120
gaccgcagcc	tcctgggcct	gggcctgccc	tcaggtggct	tccacgatcg	ctacttcata	3180
ctcaacagca	gctgcttgcg	gctctacaag	gaggtccgga	gccagaggcc	gtggagcggg	3240
gcccctgaga	ccagtcaccg	gcctgagaag	gagtggccta	ttaagagtct	caaagtctac	3300
ctgggagtga	agaagaaact	caggccaccc	acctgctggg	gcttcacagt	ggtgcatgag	3360
acagagaaac	atgagaagca	gcagtggtag	ctctgctgtg	acacacagat	ggagctccgg	3420
gagtggttcg	ctacctttct	gtttgtgcag	catgacggcc	tgggtgtggc	ctcagagccc	3480
tcacgcgtgt	cccgggcagt	gcctgaggtc	cggctgggta	gtgtgtcact	gatccccctt	3540
cgaggtagtg	aaaatgaaat	gcgccggagt	gtggctgcct	tcaccgcgga	ccctctgtct	3600
cttctgcgca	acgtctga					3618

<210> 15
 <211> 1428
 <212> DNA
 <213> Homo sapiens

<400> 15	
atgcagaaat	ctacaaattc
tgatacttcc	gtggaaacac
tgaattctac	ccgccaaaggc
acaggagctg	tgcaaatgag
aatcaaaaat	gccaacagcc
accatgacag	gctcagccaa
agtaaattcca	tgatcctcac
cgatgtcggg	aaggctcactg
aacctatatc	cagacacaga
aggaatcatt	cacagcatat
cttgaaagat	gtcattcctc
cattggaaca	actgatggtt
gaaaaagaag	gttatctgca
aaaagctaaa	attgcagatg
gaggaaagaa	actaaggaaa
aactggctcta	cttctgggat
tgttctttct	agtcgaagaa
ttgaatttta	caaagaatcc
aagcaacagg	ctctgtccaa
tatgaaaact	gggcacaaac
cagaaagtgt	ggattttgtgt
ggagcacaca	ttgaatgggc
caaggaaaaa	tcgagcagaa
agaatgtctt	tcagatcaca
acagtatcag	gaaatgagtt
ccttctacag	tcagatattg
acttcatcat	attggattgg
ttccacgcta	tcaaaaatgc
aattgacaga	ttgccaaagg
attcaagttg	tccatcaaga
	600

aacctggaat tattcaaaat ccaaagatcc tctagcactg aattgctaag tcactacgac	660
agtgatataa aagaacagaa accagagcac agaaaatctt taatgttcag actgcatcac	720
agtgttccg atacaagcga caaaaatcga gttaaaagca gattaaagaa gtttattacc	780
cgaagacctt ccctgaaaac tctgcaagaa aaaggactta ttaaagatca aatttttggc	840
tctcatctgc acaaagtgtg tgaacgtgaa aattccacag ttccgtgggt tgtaaagcaa	900
tgcatagaag ctgttgagaa aagaggtcta gatgttgatg gaatatatcg agttagtggc	960
aatctggcaa caatacagaa gttaagattt attgtcaacc aagaagagaa gctgaatttg	1020
gacgacagcc agtgggagga catccacgtt gtcaccggag cactgaagat gtttttccgg	1080
gagctgcctg agccgctctt cccttacagt ttctttgagc agtttgtgga agcgatcaaa	1140
aagcaagaca acaacacaag aattgaagct gtaaaatctc ttgtacaaaa actccctccg	1200
ccaaatcgtg acaccatgaa agtcctcttt ggacatctaa ctaagatagt ggccaaagcc	1260
tccaagaacc tcatgtccac gcaaagcttg gggattgtat ttggacctac ctttctgcga	1320
gctgaaaatg aaacaggaaa catggcgatc cacatggtct accagaacca gatagctgag	1380
ctcatgctga gtgagtacag taagatcttc ggctcagagg aagactga	1428

<210> 16
 <211> 1917
 <212> DNA
 <213> Homo sapiens

<400> 16	
atgtccctcg gtcagtcggc ctgtctgttc ctctctatag ctcggtcaag gagtgtgatg	60
actggcgagc agatggctgc cttccatcca tcgtccaccc ccaacccgct ggagaggccc	120
atcaagatgg gctggctgaa gaagcagagg tccatcgtga agaactggca gcagaggtag	180
tttgtgctga gggcgagca gctctactac tacaaggatg aagaggacac gaagccccag	240
ggctgcatgt atctaccagg atgtacaatc aaggagatcg ccacaaaccc agaagaagct	300
gggaagtttg tctttgaaat cattccagcc tcatgggacc agaatcgcag gggacaggac	360
tcctatgtcc tcatggccag ctctcaggcg gagatggagg agtgggttaa attcctcagg	420
agagttgctg gcacaccctg tggagtgttt ggccagcgct tggatgagac tgtggcctat	480
gaacagaaat tcggccccc tctggtgccc atcctggtgg agaaatgtgc agagttcatc	540
ctggagcacg gccggaatga agagggcatc ttccgtctgc ctgggcagga caacctggtg	600
aagcagctga gagacgttt tgatgctggg gagcggccct cctttgacag agacacagat	660
gtgcacactg tggcttcctt gttaaagctc tacctccgag acctcccaga gcccgtaggtt	720
ccctggagcc agtacgaagg gttcctgctc tgtgggcagc tcacgaatgc ggatgaggca	780
aaggctcagc aggagttgat gaagcagctc tccatccttc ctcgtgacaa ctatagtctc	840
ctgagctaca tctgcagggt cctacatgaa atacagctga actgtgctgt taacaagatg	900
agtgtggaca acctggctac tgtgattggg gtgaatctca tcaggtcgaa ggtcgaagac	960
cctgccgtga tcatgagagg gactcctcag atccaaagag tgatgactat gatgatcaga	1020

PCTAU2016050927-seql-000001-EN-20161013

gaccatgaag	tcctcttccc	caagtccaag	gatatacccc	tgtcaccccc	tgcccagaaa	1080
aatgaccca	agaaagctcc	agtggcccga	agctctgtag	gctgggatgc	cactgaagac	1140
ctccgaattt	ctaggacaga	cagcttcagt	agcatgacaa	gcgactctga	tacaaccagc	1200
cccaccggac	agcagccgag	cgatgcgttt	ccggaggaca	gcagcaaagt	acccagggaa	1260
aagccaggag	actggaaaat	gcaatctcgt	aaaaggactc	aaacactccc	taaccggaaa	1320
tgtttcttga	catcagcttt	tcagggtgcc	aacagcagca	aaatggagat	ctttaaaaat	1380
gaattctggt	cgccttcctc	agaggctaag	gcaggggaag	ggcacaggag	aacgatgtct	1440
caagacttgc	gccaaacttc	tgactcccaa	cggacttcca	cctacgataa	cgtcccttcc	1500
ctgccagggt	cccctgggga	ggaagccagt	gcactctctt	ccaagcctg	tgactccaag	1560
ggagatactc	ttgccagtcc	aaactctgaa	actgggcctg	gaaaaaagaa	ctctggagaa	1620
gaggaaattg	attctttgca	gaggatggtc	caagagctac	gaaaggaaat	agaaacacag	1680
aagcaaattg	atgaggaaca	gattaaaaac	cttgagaagg	aaaattatga	cgtttgggct	1740
aaagtggatg	ggctcaatga	agaactggag	aaggaaaaga	agaagtctgc	agccctagag	1800
atcagcctcc	gcaacatgga	gcgctcccgg	gaggatgttg	agaagaggaa	caaggccttg	1860
gaagaagaag	tcaaggaatt	tgtcaaattc	atgaaggaac	ccaagaccga	ggcttaa	1917

<210> 17
 <211> 2445
 <212> DNA
 <213> Homo sapiens

<400> 17	
atggggctcc	60
cagcgctcga	
gttcagcgac	
tgctgcctcg	
atagtccgca	
cttccgagag	
acgctcaagt	120
cgcacgaagc	
agagctggac	
aagaccaaca	
aattcatcaa	
ggagctcatc	
aaggacggga	180
agtcactcat	
aagcgcgctc	
aagaatttgt	
cttcagcgaa	
gcggaagtgt	
gcagattcct	240
taaatgaatt	
taaatttcag	
tgcataggag	
atgcagaaac	
agatgatgag	
atgtgtatag	300
caagatcttt	
gcaggagttt	
gccactgtcc	
tcaggaatct	
tgaagatgaa	
cggatacggg	360
tgattgagaa	
tgccagcgag	
gtgctcatca	
ctcccttgga	
gaagtttcga	
aaggaacaga	420
tcggggctgc	
caaggaagcc	
aaaaagaagt	
atgacaaaga	
gacagaaaag	
tattgtggca	480
tcttagaaaa	
acacttgaat	
ttgtcttcca	
aaaagaaaga	
atctcagctt	
caggaggcag	540
acagccaagt	
ggacctggtc	
cggcagcatt	
tctatgaagt	
atccctggaa	
tatgtcttca	600
aggtgcagga	
agtccaagag	
agaaagatgt	
ttgagtttgt	
ggagcctctg	
ctggccttcc	660
tgcaaggact	
cttcactttc	
tatcaccatg	
gttacgaact	
ggccaaggat	
ttcggggact	720
tcaagacaca	
gttaaccatt	
agcatacaga	
acacaagaaa	
tcgctttgaa	
ggcactagat	780
cagaagtgga	
atcactgatg	
aaaaagatga	
aggagaatcc	
ccttgagcac	
aagaccatca	840
gtccctacac	
catggaggga	
tacctctacg	
tgaggagaaa	
acgtcacttt	
ggaacttctt	900
gggtgaagca	
ctactgtaca	
tatcaacggg	
attccaaaca	
aatcaccatg	

gtaccatttg	acccaaagtc	aggaggaaaa	gggggagaag	atgaatcagt	tatcctcaaa	960
tcctgcacac	ggcggaac	agactccatt	gagaagaggt	tttgctttga	tgtggaagca	1020
gtagacaggc	caggggttat	caccatgcaa	gctttgtcgg	aagaggaccg	gaggctctgg	1080
atggaagcca	tggatggccg	ggaacctgtc	tacaactcga	acaaagacag	ccagagtga	1140
gggactgcg	agttggacag	cattggcttc	agcataatca	ggaaatgcat	ccatgctgtg	1200
gaaaccagag	ggatcaacga	gcaagggctg	tatcgaattg	tgggtgtcaa	ctccagagt	1260
cagaagttgc	tgagtgtcct	gatggacccc	aagactgctt	ctgagacaga	aacagatatc	1320
tgtgctgaat	gggagataaa	gaccatcact	agtgtcttga	agacctacct	aagaatgctt	1380
ccaggaccac	tcatgatgta	ccagtttcaa	agaagtttca	tcaaagcagc	aaaactggag	1440
aaccaggagt	ctcgggtctc	tgaaatccac	agccttgctt	atcggtctcc	agagaaaaat	1500
cggcagatgt	tacagctgct	catgaaccac	ttggcaaagt	ttgctaacaa	ccacaagcag	1560
aatttgatga	cgggtggcaa	ccttggtgtg	gtgtttggac	ccactctgct	gaggcctcag	1620
gaagaaacag	tagcagccat	catggacatc	aaatttcaga	acattgtcat	tgagatccta	1680
atagaaaacc	acgaaaagat	atttaacacc	gtgcccagata	tgcctctcac	caatgcccag	1740
ctgcacctgt	ctcggaagaa	gagcagtgtc	tccaagcccc	cgtcctgcag	cgagaggccc	1800
ctgacgtct	tccacaccgt	tcagtcaaca	gagaaacagg	aacaaaggaa	cagcatcatc	1860
aactccagtt	tggaatctgt	ctcatcaaat	caaacagca	tccttaattc	cagcagcagc	1920
ttacagccca	acatgaactc	cagtgaacca	gacctggctg	tgggtcaaacc	caccggcccc	1980
aactcactcc	ccccgaatcc	aagcccaact	tcaccctct	cgccatcttg	gcccattgtc	2040
tcggcgccat	ccagccctat	gcccacctca	tccacgtcca	gcgactcatc	ccccgtcagg	2100
tctgttgag	ggtttgtttg	gttttctgtt	gctgccgttg	ttctctcatt	ggctcgggtc	2160
tctcttcag	cagtgttcag	cctcctcgtc	aactttgttc	cctgccatcc	aaacctgcac	2220
ttgctttttg	acaggccaga	agaagcggta	catgaagact	ccagcacacc	gttccggaag	2280
gcaaaagcct	tgtatgcctg	caaagctgaa	catgactcag	aactttcggt	cacagcaggc	2340
acgggtcttcg	ataacgttca	cccatctcag	gagcctggct	ggttggaggg	gactctgaac	2400
ggaaagactg	gcctcatccc	tgagaattac	gtggagttcc	tctaa		2445

<210> 18
 <211> 2877
 <212> DNA
 <213> Homo sapiens

<400> 18	
atgaaggaag	ccaaggatgc cgcgtatacc aatgggcacc tcttcaccac catttcagtt 60
tcaggcatga	ccatgtgcta tgcctgtaac aagagcatca cagccaagga agccctcatc 120
tgcccaacct	gcaatgtgac tatccacaac cgctgtaaag acaccctcgc caactgtacc 180
aaggtaagc	agaagcaaca gaaagcggcc ctgctgaaga acaacaccgc cttgcagtcc 240
gtttctcttc	gaagtaagac aaccatccgg gagcgccaa gctcggccat ctaccctcc 300

gacagcttcc	ggcagtcctt	cctgggctcc	cgccgtggcc	gctcctcctt	gtcttttagcc	360
aagagtgttt	ctaccaccaa	cattgctgga	catttcaatg	atgagtctcc	cctggggctg	420
cgccggatcc	tctcacagtc	cacagactcc	ctcaacatgc	ggaaccgaac	cctatccgtg	480
gaatccctca	ttgacgaaga	ggtaatctac	agtgagctga	tgagtgactt	tgagatggat	540
gagaaggact	ttgcagctga	ctcttggagt	cttgctgtgg	acagcagctt	cctgcagcag	600
cataaaaagg	aggtgatgaa	gcagcaagat	gtcatctatg	agctaatacca	gacagagctg	660
caccatgtga	ggacactgaa	gatcatgacc	cgctctctcc	gcacggggat	gctggaagag	720
ctacacttgg	agccaggagt	ggtccagggc	ctgttccctt	gcgtggacga	gctcagtgac	780
atccatacac	gcttcctcag	ccagctatta	gaacgccgac	gccaggccct	gtgccctggc	840
agcacccgga	actttgtcat	ccatcgcttg	ggtgatctgc	tcatcagcca	gttctcaggt	900
cctagtgcgg	agcagatgtg	taagacctac	tcggagtctt	gcagccgcca	cagcaaggcc	960
ttaaagctct	ataaggagct	gtacgcccga	gacaaacgct	tccagcaatt	catccggaaa	1020
gtgaccgccc	ccgccgtgct	caagcggcac	ggggtacagg	agtgcacctt	gctggtgact	1080
cagcgcacat	ccaagtaccc	gttactcatc	agccgcatcc	tgcagcattc	ccacgggac	1140
gaggaggagc	gccaggacct	gaccacagca	ctggggctag	tgaaggagct	gctgtccaat	1200
gtggacgagg	gtatttatca	gctggagaaa	ggggcccgtc	tgcaggagat	ctacaaccgc	1260
atggaccctc	gggcccacac	cccagtgcct	ggcaagggcc	cctttggccg	agaggaactt	1320
ctgaggcgca	aactcatcca	cgatggctgc	ctgctctgga	agacagcgac	ggggcgcttc	1380
aaagatgtgc	tagtgctgct	gatgacagat	gtactggtgt	ttctccagga	aaaggaccag	1440
aagtacatct	ttcctaccct	ggacaagcct	tcagtgggat	cgctgcagaa	tctaatacgta	1500
cgagacattg	ccaaccagga	gaaagggatg	tttctgatca	gcgcagcccc	acctgagatg	1560
tacgaggtgc	acacagcatc	ccgggatgac	cggagcacct	ggatccgggt	cattcagcag	1620
agcgtgcgca	catgcccac	caggaggagc	ttccccctga	ttgagacaga	ggatgaggct	1680
tacctgcggc	gaattaagat	ggagttgcag	cagaaggacc	gggactggt	ggagctgctg	1740
cgagagaagg	tcgggctgtt	tgctgagatg	acccatttcc	aggccgaaga	ggatggtggc	1800
agtgggatgg	ccctgcccac	cctgcccagg	ggccttttcc	gctctgagtc	ccttgagtcc	1860
cctcgtggcg	agcggctgct	gcaggatgcc	atccgtgagg	tggagggtct	gaaagacctg	1920
ctggtggggc	caggagtgga	actgctcttg	acaccccag	agccagccct	gcccttggaa	1980
ccagacagcg	gtggtaacac	gagtcctggg	gtcactgcca	atggtgaggc	cagaaccttc	2040
aatggctcca	ttgaactctg	cagagctgac	tcagactcta	gccagaggga	tcgaaatgga	2100
aatcagctga	gatcaccgca	agaggaggcg	ttacagcgat	tggatcaatct	ctatggactt	2160
ctacatggcc	tacaggcagc	tgtggcccag	caggacactc	tgatggaagc	ccggttccct	2220
gagggccctg	agcggcgggg	gaagctgtgc	cgagccaact	ctcgggatgg	ggaggctggc	2280
agggctgggg	ctgcccctgt	ggcccctgaa	aagcaggcca	cggaactggc	attactgcag	2340

PCTAU2016050927-seql-000001-EN-20161013

cggcaacatg cgctgctgca ggaggagcta cggcgctgcc ggcggctagg tgaagaacgg	2400
gcaaccgaag ctggcagcct ggaggcccgg ctccgggaga gtgagcaggc ccgggcaactg	2460
ctggagcgtg aggccgaaga ggctcgaagg cagctggccg ccctgggcca gaccgagcca	2520
ctcccagctg agggcccctg ggcccgcaga cctgtggatc ctcggcgggc cagcctcccc	2580
gcaggcgatg ccctgtactt gagtttcaac cccccacagc ccagccgagg cactgaccgc	2640
ctggatctac ctgtcactac tcgctctgtc catcgaaact ttgaggaccg agagaggcag	2700
gaactgggga gccccgaaga gcggctgcaa gacagcagt accctgacac tggcagcgag	2760
gaggaaggta gcagccgtct gtctccgcc cacagtccac gagactttac cagaatgcag	2820
gacatcccgg aggagacgga gagccgcgac ggggaggctg tagcctccga gagctaa	2877

<210> 19
 <211> 1257
 <212> DNA
 <213> Homo sapiens

<400> 19	
atgggcgaca aagggacccg agtgttcaag aaggccagtc caaatggaaa gctcacccgtc	60
tacctgggaa agcgggactt tgtggaccac atcgacctcg tggaccctgt ggatggtgtg	120
gtcctggtgg atcctgagta tctcaaagag cggagagtct atgtgacgct gacctgcgcc	180
ttccgctatg gccgggagga cctggatgtc ctgggcctga cttttcgcaa ggacctgttt	240
gtggccaacg tacagtcgtt cccaccggcc cccgaggaca agaagcccct gacgcggctg	300
caggaacgcc tcatcaagaa gctgggagag cacgcttacc ctttcacctt tgagatccct	360
ccaaaccttc catgttctgt gacactgcag ccggggcccc aagacacggg gaaggcttgc	420
ggtgtggact atgaagtcaa agccttctgc gcggagaatt tggaggagaa gatccacaag	480
cggaattctg tgcgtctggt catccggaag gttcagtatg cccagagag gcctggcccc	540
cagcccacag ccgagaccac caggcagttc ctcatgtcgg acaagccctt gcacctagaa	600
gcctctctgg ataaggagat ctattacat ggagaaccca tcagcgtcaa cgtccacgtc	660
accaacaaca ccaacaagac ggtgaagaag atcaagatct cagtgcgcca gtatgcagac	720
atctgccttt tcaacacagc tcagtacaag tgccctgttg ccatggaaga ggctgatgac	780
actgtggcac ccagctcgac gttctgcaag gtctacacac tgacccctt cctagccaat	840
aaccgagaga agcggggcct cgccttgac gggagactca agcacgaaga cacgaacttg	900
gcctctagca ccctgttgag ggaaggtgcc aaccgtgaga tcctggggat cattgtttcc	960
tacaaagtga aagtgaagct ggtggtgtct cggggcggcc tgttgggaga tcttgcattc	1020
agcgacgtgg ccgtggaact gcccttcacc ctaatgcacc ccaagcccaa agaggaaccc	1080
ccgcatcggg aagttccaga gaacgagacg ccagtagata ccaatctcat agaacttgac	1140
acaaatgatg acgacattgt atttgaggac tttgctcgcc agagactgaa aggcattgaag	1200
gatgacaagg aggaagagga ggatggtacc ggctctccac agctcaacaa cagatag	1257

<210> 20
 <211> 1230
 <212> DNA
 <213> Homo sapiens

<400> 20
 atgggggaga aacccgggac caggggtcttc aagaagtcga gccctaactg caagctcacc 60
 gtgtacttgg gcaagcggga cttcgtatgat cacctggaca aagtggaccc tgtatgatggc 120
 gtggtgcttg tggaccctga ctacctgaag gaccgcaaag tgtttgtgac cctcacctgc 180
 gccttccgct atggccgtga agacctggat gtgctgggct tgccttccg caaagacctg 240
 ttcacgcgca cctaccaggc cttccccccg gtgcccaacc caccgccggc cccacccgc 300
 ctgcaggacc ggctgctgag gaagctgggc cagcatgccc accccttctt cttcaccata 360
 cccagaatc ttccatgctc cgtcacactg cagccaggcc cagaggatac aggaaaggcc 420
 tgcggcgtag actttgagat tcgagccttc tgtgctaaat cactagaaga gaaaagccac 480
 aaaaggaact ctgtgcggct ggtgatccga aaggtgcagt tcgccccgga gaaacccggc 540
 cccagcctt cagccgaaac cacacgccac ttcctcatgt ctgaccggtc cctgcacctc 600
 gaggttccc tggacaagga gctgtactac catggggagc ccctcaatgt aaatgtccac 660
 gtcaccaaca actccaccaa gaccgtcaag aagatcaaag tctctgtgag acagtacgcc 720
 gacatctgcc tcttcagcac cgcccagtag aagtgtcctg tggctcaact cgaacaagat 780
 gaccaggtat ctcccagctc cacattctgt aaggtgtaca ccataacccc actgctcagc 840
 gacaaccggg agaagcgggg tctcgccctg gatgggaaac tcaagcacga ggacaccaac 900
 ctggcttcca gcaccatcgt gaaggagggt gccacaagg aggtgctggg aatcctggtg 960
 tcctacaggg tcaagggtgaa gctgggtggtg tctcgaggcg gggatgtctc tgtggagctg 1020
 ccttttgttc ttatgcaccc caagccccac gaccacatcc ccctccccag accccagtca 1080
 gccgctccgg agacagatgt ccctgtggac accaacctca ttgaatttga taccaactat 1140
 gccacagatg atgacattgt gtttgaggac tttgcccggc ttcggctgaa ggggatgaag 1200
 gatgacgact atgatgatca actctgctag 1230

<210> 21
 <211> 3390
 <212> DNA
 <213> Homo sapiens

<400> 21
 atgagatctt cagcctccag gctctccagt ttttcgtcga gagattcact atggaatcgg 60
 atgccggacc agatctctgt ctcggagttc atcgccgaga ccaccgagga ctacaactcg 120
 cccaccacgt ccagcttcac cacgcggctg cacaactgca ggaacaccgt cacgctgctg 180
 gaggaggctc tagaccaaga tagaacagcc cttcagaaag tgaagaagtc tgtaaaagca 240
 atatataatt ctggtcaaga tcatgtacaa aatgaagaaa actatgcaca agttcttgat 300
 aagtttggga gtaatttttt aagtcgagac aaccccgacc ttggcaccgc gtttgtcaag 360

ttttctactc	ttacaaagga	actgtccaca	ctgctgaaaa	atctgctcca	gggtttgagc	420
cacaatgtga	tcttcacctt	ggattctttg	ttaaaaggag	acctaaaggg	agtcaaagga	480
gatctcaaga	agccatttga	caaagcctgg	aaagattatg	agacaaagtt	tacaaaaatt	540
gagaaagaga	aaagagagca	cgcaaaacaa	catgggatga	tccgcacaga	gataacagga	600
gctgagattg	cggaagaaat	ggagaaggaa	aggcgcctct	ttcagctcca	aatgtgtgaa	660
tatctcatta	aagttaatga	aatcaagacc	aaaaagggtg	tggatctgct	gcagaatctt	720
ataaagtatt	accatgcaca	gtgcaatttc	tttcaagatg	gcttgaaaac	agctgataag	780
ttgaaacagt	acattgaaaa	actggctgct	gatttatata	atataaaaca	gacccaggat	840
gaagaaaaga	aacagctaac	tgcactccga	gacttaataa	aatcctctct	tcaactggat	900
cagaaagaag	attctcagag	ccggcaagga	ggatacagca	tgcatacagct	ccagggcaat	960
aaggaatatg	gcagtgaaaa	gaaggggtac	ctgctaaaga	aaagtgacgg	gatccggaaa	1020
gtatggcaga	ggaggaagtg	ttcagtcaag	aatgggattc	tgaccatctc	acatgccaca	1080
tctaacaggc	aaccagccaa	gttgaacctt	ctcacctgcc	aagtaaaacc	taatgccgaa	1140
gacaaaaaat	cttttgacct	gatatcacat	aatagaacat	atcactttca	ggcagaagat	1200
gagcaggatt	atgtagcatg	gatatcagta	ttgacaaata	gcaaagaaga	ggccctaacc	1260
atggccttcc	gtggagagca	gagtgcggga	gagaacagcc	tggaagacct	gacaaaagcc	1320
attattgagg	atgtccagcg	gctcccaggg	aatgacattt	gctgcgattg	tggctcatca	1380
gaaccacact	ggctttcaac	caacttgggt	attttgacct	gtatagaatg	ttctggcatc	1440
catagggaaa	tgggggttca	tatttctcgc	attcagtcct	tggaactaga	caaattagga	1500
acttctgaac	tcttgctggc	caagaatgta	ggaaacaata	gttttaatga	tattatggaa	1560
gcaaatttac	ccagcccctc	accaaacc	accccttcaa	gtgatatgac	tgtacgaaaa	1620
gaatatatca	ctgcaaagta	tgtagatcat	aggttttcaa	ggaagacctg	ttcaacttca	1680
tcagctaaac	taaatgaatt	gcttgaggcc	atcaaatacca	gggatttact	tgcactaatt	1740
caagtctatg	cagaaggggt	agagctaatt	gaaccactgc	tggaacctgg	gcaggagctt	1800
ggggagacag	cccttcacct	tgccgtccga	actgcagatc	agacatctct	ccatttggtt	1860
gacttccttg	tacaaaactg	tgggaacctg	gataagcaga	cggccctggg	aaacacagtt	1920
ctacactact	gtagtatgta	cagtaaacct	gagtgtttga	agcttttgct	caggagcaag	1980
cccactgtgg	atatagttaa	ccaggctgga	gaaactgccc	tagacatagc	aaagagacta	2040
aaagctaccc	agtgtgaaga	tctgctttcc	caggctaaat	ctggaaagtt	caatccacac	2100
gtccacgtag	aatatgagtg	gaatcttcga	caggaggaga	tagatgagag	cgatgatgat	2160
ctggatgaca	aaccaagccc	tatcaagaaa	gagcgtcac	ccagacctca	gagcttctgc	2220
cactcctcca	gcatctcccc	ccaggacaag	ctggcactgc	caggattcag	cactccaagg	2280
gacaaacagc	ggctctccta	tggagccttc	accaaccaga	tcttcgtttc	cacaagcaca	2340
gactcgccca	catcaccaac	cacggaggct	ccccctctgc	ctcctaggaa	cgccgggaaa	2400

ggtccaactg gccaccttc aacactccct ctaagcacc agacctctag tggcagctcc	2460
accctatcca agaagaggcc tcctccccc ccacccggac acaagagaac cctatccgac	2520
cctcccagcc cactacctca tgggccccca aacaaaggcg cagttccttg gggtaacgat	2580
gggggtccat cctcttcaag taagactaca aacaagtttg agggactatc ccagcagtcg	2640
agcaccagtt ctgcaaagac tgcccttggc ccaagagttc ttcctaaact acctcagaaa	2700
gtggcactaa ggaaaacaga tcattctctc ctagacaaag ccaccatccc gcccgaaatc	2760
tttcagaaat catcacagtt ggcagagttg ccacaaaagc caccacctgg agacctgccc	2820
ccaaagccca cagaactggc cccaagccc caaattggag atttgccgcc taagccagga	2880
gaactgcccc ccaaaccaca gctgggggac ctgccacca aaccccaact ctcagactta	2940
cctcccaaac cacagatgaa ggacctgccc ccaaaccac agctgggaga cctgctagca	3000
aaatcccaga ctggagatgt ctcaccaag gctcagcaac cctctgaggt cactctgaag	3060
tcacacccat tggatctatc ccaaagtgt cagtcagag acgcatcca aaagcaagca	3120
tctgaagact ccaacgacct cacgcctact ctgccagaga cgcccgtaac actgcccaga	3180
aaaatcaata cggggaaaaa taaagtgagg cgagtgaaga ccatttatga ctgccaggca	3240
gacaacgatg acgagctcac attcatcgag ggagaagtga ttatcgtcac aggggaagag	3300
gaccaggagt ggtggattgg ccacatcgaa ggacagcctg aaaggaagg ggtctttcca	3360
gtgtcctttg ttcatatcct gtctgactag	3390

<210> 22
 <211> 4377
 <212> DNA
 <213> Homo sapiens

<400> 22	
atggtgaaca cccggaagag ctctctccgc cttctcgggt ccaagtctcc tgggtccggg	60
cctgggcctg gggccggagc agagcctggg gcgaccggag gcagcagcca tttcatctcc	120
tctcggacct gtcctccaa gaccgcgcc gccagctgcc ccgccgcaa agccggggga	180
agcgggtggc ccggcgctac tctggatgag gccaggaaag ttgaagttga tggtagttta	240
agtgatagcc acgtatctcc tccagccaaa cgcactttga aacaacctga ttctgtttgc	300
aaagacaaat caaaatcacg aagtactggg cagcgagagg aatggaactt atcaactgga	360
caggccaggt taacttctca gcctggtgct acattaccaa atggacatag tggcttatcc	420
cttcgaagcc atccccttcg aggggaaaag aaggagatg gggacctttc ttgtataaat	480
ggtgacatgg aagtcagaaa aagttgtcgt tccaggaaaa acagatttga aagtgtgaac	540
cagagtttgt tatttgatca actagtaaag agcactgctg aagctgtact acaggaaatg	600
gacaacatta acatccgacg gaatcgctga tcaggagaag tagaacgact tcgaatgtgg	660
acagatacag aatttgaaaa catggatatg tattcaagag tgaaaaggcg aagaaagtca	720
ctaagaagaa atagttatgg gatacaaaat catcatgaag tttctactga gggatgaagaa	780
gaagaatctc aagaggagga tggagatata gaagttgaag aggcagaagg agaagaaaat	840

PCTAU2016050927-seq1-000001-EN-20161013

gatagaccat	ataatttgag	acagagaaaa	acagtggatc	gataccaagc	acctccaata	900
gtaccagctc	atcaaaaaaa	gagggaaaac	acgctgtttg	atattcatag	atctccagca	960
agaagaagcc	atattaggag	aaagaagcat	gccattcata	gtagtgacac	aacttcttct	1020
gatgaggaa	gctttgaaag	aaggaaatca	aagagcatgg	caagagcaag	aaatagatgt	1080
ttgcctatga	acttcagagc	agaggactta	gctagcggta	ttctccgaga	acgagtgaaa	1140
gtgggtgcaa	gcttggctga	tgttgatcca	atgaacattg	ataaatcagt	acggtttgat	1200
agcataggtg	gattgagcca	tcatattcat	gcgctaaagg	aaatggtagt	attcccactt	1260
ttatatccag	aaatTTTTtga	aaagtttaaa	attcagcctc	caaggggctg	tttgTTTTat	1320
ggccctcctg	gcacaggtaa	aaccttggtt	gccagagcat	tagctaata	atgcagccaa	1380
ggagacaaaa	aagtggcttt	ttttatgcga	aaaggagcag	attgtttgag	caagtgggtt	1440
ggatgaatctg	aaaggcaact	taggcttctt	tttgatcagg	catatttgat	gagaccttct	1500
ataatatttt	ttgatgaaat	agatggatta	gctccagttc	gctctagcag	acaagatcag	1560
atccacagct	ctatagtatc	aacctcctt	gctcttatgg	atggattaga	taataggggt	1620
gaaattgttg	ttattgggtg	tacaaacaga	cttgactcta	tagatcctgc	actcaggaga	1680
cctggtcgtt	ttgacagaga	attcctcttc	aacctgcctg	atcaaaaggc	aagaaaacac	1740
atcttacaga	tccataccag	ggactggaat	ccaaaattgt	cagatgcatt	tttaggtgaa	1800
ttggctgaaa	aatgtgttgg	ctactgtgga	gccgatatca	aggccctgtg	cactgaagcc	1860
gccctgattg	cactgcggag	gcgttatccc	cagatctatg	ctagcagtca	taaactgcag	1920
ctggatgttt	cctcaatagt	gcttagtgcc	caagatTTTT	accatgcaat	gcagaatatc	1980
gtgcctgctt	cccaacgtgc	tgtgatgtct	tcagggcattg	cactatcccc	catcataaga	2040
ccactgctgg	aaagaagctt	caacaacatc	ctagcagtct	tgcaaaaagt	gtttcctcat	2100
gctgaaatta	gccagagtga	caaaaaagaa	gatatagaaa	ctttaatttt	agaggatagt	2160
gaagatgaaa	atgctttatc	aatttttgag	accaattgtc	actcaggatc	accaaagaaa	2220
cagtcatcat	ctgctgctat	acataaacc	taccttcatt	ttacaatgtc	accatatcat	2280
cagccaacct	cttacaggcc	acgcttattg	ctctctggag	aacggggctc	agggtcaaact	2340
tctcaccttg	ctccagcact	tttgacact	ctagaaagat	tctctgtgca	tagactagat	2400
ctcccagcac	tttattcagt	tagtgccaaa	acacctgagg	aatcatgtgc	acagattttt	2460
cgtgaagctc	gaagaacagt	acctagtatt	gtttacatgc	ctcacattgg	ggattgggtg	2520
gaagctgtca	gtgaaactgt	gagagcaact	tttctgacat	tgctacaaga	tataccatca	2580
ttttcaccta	tatttttatt	gtctacctct	gaaacctgtg	acagtgaact	gcctgaagag	2640
gttaaagtga	tctttagaat	acagtatgaa	gaggtcttgt	atattcaaag	gcctattgaa	2700
gaagacagaa	gaaaattttt	tcaagaattg	attctcaatc	aggcatcaat	ggctccacca	2760
cgaaggaaac	atgctgctct	ttgtgctatg	gaagtgtctc	ctcttgact	accttctcca	2820
cctcgtcaat	tatcagaatc	agaaaaaagt	cgaatggagg	accaggagga	aaatacttta	2880

PCTAU2016050927-seql-000001-EN-20161013

agagagttgc	ggttgtttct	cagggatgta	accaagaggc	tggccacaga	taaacgcttt	2940
aacatcttca	gcaaaccggt	ggatattgaa	gaggtttcag	attatcttga	agtaatcaag	3000
gaaccaatgg	acttatcaac	agtaataact	aaaattgata	aacataatta	cctgactgca	3060
aaggatttcc	tgaaagatat	tgacctcatc	tgtagcaatg	ctttagagta	taatccagat	3120
aaggaccag	gagataaaat	aattaggcac	agggcttgta	ccctgaagga	cactgcacat	3180
gctatcattg	cagctgaatt	agatccagaa	tttaataaac	tttgtgagga	aattaaggaa	3240
gcaagaataa	aaagaggctt	atcagtaaca	tcagaacaaa	taaatcctca	tagtactgga	3300
gctcggaaga	cagaaactag	agtcgaagag	gcatttcggc	acaaacaaag	aatccaatg	3360
gatgtgtggc	acaactctgc	aaataaatgt	gcatttcggg	ttcggagaaa	atcaaggcgg	3420
agatcacagt	ggggtaaagg	aattattaag	aaaaggaaag	ttaataattt	aaaaaaagat	3480
gaagaagaca	ccaaatttgc	agactatgag	aaccatacgg	aggacaggaa	attattagag	3540
aatggagagt	ttgaggtaag	cactgactgc	catgaggaaa	atggagaaga	gactggagac	3600
ttatctatga	ccaatgatga	atcatcctgt	gacatcatgg	acttggaaca	ggggcagagg	3660
cttaacaatg	gagcaggcac	aaaagagaac	tttgcattct	ctgaggagga	aagttcaaat	3720
gaatctctac	tgggtcaacag	cagcagttcc	ttaaaccgga	agcagacctc	caggaaagag	3780
actttcctta	aaggaaattg	tctaaatggt	gaggcttcca	ctgacagttt	tgaaggaata	3840
ccagttctgg	aatgtcagaa	tggcaagctt	gaagtagttt	ctttctgtga	tagtggagat	3900
aaatgtagtt	ctgaacaaaa	gattcttctg	gaggaccagt	caaaagaaaa	accagaaact	3960
tcgactgaaa	atcatggaga	tgatcttgag	aaactagagg	cactggaatg	tagcaataat	4020
gagaagttag	aacctggctc	tgatgtggag	gttaaagatg	cagaactgga	taaagaaggt	4080
gcttctaaag	taaagaaata	ccgtaaatta	atttttagagc	aggcaaaaac	gacaagcctg	4140
gaactgggtc	cagaagagcc	atctgagcct	gtgcctcctc	ttatagttga	tcgtgagaga	4200
ttgaagaaat	tgcttgattt	gttggtggat	aaaagcaaca	atctggcagt	tgatcagctt	4260
gagagattat	attctcttct	tagtcagtgt	atctaccgtc	atcgtaaaga	ttatgacaaa	4320
tcacaacttg	tagaggagat	ggaaagaaca	gttcatatgt	ttgagacatt	cctatga	4377

<210> 23
 <211> 2049
 <212> DNA
 <213> Homo sapiens

<400> 23	atggcaagtc	cagatagaag	taaacggaag	atattaaaag	ccaaaaagac	aatgccctta	60
	agttgccgga	agcaagtaga	gatgctgaat	aagtcaagga	atgttgaagc	gctgaaaaca	120
	gcaattggga	gtaatgttcc	aagcggtaat	cagagtttca	gtcctagtgt	cataactagg	180
	acgactgaaa	taaccaaagt	tagcccttct	gaaaatggtg	catcctcatt	ggactcta	240
	aaaaattcaa	tatcagagaa	aagtaaagta	ttctctcaga	attgcataaa	accagtagaa	300

gaaattgttc attcagaaac aaaattggaa caagttgttt gttcgtacca aaagccaagt	360
agaacaacag aatccccag cagagtcttc acagaagagg caaaagattc actgaacact	420
tctgaaaacg attctgagca tcagacaaat gtaacaagat ccctttttga gcatgagggg	480
gcttgtagtc taaagtccag ttgctgtcca cccagtgtat tgagtgggtg tgttcagatg	540
ccagagtcta cagtaaccag taccgtgggt gacaagaaaa ctgaccagat ggttttccat	600
ttagaaacaa actccaattc agaatcacat gataaaaggc aaagtgacaa cattttatgt	660
tcagaagact caggttttgt gcctgttgag aaaacaccta atttggtgaa ttcagtcact	720
tctaacaact gtgctgatga ctttttgaac actgatgagt gtagtagaac cagtatttca	780
aattgtgaaa gtgcagactc aacatggcag tcatcacttg aactaataa caacagccat	840
tatcaaaaga agaggatgtt ttcagaaaac gaggaaaatg ttaaaccgat gaaaacttca	900
gagcaaatta atgaaaatat ttgtgtaagt ttggaaaggc aaacagcatt cctggaacag	960
gtcagacatt tgattcagca ggagatctat agcataaatt atgaactatt tgataagaaa	1020
ctgaaagaat tgaaccaacg cattgggaag acagagtgcg gaaataagca tgaaggaata	1080
gctgataaac ttttggcaaa aatagcaaaa cttcaaagac gtattaaaaac agtattatta	1140
tttcaaagga attgtttgaa accaaacatg ttatccagta atggagcctc taagggttgc	1200
aattcagagg ctatgatttt ggataagaat cttgagtcag ttaatagtcc aattgaaaag	1260
tcttctgtga attatgagcc ttctaaccct tccgaaaaag gaagtaaaaa aattaatttg	1320
tcatcagatc aaaataagtc tgtttctgaa agtaacaatg atgatgttat gttgatttct	1380
gtggaaagtc ctaatttgac aactccaatt acatcaaac caacagatac cagaaaaatt	1440
acatcaggaa attctagcaa ttctcccaat gctgaagtta tggctgtaca gaagaaactt	1500
gattctataa ttgatttgac aaaagaaggc ctatccaact gcaatacaga aagtccagta	1560
tccccctgg agtcacattc gaaagctgct tcaaactcaa aggaaacaac cccattggca	1620
caaatgcag tccaggttcc tgagtccttt gagcacctgc cacctctccc agaaccacca	1680
gcaccactac ctgaattagt agacaaaacc cgagacacac ttcctcccca gaagcctgag	1740
ctcaaagtga aacgggtttt cagaccaat ggcattgccc tgacttgga tataacaaaa	1800
atcaatccca agtgtgtcc tgtagaaagc taccacctt tcctgtgtca tgagaactct	1860
aataataagt tgatttgga gaagattgga gaaattaaag ctttaccact cccatggcc	1920
tgtactttat ctgagtttt agcttccaac agatactatt ttactgtcca atcaaaagat	1980
atttttggac gatatggacc attctgtgat ataaaatcta tccctgggtt ttctgaaaat	2040
cttacgtaa	2049

<210> 24
 <211> 9171
 <212> DNA
 <213> Homo sapiens

<400> 24	
atgagtctag tacttaatga tctgcttata tgctgccgtc aactagaaca tgatagagct	60

acagaacgaa	agaaagaagt	tgagaaat	ttt	aagcgcctga	ttcgagatcc	tgaaacaatt	120
aaacatctag	atcggcattc	agattccaaa	caaggaaaat	atttgaattg	ggatgctggt		180
tttagat	ttt	tacagaaata	tattcagaaa	gaaacagaat	gtctgagaat	agcaaaacca	240
aatgtatcag	cctcaacaca	agcctccagg	cagaaaaaga	tgagagaaat	cagtagtttg		300
gtcaaatact	tcatcaaatg	tgcaaacaga	agagcaccta	ggctaaaatg	tcaagaactc		360
ttaaattata	tcatggatac	agtgaagat	tcatctaattg	gtgctattta	cggagctgat		420
tgtagcaaca	tactactcaa	agacattctt	tctgtgagaa	aatactggtg	tgaaatatct		480
cagcaacagt	ggttagaatt	gttctctgtg	tacttcaggc	tctatctgaa	accttcacaa		540
gatgttcata	gagttttagt	ggctagaata	attcatgctg	ttaccaaagg	atgctgttct		600
cagactgacg	gattaaattc	caaatttttg	gacttttttt	ccaaggctat	tcagtgtgcg		660
agacaagaaa	agagctcttc	aggtctaaat	catatcttag	cagctcttac	tatcttcctc		720
aagacttttg	ctgtcaactt	tcgaattcga	gtgtgtgaat	taggagatga	aattcttccc		780
actttgcttt	atatttgac	tcaacatagg	cttaatgatt	ctttaaaaga	agtcattatt		840
gaattatttc	aactgcaaat	ttatatccat	catccgaaag	gagccaaaac	ccaagaaaaa		900
ggtgcttatg	aatcaacaaa	atggagaagt	attttataca	acttatatga	tctgctagt		960
aatgagataa	gtcatatagg	aagtagagga	aagtattctt	caggatttcg	taatattgcc		1020
gtcaaagaaa	atttgattga	attgatggca	gatatctgtc	accagggtttt	taatgaagat		1080
accagatcct	tggagatttc	tcaatcttac	actactacac	aaagagaatc	tagtgattac		1140
agtgtccctt	gcaaaaggaa	gaaaatagaa	ctaggctggg	aagtaataaa	agatcacctt		1200
cagaagtcac	agaatgattt	tgatcttgtg	ccttggtac	agattgcaac	ccaattaata		1260
tcaaagtatc	ctgcaagttt	acctaactgt	gagctgtctc	cattactgat	gatactatct		1320
cagcttctac	ccaacagcg	acatggggaa	cgtacaccat	atgtgttacg	atgccttacg		1380
gaagttgcat	tgtgtcaaga	caagaggtca	aacctagaaa	gtcacaaaa	gtcagattta		1440
ttaaaactct	ggaataaaat	ttggtgtatt	acctttcgtg	gtataagttc	tgagcaaata		1500
caagctgaaa	actttggctt	acttgagcc	ataattcagg	gtagtttagt	tgaggttgac		1560
agagaattct	ggaagttatt	tactgggtca	gcctgcagac	cttcatgtcc	tgagttatgc		1620
tgtttgactt	tggcactgac	caccagtata	gttccaggaa	cggtaaaaat	gggaatagag		1680
caaaatatgt	gtgaagtaaa	tagaagcttt	tctttaaagg	aatcaataat	gaaatggctc		1740
ttattctatc	agttagagg	tgacttagaa	aatagcacag	aagtgcctcc	aattcttcac		1800
agtaattttc	ctcatcttgt	actggagaaa	attcttgtga	gtctcactat	gaaaaactgt		1860
aaagctgcaa	tgaatttttt	ccaaagcgtg	ccagaatgtg	aacaccacca	aaaagataaa		1920
gaagaacttt	cattctcaga	agtagaagaa	ctatttcttc	agacaacttt	tgacaagatg		1980
gacttttta	ccattgtgag	agaatgtggt	atagaaaagc	accagtccag	tattggcttc		2040
tctgtccacc	agaatctcaa	ggaatcactg	gatcgctgtc	ttctgggatt	atcagaacag		2100

cttctgaata	attactcatc	tgagattaca	aattcagaaa	ctcttgtccg	gtgttcacgt	2160
cttttggtgg	gtgtccttgg	ctgctactgt	tacatgggtg	taatagctga	agaggaagca	2220
tataagtcag	aattattcca	gaaagccaag	tctctaattgc	aatgtgcagg	agaaagtatc	2280
actctgttta	aaaataagac	aaatgaggaa	ttcagaattg	gttccttgag	aaatatgatg	2340
cagctatgta	cacgttgctt	gagcaactgt	accaagaaga	gtccaaataa	gattgcatct	2400
ggctttttcc	tgcgattggt	aacatcaaag	ctaataatg	acattgcaga	tatttgtaaa	2460
agtttagcat	ccttcatcaa	aaagccattt	gaccgtggag	aagtagaatc	aatggaagat	2520
gataactaatg	gaaatcta	ggaggtggag	gatcagtc	ccatgaatct	atttaacgat	2580
taccctgata	gtagtgttag	tgatgcaa	gaacctggag	agagccaaag	taccataggt	2640
gccattaatc	cttagctga	agaatatctg	tcaaagcaag	atctactttt	cttagacatg	2700
ctcaagttct	tgtgtttgtg	tgtaactact	gctcagacca	atactgtgtc	ctttagggca	2760
gctgatattc	ggaggaaatt	gttaatgtta	attgattcta	gcacgctaga	acctaccaa	2820
tccctccacc	tgcatatgta	tctaattgctt	ttaaaggagc	ttcctggaga	agagtacccc	2880
ttgccaatgg	aagatgttct	tgaacttctg	aaaccactat	ccaatgtgtg	ttctttgtat	2940
cgtcgtgacc	aagatgtttg	taaaactatt	ttaaaccatg	tccttcatgt	agtgaaaaac	3000
ctagggtcaaa	gcaatatgga	ctctgagaac	acaagggatg	ctcaaggaca	gtttcttaca	3060
gtaattggag	cattttggca	tctaacaaag	gagaggaaat	atatattctc	tgtaagaatg	3120
gccctagtaa	attgccttaa	aactttgctt	gaggctgac	cttattcaaa	atggggcatt	3180
cttaatgtaa	tgggaaaaga	ctttcctgta	aatgaagtat	ttacacaatt	tcttgctgac	3240
aatcatcacc	aagttcgcat	gttggtgca	gagtcaatca	atagattggt	ccaggacacg	3300
aagggagatt	cttccagggt	actgaaagca	cttcctttga	agcttcagca	aacagctttt	3360
gaaaatgcat	acttgaaagc	tcaggaagga	atgagagaaa	tgtcccatag	tgctgagaac	3420
cctgaaactt	tggatgaaat	ttataataga	aaatctgttt	tactgacgtt	gatagctgtg	3480
gttttatcct	gtagccctat	ctgcgaaaaa	caggctttgt	ttgccctgtg	taaatctgtg	3540
aaagagaatg	gattagaacc	tcaccttgtg	aaaaaggttt	tagagaaagt	ttctgaaact	3600
tttgatata	gacgtttaga	agactttatg	gcatctcatt	tagattatct	ggttttggaa	3660
tggctaaatc	ttcaagatac	tgaatacaac	ttatcttctt	ttccttttat	tttattaaac	3720
tacacaaata	ttgaggattt	ctatagatct	tgttataagg	ttttgattcc	acatctgggtg	3780
attagaagtc	attttgatga	ggtgaagtcc	attgctaata	agattcaaga	ggactggaaa	3840
agtcttctaa	cagactgctt	tccaaagatt	cttgtaaata	ttcttcctta	ttttgcctat	3900
gagggtagca	gagacagtgg	gatggcacag	caaagagaga	ctgctaccaa	ggtctatgat	3960
atgcttaaaa	gtgaaaactt	attgggaaaa	cagattgatc	acttattcat	tagtaattta	4020
ccagagattg	tgggtggagt	attgatgacg	ttacatgagc	cagcaaattc	tagtgccagt	4080
cagagcactg	acctctgtga	cttttcaggg	gatttggtac	ctgctcctaa	tccacctcat	4140

tttccatcgc	atgtgattaa	agcaacattt	gcctatatca	gcaattgtca	taaaaccaag	4200
ttaaaaagca	ttttagaaat	tctttccaaa	agccctgatt	cctatcagaa	aattcttctt	4260
gccatatgtg	agcaagcagc	tgaacaaaat	aatgtttata	agaagcacag	aattcttaaa	4320
atatacacc	tgtttgtag	tttattactg	aaagatataa	aaagtggctt	aggaggagct	4380
tgggcctttg	ttcttcgaga	cgttatttat	actttgattc	actatatcaa	ccaaaggcct	4440
tcttgatca	tggatgtgtc	attacgtagc	ttctcccttt	gttgtagactt	attaagtcag	4500
gtttgccaga	cagccgtgac	ttactgtaag	gatgctctag	aaaaccatct	tcatgttatt	4560
gttggtacac	ttatacccct	tgtgtatgag	caggtggagg	ttcagaaaca	ggtattggac	4620
ttgttgaaat	acttagtgat	agataacaag	gataatgaaa	acctctatat	cacgattaag	4680
cttttagatc	cttttcctga	ccatgttggt	tttaaggatt	tcgtatttac	tcagcaaaaa	4740
atcaaataca	gtagaggacc	cttttcactc	ttggaggaaa	ttaaccattt	tctctcagta	4800
agtgtttatg	atgcacttcc	attgacaaga	cttgaaggac	taaaggatct	tcgaagacaa	4860
ctggaactac	ataaagatca	gatggtggac	attatgagag	cttctcagga	taatccgcaa	4920
gatgggatta	tggtgaaact	agttgtcaat	ttgttgacgt	tatccaagat	ggcaataaac	4980
cacactggtg	aaaaagaagt	tctagaggct	gttggaagct	gcttgggaga	agtgggtcct	5040
atagatttct	ctaccatagc	tataacaacat	agtaaagatg	catcttatac	caaggccctt	5100
aagttatttg	aagataaaga	acttcagtgg	accttcataa	tgctgacctt	cctgaataac	5160
acactggtag	aagatttgtg	caaagttcga	tcagcagctg	ttacctgttt	gaaaaacatt	5220
ttagccacaa	agactggaca	tagtttctgg	gagatttata	agatgacaac	agatccaatg	5280
ctggcctatc	tacagccttt	tagaacatca	agaaaaaagt	ttttagaagt	accagatttt	5340
gacaaagaaa	acctttttga	aggcctggat	gatataaatc	tgtggattcc	tctaagtga	5400
aatcatgaca	tttgataaaa	gacactgact	tgtgcttttt	tggacagtgg	aggcacaaaa	5460
tgtgaaattc	ttcaattatt	aaagccaatg	tgtgaagtga	aaactgactt	ttgtcagact	5520
gtacttccat	acttgattca	tgatatttta	ctccaagata	caaatgaatc	atggagaaat	5580
ctgctttcta	cacatgttca	gggatttttc	accagctgtc	ttcgacactt	ctcgaaaacg	5640
agccgatcca	caaccctgc	aaacttggtg	tcagagtcag	agcacttttt	ccgatgctgt	5700
ttggataaaa	aatcacaaag	aacaatgctt	gctgttgtgg	actacatgag	aagacaaaag	5760
agaccttctt	caggaacaat	ttttaatgat	gctttctggc	tggattttaa	ttatctagaa	5820
gttgccaagg	tagctcagtc	ttgtgctgct	cactttacag	ctttactcta	tgcagaaatc	5880
tatgcagata	agaaaagtat	ggatgatcaa	gagaaaagaa	gtcttgcat	tgaagaagga	5940
agccagagta	caactatttc	tagcttgagt	gaaaaaagta	aagaagaaac	tggataaagt	6000
ttacaggatc	ttctcttaga	aatctacaga	agtatagggg	agccagatag	tttgatggc	6060
tgtggtggag	ggaagatgtt	acaaccatt	actagactac	gaacatatga	acacgaagca	6120
atgtggggca	aagccctagt	aacatatgac	ctcgaaacag	caatcccctc	atcaacacgc	6180

caggcaggaa	tcattcaggc	cttgcagaat	ttgggactct	gccatattct	ttccgtctat	6240
ttaaaaggat	tggattatga	aaataaagac	tgggtgtcctg	aactagaaga	acttcattac	6300
caagcagcat	ggaggaatat	gcagtgggac	cattgcactt	ccgtcagcaa	agaagtagaa	6360
ggaaccagtt	accatgaatc	attgtacaat	gctctacaat	ctctaagaga	cagagaattc	6420
tctacatttt	atgaaagtct	caaatatgcc	agagtaaaag	aagtgggaaga	gatgtgtaag	6480
cgcagccttg	agtctgtgta	ttcgctctat	cccacactta	gcaggttgca	ggccattgga	6540
gagctggaaa	gcattgggga	gcttttctca	agatcagtca	cacatagaca	actctctgaa	6600
gtatatatta	agtggcagaa	acactcccag	cttctcaagg	acagtgattt	tagttttcag	6660
gagcctatca	tggctctacg	cacagtcatt	ttggagatcc	tgatggaaaa	ggaaatggac	6720
aactcacaaa	gagaatgtat	taaggacatt	ctcaccaaac	accttgtaga	actctctata	6780
ctggccagaa	ctttcaagaa	cactcagctc	cctgaaaggg	caatatttca	aattaaacag	6840
tacaattcag	ttagctgtgg	agtctctgag	tggcagctgg	aagaagcaca	agtattctgg	6900
gcaaaaaagg	agcagagtct	tgccctgagt	attctcaagc	aatgatcaa	gaagttggat	6960
gccagctgtg	cagcgaacaa	tcccagccta	aaacttacat	acacagaatg	tctgagggtt	7020
tgtggcaact	ggttagcaga	aacgtgctta	gaaaatcctg	cggtcatcat	gcagacctat	7080
ctagaaaagg	cagtagaagt	tgctggaaat	tatgatggag	aaagtagtga	tgagctaaga	7140
aatggaaaaa	tgaaggcatt	tctctcatta	gcccggtttt	cagatactca	ataccaaaga	7200
attgaaaact	acatgaaatc	atcggaattt	gaaaacaagc	aagctctcct	gaaaagagcc	7260
aaagaggaag	taggtctcct	tagggaacat	aaaattcaga	caaacagata	cacagtaaag	7320
gttcagcgag	agctggagtt	ggatgaatta	gccctgcgtg	cactgaaaga	ggatcgtaaa	7380
cgcttcttat	gtaaagcagt	tgaaaattat	atcaactgct	tattaagtgg	agaagaacat	7440
gatatgtggg	tattccgact	ttgttcctc	tggcttgaaa	attctggagt	ttctgaagtc	7500
aatggcatga	tgaagagaga	cggaatgaag	attccaacat	ataaattttt	gcctcttatg	7560
taccaattgg	ctgctagaat	ggggaccaag	atgatgggag	gcctaggatt	tcatgaagtc	7620
ctcaataatc	taatctctag	aatttcaatg	gatcaccccc	atcacacttt	gtttattata	7680
ctggccttag	caaatgcaaa	cagagatgaa	tttctgacta	aaccagaggt	agccagaaga	7740
agcagaataa	ctaaaaatgt	gcctaaacaa	agctctcagc	ttgatgagga	tcgaacagag	7800
gctgcaaata	gaataatatg	tactatcaga	agtaggagac	ctcagatggg	cagaagtgtt	7860
gaggcacttt	gtgatgctta	tattatatta	gcaaacttag	atgccactca	gtggaagact	7920
cagagaaaag	gcataaatat	tccagcagac	cagccaatta	ctaaacttaa	gaatttagaa	7980
gatgttggtg	tccctactat	ggaaattaag	gtggaccaca	caggagaata	tggaaatctg	8040
gtgactatac	agtcatttaa	agcagaattt	cgcttagcag	gaggtgtaaa	tttaccaaaa	8100
ataatagatt	gtgtaggttc	cgatggcaag	gagaggagac	agcttggtta	gggccgtgat	8160
gacctgagac	aagatgctgt	catgcaacag	gtcttccaga	tgtgtaatac	attactgcag	8220

agaaacacgg aaactaggaa gaggaaatta actatctgta cttataaggt ggttcccctc	8280
tctcagcgaa gtggtgttct tgaatggtgc acaggaactg tccccattgg tgaatttctt	8340
gttaacaatg aagatggtgc tcataaaaga tacaggccaa atgatttcag tgcctttcag	8400
tgccaaaaga aaatgatgga ggtgcaaaaa aagtcttttg aagagaaata tgaagtcttc	8460
atggatgttt gccaaaattt tcaaccagtt ttccgttact tctgcatgga aaaattcttg	8520
gatccagcta tttggtttga gaagcgattg gcttatacgc gcagtgtagc tacttcttct	8580
attgttggtt acatacttgg acttggtgat agacatgtac agaatatctt gataaatgag	8640
cagtcagcag aacttgtaca tatagatcta ggtgttgctt ttgaacaggg caaaatcctt	8700
cctactcctg agacagttcc ttttagactc accagagata ttgtggatgg catgggcatt	8760
acgggtgttg aagggtgtctt cagaagatgc tgtgagaaaa ccatggaagt gatgagaaac	8820
tctcaggaaa ctctgttaac cattgtagag gtccttctat atgatccact ctttgactgg	8880
accatgaatc ctttgaaagc tttgtattta cagcagaggc cggaagatga aactgagctt	8940
caccctactc tgaatgcaga tgaccaagaa tgcaaacgaa atctcagtga tattgaccag	9000
agtttcaaca aagtagctga acgtgtctta atgagactac aagagaaact gaaaggagtg	9060
gaagaaggca ctgtgctcag tgttggtgga caagtgaatt tgctcataca gcaggccata	9120
gaccccaaaa atctcagccg acttttccca ggatggaaag cttgggtgtg a	9171

<210> 25
 <211> 1536
 <212> DNA
 <213> Homo sapiens

<400> 25	
atggcgctgc gggcgatgcg ggggattgtc aacggggccg caccgagct acccggtgcc	60
accggtgggc cggcgggtgg agctcgggag caggcgctgg cagtcagtcg gaactacctc	120
tcccagcctc gcctcacata caagacagta tctggagtca atgggtccact agtgatctta	180
gatcatgtta agtttcccag gtatgctgaa attgtccatt tgaccttacc ggatggcaca	240
aagagaagtg ggcaagttct ggaagttagt ggttccaagg cagtagttca ggtatttgaa	300
gggacttcag gtatagatgc taagaaaacg tcctgtgagt ttactgggga tattctccga	360
acaccggtgt ctgaggatat gcttggtcgg gtattcaatg gatcgggaaa acccattgac	420
agaggtcctg ttgtactggc cgaagacttc cttgatatca tgggtcagcc aatcaaccct	480
caatgtcgaa tctaccaga ggaaatgatt cagactggca tttcggccat cgatgggatg	540
aacagtattg ctagggggca gaaaattcct atcttctctg ctgctgggct accacacaat	600
gagattgcag ctcatgctg tcgccaggct ggtttggtaa agaaatccaa agatgtagta	660
gactacagtg agggaaattt tgcaattgta tttgctgcta tgggtgtaaa catggaaact	720
gcccggttct tcaaattctga ctttgaagaa aatggctcaa tggacaatgt ctgcctcttt	780
ttgaacttgg ctaatgacct aaccattgag cgaattatca ctctcgcct ggctctaacc	840

acagctgaat	ttctggcgta	ccaatgtgag	aaacatgtat	tggttattct	aacagacatg	900
agttcttatg	ctgaagcact	tcgagagggt	tcagcagcca	gggaagagggt	acctgggtcga	960
cgaggttttc	caggttacat	gtatacagat	ttagccacga	tatatgaacg	cgctggggcga	1020
gtggaagggg	gaaacggctc	gattactcaa	atccctattc	taaccatgcc	taatgatgat	1080
atcactcacc	ccatcccaga	cttgactggc	tacattacag	aggggcagat	ctatgtggac	1140
agacagctgc	acaacagaca	gatttatcca	cctatcaatg	tgctgccctc	actatcacgg	1200
ttaatgaagt	ctgctattgg	agaagggatg	accaggaagg	atcatgccga	tgtatctaac	1260
cagctatatg	cgtgctatgc	tattggaaag	gatgtgcaag	ccatgaaagc	tgctggttga	1320
gaagaagccc	ttacctcaga	tgatcttctc	tacttggaat	ttctgcagaa	gtttgagagg	1380
aacttcattg	ctcagggtcc	ttacgaaaat	cgactgtctt	ttgagacttt	ggacattggc	1440
tggcagctac	tccgaatctt	ccccaaagaa	atgctgaaga	gaatccctca	gagcaccctc	1500
agcgaatttt	accctcgaga	ctctgcaaag	cattag			1536

<210> 26
 <211> 2211
 <212> DNA
 <213> Homo sapiens

<400> 26	
atgtctctga	gtgagaactc
ggtttttgcc	tatgaatctt
ctgtgcatag	caccaatggt
60	
ttactcagcc	ttaatgacca
gcggaagaaa	gatgtgctgt
gcatgtcac	catctttgtg
120	
gagggacagc	ggttccgcgc
tcaccgggtc	gtgctggcgg
catgcagcag	ttacttccac
180	
tcaagaatcg	taggccaggc
tgatggagag	ctgaacatta
ctcttccaga	agaggtgaca
240	
gttaaaggat	ttgaaccttt
aattcagttt	gcctacactg
ctaaactgat	tttaagtaaa
300	
gagaatgtgg	atgaagtgtg
caaatgtgtg	gagtttttaa
gtgtacataa	tattgaggaa
360	
tcctgctttc	agtttctgaa
atttaagttt	ttggactcca
ctgcagacca	gcaagaatgc
420	
ccaagaaaaa	aatgcttttc
atcacactgt	cagaaaacag
accttaaact	ttcacttttg
480	
gaccagaggg	atctagaaac
tgatgaagtg	gaggaatttc
tggaaaataa	aaatgttcag
540	
actcctcagt	gtaaactccg
caggtatcaa	ggaaatgcaa
aagcctcacc	tcctctacaa
600	
gacagtgcc	gtcagacata
tgagtccatg	tgcttagaga
aggatgctgc	tctggccttg
660	
ccttctttat	gccccaaata
cagaaaattc	caaaaagcat
ttggaactga	cagagtccgt
720	
actggggaat	ctagtgtcaa
agacattcat	gcttctgttc
agccaaatga	aagggtctgaa
780	
aatgaatgcc	tgggaggagt
cccggagtgt	agagatttgc
aggtgatgtt	aaaatgtgac
840	
gaaagtaa	tagcaatgga
acctgaagaa	acgaagaaag
atcctgcttc	tcagtgccca
900	
actgaaaaat	cagaagtgc
tcctttcccc	cacaattctt
ccatagaccc	tcattggactt
960	
tattctttgt	ctcttttaca
cacatatgac	caatatgggtg
acttgaattt	tgctgggtatg
1020	
caaaacacaa	cagtgttaac
agaaaagcct	ttgtcaggta
cagacgtcca	agaaaaaaca
1080	
tttggtgaaa	gtcaggattt
acctttgaaa	tccgacttgg
gcaccaggga	agatagtagt
1140	

PCTAU2016050927-seq1-000001-EN-20161013

gttgcatcta	gtgataggag	tagtgtggag	cgagaagtgg	cagaacacct	agcaaaaggc	1200
ttctggagtg	acatttgcag	cacggacact	ccttgccaaa	tgcagttatc	acctgctgtg	1260
gccaaagatg	gctcagaaca	gatctcacag	aaacgggtctg	agtgtccgtg	gttaggtatc	1320
aggattagtg	agagcccaga	accaggtcaa	aggactttca	caacattaag	ttctgtcaac	1380
tgccctttta	taagtactct	gagtactgaa	ggctgttcaa	gcaatttgga	aattggaaac	1440
gatgattatg	tttcagaacc	ccagcaagaa	ccttgcccat	atgcttgtgt	cattagcttg	1500
ggagacgact	ctgagacgga	caccgaagga	gacagtgaat	cctgttcagc	cagagaacaa	1560
gaatgtgagg	taaaactgcc	attcaatgca	caacggataa	tttactgtc	tcgaaatgat	1620
tttcagtcct	tgttgaaaat	gcacaagctt	actccagaac	agctggattg	tatccatgat	1680
attcgaagaa	gaagtaaaaa	cagaattgct	gcacagcgct	gtcgcaagag	aaaacttgac	1740
tgtatacaga	atcttgaatc	agaaattgag	aagctgcaaa	gtgaaaagga	gagcttggtg	1800
aaggaaagag	atcacatttt	gtcaactctg	ggtgagacaa	agcagaacct	aactggactt	1860
tgccagaaaag	tttgtaaaga	agcagctctg	agtcaagaac	aaatacagat	actcgccaag	1920
tactcagctg	cagattgccc	actttcattt	ttaatttctg	aaaaagataa	aagtactcct	1980
gatggtgaac	tggtggtacc	atcaattttc	agtttatctg	accggcctcc	agcagtgtctg	2040
cctccctgtg	ccagaggaaa	cagtgagcct	ggctacgcgc	gagggcagga	gtcccagcag	2100
atgtccacag	ccacctctga	gcaagctggg	cctgcggaac	agtgtcgtca	gagtgggtggg	2160
atctcagatt	tctgtcagca	gatgactgat	aaatgtacta	ctgatgagta	a	2211

<210> 27
 <211> 1410
 <212> DNA
 <213> Homo sapiens

<400> 27							
atgatgtcgg	aacacgacct	ggccgatgtg	gttcagattg	cagtggaaga	cctgagccct	60	
gaccaccag	ttgttttggg	gaatcatgta	gtgacagatg	aagacgaacc	tgctttgaaa	120	
cgccagcgac	tagaaatcaa	ttgccaggat	ccatctataa	agtcattcct	gtattccatc	180	
aaccagacaa	tctgcttgcg	gttggaatagc	attgaagcca	aattgcaagc	cctggaggct	240	
acttgtaa	at	cttagaaga	aaagctggat	ctggctacga	acaagcagca	cagccccatc	300
cagggtccca	tggtggccgg	ctcccctctc	ggggcaacct	agacgtgcaa	caaagtgcga	360	
tgcgctgtgc	ctgggcgtcg	gcagaacacc	atttgtgtga	aggtgccggg	ccaagaagac	420	
agccaccacg	aggacgggga	gagcggctcg	gaggccagcg	actctgtgtc	cagctgtggg	480	
caggcgggca	gtcagagcat	cgggagcaac	gtcacgtca	tcaccctgaa	ctcgaagag	540	
gactaccca	atggcacctg	gctgggcgac	gagaacaacc	ccgagatgcg	ggtacgtgc	600	
gcatcatcc	cctccgacat	gctgcacatc	agcaccaact	gccgcacggc	cgagaagatg	660	
gcgctcacgc	tgctggacta	cctcttccac	cgcgagggtgc	aggctgtgtc	caacctctcg	720	

gggcagggca agcacgggaa gaagcagctg gacccgtca ccatctacgg catccggtgt	780
caccttttct ataaatttgg catcacagaa tccgactggt accgaatcaa gcagagcatc	840
gactccaagt gccgcacggc gtggcgggcg aagcagcggg gccagagcct ggcggtcaag	900
agcttctcgc ggagaacgcc caactcgtcc tcctactgcc cttcagagcc gatgatgagc	960
acccacctc ctgccagcga gctcccgag ccacagccgc agccgcaggc cctgcactac	1020
gcgctggcca acgcacagca ggtgcagatc caccagatcg gagaagacgg acaggtgcaa	1080
gtaatccac agggacacct ccacatcgcc caggtgccgc agggggagca agtccagatc	1140
acgcaggaca gcgagggcaa cctccagatc catcacgtgg ggcaggacgg tcaggtgctg	1200
cagggtgac agtgatcgc cgtggcctcc tcggaccccg cggcggcggg cgtggatggg	1260
tcgccactcc agggcagcga catccaggtt cagtacgtgc agctggcgcc agtgagtgc	1320
cacacggccg gggcacagac ggccgaagcc ctgcagccca cgctacagcc ggagatgcag	1380
ctcgagcacg gggccatcca gattcagtga	1410

<210> 28
 <211> 6507
 <212> DNA
 <213> Homo sapiens

<400> 28	
atggagtctg gagaacggtt accatcctca gcagcctcct ctactacacc aacttcatct	60
tcgacacctt ctgtggcttc agtagtttca aaaggtggcc tttccactgg agttgcttca	120
cttagctcta caatcaacct atgtggacat ttattcagaa cagctgggga tcaaccgttt	180
aacctgtcca cagtgtcag tgccttccca atggtcagcc acccagtctt tggctacat	240
tcagccagct cagggcattc agaatttggg ggtttgggga cacttggtac acccacagcc	300
ttagccgcac atccccaact agcatctttt ccaggtgcag aatggtggcg aacaactgat	360
gctcactc gtacaggagc aaccttcttt ccaccattac tgggaattcc accactatct	420
gctccccag cccagaatca tgattcttct tcattccatt caaggacttc gggaaaaagt	480
aatcgaaatg gtcccgaata aggtgtaaat gggtaataa atggaagtaa tacatcatct	540
gtaattggta tcaacacatc tgtactatcc actactgctt caagttccat gggacaaact	600
aaaagtacaa gtcagggtgg aggaatcga aaatgtaatc aggaacaaag caaaaaccag	660
cctttggatg ctagagttga caaatcaaa gataagaaac caaggaagaa agcaatggaa	720
agttctagca acagtgatag tgattcaggc acatcatcag acacctcaag tgaaggcatt	780
agtagcagt attcagatga tctagaagaa gatgaagaag aagaagatca aagtattgaa	840
gaaagtgaag atgatgattc tgattcagag agtgaagcac aacataaaag taacaaccag	900
gtgctattac atgggtatttc agacccaaaa gcagatggac agaaagcaac tgaaaaagcc	960
caggaaaaaa gaatacacca gccattacct cttgcgtctg aatcccagac tcatcattc	1020
caatcccagc agaagcagcc tcaggttttg tcacagcagc ttccatttat tttccaaagc	1080
tctcaggcaa aggaggaatc tgtgaacaaa cacaccagt taatacagtc tacgggattg	1140

gtgtccaatg	tgaaaccttt	atctttggta	aatcaagcca	aaaaggaaac	ttacatgaaa	1200
ctcatagttc	cttctcctga	tgttcttaaa	gcagggaata	aaaatacctc	tgaagaatct	1260
agtttattga	ccagtgaatt	gagatccaaa	cggaacaat	ataaacaggc	attcccatca	1320
cagttaaaga	aacaagagtc	atcgaagagc	ctgaagaagg	ttattgcagc	tttgtcaaat	1380
ccaaaagcaa	cctctagttc	accagcacat	ccaaaacaaa	cattagaaaa	caaccaccca	1440
aatccattct	tgacaaatgc	acttttaggt	aatcaccaac	caaattggagt	tattcaaagt	1500
gtcattcaag	aagctcctct	agcacttact	acaaaaacta	aaatgcagag	caagattaat	1560
gaaaacattg	ctgctgcaag	tagcaccctt	tttctctcac	ctgtaaatct	gagtacaagt	1620
gggagaagaa	cccctggcaa	tcagacacct	gtaatgccct	ctgcctctcc	catcctgcat	1680
agtcaaggga	aggaaaaagc	agttagcaat	aatgtaaacc	cagtaaaaaac	acagcatcac	1740
tcccatcctg	caaaatcttt	agtgaacaa	ttcagaggaa	cagattcaga	cattcccagt	1800
agtaaagatt	ctgaagattc	aatgaggat	gaagaggaag	atgatgaaga	agaagatgag	1860
gaagatgatg	aagatgatga	atctgatgac	agccaatcag	aatcagatag	taattcagaa	1920
tcagatacag	aaggatcaga	agaagaagat	gatgatgata	aagaccaaga	tgaatcagat	1980
agtgatactg	aaggagagaa	aacttcaatg	aaactgaata	aaacaacttc	ctctgtcaaa	2040
agcccttcca	tgagtctcac	aggtcactca	acacctcgta	acctccacat	agcaaaagcc	2100
ccaggctctg	ctcctgctgc	cttatgttct	gaatcccagt	cacctgcttt	tcttggtaca	2160
tcttcttcca	cacttacttc	aagcccacac	tctggcactt	ccaaaagaag	aagagtaaca	2220
gatgaacgtg	aactgcgtat	tccattggaa	tatggctggc	agagagagac	aagaataaga	2280
aactttggag	ggcgcttca	aggagaagta	gcatattatg	ctccatgtgg	aaagaaactt	2340
aggcagtacc	ctgaagtaat	aaagtatctc	agcagaaatg	gaataatgga	tatctcaagg	2400
gacaatttca	gcttcagtgc	aaaaataaga	gtgggtgact	tctatgaagc	cagagatgga	2460
ccgcaggga	tgacgtggtg	tcttttga	gaagaggatg	tcattcctcg	tatcagggca	2520
atggaaggtc	gtagaggaag	accaccaa	ccagatagac	aacgagcaag	agaggaatcc	2580
aggatgagac	gtcggaag	tcgacctcca	aatgttggca	atgctgaatt	cctagataac	2640
gcagatgcaa	agttgctaag	aaaactgcaa	gctcaagaaa	tagccaggca	agcagcacia	2700
ataaagcttt	tgagaaaact	tcaaaagcag	gaacaggctc	gggttgctaa	agaagccaaa	2760
aaacaacaag	caataatggc	tgctgaggag	aagcggaagc	aaaaagaaca	gataaagatt	2820
atgaaacagc	aggaaaaaat	taagagaata	cagcaaatca	gaatggaaaa	agaacttcga	2880
gctcagcaaa	ttctagaggc	taaaaagaaa	aagaaggaag	aagcggcaaa	tgccaaatta	2940
ttggaggccg	agaaacgaat	aaaggaaaaa	gaaatgagaa	gacaacaagc	tgttcttctg	3000
aaacatcagg	aacgagagcg	aaggcgacaa	cacatgatgc	ttatgaaagc	tatggaagct	3060
cgtaaaaaag	cagaagaaaa	agagcggttg	aaacaagaaa	aacgtgatga	gaaaagatta	3120
aataaagagc	gtaaactaga	gcagcgaaga	ttagaattag	aaatggcaaa	ggaactaaag	3180

aagcctaattg	aagacatgtg	cttagcagac	caaaagcctt	tgccagagtt	gcctcgtatt	3240
ccaggacttg	ttctctctgg	aagtacattt	tcagactgtc	tcattggtgg	gcagttctta	3300
cgaactttg	gtaaagtttt	gggctttgat	gtgaatattg	atgttccaaa	cctgagtgtt	3360
cttcaagagg	gattgctaaa	tataggggac	agcatgggtg	aagtacaaga	cttgcttggtg	3420
aggctcctct	cagctgctgt	atgtgatcca	ggtctaataa	caggatacaa	ggctaaaaca	3480
gctcttgagg	aacatttgct	gaatgttgg	gtgaatcgag	acaatgtttc	cgagatttta	3540
cagatattta	tggaagccca	ctgtggacaa	actgagctta	ctgaaagtct	gaagacccaa	3600
gcttttcagg	ctcacactcc	agcacagaaa	gcttcagtcc	tggctttcct	gatcaatgaa	3660
ctggcatgca	gcaagagtgt	ggtcagtga	atcgacaaga	acattgatta	tatgtcaaac	3720
ttgaggagag	ataaatgggt	ggtagaagg	aaactccgca	agctcagaat	cattcatgct	3780
aagaaaacag	gcaaaagaga	cacttcaggt	ggcattgatc	tgggagaaga	gcagcatccc	3840
ttgggcacac	ccactccagg	acgcaagcga	agaaggaagg	gaggagacag	tgattatgac	3900
gatgatgatg	acgatgacag	tgatgaccaa	ggggatgaag	atgatgagga	tgaagaagat	3960
aaagaagaca	aaaaaggaaa	aaagactgat	atctgtgaag	atgaggatga	aggtgaccaa	4020
gcagcaagtg	ttgaagagct	ggaaaaacag	attgaaaaac	tgagtaaaca	acagagtcag	4080
tacagaagga	agctctttga	tgcgtctcac	tcattgcgtt	cagtgatgtt	tggccaagat	4140
cgttacagac	gccggtactg	gattcttccc	caatgtgggg	ggatttttgt	agaaggcatg	4200
gagagtgggtg	aaggactaga	agaaattgca	aaagaaagag	aaaaactgaa	aaaggcagaa	4260
agtgtccaga	tcaaagaaga	aatgtttgag	acttctgggg	acagtttaaa	ttgttcaaat	4320
acagatcact	gtgaacaaaa	ggaagatctt	aaagaaaaag	ataacacaaa	tctattcctt	4380
cagaaacctg	gctctttttc	caaattaagc	aagcttttgg	aagtagctaa	gatgcctcct	4440
gagtcagagg	ttatgacccc	caaaccaa	gctgggtgcaa	atgggtgcac	gttgtcttat	4500
cagaacagtg	gaaaacattc	actgggcagc	gttcagtcaa	cagcaacgca	aagcaatgtg	4560
gaaaaggcag	actctaataa	tctgtttaat	actggttcaa	gtgggtccagg	gaagttctac	4620
agtcctctcc	ccaatgacca	gttactaaaa	acgctgactg	aaaagaatag	acaatggttt	4680
agtcttttgc	cacgaacacc	ctgtgatgac	acttcactta	ctcatgccga	tatgtcaact	4740
gcttctttgg	tgactcctca	gtctcagcca	ccatctaagt	caccttcacc	tacccagct	4800
cctcttggtg	cttctgctca	gaatcctgtt	ggcttaaata	catttgcttt	atcacctctt	4860
caggtgaaag	gtggagtatc	tatgatggga	cttcagtttt	gtggatggcc	cactggtgtg	4920
gttacttcta	atattccatt	tacatcatct	gtacctagtc	taggatcggg	gttagggtta	4980
tcagaaggaa	atggtaattc	attcttgact	tccaatgttg	cttcaagtaa	aagtgaatct	5040
ccagtaccac	agaatgaaaa	ggccacttca	gctcaacctg	cagctgttga	agtagcaaaa	5100
ccagtagatt	ttcctagtcc	aaaacctatt	ccagaagaaa	tcagtttgg	ttggtggaga	5160
attattgacc	cagaggacct	aaaagctttg	ctcaaagtgc	tcgatctcag	aggaataaga	5220

5280
5340
5400
5460
5520
5580
5640
5700
5760
5820
5880
5940
6000
6060
6120
6180
6240
6300
6360
6420
6480
6507

60
120
180
240
300
360
420
480

agcgtcaacc gggagatgtc gcccctggtg gacaacatcg ccctgtggat gactgagtac	540
ctgaaccggc acctgcacac ctggatccag gataacggag gctgggatgc ctttgtggaa	600
ctgtacggcc ccagcatgcg gcctctgttt gatttctcct ggctgtctct gaagactctg	660
ctcagtttgg ccctggtggg agcttgcac accctgggtg cctatctggg ccacaagtga	720

<210> 30
 <211> 363
 <212> DNA
 <213> Homo sapiens

<400> 30 atggagtcca aagaggaact agcggcaaac aatctcaacg gggaaaatgc ccaacaagaa	60
aacgaaggag gggagcaggc cccacgcag aatgaagaag aatcccgcc tttgggaggg	120
ggtgaaggcc agaagcctgg aggaaatatc aggcgggggc gagttaggcg acttgtccct	180
aattttcgat gggccatacc taataggcat attgagcaca atgaagcgag agatgatgta	240
gaaaggtttg tagggcagat gatggaaatc aagagaaaga ctagggaaca gcagatgagg	300
cactatatgc gcttcaaac tcctgaacct gacaaccatt atgacttttg cctcatacct	360
tga	363

<210> 31
 <211> 1989
 <212> DNA
 <213> Homo sapiens

<400> 31 atgaagaagt tctctcggat gcccaagtcg gagggcggca gcggcggcgg agcggcgggt	60
ggcggggctg gcggggccgg ggccggggcc ggctgcggct cgggcggctc gtccgtgggg	120
gtccgggtgt tcgcggctcg cgcaccag gtcaccctgg aagagtcgct ggccgaagg	180
ggattctcca cagttttcct cgtgcgtact cacggtggaa tccgatgtgc attgaagcga	240
atgtatgtca ataacatgcc agacctcaat gtttgtaaaa gggaaattac aattatgaaa	300
gagctatctg gtcacaaaaa tattgtgggc tatttgact gtgctgttaa ttcaattagt	360
gataatgtat gggaagtcct tatcttaatg gaatattgtc gagctggaca ggtagtgaat	420
caaatgaata agaagctaca gacgggtttt acagaaccag aagtgttaca gatattctgt	480
gatacctgtg aagctgttgc aaggttgcat cagtgtgaaga ctccaataat tcaccgggat	540
ctgaaggtag aaaatatttt gttgaatgat ggtgggaact atgtactttg tgactttggc	600
agtgccacta ataaatttct taatcctcaa aaagatggag ttaatgtagt agaagaagaa	660
attaaaaagt atacaactct gtcatacaga gccctgaaa tgatcaacct ttatggaggg	720
aaacccatca ccaccaaggc tgatatctgg gactgggat gtctactcta taaactttgt	780
ttcttcactc ttccttttgg tgagagtcag gttgctatct gtgatggcaa cttcaccatc	840
ccagacaatt ctcgttactc ccgtaacata cattgcttaa taaggttcat gcttgaacca	900
gatccggaac atagacctga tatatttcaa gtgtcatatt ttgcatttaa atttgccaaa	960

aaggattgtc	cagtctccaa	catcaataat	tcttctattc	cttcagctct	tcctgaaccg	1020
atgactgcta	gtgaagcagc	tgctagggaa	agccaaataa	aagccagaat	aacagatacc	1080
attggaccaa	cagaaacctc	aattgcacca	agacaaagac	caaaggccaa	ctctgctact	1140
actgccactc	ccagtgtgct	gaccattcaa	agttcagcaa	cacctgttaa	agtccttgct	1200
cctgggtgaat	tcggtaacca	tagacaaaaa	ggggcactaa	gacctggaaa	tggccctgaa	1260
attttattgg	gtcagggacc	tcctcagcag	ccgccacagc	agcatagagt	actccagcaa	1320
ctacagcagg	gagattggag	attacagcaa	ctccatttac	agcatcgta	tcctcaccag	1380
cagcagcagc	agcagcagca	gcaacagcaa	cagcagcagc	agcaacagca	acagcagcag	1440
cagcagcagc	agcagcagca	ccaccaccac	caccaccacc	acctacttca	agatgcttat	1500
atgcagcagt	atcaacatgc	aacacagcag	caacagatgc	ttcaacaaca	atttttaatg	1560
cattcgggtat	atcaaccaca	accttctgca	tcacagtatc	ctacaatgat	gccgcagtat	1620
cagcaggctt	tctttcaaca	gcagatgcta	gctcaacatc	agccgtctca	acaacaggca	1680
tcacctgaat	atcttacctc	ccctcaagag	ttctcaccag	ccttagtttc	ctacacttca	1740
tcacttccag	ctcaggttgg	aaccataatg	gactcctcct	atagtgccaa	taggtcagtt	1800
gctgataaag	aggccattgc	aaatttcaca	aatcagaaga	acatcagcaa	tccacctgat	1860
atgtcagggt	ggaatccttt	tggagaggat	aatttctcta	agttaacaga	agaggaacta	1920
ttggacagag	aatttgacct	tctaagatca	agtaaggggac	acttgaaggc	ttattttgct	1980
tcacagtaa						1989

```
<210> 32
<211> 3177
<212> DNA
<213> Homo sapiens
```

<400>	32								
atgaggagga	aaggacgatg	tcatcgaggc	tctgcagcga	ggcatccttc	ttccccatgc				60
agtgttaaac	actcccctac	gcgagaaacg	ctgacctacg	ctcaagctca	aaggatggta				120
gagatagaaa	ttgaagggcg	cttgcacagg	atcagtattt	ttgatccctt	ggagatcata				180
ttggaagatg	acctcactgc	tcaagagatg	agtgagtgca	acagcaacaa	ggaaaacagc				240
gagcggcctc	ctgtctgctt	aagaactaag	cgtcacaaaa	acaacagagt	caaaaagaaa				300
aacgaggccc	tccccagcgc	ccacggcacg	ccggcctcgg	ccagtgccct	cccgagagccc				360
aaggtgcgca	tcgtggagta	cagccctccg	tccgccccca	ggaggcctcc	tgtgtactac				420
aagttcatcg	agaagtcggc	cgaggaactg	gacaacgagg	tggagtatga	catggacgag				480
gaggactatg	cctggctgga	gatcgtcaat	gagaagcgca	agggcgactg	cgtccccgcc				540
gtgtcgcaga	gcatgtttga	gttcctgatg	gaccgccttcg	agaaggagtc	gcactgcgag				600
aaccagaagc	agggcgagca	gcagtctctg	atcgacgagg	acgccgtgtg	ctgcatctgc				660
atggacgggg	agtgtcagaa	cagcaacgtg	atcctcttct	gcgacatgtg	caacctggcc				720
gtgcaccagg	agtgctacgg	ggtgccctac	atccccgagg	gccagtggct	ctgccgccac				780

tgctgcagt	cgcgggcccg	gcccgccgac	tgtgtgctgt	gcccacaaca	gggtggtgcc	840
ttcaaaaaga	cagatgacga	ccgctgggggt	cacgtggtgt	gtgccctgtg	gatcccagag	900
gtcggctttg	ccaacacggt	gttcatcgag	cccatcgatg	gggtgaggaa	catccctcca	960
gcccgggtga	aactgacatg	ctacctctgt	aagcagaagg	gcgtgggtgc	ctgcatccag	1020
tgccacaaag	caaactgcta	cacagcattc	catgtgacgt	gtgcccagaa	ggctggcctg	1080
tacatgaaaa	tggagcccggt	gaaggaactg	actggcggtg	gcaccacctt	ctccgtcaga	1140
aagaccgctt	actgtgatgt	ccacacgcct	ccaggctgca	cccggaggcc	tctgaatatt	1200
tacgggggatg	tcgaaatgaa	aaatggcgctc	tgtcgaaaag	agagctcggt	taaaacggctc	1260
aggtccacat	ccaaggctcag	gaagaaggca	aaaaaggcta	agaaagctct	ggctgagccc	1320
tgcgcggtcc	tgccgaccgt	gtgcgctcct	tatattcccc	cgagagaggtt	aaataggatt	1380
gcgaatcagg	tggccattca	gcggaagaag	cagtttgtgg	agcgagccca	cagctactgg	1440
ctgctcaagc	ggctgtccag	gaacggggcc	cccctgctgc	ggcggtgca	gtccagcctg	1500
cagtctcagc	gaagctcaca	gcagagagaa	aatgatgagg	agatgaaggc	tgccaaagag	1560
aagctgaagt	actggcagcg	gctgcggcac	gacctggagc	gcgctcgctt	gctgatcgag	1620
ctgctgcgca	agcgggagaa	gctcaagcgt	gagcagggtga	aggtggagca	ggtcgccatg	1680
gagctgcggc	tgaccccgct	gacggtgctg	ctgcgctcag	tgctggacca	gctgcaagac	1740
aaggaccccg	ccaggatatt	tgcgcagccc	gtgagtctga	aggaggtacc	agattatttg	1800
gatcacatta	aacatcccat	ggactttgcc	acaatgagga	aacggttaga	agctcaaggg	1860
tataaaaacc	tccatgagtt	tgaggaggat	tttgatctca	ttatagataa	ctgcatgaag	1920
tacaatgcca	gggacaccgt	gttctataga	gccgcggtga	ggctgcgcga	tcagggaggt	1980
gttgttctga	ggcaggcccg	gcgcgaggtg	gacagcatcg	gcttggaaga	ggcctcgggg	2040
atgcacctgc	ctgagcggcc	tgctgcggca	ccgcggcggc	ctttctcctg	ggaagacgtg	2100
gacaggttgc	tggaccccg	caacagagcc	cacctgggcc	tggaggagca	gctgagagag	2160
ctgctggaca	tgctcgacct	cacctgcgct	atgaagtcca	gcggctcccg	gagcaagcgg	2220
gcaaagctgc	tcaaaaagga	aattgccctt	ctccgaaaca	agctgagcca	gcagcacagc	2280
cagcccctgc	ccacggggcc	aggcttgga	ggcttcgaag	aggacggagc	tgcgctgggg	2340
ccggaggcgg	gcgaggaagt	ccttccgagg	ttggagactc	ttctgcagcc	aaggaaaagg	2400
tcgcggagca	catgcggaga	ctccgaggtg	gaggaggagt	ccccaggaaa	gcgcctggac	2460
gcaggtctca	ccaacggctt	tgggggtg	aggagcgagc	aggagccggg	cggcggcctg	2520
gggaggaagg	ccacaccccg	acgacgtgt	gcctccgagt	ccagcatctc	ctccagcaac	2580
agcccgtctt	gcgactcgag	ctttaatgcg	cccaaagtgt	ggcggggcaa	accggctctt	2640
gtgcgacggc	acacgctgga	ggaccgcagt	gagctgatct	cctgcatcga	gaatgggaac	2700
tacgccaagg	cggccaggat	cgagccgaa	gtcggccaga	gcagcatgtg	gatctccact	2760
gatgccgccc	cctcgggtgt	ggagcctctg	aagggtggtgt	gggccaagtg	cagcggctac	2820

ccctcctacc	cggcactgat	catcgacccc	aagatgcccc	gtgtgcctgg	ccaccacaac	2880
ggcgtcacca	tcccggcccc	acccttggac	gtgtctgaaga	ttggggagca	catgcagacc	2940
aagtctgatg	agaagctgtt	cctcgttctc	ttttttgata	ataagagaag	ttggcagtgg	3000
cttcctaagt	ccaaaatggg	tccccttggg	attgacgaaa	ctatagacaa	gttaaagatg	3060
atggaaggga	ggaattccag	catccggaag	gccgtgcgga	tcgcttttga	ccgcgccatg	3120
aaccacctga	gccgcgtcca	cggggagccg	accagcgacc	tcagtgcacat	tgactga	3177

```
<210> 33
<211> 2169
<212> DNA
<213> Homo sapiens
```

Page 40

PCTAU2016050927-seq1-000001-EN-20161013

gccccgccct catccagcga cagcagcagc gatagctcct cggacagtga cagttcgact	1500
gatgactctg aggaggagcg agcccagcgg ctgggtgagc tccaggagca gctcaaagcc	1560
gtgcacgagc agcttgacgc cctctctcag ccccagcaga acaaaccaaa gaaaaaggag	1620
aaagacaaga aggaaaagaa aaaagaaaag cacaaaagga aagaggaagt ggaagagaat	1680
aaaaaaagca aagccaagga acctcctcct aaaaagacga agaaaaataa tagcagcaac	1740
agcaatgtga gcaagaagga gccagcgcgc atgaagagca agccccctcc cacgtatgag	1800
tcggaggaag aggacaagtg caagcctatg tcctatgagg agaagcggca gctcagcttg	1860
gacatcaaca agtccccgg cgagaagctg ggccgcgtgg tgcacatcat ccagtcacgg	1920
gagccctccc tgaagaattc caaccccgac gagattgaaa tcgactttga gaccctgaag	1980
ccgtccacac tgcgtgagct ggagcgtat gtcacctcct gtttgcgga gaaaaggaaa	2040
cctcaagctg agaaagttga tgtgattgcc ggctcctcca agatgaaggg cttctcgtcc	2100
tcagagtcgg agagctccag tgagtccagc tcctctgaca gcgaagactc cgaaacaggt	2160
cctgcctaa	2169

<210> 34
 <211> 516
 <212> DNA
 <213> Homo sapiens

<400> 34	
atgcatccct tctacacccg ggccgccacc atgataggcg agatcgccgc cgccgtgtcc	60
ttcatctcca agtttctccg caccaagggg ctcacgagcg agcgacagct gcagaccttc	120
agccagagcc tgcaggagct gctggcagaa cattataaac atcactgggtt cccagaaaag	180
ccatgcaagg gatcgggtta ccgttgattt cgcatacaacc ataaaatgga tcctctgatt	240
ggacaggcag cacagcggat tggactgagc agtcaggagc tgttcaggct tctcccaagt	300
gaactcacac tctgggttga cccctatgaa gtgtcctaca gaattggaga ggatggctcc	360
atctgtgtgc tgtatgaagc ctcaccagca ggaggtagca ctcaaacag caccaacgtg	420
caaagtgtag acagccgaat cagctgtaag gaggaacttc tcttgggcag aacgagccct	480
tccaaaaact acaatatgat gactgtatca gggttaa	516

<210> 35
 <211> 876
 <212> DNA
 <213> Homo sapiens

<400> 35	
atgtctcagg aaggtgtgga gctggagaag agcgtccggc gcctccggga gaagtttcat	60
gggaaggat cctccaagaa ggcgggggct ctgatgagga aattcggcag cgaccacacg	120
ggagtggggc gctccatcgt gtacggggta aagcaaaaag atggccaaga actaagtaac	180
gatctggatg cccaggatcc accagaagat atgaagcagg accgggacat tcaggcagtg	240
gcgacctccc tcctgccact gacagaagcc aacctacgca tgtttcaacg tgcccaggac	300

PCTAU2016050927-seq1-000001-EN-20161013

gaccttatcc ctgctgtgga cgggcagttt gcctgctcct cctgcgacca cgtctggtgg	360
cgccgcgtgc cccagcggaa ggaggtatcc cggtgccgga aatgccggaa gcgctacgag	420
ccagtgccag ctgacaagat gtggggcctg gctgagttcc actgcccgaa gtgtcggcac	480
aacttccggg gctgggcaca gatgggggtcc ccgtccccct gctacgggtg cggcttcccc	540
gtgtatccaa cacggatcct cccccgcgc tgggaccggg acccggatcg ccgcagcacc	600
cacactcact cctgctcagc tgccgactgc tacaaccggc gagagcccca cgtgcctggg	660
acatcctgtg ctcaccccaa gagccggaag cagaaccacc tgcccaaagt gctccacccc	720
agcaaccctc acattagcag tggctccact gtggccacct gcttgagcca ggggtggcctc	780
ctggaagacc tggacaacct catcctggag gacctgaagg aggaggagga ggaagaggag	840
gaggtggagg acgaggaggg cgggcccagg gagtga	876

<210> 36
 <211> 501
 <212> DNA
 <213> Homo sapiens

<400> 36 atggaggcgg ggccgcatcc ccggccgggg cactgctgca agcctggggg gcggctggac	60
atgaaccacg gcttcgtgca ccatatccga cggaaccaga tcgctcggga cgactatgac	120
aagaagggtga agcaggcggc caaggagaag gtgaggaggc ggcacacgcc cgcgccgacg	180
cggccccgca agccagacct gcaggtgtac ctgccgcgac accgagatgt ctctgccac	240
ccacgcaacc cagactatga agagtccggg gaaagcagca gtagtggagg ctctgagctg	300
gagccttctg gccatcagct cttctgctta gaatacgagg cagacagtgg agaggtcaca	360
tcagttatcg tctatcaggg tgatgacca ggaaagggtg gtgagaagggt gtcggcacac	420
acgcctctgg atccacccat gcgagaagcc ctcaagttgc gtatccagga ggagattgca	480
aagcgccaga gccaacactg a	501

<210> 37
 <211> 1074
 <212> DNA
 <213> Homo sapiens

<400> 37 atggcccggg agaacggcga gagcagctcc tcctggaaaa agcaagctga agacatcaag	60
aagatcttcg agttcaaaga gaccctcgga accggggcct tttccgaagt ggtttttagct	120
gaagagaagg caactggcaa gctctttgct gtgaagtgtg tccctaagaa ggcgctgaag	180
ggcaaggaaa gcagcataga gaatgagata gccgtcctga gaaagattaa gcatgaaaat	240
attgttgccc tggaagacat ttatgaaagc ccaaatacacc tgtacttggg catgcagctg	300
gtgtccggtg gagagctggt tgaccggata gtggagaagg ggtttttatac agagaaggat	360
gccagcactc tgatccgcca agtcttggac gccgtgtact atctccacag aatgggcatac	420
gtccacagag acctcaagcc cgaaaatctc ttgtactaca gtcaagatga ggagtccaaa	480

PCTAU2016050927-seql-000001-EN-20161013

ataatgatca	gtgacttttg	attgtcaaaa	atggagggca	aaggagatgt	gatgtccact	540
gcctgtggaa	ctccaggcta	tgtcgtcct	gaagtcctcg	cccagaaacc	ttacagcaaa	600
gccgttgact	gctgggtccat	cggagtgtt	gcctacatct	tgctctgcgg	ctaccctcct	660
ttttatgatg	aaaatgactc	caagctcttt	gagcagatcc	tcaaggcgga	atatgagttt	720
gactctccct	actgggatga	catctccgac	tctgcaaaag	acttcattcg	gaacctgatg	780
gagaaggacc	cgaataaaaag	atacacgtgt	gagcaggcag	ctcggcacc	atggatcgct	840
ggtgacacag	ccctcaacaa	aaacatccac	gagtccgtca	gcgcccagat	ccggaaaaac	900
tttgccaaga	gcaaattggag	acaagcattt	aatgccacgg	ccgtcgtcag	acatatgaga	960
aaactacacc	tcggcagcag	cctggacagt	tcaaattgcaa	gtgttttcgag	cagcctcagt	1020
ttggccagcc	aaaaagactg	tgcgtatgta	gcaaaaccag	aatccctcag	ctga	1074

<210> 38
 <211> 1488
 <212> DNA
 <213> Homo sapiens

<400> 38	atggccacca	ccgccacctg	cacccgtttc	accgacgact	accagctctt	cgaggagctt	60
	ggcaaggggtg	ctttctctgt	ggtccgcagg	tgtgtgaaga	aaacctccac	gcaggagtac	120
	gcagcaaaaa	tcatcaatac	caagaagttg	tctgcccggg	atcaccagaa	actagaacgt	180
	gaggctcgga	tatgtcgact	tctgaaacat	caaacatcg	tgcgctcca	tgacagtatt	240
	tctgaagaag	ggtttacta	cctcgtgttt	gaccttgta	ccggcgggga	gctgtttgaa	300
	gacattgtgg	ccagagagta	ctacagtga	gcagatgcc	gccactgtat	acatcagatt	360
	ctggagagt	ttaaccacat	ccaccagcat	gacatcgcc	acagggacct	gaagcctgag	420
	aacctgctgc	tggcgagtaa	atgcaaggg	gccgccgtca	agctggctga	ttttggccta	480
	gccatcgaag	tacagggaga	gcagcaggct	tggtttggtt	ttgctggcac	cccaggttac	540
	ttgtcccctg	aggtcttgag	gaaagatccc	tatggaaaac	ctgtggatat	ctgggcctgc	600
	ggggtcatcc	tgtatatcct	cctgggtggc	tatcctccct	tctgggatga	ggatcagcac	660
	aagctgtatc	agcagatcaa	ggctggagcc	tatgatttcc	catcaccaga	atgggacacg	720
	gtaactcctg	aagccaagaa	cttgatcaac	cagatgctga	ccataaacc	agcaaagcgc	780
	atcacggctg	accaggctct	caagcaccg	tgggtctgtc	aacgatccac	ggtggcatcc	840
	atgatgcac	gtcaggagac	tgtggagtgt	ttgcgcaagt	tcaatgcccg	gagaaaactg	900
	aagggtgcc	tcctcacgac	catgcttgtc	tccaggaact	tctcagctgc	caaaagccta	960
	ttgaacaaga	agtcggatgg	cgggtgtcaag	gagccacaaa	ccactgtggt	acacaacgct	1020
	acagatggga	tcaagggctc	cacagagagc	tgcaacacca	ccacagaaga	tgaggacctc	1080
	aaagtgcgaa	aacaggagat	cattaagatt	acagaacagc	tgattgaagc	catcaacaat	1140
	ggggactttg	aggcctacac	gaagatttgt	gatccaggcc	tcacttcctt	tgagcctgag	1200
	gcccttggtg	acctcgtgga	ggggatggat	ttccataagt	tttactttga	gaatctcctg	1260

PCTAU2016050927-seq1-000001-EN-20161013

tccaagaaca gcaagcctat ccataccacc atcctaaacc cacacgtcca cgtgattggg	1320
gaggacgcag cgtgcatcgc ctacatccgc ctcacccagt acatcgacgg gcagggtcgg	1380
cctcgcacca gccagtcaga agagaccgg gtctggcacc gtcgggatgg caagtggctc	1440
aatgtccact atcactgctc aggggccct gccgcaccgc tgcagtga	1488

<210> 39
 <211> 1428
 <212> DNA
 <213> Homo sapiens

<400> 39 atggctgaca tgcaaaatct ggtagaaaga ttggagaggg cagtgggccg cctggaggca	60
gtatctcata cctctgacat gcaccgtggg tatgcagaca gtccttcaa agcaggagca	120
gctccatatg tgcaggcatt tgactcgctg cttgctggtc ctgtggcaga gtacttgaag	180
atcagtaaag agattggggg agacgtgcag aaacatgcgg agatgggtcca cacaggtttg	240
aagttggagc gagctctgtt ggttacagct tctcagtgtc aacagccagc agaaaataag	300
ctttccgatt tgttggcacc catctcagag cagatcaaag aagtgataac ctttcgggag	360
aagaaccgag gcagcaagtt gttaaatcac ctgtcagctg tcagcgaag tatccaggcc	420
ctgggctggg tggctatggc tccaagcct ggcccttatg tgaaagaaat gaatgatgcc	480
gccatgtttt atacaaaccg agtcctcaa gagtacaag atgtggataa gaagcatgta	540
gactgggtca aagcttattt aagtatatgg acagagctgc aggcttacat taaggagttc	600
cataccaccg gactggcctg gagcaaacg gggcctgtgg caaaagaact gagcggactg	660
ccatctggac cctctgccg atcatgtcct cctccccctc caccatgcc ccctcctccc	720
ccagtctcta ccatttcatt ctcatatgag tctgcttccc gctcatcact gttcgcgcag	780
attaatcagg gggagagcat tacacatgcc ctgaaacatg tatctgatga catgaagact	840
cacaagaacc ctgccctgaa ggctcagagt ggtccagtac gcagtggccc caaaccattc	900
tctgcaccta aaccccaaac cagcccatcc cccaaacgag ccacaaagaa ggagccagct	960
gtacttgaac tggagggcaa gaagtggaga gtggaaaatc aggaaaatgt ttccaacctg	1020
gtgattgagg acacagagct gaaacagggtg gcttacatat acaagtgtgt caacacgaca	1080
ttgcaaatca agggcaaaat taactccatt acagtagata actgtaagaa acttggcctg	1140
gtattcgatg acgtgggtgg cattgtggag ataataca gtaaggatgt caaagttcag	1200
gtaatgggta aagtgccaac catatccatc aacaaaacag atggctgcca tgcttacctg	1260
agcaagaatt ccctggattg tgaaatagtc agtgccaaat cttccgagat gaatgtcctc	1320
attcctacag aaggcggatg cttaaatgaa ttcccagttc ctgagcagtt caagacccta	1380
tggaacgggc agaagttggt caccacagtg acagaaattg ctggataa	1428

<210> 40
 <211> 2112
 <212> DNA

<213> Homo sapiens

<400> 40

atggcggacc ggcggcggca ggcgcgttcg caagacaccg aggacgagga atctggtgct	60
tcgggctccg acagcggcgg ctccccgttg cggggaggcg ggagctgcag cggtagcgcc	120
ggaggcggcg gcagcggctc tctgccttca cagcgcggag gccgaaccgg ggcccttcat	180
ctgcccgggg tggagagcgg gggcgccaag agtgcgtgagg agtcggagtg tgagagtga	240
gatggcattg aaggtgatgc tgttctctcg gattatgaaa gtgcagaaga ctcggaaggt	300
gaagaaggtg aatacagtga agaggaaaac tccaaagtgg agctgaaatc agaagcta	360
gatgctgtta attcttcaac aaaagaagag aaggggagaag aaaagcctga caccaaaagc	420
actgtgactg gagagaggca aagtggggac ggacaggaga gcacagagcc tgtggagaac	480
aaagtgggta aaaagggccc taagcatttg gatgatgatg aagatcggaa gaatccagca	540
tacatacctc ggaaagggct cttctttgag catgatcttc gaggggcaaac tcaggaggag	600
gaagtcagac ccaaggggcg tcagcgaaag ctatggaagg atgagggtcg ctgggagcat	660
gacaagtcc gggaagatga gcaggcccca aagtcccgac aggagctcat tgctctttat	720
ggttatgaca ttcgctcagc tcataatcct gatgacatca aacctcgaag aatccggaaa	780
ccccgatatg ggagtcctcc acaaagagat ccaaactgga acggtgagcg gctaaacaag	840
tctcatcgcc accagggtct tgggggcacc ctaccaccaa ggacatttat taacaggaat	900
gctgcaggta ccggccgtat gtctgcaccc aggaattatt ctcgatctgg gggcttcaag	960
gaaggtcgtg ctggtttttag gcctgtggaa gctggtgggc agcatggtgg ccggtctggt	1020
gagactgtta agcatgagat tagttaccgg tcacggcgcc tagagcagac ttctgtgagg	1080
gatccatctc cagaagcaga tgctccagtg cttggcagtc ctgagaagga agaggcagcc	1140
tcagagccac cagctgctgc tcctgatgct gcaccaccac cccctgatag gccattgag	1200
aagaaatcct attcccgggc aagaagaact cgaaccaaag ttggagatgc agtcaagctt	1260
gcagaggagg tgccccctcc tcctgaagga ctgattccag cacctccagt ccagaaaacc	1320
acccaactc cacctactaa gactgggacc tgggaagctc cgggtggattc tagtacaagt	1380
ggacttgagc aagatgtggc acaactaaat atagcagaac agaattggag tccggggcag	1440
ccttctttcc tgcaaccag ggaacttcga ggtatgccca accatatata catgggagca	1500
ggacctccac ctgagtttaa ccggatggaa gaaatgggtg tccagggtgg tcgagccaaa	1560
cgctattcat ccagcggca aagacctgtg ccagagcccc ccgcccctcc agtgcatatc	1620
agtatcatgg aggacatta ctatgatcca ctgcagttcc agggaccaat ctatacccat	1680
ggtgacagcc ctgccccgt gcctccacag ggcatgcttg tgcagccagg aatgaacctt	1740
ccccaccag gtttacatcc ccaccagaca ccagctcctc tgcccaatcc aggcctctat	1800
ccccaccag tgtccatgtc tccaggacag ccaccacctc agcagttgct tgctcctact	1860
tacttttctg ctccaggcgt catgaacttt ggtaatccca gttaccctta tgctccaggg	1920
gcactgcctc cccaccacc gcctcatctg tatcctaata cacaggcccc atcacaggta	1980

tatggaggag	tgacctacta	taaccccgcc	cagcagcagg	tgagccaaa	gccctcccca	2040
ccccggagga	ctcccagcc	agtcaccatc	aagccccctc	cacctgaggt	tgtaagcagg	2100
ggttccagtt	aa					2112

<210> 41
 <211> 1491
 <212> DNA
 <213> Homo sapiens

<400> 41						
atggacttca	gcagaaatct	ttatgatatt	ggggaacaac	tggacagtga	agatctggcc	60
tccctcaagt	tcctgagcct	ggactacatt	ccgcaaagga	agcaagaacc	catcaaggat	120
gccttgatgt	tattccagag	actccaggaa	aagagaatgt	tggaggaaag	caatctgtcc	180
ttcctgaagg	agctgctctt	ccgaattaat	agactggatt	tgctgattac	ctacctaaac	240
actagaaagg	aggagatgga	aagggaactt	cagacaccag	gcaggggtca	aatttctgcc	300
tacaggttcc	acttctgccg	catgagctgg	gctgaagcaa	acagccagtg	ccagacacag	360
tctgtacctt	tctggcggag	ggtcgatcat	ctattaataa	gggtcatgct	ctatcagatt	420
tcagaagaag	tgagcagatc	agaattgagg	tcttttaagt	ttcttttgca	agaggaaatc	480
tccaaatgca	aactggatga	tgacatgaac	ctgctggata	ttttcataga	gatggagaag	540
agggatcatc	tgggagaagg	aaagttggac	atcctgaaaa	gagtctgtgc	ccaaatcaac	600
aagagcctgc	tgaagataat	caacgactat	gaagaattca	gcaaagggga	ggagttgtgt	660
ggggtaatga	caatctcgga	ctctccaaga	gaacaggata	gtgaatcaca	gactttggac	720
aaagtttacc	aatgaaaag	caaacctcgg	ggatactgtc	tgatcatcaa	caatcacaat	780
tttgcaaaag	cacgggagaa	agtgcccaa	cttcacagca	ttagggacag	gaatggaaca	840
cacttgatg	caggggcttt	gaccacgacc	tttgaagagc	ttcattttga	gatcaagccc	900
cacgatgact	gcacagtaga	gcaaattctat	gagattttga	aaatctacca	actcatggac	960
cacagtaaca	tggactgctt	catctgctgt	atcctctccc	atggagacaa	gggcatcatc	1020
tatggcactg	atggacagga	ggccccatc	tatgagctga	catctcagtt	cactggtttg	1080
aagtgccctt	cccttgctgg	aaaacccaaa	gtgtttttta	ttcaggcttg	tcagggggat	1140
aactaccaga	aaggtatacc	tggtgagact	gattcagagg	agcaacccta	tttagaaatg	1200
gatttatcat	cacctcaaac	gagatatatc	ccggatgagg	ctgactttct	gctggggatg	1260
gccactgtga	ataactgtgt	ttcctaccga	aaccctgcag	agggaaacctg	gtacatccag	1320
tcactttgcc	agagcctgag	agagcgatgt	cctcgaggcg	atgatattct	caccatcctg	1380
actgaagtga	actatgaagt	aagcaacaag	gatgacaaga	aaaacatggg	gaaacagatg	1440
cctcagccta	ctttcacact	aagaaaaaaa	cttgtcttcc	cttctgattg	a	1491

<210> 42
 <211> 756
 <212> DNA

<213> Homo sapiens

<400> 42

atggagctgt cagccatcgg cgagcaggtg ttcgccgtgg agagcatccg gaagaagcgc	60
gtgcggaagg gtaaagtcga gtatctggtg aagtggaaag gatggccccc aaagtacagc	120
acgtgggagc cagaagagca catcttgac cccgcctcg tcatggccta cgaggagaag	180
gaggagagag accgagcatc ggggtatagg aagagaggtc cgaaacccaa gcggcttctg	240
ctgcagcggc tgtacagcat ggacctgcgg agctcccaca aggccaaggg caaggagaag	300
ctctgcttct ccctgacgtg cccactcggc agcgggagcc ctgagggggg ggtcaaggcg	360
ggggcacctg agctggtgga caagggcccc ttggtgccca ccctgccctt cccgctccgc	420
aagccccgaa agggccacaa gtacctgcgg ctctcgcgca agaagttccc gccccgcggg	480
cccaacctgg agagccacag ccatcgacgg gagctcttcc tgcaggagcc accggcccca	540
gacgtcctgc aggcggctgg cgagtgggag cctgctgcgc agccccctga agaggaggca	600
gatgccgacc tggccgaggg gccccctccc tggacacctg cgctcccctc aagtgaggtg	660
accgtgaccg acatcaccgc caactccatc accgtcacct tccgcgaggc ccaggcagct	720
gagggcttct tccgagaccg cagtgggaag ttctga	756

<210> 43

<211> 879

<212> DNA

<213> Homo sapiens

<400> 43

atggagctgc tgtgttcga aggcacccgg cagcgccccc gggccggggc ggacccgcgg	60
ctgctggggg accagcgtgt cctgcagagc ctgctccgcc tggaggagcg ctacgtaccc	120
cgcgctcct acttccagt cgtgcagcgg gagatcaagc cgcacatgcg gaagatgctg	180
gcttactgga tgctggaggt atgtgaggag cagcgtgtg aggaggaagt cttccccctg	240
gccatgaact acctggatcg ctacctgtct tgcgtcccca cccgaaaggc gcagttgcag	300
ctcctgggtg cggctctcat gctgctggcc tccaagctgc gcgagaccac gccctgacc	360
atcgaaaaac tgtgcatcta caccgaccac gctgtctctc cccgccagtt gcgggactgg	420
gaggtgctgg tcctagggaa gctcaagtgg gacctggctg ctgtgattgc acatgatttc	480
ctggccttca ttctgcaccg gctctctctg ccccgtagcc gacaggcctt ggtcaaaaag	540
catgcccaga ctttttggc cctctgtgct acagattata cttttgcat gtacccgcca	600
tccatgatcg ccacgggcag cattggggct gcagtgaag gcctgggtgc ctgctccatg	660
tccggggatg agctcacaga gctgctggca gggatcactg gactgaagt ggactgcctg	720
cgggcctgtc aggagcagat cgaagctgca ctcagggaga gcctcaggga agcctctcag	780
accagctcca gccagcgcc caaagcccc cggggctcca gcagccaagg gccagccag	840
accagcactc ctacagatgt cacagccata cacctgtag	879

<210> 44

<211> 1035
 <212> DNA
 <213> Homo sapiens

<400> 44
 atgaaggatt tgggggcaga gcacttggca ggtcatgaag gggccaact tctcgggttg 60
 ttgaacgtct acctggaaca agaagagaga ttccaacctc gagaaaaagg gctgagtttg 120
 attgaggcta ccccgagaa tgataacact ttgtgtccag gattgagaaa tgccaaagtt 180
 gaagatttaa ggagtttagc caactttttt ggatcttgca ctgaaacttt tgtcctggct 240
 gtcaatatatt tggacagggt cttggctctt atgaaggatga aacctaaaca tttgtcttgc 300
 attggagtct gttctttttt gctggctgct agaatagttg aagaagactg caatattcca 360
 tccactcatg atgtgatccg gattagtcag tgtaaagtga ctgcttctga cataaaacgg 420
 atggaaaaaa taatttcaga aaaattgcac tatgaattgg aagctactac tgccttaaac 480
 tttttgcact tataccatac tattatactt tgtcatactt cagaaaggaa agaaatactg 540
 agccttgata aactagaagc tcagctgaaa gcttgcaact gccgactcat cttttcaaaa 600
 gcaaaacat ctgtattagc cttgtgcctt ctcaatttgg aagtggaaac tttgaaatct 660
 gttgaattac tggaaattct cttgctagtt aaaaaacatt ccaagattaa tgacactgag 720
 ttcttctact ggagagagtt ggtttctaaa tgcctagccg agtattcttc tcctgaatgt 780
 tgcaaaccag atcttaagaa gttggtttgg atcgtttcaa ggcgcacagc ccagaacctc 840
 cacaacagct actatagtgt tcctgagctg ccaacgatac ctgagggggg ttgttttgat 900
 gaaagtgaag gtgaggactc ttgtgaagat atgagttgtg gagaggagag tctcagcagc 960
 tctcctcca gtgatcaaga gtgcaccttc tttttcaact tcaaagtggc acaaacactg 1020
 tgctttccat cttag 1035

<210> 45
 <211> 1992
 <212> DNA
 <213> Homo sapiens

<400> 45
 atggcgctcg gccgtggagc ttcttctcgc tggttcttta ctcgggaaca gctggagaac 60
 acgccgagcc gccgtgcgg agtggaggcg gataaagagc tctcgtgccg ccagcaggcg 120
 gccaacctca tccaggagat gggacagcgt ctcaatgtct ctcagcttac aataaacact 180
 gcgattgttt atatgcacag gttttatatg caccattctt tcaccaaatt caacaaaaat 240
 ataatatcgt ctactgcatt atttttggct gcaaaagtgg aagaacaggc tcgaaaactt 300
 gaacatgtta tcaaagtagc acatgcttgt cttcatcctc tagagccact gctggatact 360
 aaatgtgatg cttaccttca acagactcaa gaactggta tacttgaaac cataatgcta 420
 caaactctag gttttgagat caccattgaa caccacaca cagatgtggg gaaatgtacc 480
 cagttagtaa gagcaagcaa ggatttggca cagacatcct atttcatggc taccaacagt 540
 ctgcatctta caaccttctg tcttcagtag aaaccaacag tgatagcatg tgtatgcatt 600

catttggctt gcaa	atggtc caattgggag atccctgtat caactgatgg aaagcattgg	660
tggaatatg tggatcctac agttactcta gaattattag atgagctaac acatgagttt		720
ctacaaatat tggagaaaac gcctaataagg ttgaagaaga ttcgaaactg gaggggcta	at	780
caggcagcta ggaaaccaa agtagatgga caggatcag agacaccact tcttggttca		840
tctttgggtcc agaattccat tttagtagat agtgtcactg gtgtgcctac aaaccaagt		900
tttcagaaac catctacatc agcattccct gcgccagtac ctctaaattc aggaaatatt		960
tctgttcaag acagccatac atctgataat ttgtcaatgc tagcaacagg aatgccagt		1020
acttcatacg gtttatcatc acaccaggaa tggcctcaac atcaagactc agcaaggaca		1080
gaacagctat attcacagaa acaggagaca tctttgtctg gtagccagta caacatcaac		1140
ttccagcagg gaccttctat atcactgcat tcaggattac atcacagacc tgacaaaatt		1200
tcagatcatt cttctgttaa gcaagaatat actcataaag caggggagcag taaacaccat		1260
gggccaattt ccactactcc aggaataatt cctcagaaaa tgtctttaga taaatataga		1320
gaaaagcgta aactagaaac tcttgatctc gatgtaaggg atcattatat agctgcccag		1380
gtagaacagc agcacaacaa agggcagtc caggcagcca gcagcagttc tgttacttct		1440
ccattaaaa tgaaaatacc tatcgcaaat actgaaaaat acatggcaga caaaaaggaa		1500
aagagtgggt cactgaaatt acggattcca ataccacca ctgataaaaag cgccagtaaa		1560
gaagaactga aaatgaaaat aaaagtttct tcttcagaaa gacacagctc ttctgatgaa		1620
ggcagtggga agagcaaaca ttcaagccca catattagca gagaccataa ggagaagcac		1680
aaggagcatc cttcaagccg ccaccacacc agcagccaca agcattccca ctgcgatagt		1740
ggcagcagca gcggtggcag taaacacagt gccgacggaa taccaccac tgttctgagg		1800
agtcctgttg gcctgagcag tgatggcatt tcctctagct ccagctcttc aaggaagagg		1860
ctgcatgtca atgatgatc tcacaaccac cactccaaaa tgagcaaaaag ttccaaaagt		1920
tcaggtgggc tacggacatc tcagcacct cgtgaaactg gacaagaagc cagtggagac		1980
caacggtcct ga		1992

<210> 46
 <211> 1137
 <212> DNA
 <213> Homo sapiens

<400> 46		
atggacctgg ggaaaccaat gaaaagcgtg ctggtgggtg ctctccttgt cattttccag		60
gtatgcctgt gtcaagatga ggtcacggac gattacatcg gagacaacac cacagtggac		120
tacactttgt tcgagtcttt gtgctccaag aaggacgtgc ggaacttta agcctggttc		180
ctccctatca tgtactccat ctttgtttc gtgggcctac tgggcaatgg gctggtcgtg		240
ttgacctata tctatttcaa gaggtcaag accatgaccg atacctacct gctcaacctg		300
gcggtggcag acatcctctt cctcctgacc cttcccttct gggcctacag cgcgccaag		360
tcctgggtct tcggtgtcca cttttgcaag ctcatctttg ccatctacaa gatgagcttc		420

PCTAU2016050927-seq1-000001-EN-20161013

ttcagtggca	tgctcctact	tctttgcatc	agcattgacc	gctacgtggc	catcgtccag	480
gctgtctcag	ctcaccgccca	ccgtgcccgc	gtccttctca	tcagcaagct	gtcctgtgtg	540
ggcatctgga	tactagccac	agtgtctctc	atcccagagc	tcctgtacag	tgacctccag	600
aggagcagca	gtgagcaagc	gatgcatg	tctctcatca	cagagcatgt	ggaggccttt	660
atcaccatcc	aggtggccca	gatggtgatc	ggctttctgg	tccccctgct	ggccatgagc	720
ttctgttacc	ttgtcatcat	ccgcaccctg	ctccaggcac	gcaactttga	gcgcaacaag	780
gccatcaagg	tgatcatcgc	tgtggctgtg	gtcttcatag	tcttccagct	gccctacaat	840
ggggtgttcc	tggcccagac	ggtggccaac	ttcaacatca	ccagtagcac	ctgtgagctc	900
agtaagcaac	tcaacatcgc	ctacgacgtc	acctacagcc	tggcctgcgt	ccgctgctgc	960
gtcaaccctt	tctgtacgc	cttcatcggc	gtcaagttcc	gcaacgatct	cttcaagctc	1020
ttcaaggacc	tgggctgcct	cagccaggag	cagctccggc	agtggctctc	ctgtcggcac	1080
atccggcgct	cctccatgag	tgtggaggcc	gagaccacca	ccaccttctc	cccatag	1137

<210> 47
 <211> 846
 <212> DNA
 <213> Homo sapiens

<400> 47	
atgtcagccc	aggagagctg cctcagcctc atcaagtact tcctcttcgt tttcaacctc 60
ttcttcttcg	tcctcggcag cctgatcttc tgcttcggca tctggatcct cattgacaag 120
accagcttcg	tgtcctttgt gggcttggcc ttcgtgcctc tgcagatctg gtccaaagtc 180
ctggccatct	caggaatctt caccatgggc atcgccctcc tgggttgtgt gggggccctc 240
aaggagctcc	gctgcctcct gggcctgtat tttgggatgc tgctgctcct gtttgccaca 300
cagatcacc	tgggaatcct catctccact cagcgggccc agctggagcg aagcttgagg 360
gacgtcgtag	agaaaacat ccaaaagtac ggcaccaacc ccgaggagac cgcgcccgag 420
gagagctggg	actatgtgca gttccagctg cgctgctgcg gctggcacta cccgcaggac 480
tggttccaag	tcctcatcct gagaggtaac gggtcggagg cgcaccgcgt gccctgctcc 540
tgctacaact	tgctcggcgac caacgactcc acaatcctag ataaggtgat cttgccccag 600
ctcagcaggc	ttggacacct ggcgcgggtc agacacagtg cagacatctg cgctgtccct 660
gcagagagcc	acatctaccg cgagggtgc gcgcagggcc tccagaagtg gctgcacaac 720
aaccttattt	ccatagtggg catttgctgc ggcgtcggcc tactcgagct cgggttcattg 780
acgctctcga	tattcctgtg cagaaacctg gaccacgtct acaaccggct cgctcgatac 840
cgttag	846

<210> 48
 <211> 1959
 <212> DNA
 <213> Homo sapiens

<400> 48

atggccacct	ccatgggcct	gctgctgctg	ctgctgctgc	tcctgacca	gcccggggcg	60
gggacgggag	ctgacacgga	ggcgggtggc	tgcgtgggga	ccgcctgcta	cacggccac	120
tcgggcaagc	tgagcgctgc	cgaggcccag	aaccactgca	accagaacgg	gggcaacctg	180
gccactgtga	agagcaagga	ggaggcccag	cacgtccagc	gagtactggc	ccagctcctg	240
aggcgggagg	cagccctgac	ggcgaggatg	agcaagttct	ggattgggct	ccagcgagag	300
aagggcaagt	gcctggaccc	tagtctgccg	ctgaagggct	tcagctgggt	gggcgggggg	360
gaggacacgc	cttactctaa	ctggcacaag	gagctccgga	actcgtgcat	ctccaagcgc	420
tgtgtgtctc	tgctgctgga	cctgtcccag	ccgctccttc	ccagccgcct	ccccaagtgg	480
tctgagggcc	cctgtgggag	cccaggctcc	cccggaagta	acattgaggg	cttcgtgtgc	540
aagttcagct	tcaaaggcat	gtgccggcct	ctggccctgg	ggggcccagg	tcaggtgacc	600
tacaccaccc	ccttcagac	caccagttcc	tccttgagg	ctgtgccctt	tgcctctgcg	660
gccaatgtag	cctgtgggga	aggtgacaag	gacgagactc	agagtcatta	tttcctgtgc	720
aaggagaagg	ccccgatgt	gttcgactgg	ggcagctcgg	gccccctctg	tgtagcccc	780
aagtatggct	gcaacttcaa	caatgggggc	tgccaccagg	actgctttga	agggggggat	840
ggctccttcc	tctgcggtg	ccgaccagga	ttccggctgc	tggatgacct	ggtgacctgt	900
gcctctcgaa	acccttgag	ctccagccca	tgctgtgggg	gggccacgtg	cgctctggga	960
ccccatggga	aaaactacac	gtgccgctgc	ccccaaggg	accagctgga	ctcgagtcag	1020
ctggactgtg	tggacgtgga	tgaatgccag	gactccccct	gtgccagga	gtgtgtcaac	1080
accctgggg	gcttcgctg	cgaatgctgg	gttggtatg	agccgggagg	tcctggagag	1140
ggggcctgtc	aggatgtgga	tgagtgtgct	ctgggtcgct	cgccttgccg	ccagggtgc	1200
accaacacag	atggctcatt	tcactgtctc	tgtgaggagg	gctacgtcct	ggccggggag	1260
gacgggactc	agtgccagga	cgtggatgag	tgtgtggggc	cggggggccc	cctctgcgac	1320
agcttgtgct	tcaacacaca	agggtccttc	actgtgggt	gcctgccagg	ctgggtgctg	1380
gccccaaatg	gggtctcttg	caccatgggg	cctgtgtctc	tgggaccacc	atctggggcc	1440
cccgatgagg	aggacaaagg	agagaaagaa	gggagcaccg	tgccccgtgc	tgcaacagcc	1500
agtcccacaa	ggggccccga	gggcaccccc	aaggctacac	ccaccacaag	tagaccttcg	1560
ctgtcatctg	acgcccccat	cacatctgcc	ccactcaaga	tgctggcccc	cagtgggtcc	1620
ccaggcgtct	ggagggagcc	cagcatccat	cagccacag	ctgcctctgg	ccccaggag	1680
cctgcaggtg	gggactcctc	cgtggccaca	caaaacaacg	atggcactga	cgggcaaaag	1740
ctgcttttat	tctacatcct	aggcaccgtg	gtggccatcc	tactcctgct	ggccctggct	1800
ctggggctac	tgggtctatcg	caagcggaga	gcgaagaggg	aggagaagaa	ggagaagaag	1860
ccccagaatg	cggcagacag	ttactcctgg	gttccagagc	gagctgagag	cagggccatg	1920
gagaaccagt	acagtccgac	acctgggaca	gactgctga			1959

<210> 49
 <211> 2229
 <212> DNA
 <213> Homo sapiens

<400> 49
 atgggaggcc gcgtctttct cgcattctgt gtctggctga ctctgccggg agctgaaacc 60
 caggactcca ggggctgtgc ccggtggtgc cctcagaact cctcgtgtgt caatgccacc 120
 gcctgtcgct gcaatccagg gttcagctct ttttctgaga tcatcaccac cccgacggag 180
 acttgtgacg acatcaacga gtgtgcaaca ccgtcgaaag tgtcatgcgg aaaattctcg 240
 gactgctgga acacagaggg gagctacgac tgcgtgtgca gcccgggata tgagcctggt 300
 tctggggcaa aaacattcaa gaatgagagc gagaacacct gtcaagatgt ggacgagtgc 360
 agtccggggc agcatcagtg tgacagctcc accgtctgct tcaacaccgt gggttcatac 420
 agtgccgct gccgccagg ctggaagccc agacacggaa tcccgaataa ccaaaaggac 480
 actgtctgtg aagatatgac tttctccacc tggacccgc cccctggagt ccacagccag 540
 acgctttccc gattcttcga caaagtccag gacctgggca gagactccaa gacaagctca 600
 gccgaggtca ccatccagaa tgtcatcaaa ttggtggatg aactgatgga agtcctgga 660
 gacgtagagg ccctggcgcc acctgtccgg cacctcatag ccaccagct gctctcaaac 720
 cttgaagata tcatgaggat cctggccaag agcctgccta aaggccctt cacctacatt 780
 tccccttcga acacagagct gacctgatg atccaggagc ggggggacaa gaacgtcact 840
 atgggtcaga gcagcgcacg catgaagctg aattgggctg tggcagctgg agccgaggat 900
 ccaggccccg ccgtggcggg catcctctcc atccagaaca tgacgacatt gctggccaat 960
 gcctccttga acctgcattc caagaagcaa gccgaactgg aggagatata tgaaagcagc 1020
 atccgtggtg tccaactcag acgcctctct gccgtcaact ccatctttct gagccacaac 1080
 aacaccaagg aactcaactc ccccatcctt ttgccttct cccacctga gtcctccgat 1140
 ggggaggcgg gaagagaccc tcctgccaag gacgtgatgc ctgggccacg gcaggagctg 1200
 ctctgtgcct tctggaagag tgacagcgac aggggagggc actgggccac cgagggtgc 1260
 caggtgctgg gcagcaagaa cggcagcacc acctgccaat gcagccacct gagcagcttt 1320
 gcgatcctta tggctcatta tgacgtggag gactggaagc tgaccctgat caccagggtg 1380
 ggactggcgc tgtcactctt ctgcctgctg ctgtgcatcc tcactttcct gctggtgcgg 1440
 cccatccagg gtcgcgcac caccatacac ctgcacctct gcatctgcct cttcgtgggc 1500
 tccaccatct tcctggccgg catcgagaac gaaggcggcc aggtggggct gcgctgccgc 1560
 ctggtggccg ggctgctgca ctactgtttc ctggccgcct tctgctggat gagcctcgaa 1620
 ggcctggagc tctactttct tgtggtgctg gtgttccaag gccagggcct gagtacgcgc 1680
 tggctctgcc tgatcggcta tggcgtgccc ctgctcatcg tgggcgtctc ggctgccatc 1740
 tacagcaagg gctacggccg cccagatac tgctggttgg actttgagca gggcttcctc 1800
 tggagcttct tgggacctgt gacctcatc attttgtgca atgctgtcat tttcgtgact 1860

PCTAU2016050927-seql-000001-EN-20161013

accgtctgga agctcactca gaagttttct gaaatcaatc cagacatgaa gaaattaaag	1920
aaggcgaggg cgctgacat caccggccatc gcgcagctct tcctgttggg ctgcacctgg	1980
gtctttggcc tgttcattct cgacgatcgg agcttggtgc tgacctatgt gtttaccatc	2040
ctcaactgcc tgcagggcgc cttcctctac ctgctgcact gcctgctcaa caagaagggt	2100
cggaagaat accggaagtg ggccctgccta gttgctgggg ggagcaagta ctcagaattc	2160
acctccacca cgtctggcac tggccacaat cagaccggg ccctcagggc atcagagtcc	2220
ggcatatga	2229

<210> 50
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 50 atgccagacg aaaatatctt cctgttcgtg cccaacctca tcggttatgc ccggattgtc	60
ttcgccatca tttctttcta cttcatgccc tgctgcccc tcacggcctc ctcctttctac	120
ctgctcagcg gcctgctgga cgctttcgat ggacacgctg ctcgcgctct taatcaagga	180
acccggtttg gggccatgct ggacatgctg acggaccgct gctccaccat gtgcctgttg	240
gtcaacctgg ccctgctgta ccctggagcc acgctgttct tccaaatcag catgagtttg	300
gatgtggcca gtcactggct gcacctccac agttctgtgg tccgaggcag tgagagtcac	360
aagatgatcg acttgccgg gaatccggtg cttcggatct actacacctc gaggcctgct	420
ctgttcacct tgtgtgctgg gaatgagctc ttctactgcc tcctctacct gttccatttc	480
tctgagggac ctttagttgg ctctgtggga ctgttccgga tgggcctctg ggtcactgcc	540
cccatcgctt tgctgaagtc gctcatcagc gtcattccacc tgatcacggc cgcccgaac	600
atggctgccc tggacgcagc agaccgcgcc aagaagaagt ga	642

<210> 51
 <211> 4755
 <212> DNA
 <213> Homo sapiens

<400> 51 atgagcttaa catcctgggt tttggtgagc agtggaggca ctcgccacag gctgccacga	60
gaaatgattt ttgttggaag agatgactgt gagctcatgt tgcagtctcg tagtgtggat	120
aagcaacacg ctgtcatcaa ctatgatgcg tctacggatg agcatttagt gaaggatttg	180
ggcagcctca atgggacttt tgtgaatgat gtaaggattc cggaacagac ttatatcacc	240
ttgaaacttg aagataagct gagatttgga tatgatacaa atcttttcac tgtagtataa	300
ggagaaatga gggtcctga agaagctctt aagcatgaga agtttaccat tcagcttcag	360
ttgtcccaa aatcttcaga atcagaatta tccaaatctg caagtgccaa aagcatagat	420
tcaaaggtag cagacgctgc tactgaagtg cagcacaaaa ctactgaagc actgaaatcc	480
gaggaaaaag ccatggatat ttctgctatg ccccggtgga ctccattata tgggcagccg	540

tcatggtggg	gggatgatga	ggtggatgaa	aaaagagctt	tcaagacaaa	tggaacacct	600
gaagaaaaaa	accatgaagc	tggaacatca	gggtgcggca	tagatgccaa	gcaagttgag	660
gaacaatctg	cagctgcaaa	tgaagaagta	ctttttcctt	tctgtaggga	accaagttat	720
tttgaaatcc	ctacaaaaga	attccagcaa	ccatcacaaa	taacagaaaag	cactattcat	780
gaaatcccaa	caaaagacac	gccaagttcc	catataacag	gtgcagggca	tgcttcattt	840
accattgaat	ttgatgacag	taccccaggg	aaggtaacta	ttagagacca	tgtgacaaaag	900
tttactttctg	atcagcgcca	caagtccaag	aagtcttctc	ctggaactca	agacttgctg	960
gggattcaaa	caggaatgat	ggcacccgaa	aacaaagttg	ctgactggct	agcacaaaac	1020
aacctcctc	aaatgctatg	ggaaagaaca	gaagaggatt	ctaaaagcat	taaaagtgat	1080
gttccagtgt	acttgaaaag	gttgaaagga	aataaacatg	atgatggtac	gcaaagtgat	1140
tcagagaacg	ctggggctca	caggcgctgt	agcaaactg	caactcttga	ggaacactta	1200
agacgccacc	attcagaaca	caaaaagcta	cagaaggtcc	aggctactga	aaagcatcaa	1260
gaccaagctg	ttactagctc	tgcgcacac	agaggggggc	atggtgttcc	acatgggaaa	1320
ttgttaaaac	agaaatcaga	ggagccatcg	gtgtcaatac	ccttcctaca	aactgcatta	1380
ttaagaagtt	cagggagtct	tgggcacaga	ccaagccagg	agatggataa	aatgttaaaa	1440
aatcaagcaa	cttctgctac	ttctgaaaag	gataatgatg	atgaccaaag	tgacaagggg	1500
acttatacca	ttgagttaga	gaatcccaac	agttaggaag	tggaagcaag	aaaaatgatt	1560
gacaaggtgt	ttggagtaga	tgacaatcag	gattataata	ggcctgttat	caacgaaaaa	1620
cataaagatc	taataaaaaga	ttgggctctc	agttctgctg	cagcagtaat	ggaagaaaga	1680
aaaccactga	ctacatctgg	atttcaccac	tcagaggaag	gcacatcttc	atctggaagc	1740
aaacgttggg	tttcacagt	ggctagtttg	gctgccaatc	atacaaggca	tgatcaagaa	1800
gaaaggataa	tggaattttc	tgcacctctt	ccttttagaga	atgagacaga	gatcagtgag	1860
tctggcatga	cagtgagaag	tactggctct	gcaacttcct	tggctagcca	gggagagaga	1920
aggagacgaa	ctcttcccca	gcttccaaat	gaagaaaagt	ctcttgagag	ccacagagca	1980
aaggttgtaa	cacagaggtc	agagatagga	gaaaaacaag	acacagaact	tcaggagaaa	2040
gaaacaccta	cacaggtata	ccagaaagat	aaacaagatg	ctgacagacc	cttgagtaaa	2100
atgaacaggg	cagtaaatgg	agagactctc	aaaactgggtg	gagataataa	aaccctactt	2160
cacttaggca	gctctgctcc	tggaagagag	aaaagtgaaa	ctgataagga	aacttctttg	2220
gtaaagcaaa	cattagcaaa	acttcaacaa	caagaacaaa	gggaggaggc	tcagtggaca	2280
cctactaaat	tgtcttccaa	aatgttttca	ggtcagacag	ataaatgtag	ggaggaaact	2340
tttaacaag	aatcacaacc	tccagaaaaa	aattcaggac	attctacaag	caaaggagac	2400
agagtggcac	aaagtgagag	caagagaaga	aaagctgagg	aaattctgaa	aagtcagact	2460
ccaaagggag	gagacaagaa	ggaatcctcc	aagtcattag	tgcgacaagg	gagcttcact	2520
atagaaaaac	ccagcccaaa	catacccata	gaacttattc	cccatataaa	taaacagact	2580

tcctctactc	cttcttcttt	agcattaaca	tctgcaagta	gaatacgaga	aagaagtgag	2640
tctttggatc	ctgattctag	tatggacaca	acccttattc	taaaagacac	agaagcagta	2700
atgggctttc	tagaagctaa	actacgtgaa	gataataaaa	ctgatgaagg	accagatact	2760
cccagttata	atagagacaa	ttctatttca	ccagaatctg	atgtagatac	agctagtaca	2820
atcagtctgg	ttactggaga	aactgaaaga	aagtcaaccc	aaaagcgaaa	gagtttctact	2880
agcctctata	aagataggtg	ttccacaggt	tctccttcca	aagatgttac	aaaatcatca	2940
tcttcaggtg	ctagggaaaa	aatggaaaag	aaaacaaaaa	gtcgttccac	agatgtgggt	3000
tcaagagcag	atggtcgtaa	atttgttcag	tccagtggga	gaataagaca	gccctcagta	3060
gacttaacag	atgatgacca	aacctctagt	gtacctcatt	ctgccatctc	tgatattatg	3120
tcatctgatc	aagaaactta	ctcttgtaaa	cctcatggac	ggactccact	tacctcagct	3180
gatgagcatg	tacattccaa	actggaagga	agtaaagtaa	cgaaatctaa	gacttctccg	3240
gtggtatctg	gttcatctag	taaatcaacc	acccttccaa	ggccacgacc	taccaggact	3300
tccctcttgc	gcagagcacg	acttggtgaa	gcttcagaca	gtgaacttgc	tgatgctgac	3360
aaagcatctg	ttgcttctga	agtatccaca	acaagttcta	catcaaaacc	tcccacagga	3420
aggcgtaaca	tctctcggat	tgatttattg	gctcagcctc	gtagaacacg	acttgggtca	3480
ctgtcagctc	gtagtactc	tgaagcaaca	atttctagaa	gtagtgcctc	ttcgaggacc	3540
gcagaagcca	tcattagaag	tggagccaga	ctagtaccat	cagataaatt	ttctcctaga	3600
attagagcta	acagtatctc	tcgactctca	gactccaagg	tcaaaagtat	gacctcagct	3660
catggctctg	cttcagtaaa	ttcaagatgg	aggcgctttc	ctactgatta	tgcttccacc	3720
tcagaagatg	aatttggatc	aaaccgtaat	ttccctaaac	ataccctgtc	acgtacttct	3780
ccagccctga	aaaccactcg	cttgagagc	gctggatcag	caatgcctac	tagttcttca	3840
ttcaaacacc	ggattaaaga	gcaggaagac	tacatccgag	attggactgc	tcatcgagaa	3900
gagatagcca	ggatcagcca	agatcttgct	ctcattgctc	gggagatcaa	cgatgtagca	3960
ggagagatag	attcagtgc	ttcatcaggc	actgccctta	gtaccacagt	aagcactgct	4020
gccaccaccc	ctggctctgc	catagacact	agagaagagt	tggttgatcg	tgtttttgat	4080
gaaagcctca	acttccgaaa	gattcctcca	ttagttcatt	ccaaaacacc	agaaggaaac	4140
aacggctgat	ctgggtgatcc	aagacctcaa	gcagcagagc	ctcccgatca	cttaacaatt	4200
acaaggcgga	gaacctggag	cagggatgaa	gtcatgggag	ataatctgct	gctgtcatcc	4260
gtctttcagt	tctctaagaa	gataagacaa	tctatagata	agacagctgg	aaagatcaga	4320
atattattta	aagacaaaga	tcggaattgg	gatgacatag	aaagcaaatt	aagagccgaa	4380
agtgaagtcc	ctattgtgaa	aacctcaagc	atggagattt	cttctatctt	acaggaactg	4440
aaaagagtag	aaaagcagct	gcaagcaatc	aatgctatga	ttgatcctga	tggaactttg	4500
gaggctctga	acaacatggg	atttcccagt	gctatgttgc	catctccacc	gaaacagaag	4560
tccagccctg	tgaataacca	ccacagcccc	ggtcagacac	caacacttgg	ccaaccagaa	4620

gctagggctc ttcacctgc tgctgtttca gccgcagctg aatttgagaa tgctgaatct	4680
gaggctgatt tcagtataca tttcaataga ttcaaccccg atggggaaga ggaagatgtt	4740
acagtacaag aatga	4755

<210> 52
 <211> 2274
 <212> DNA
 <213> Homo sapiens

<400> 52	
atggccctgg gtgaagaaaa ggcagaagcg gaagcatctg aagacacaaa ggcccagttcc	60
tatgggagag ggagctgcag ggagcgggag ctggacatcc cagggcccat gagtggggag	120
cagccccac gcctggaagc tgaggaggag ctcactctcc ctgtatgggg ggcagaaggg	180
atacctgccc ctacttgctg gattgggact gaccctggcg gccctctag agcccaccag	240
ccacaggcca gtgatgcaa cagagagccc gtagctgaga ggtctgagcc tgcactcagt	300
ggcctgcctc ctgccacat ggggtctgga gaccttctgc tctccgggga aagccaggtg	360
gagaagacca agctttcttc ctccgaggag ttccctcaga ctctgagcct tcccagaaca	420
acaactatth gtcaggaca tgatgctgat accgaagatg atccatccct agcagatttg	480
ccccaggcac tggacctcag ccagcagcct cacagctcag gtctctcttg cctgtcacag	540
tgggaagtccg tgctgagccc aggttccgca gctcagcctt ccagctgcag catctctgct	600
tcctccacag gcagcagtct ccagggtcac caggagaggg cggagcctcg tgggtggtct	660
ctggccaagg tctctcttc cctggagccg gtcgtccccc aggaaccttc ctctgtggtg	720
gggctaggac ctcgcccca gtggtcacca cagcctgtgt tctctggggg tgatgcttct	780
gggctaggca ggagacgcct ctcttccag gctgagtact gggcctgtgt gctgccagat	840
tccctgcctc catcaccga ccgccactcc cctctctgga acccaaataa agagtatgaa	900
gatctgcttg actatactta cccactgagg cccgggcctc agctcccaa gcaccttgat	960
agccgtgtgc cagctgacct tgtcctgcag gactccgggg tagacctgga tagcttctct	1020
gtctctccag caagcacct caaatcacct actaatgtct cccccaactg cccaccagca	1080
gaggccactg ccctgccatt ttctgggccc agagagccaa gccttaagca gtggccctcc	1140
agagtacccc agaaacaggg tggcatgggc ttggcatctt ggagccaact tgcacttacc	1200
cccagagccc caggcagtag ggatgctcgt tgggagcgca gagagccagc cctgaggggt	1260
gcgaaggacc ggctgactat aggcaagcac cttgatatgg gctctccca gctaaggaca	1320
cgggacagag ggtggccctc gccaggcca gagagggaga agaggaccag ccagagtgcc	1380
cggcgcccta cctgcacaga gtctaggtgg aaatcagaag aggaagtgga aagtgatgac	1440
gagtatcttg ccctccccgc tcggctgaca caggtttcta gcctggtttc gtatctagga	1500
tccatttcta ccttggttac cctgcccact ggggatatca aagggcagag ccccttgaa	1560
gtgtcagaca gtgatgggc agcttccttc cttcaagct ccagccaaag ccagcttccc	1620
cctggagctg ccctccaagg atctggggat cctgagggcc agaatccctg tttcctgcgc	1680

PCTAU2016050927-seq1-000001-EN-20161013

tccttcgtcc	gtgcccacga	ctccgcaggg	gaaggcagtc	tggggagcag	ccaggccctc	1740
gggggtctcct	ctggactgct	gaaaacacgc	ccctccttgc	cagctagggt	ggaccgggtg	1800
ccattctcag	accagatgt	tgaagggcag	cttcccagga	aaggaggaga	acagggaaaa	1860
gaatcactgg	tgcaatgtgt	gaagacattt	tgctgtcagc	tggaagagct	gatctgctgg	1920
ctgtataatg	ttgcagatgt	tactgaccac	gggactgcag	ccagggtccaa	tcttacaagt	1980
ctcaagtctt	ctctgcagct	ttaccggcaa	tttaagaaag	atatagatga	acatcagtct	2040
ctgacggaga	gtgtcttaca	gaagggggag	attcttcttc	agtgcctggt	ggagaacacc	2100
ccagtttttag	aggatgtcct	tgggaggatc	gcaaagcagt	ctggtgagct	ggagagccac	2160
gcagatcgcc	tgtatgactc	tatcttggcc	tctctggaca	tgctggctgg	ctgcaccctt	2220
atccctgaca	aaaagcccat	ggcggcaatg	gagcacccat	gtgaaggggt	ttaa	2274

<210> 53
 <211> 5901
 <212> DNA
 <213> Homo sapiens

<400> 53	
atgaaggcgg	cagacactgt gatcctgtgg gcaagaagta aaaatgacca gctgaggatt 60
tcttttcctc	caggactgtg ttgggggtgac aggatgcctg ataaggatga cattcggctg 120
ctgccgtcag	cattgggtgt gaagaagaga aaacgaggac ccaagaagca gaaggagaac 180
aagccaggaa	aaccccgaaa acgcaagaag cgtgacagtg aggaggaatt tggttctgag 240
cgagatgagt	accgggagaa gtcagagagt gggggcagtg aatatggaac cggaccgggt 300
cggaaacgaa	gaaggaagca ccgagaaaaa aaggagaaga agacaaaagcg gcggaaaaag 360
ggggagggag	atggggggca aaagcaagtg gaacagaagt catcagcaac tctgcttctg 420
acctggggcc	tggaggatgt ggagcatgtg ttctctgagg aggattacca cacgctcacc 480
aactacaaag	ccttcagcca gttcatgagg cccctaattg ctaagaagaa tcctaagatc 540
ccaatgtcta	agatgatgac catccttggg gccaaatgga gagagttcag tgccaacaac 600
cccttcaagg	ggtcagcagc tgctgtggcg gcggcagcgg cagcagcagc agcagctgta 660
gctgagcagg	tgctcagctgc tgtctcgtcg gccaccccca tagcacctc cggacccccc 720
gcccttccac	caccccctgc tgctgatatc cagccccac ccatccgaag agccaaaacc 780
aaagagggca	aaggtccagg ccataagagg cggagtaaga gccccgagt gcctgatgga 840
cgcaagaagc	ttcggggaaa gaaaatggca ccactcaaaa taaaactagg gcttctgggt 900
ggcaagagga	agaaaggagg ctcgtatgtt ttccagagcg acgaagggtcc tgaaccagag 960
gctgaggaat	cagacctgga cagtggcagt gtccacagtg cctcaggccg gcctgatggc 1020
cctgtccgca	ccaagaaact aaagagaggc cggccaggaa ggaagaagaa gaaggtcctg 1080
ggctgtcctg	cagtggccgg ggaggaggag gttgatggct acgagacgga tcaccaggat 1140
tactgtgagg	tgtgccagca ggggtgggaa attattctgt gtgacacctg ccctcgtgcc 1200

taccacctcg	tctgccttga	tcctgagctt	gaccgggctc	cagagggcaa	atggagctgc	1260
cctcactgtg	agaaggaggg	ggtccagtgg	gaggccaagg	aggaagaaga	agaatacgaa	1320
gaggagggag	aggaagaagg	ggagaaggag	gaggaggatg	atcacatgga	gtactgccgc	1380
gtatgcaagg	acggcgggga	gctcctgtgc	tgtgacgcgt	gcattctctc	ctaccacatt	1440
cattgtctaa	accctcccct	gcctgacatt	cccaatggtg	aatggctgtg	tccccgatgc	1500
acatgccccg	tgctgaaggg	tcgagtgcag	aagatcctac	attggcggtg	gggggagcca	1560
cctgtagcag	tgccagcccc	tcaacaggca	gatggaaatc	cagatgtccc	accccccggt	1620
cctcttcaag	gcagatcaga	gcgagagttc	tttgtcaagt	gggtaggact	atcctactgg	1680
cactgctcct	gggccaagga	gcttcagctg	gaaatcttcc	atttggttat	gtatcgaaac	1740
taccagcggg	agaatgacat	ggatgagccc	ccaccctgg	actatggctc	cggcgaggat	1800
gatgggaaga	gcgacaagcg	taaagtgaag	gaccgcact	atgctgagat	ggaggagaag	1860
tactatcggt	ttggcatcaa	gccagagtgg	atgaccgtcc	accgcatcat	caaccacagt	1920
gtggataaaa	aggggaatta	ccactatcta	gtaaaatgga	gggacttacc	atatgaccag	1980
tccacgtggg	aggaagatga	aatgaatatc	cctgaatacg	aagaacataa	gcaaagctac	2040
tggagacacc	gagaactaat	tatgggggaa	gaccctgccc	agccccgcaa	gtataagaag	2100
aagaagaagg	agctacaggg	tgatgggcct	cccagttctc	ccactaatga	tcctaccgtg	2160
aaatatgaga	ctcagccacg	gtttatcaca	gccactggag	gcaccctgca	catgtatcag	2220
ttggaagggc	tgaactggct	acgcttctcc	tggggccagg	gcactgacac	cattctagct	2280
gatgagatgg	ggctaggcaa	gaccatacaa	accatcgctc	tcctctactc	actctacaag	2340
gagggccaca	caaaagggtc	cttcctggtg	agtgccccac	tctctaccat	cattaactgg	2400
gagcgggagt	tccagatgtg	ggcacccaaa	ttctatgtgg	tgacatacac	gggtgacaag	2460
gacagccggg	ccatcattcg	tgagaatgaa	ttctcctttg	aggacaatgc	catcaaaggg	2520
ggcaagaaag	cttttaagat	gaagagggag	gcacaggtga	agttccatgt	tctcctgaca	2580
tcgtatgagc	tgatcaccat	tgatcaggca	gcacttggtt	ccatccgctg	ggcctgtctt	2640
gtggtagatg	aggcccatcg	actcaagaac	aaccagtcca	agtttttcag	ggttctcaat	2700
ggttacaaga	tagatcataa	gttgctgctg	acaggaaccc	cattgcagaa	taatctggag	2760
gagctcttcc	atctcctgaa	cttcctcacc	ccagagagat	ttaacaactt	ggagggcttc	2820
ctggaggagt	ttgctgacat	atccaaagag	gaccagatca	agaaactgca	tgatttgctg	2880
gggccacaca	tgctgcggag	actcaaggca	gatgtcttta	agaacatgcc	agccaagaca	2940
gagctcatcg	ttcgggtgga	gctaagcccc	atgcagaaga	aatactacaa	atacatcctg	3000
actcgaaatt	ttgaggcctt	gaattcacga	ggtggtggga	accagggtgc	gctgcttaat	3060
atcatgatgg	atcttaagaa	gtgctgcaac	catccatacc	tttttcccgt	ggctgctatg	3120
gagtccccca	aactccccag	tggggcttat	gaggggtggg	cacttattaa	gtcgtctggg	3180
aagctcatgc	tgctccagaa	gatgctgcga	aagctgaagg	agcaaggaca	ccgagtgctc	3240

atcttctcgc	agatgaccaa	aatgttagac	ttgcttgagg	acttcttaga	ctatgaaggc	3300
tacaagtatg	agcgcatcga	tggtggtatc	acgggtgccc	tgaggcagga	ggccatcgat	3360
cggtttaatg	ctcctggggc	ccaacaattc	tgcttctctc	tgtccacccg	agctgggggc	3420
ctgggcatca	atctggccac	tgctgacact	gtcatcatct	ttgattctga	ctggaacccc	3480
cataatgaca	tccaggcctt	tagccgggct	catcggattg	gccaggccaa	caaagtgatg	3540
atttaccggt	ttgtgactcg	cgcgtcagtg	gaagagcgaa	tcacacaagt	ggccaagaga	3600
aagatgatgc	tgacacacct	ggttgtgcgg	cctgggctgg	gctccaaggc	aggctccatg	3660
tccaagcagg	agcttgacga	cattctcaaa	tttggcactg	aagagctatt	caaggatgaa	3720
aacgaggggg	agaacaagga	ggaggacagc	agtgtgattc	attatgacaa	tgaggccatc	3780
gctcggctgt	tggaccggaa	ccaggatgca	actgaggaca	ctgacgtgca	gaacatgaat	3840
gagtatctca	gctccttcaa	ggtggcacag	tacgtcgtgc	gggaagaaga	caagattgag	3900
gaaattgagc	gagagatcat	caagcaggag	gagaatgtgg	accctgacta	ctgggagaag	3960
ctgctgaggc	atcactatga	gcaacagcag	gaagacctag	cccggaatct	aggcaagggc	4020
aagcgggttc	gcaagcaagt	taactacaat	gatgctgctc	aggaagacca	agacaaccag	4080
tcagagtact	cgggtgggttc	agaggaggag	gatgaagact	tcgatgaacg	tcctgaaggg	4140
cgtagacagt	caaagaggca	gctccggaat	gagaaagata	agccactgcc	tccactgctg	4200
gcccagatcg	ggggcaacat	tgagggtgctg	ggcttcaaca	cccgtcagcg	gaaggctttc	4260
ctcaatgctg	tgatgcgctg	ggggatgcca	ccacaggatg	ccttcaccac	acagtggctg	4320
gtgcgggacc	tgaggggcaa	gactgagaag	gagtttaagg	cctatgtgtc	tttgttcatg	4380
cgccatctgt	gtgagcctgg	ggcagacggc	tctgaaacct	ttgccgatgg	ggtccctcgg	4440
gagggactga	gtcgccagca	ggtgttgacc	cgcattggag	tcatgtctct	cgtaaaaaag	4500
aagggtgcagg	agtttgagca	catcaatggg	cgttgggtcaa	tgccggaact	gatgcctgac	4560
cccagcgccg	attctaagcg	ctcctccaga	gcctcctctc	ctacaaaaac	gtctcccacc	4620
actcctgagg	cttctgctac	caacagtccc	tgcacctcta	aacctgctac	tccagctcca	4680
agtgagaaaag	gagaaggcat	aaggacacct	cttgagaagg	aggaagctga	aaaccaggag	4740
gaaaagccag	agaagaacag	cagaattggg	gagaagatgg	agacagaggc	tgatgcccc	4800
agcccagccc	catcacttgg	ggagcggctg	gagccaagga	agattcctct	agaggatgag	4860
gtgccagggg	tgcttgaga	gatggagcct	gaacctgggt	accgtgggga	cagagagaag	4920
tcagaagatg	taaaagggtga	ccgggagctt	cgaccagggc	ctcgagatga	gccacggtcc	4980
aatgggcgac	gagaggaaaa	gacagagaag	ccccggttca	tgttcaatat	cgccgatggt	5040
ggcttcacag	agcttcacac	actgtggcag	aatgaggaac	gggcagctat	ttcctcgggg	5100
aaactcaatg	agatctggca	cagaagacat	gactattggc	ttctggctgg	gattgtcctc	5160
catggctatg	cacggtggca	ggacatccag	aatgatgctc	aatttgccat	tatcaacgag	5220
ccatttaaaa	ctgaagccaa	taaggggaac	tttctggaga	tgaaaaataa	gttcctggcc	5280

cggaggttca agctcctgga gcaggcgctg gtgattgagg agcagctgcg gcgggaggcc	5340
tacctgaacc tgtcgcagga gccgggcgcac cccgccatgg ccctccacgc ccgcttcgcc	5400
gaggccgagt gcctggccga gagccaccag cacctctcca aggagtcgct ggagggggaac	5460
aagccggcca acgccgtcct gcacaagggt ctgaaccagc tggaggagtt gctgagcgac	5520
atgaaggcgg acgtgacccg cctgccagcc acgctgtccc gaataccccc catcgagacc	5580
cgccttcaga tgtccgagcg cagcatcctc agccggctgg ccagcaaggg cacggagcct	5640
cacccacac cggcctaccc gccgggtccc tacgctacac ctccggggta cggggcggcc	5700
ttcagcgccg caccgtagg ggccctggcc gccgcaggcg ccaattacag ccagatgcct	5760
gcagggtcct tcatcacagc cgccaccaac ggccctccag tgcttgtaa gaaggagaag	5820
gaaatggtgg gggcattggt gtcagacggg ctggatcgga aggagccccg agccggggag	5880
gtgatctgta tagacgactg a	5901

<210> 54
 <211> 600
 <212> DNA
 <213> Homo sapiens

<400> 54	
atgtctaaca tggagaaaca cctgttcaac ctgaagttcg cggccaaaga actgagtagg	60
agtgccaaaa aatgcgataa ggaggaaaag gccgaaaagg ccaaaattaa aaaggccatt	120
cagaagggca acatggaagt tgcgaggata cacgccgaaa atgccatccg ccagaagaac	180
caggcgggtga atttcttgag aatgagtgcg cgagtcgatg cagtggctgc cagggtccag	240
acggcgggtga cgatgggcaa ggtgaccaag tcgatggctg gtgtgggtaa gtcgatggat	300
gcgacattga agaccatgaa tctggagaag atttctgctt tgatggacaa attcgagcac	360
cagtttgaga ctctggacgt ccagacgcag caaatggaag acacgatgag cagcacgacg	420
acgctcacca ctccccagaa ccaagtggat atgctgctcc aggaaatggc agatgaggcg	480
ggcctcgacc tcaacatgga gctgccgcag ggccagaccg gctccgtggg cacgagcgctg	540
gcttcggcgg agcaggatga actgtctcag agactggccc gccttcggga tcaagtgtga	600

<210> 55
 <211> 1362
 <212> DNA
 <213> Homo sapiens

<400> 55	
atgtggtccc cggagcggga ggccgaggcc ccagccgggg gagaccggc gggccttctg	60
ccccccgagt gggaggagga cgaggagcgc atgtccttcc tgttctccgc tttcaagagg	120
agtcgcgagg tgaacagcac cgactgggac agcaagatgg gcttctgggc gccgttggtg	180
ctgagccaca gccgccgcca ggggggtggtg cgcctgcgtc tgccgggactt gcaggaggcc	240
tttcagcgca aggggagcgt cccgctgggg ctggccacgg tgctgcagga cctgctgcgt	300
cgaggggagc tgcagcggga gtcagacttc atggccagtg tagacagcag ctggatctcc	360

tggtggggttg	gggtcttcct	gctgaagcct	ctcaagtgga	ctctttctaa	catgctggga	420
gataataagg	ttccagctga	ggaggtcctt	gtcgctgtgg	agctgttgaa	ggaaaaggct	480
gaggaggtgt	atcgtctgta	tcagaactcg	cccctctcct	cccaccccg	ggtggccctg	540
tcagagctca	gcaccctctg	tgctaactcc	tgcccagatg	agaggacctt	ctacttggtg	600
ttgctgcagc	tgcaagaagg	gaagaggggc	acagtcctcg	agcagaacgg	ggagaagatt	660
gtgaagtttg	cccaggggcc	acgtgccaa	gtctctccag	tcaatgacgt	agatgttggg	720
gtgtaccagc	tgatgcagag	tgaacagctt	ctctcacgca	aagtggagtc	cttatcccag	780
gaagcagaga	ggtgtaaaga	agaagcccg	cgggcatgcc	gagcaggaaa	gaagcagctg	840
gcactgaggt	ctctcaaggc	caagcaacgg	acagagaagc	gcacgcaggc	cttgcatgcc	900
aagctggaca	ctgttcaagg	catcctggac	cggatctatg	cctcccagac	agatcagatg	960
gtttttaacg	cctaccaggc	tggggtagga	gcactcaaac	tctccatgaa	ggatgtcaca	1020
gtggagaagg	cagagagcct	cgtggatcag	atccaagagc	tctgtgacac	ccaggatgaa	1080
gtttctcaga	ctctggctgg	tggggtaaca	aatggcttag	attttgacag	tgaagaactg	1140
gagaaggaat	tggacatcct	ccttcaggat	accaccaaag	aacctttgga	tctgcctgac	1200
aacccccgca	ataggcattt	taccaacagc	gtgcctaacc	ctaggatctc	agatgctgaa	1260
cttgaagctg	aacttgagaa	actgtcctta	tcagagggag	gtttggtccc	aagcagtaaa	1320
tctccaaaaa	ggcaattgga	accgactcta	aagccattgt	ag		1362

<210> 56
 <211> 1059
 <212> DNA
 <213> Homo sapiens

<400> 56	
atgaagccag	cgctgctgga agtgatgagg atgaacagaa tctgccggat ggtgctggcc 60
acttgcttgg	gatcctttat cctgggtcatc ttctattttcc aaagtatggt gcaccagtc 120
atgcggagga	atcccttttg tgtggacatc tgctgccgga aggggtcccg aagccccctg 180
caggaactct	acaaccaat ccagctggag ctctcaaaca ctgctgtcct gcaccagatg 240
cggcgggacc	aggtgacaga cacgtgccga gccaacagcg ccacaagccg taagcggagg 300
gtgctgacct	ccaacgacct gaagcacttg gtggtggatg aggaccacga gtcacatctac 360
tgctacgtgc	ccaaggtggc ctgcaccaac tggaagcggc tcatgatggt cctgaccggg 420
cgggggaagt	acagcgacct catggagatc ccggccaacg aggcacacgt ctccgccaac 480
ctgaagacct	tgaaccagta cagcatcca gaaatcaacc accgcttgaa aagctacatg 540
aagttcctgt	ttgtccggga gcccttcgag aggctagtgt ccgcctaccg caacaagttc 600
accagaagt	acaacatctc cttccacaag cggtagggca ccaagatcat caaacgccag 660
cgaagaacg	ccaccagga ggccctgcgc aaaggggacg atgtcaaatt cgaggagttt 720
gtggcctatc	tcatcgacct acacaccag cgggaggagc ctttcaacga aactggcaa 780
accgtctact	cactctgcca tccctgccac atccactatg acctcgtggg caagtacgag 840

PCTAU2016050927-seq1-000001-EN-20161013

aactggaag aggattctaa ttacgtcctg cagctggcag gaggggcag ctacctgaag	900
ttccccacct atgcaaagtc tacgagaact actgatgaaa tgaccacaga attcttccag	960
aacatcagct cagagcacca aacgcagctg tacgaagtct acaaactcga ttttttaatg	1020
ttcaattact cagtgccaaag ctacctgaaa ttggaataa	1059

<210> 57
 <211> 939
 <212> DNA
 <213> Homo sapiens

<400> 57 atggcagatt ttgggatctc tgctggccag tttgtggcag tgggtctggga taagtcattcc	60
ccagtggagg ctctgaaagg tctggtggat aagcttcaag cgtaaacgg caatgagggc	120
cgctgtctg tggaaaacat caagcagctg ttgcaatctg ccacaaaaga atccagcttt	180
gacattattt tgcagggtt agtcccagga agcaccactc tgcacagtgc tgagattttg	240
gctgaaatcg cccggatcct tcggcctggg ggatgtcttt ttctgaagga gccagtagag	300
acagctgtag ataacaatag caaagtgaag acagcatcta agctgtgttc agccctgact	360
ctttctggtc ttgtggaagt gaaagagctg cagcgggagc ccctaacccc tgaggaagta	420
cagtctgttc gagaacacct tggatcatgaa agtgacaacc tgctgtttgt tcagatcaca	480
ggcaaaaaac caaactttga agtgggttct tctaggcagc ttaagctttc catcaccaag	540
aagtcttctc cttcagtga acctgctgtg gaccctgctg ctgccaagct gtggaccctc	600
tcagccaacg atatggagga cgacagcatg gatctcattg actcagatga gctgctggat	660
ccagaagatt tgaagaagcc agatccagct tccctgcggg ctgcttcttg tggggaaggg	720
aaaaagagga aggcctgtaa gaactgcacc tgtggccttg ccgaagaact ggaaaaagag	780
aagtcaaggg aacagatgag ctccaaccc aagtcagctt gtggaaactg ctacctgggc	840
gatgccttcc gctgtgccag ctgccctac cttgggatgc cagccttcaa acctggggaa	900
aagtgcttc tgagtgatag caatcttcat gatgcctag	939

<210> 58
 <211> 714
 <212> DNA
 <213> Homo sapiens

<400> 58 atgacttcgg aaatcactta tgctgaagtg aggttcaaaa atgaattcaa gtcctcaggc	60
atcaacacag cctcttctgc agcttccaag gagaggactg cccctcaca aagtaatacc	120
ggattcccca agctgctttg tgcctcactg ttgatatttt tctgtctatt ggcaatctca	180
ttctttattg cttttgtcat tttctttcaa aaatattctc agcttcttga aaaaaagact	240
acaaaagagc tggttcatac aacattggag tgtgtgaaaa aaaatatgcc cgtggaagag	300
acagcctgga gctgttgccc aaagaattgg aagtcattta gttccaactg ctactttatt	360
tctactgaat cagcatcttg gcaagacagt gagaaggact gtgctagaat ggaggctcac	420

PCTAU2016050927-seq1-000001-EN-20161013

ctgctggtga taaacactca agaagagcag gatttcatct tccagaatct gcaagaagaa	480
tctgcttatt ttgtggggct ctcagatcca gaaggtcagc gacattggca atgggttgat	540
cagacaccat acaatgaaag ttccacattc tggcatccac gtgagcccag tgatcccaat	600
gagcgtgctg ttgtgctaaa ttttcgtaaa tcacccaaaa gatggggctg gaatgatgtt	660
aattgtcttg gtcctcaaag gtcagtttgt gagatgatga agatccactt atga	714

<210> 59
 <211> 1446
 <212> DNA
 <213> Homo sapiens

<400> 59	
atgcggcatt ccaaaagaac tcactgtcct gattgggata gcagagaaag ctggggacat	60
gaaagctatc gtggaagtca caagcgggaag aggagatctc atagtagcac acaagagaac	120
aggcattgta aaccacatca ccagtttaaa gaatctgatt gtcattatctt agaagcaagg	180
tccttgaatg agcgagatta tcgggaccgg agatacgttg acgaatacag gaatgactac	240
tgtgaaggat atgttcctag acattatcac agagacattg aaagcgggta tcgaatccac	300
tgcagtaaatt cttcagtcctg cagcaggaga agcagtccta aaaggaagcg caatagacac	360
tgttcaagtc atcagtcacg ttcgaagagc caccgaagga aaagatccag gagtatagag	420
gatgatgagg aggggtcacct gatctgtcaa agtggagacg ttctaagagc aagatatgaa	480
atcgtggaca ctttgggtga aggagccttt ggcaaagtgt tagagtgcatt tgatcatggc	540
atggatggca tgcatgtagc agtgaaaatc gtaaaaaatg taggccgtta ccgtgaagca	600
gctcgttcag aaatccaagt attagagcac ttaaatagta ctgatcccaa tagtgtcttc	660
cgatgtgtcc agatgctaga atggtttgat catcatggtc atgtttgtat tgtgtttgaa	720
ctactgggac ttagtactta cgatttcatt aaagaaaaca gctttctgcc atttcaaatt	780
gaccacatca ggcagatggc gtatcagatc tgccagtcaa taaatTTTTT acatcataat	840
aaattaaccc atacagatct gaagcctgaa aatattttgt ttgtgaagtc tgactatgta	900
gtcaaatata attctaaaat gaaacgtgat gaacgcacac tgaaaaacac agatatcaaa	960
gttgttgact ttggaagtgc aacgtatgat gatgaacatc acagtacttt ggtgtctacc	1020
cggcactaca gagctccga ggtcattttg gctttagggtt ggtctcagcc ttgtgatgtt	1080
tggagcatag gttgcattct tattgaatat taccttggtt tcacagtctt tcagactcat	1140
gatagtaaag agcacctggc aatgatggaa cgaatattag gaccataacc acaacacatg	1200
attcagaaaa caagaaaacg caagtatttt caccataacc agctagattg ggatgaacac	1260
agttctgctg gtagatatgt taggagacgc tgcaaaccgt tgaaggaatt tatgctttgt	1320
catgatgaag aacatgagaa actgtttgac ctggttcgaa gaatgttaga atatgatcca	1380
actcaaagaa ttaccttgga tgaagcattg cagcatcctt tctttgactt attaaaaaag	1440
aaatga	1446

<210> 60
 <211> 837
 <212> DNA
 <213> Homo sapiens

<400> 60
 atggattcaa tgcctgagcc cgcgtcccgc tgtcttctgc ttcttccctt gctgctgctg 60
 ctgctgctgc tgctgccggc cccggagctg ggcccagacc aggccggagc tgaggagAAC 120
 gactgggttc gcctgcccag caaatgcgaa gtgtgtaaat atgttgctgt ggagctgaag 180
 tcagcctttg aggaaaccgg caagaccaag gaggtgattg gcacgggcta tggcatcctg 240
 gaccagaagg cctctggagt caaatacacc aagtcggact tgcggttaat cgaagtcact 300
 gagaccattt gcaagaggct cctggattat agcctgcaca aggagaggac cggcagcaat 360
 cgatttgcca agggcatgtc agagacctt gagacattac acaacctggt acacaaaggg 420
 gtcaagggtg tgatggacat cccctatgag ctgtggaacg agacttctgc agagggtggct 480
 gacctcaaga agcagtgtga tgtgctggtg gaagagtttg aggaggtgat cgaggactgg 540
 tacaggaacc accaggagga agacctgact gaattcctct gcgccaacca cgtgctgaag 600
 ggaaaagaca ccagttgcct ggcagagcag tggtcgggca agaagggaga cacagctgcc 660
 ctgggagggg agaagtccaa gaagaagagc agcagggcca aggcagcagg cggcaggagt 720
 agcagcagca aacaaaggaa ggagctgggt ggccttgagg gagaccccag ccccgaggag 780
 gatgagggca tccagaaggc atcccctctc acacacagcc cccctgatga gctctga 837

<210> 61
 <211> 984
 <212> DNA
 <213> Homo sapiens

<400> 61
 atgaccatgg aatctggagc cgagaaccag cagagtggag atgcagctgt aacagaagct 60
 gaaaaccaac aaatgacagt tcaagcccag ccacagattg ccacattagc ccaggatatct 120
 atgccagcag ctcatgcaac atcatctgct cccaccgtaa ctctagtaca gctgcccaat 180
 gggcagacag ttcaagtcca tggagtcatt caggcggccc agccatcagt tattcagtct 240
 ccacaagtcc aaacagttca gatttcaact attgcagaaa gtgaagattc acaggagtca 300
 gtggatagtg taactgattc ccaaaagcga agggaaattc tttcaaggag gccttcctac 360
 aggaaaattt tgaatgactt atcttctgat gcaccaggag tgccaaggat tgaagaagag 420
 aagtctgaag aggagacttc agcacctgcc atcaccactg taacggtgcc aactccaatt 480
 taccaaacta gcagtggaca gtatattgcc attaccagcagg gaggagcaat acagctggct 540
 aacaatggta ccgatggggt acagggcctg caaacattaa ccatgaccaa tgcagcagcc 600
 actcagccgg gtactacat tctacagtat gcacagacca ctgatggaca gcagatctta 660
 gtgccagca accaagttgt tgttcaagct gcctctggag acgtacaaac ataccagatt 720
 cgcacagcac ccactagcac tattgcccct ggagttgtta tggcatcctc cccagcactt 780

cctacacagc	ctgctgaaga	agcagcacga	aagagagagg	tccgtctaata	gaagaacagg	840
gaagcagctc	gagagtgtcg	tagaaagaag	aaagaatatg	tgaaatgttt	agaaaacaga	900
gtggcagtgc	ttgaaaatca	aaacaagaca	ttgattgagg	agctaaaagc	acttaaggac	960
ctttactgcc	acaaatcaga	ttaa				984

<210> 62
 <211> 7329
 <212> DNA
 <213> Homo sapiens

<400> 62						
atggctgaga	acttgctgga	cggaccgccc	aacccccaaa	gagccaaact	cagctcgccc	60
ggtttctcgg	cgaatgacag	cacagatttt	ggatcattgt	ttgacttgga	aaatgatctt	120
cctgatgagc	tgatacccaa	tggaggagaa	ttaggccttt	taaacagtgg	gaaccttggt	180
ccagatgctg	cttccaaaca	taaacaactg	tcggagcttc	tacgaggagg	cagcggctct	240
agtatcaacc	caggaatagg	aatgtgtgagc	gccagcagcc	ccgtgcagca	gggcctgggt	300
ggccaggctc	aagggcagcc	gaacagtgtc	aacatggcca	gcctcagtgc	catgggcaag	360
agccctctga	gccagggaga	ttcttcagcc	cccagcctgc	ctaaacaggc	agccagcacc	420
tctgggcca	ccccgctgc	ctccaagca	ctgaatccgc	aagcacaaaa	gcaagtgggg	480
ctggcgacta	gcagccctgc	cacgtcacag	actggacctg	gtatctgcat	gaatgctaac	540
tttaaccaga	cccaccagg	cctcctcaat	agtaactctg	gccatagctt	aattaatcag	600
gcttcacaag	ggcaggcgca	agtcatgaat	ggatctcttg	gggctgctgg	cagaggaagg	660
ggagctggaa	tgccgtacct	tactccagcc	atgcaggggc	cctcgagcag	cgtgctggct	720
gagaccctaa	cgcaggtttc	cccgcaaatg	actggtcacg	cgggactgaa	caccgcacag	780
gcaggaggca	tggccaagat	gggaataact	gggaacacaa	gtccatttgg	acagcccttt	840
agtcaagctg	gagggcagcc	aatgggagcc	actggagtga	accccagtt	agccagcaaa	900
cagagcatgg	tcaacagttt	gccaccttc	cctacagata	tcaagaatac	ttcagtcacc	960
aacgtgccaa	atatgtctca	gatgcaaaca	tcagtgggaa	ttgtaccac	acaagcaatt	1020
gcaacaggcc	ccactgcaga	tcctgaaaaa	cgcaaactga	tacagcagca	gctggttcta	1080
ctgcttcatt	ctcataagt	tcagagacga	gagcaagcaa	acggagaggt	tcgggcctgc	1140
tcgctcccg	attgtcgaac	catgaaaaac	gttttgaatc	acatgacgca	ttgtcaggct	1200
gggaaagcct	gccaagtgtc	ccattgtgca	tcttcacgac	aaatcatctc	tcattggaag	1260
aactgcacac	gacatgactg	tcctgtttgc	ctccctttga	aaaatgccag	tgacaagcga	1320
aaccaacaaa	ccatcctggg	gtctccagct	agtggaattc	aaaacacaat	tggttctgtt	1380
ggcacagggc	aacagaatgc	cacttcttta	agtaacccaa	atcccataga	cccagctcc	1440
atgcagcgag	cctatgctgc	tctcggactc	ccctacatga	accagcccca	gacgcagctg	1500
cagcctcagg	ttcctggcca	gcaaccagca	cagcctcaaa	cccaccagca	gatgaggact	1560
ctcaaccccc	tgggaaataa	tccaatgaac	attccagcag	gaggaataac	aacagatcag	1620

cagccccaa	acttgatttc	agaatcagct	cttccgactt	ccctgggggc	cacaaaccca	1680
ctgatgaacg	atgggtccaa	ctctggtaac	attggaaccc	tcagcactat	accaacagca	1740
gctcctcctt	ctagcaccgg	tgtaaggaaa	ggctggcacg	aacatgtcac	tcaggacctg	1800
cggagccatc	tagtgcataa	actcgtccaa	gccatcttcc	caacacctga	tcccgcagct	1860
ctaaaggatc	gccgcatgga	aaacctggta	gcctatgcta	agaaagtgga	aggggacatg	1920
tacgagtctg	ccaacagcag	ggatgaatat	tatcacttat	tagcagagaa	aatctacaag	1980
atacaaaaag	aactagaaga	aaaacggagg	tcgcgtttac	ataaacaagg	catcttgggg	2040
aaccagccag	ccttaccagc	cccgggggct	cagccccctg	tgattccaca	ggcacaacct	2100
gtgagacctc	caaatggacc	cctgtccctg	ccagtgaatc	gcatgcaagt	ttctcaaggg	2160
atgaattcat	ttaaccccat	gtccttgggg	aacgtccagt	tgccacaagc	acccatggga	2220
cctcgtgcag	cctccccaat	gaaccactct	gtccagatga	acagcatggg	ctcagtgcc	2280
gggatggcca	tttctccttc	ccgaatgcct	cagcctccga	acatgatggg	tgcacacacc	2340
aacaacatga	tggcccaggc	gcccgtcag	agccagtttc	tgccacagaa	ccagttcccg	2400
tcatccagcg	gggcgatgag	tgtgggcatg	gggcagccgc	cagcccaaac	aggcgtgtca	2460
cagggacagg	tgctgtgtgc	tgctcttcct	aaccctctca	acatgctggg	gcctcaggcc	2520
agccagctac	cttgccctcc	agtgcacag	tcaccactgc	acccaacacc	gcctcctgct	2580
tccacggctg	ctggcatgcc	atctctccag	cacacgacac	cacctgggat	gactcctccc	2640
cagccagcag	ctcccactca	gcatcaact	cctgtgtcgt	cttccgggca	gactcccacc	2700
ccgactcctg	gctcagtgcc	cagtgtacc	caaaccaga	gcaccctac	agtccaggca	2760
gcagcccagg	cccaggtgac	cccgcagcct	caaaccag	ttcagcccc	gtctgtggct	2820
acccctcagt	catcgcagca	acagccgacg	cctgtgcacg	cccagcctcc	tggcacaccg	2880
ctttcccagg	cagcagccag	cattgataac	agagtcccta	ccccctctc	ggtggccagc	2940
gcagaaacca	attcccagca	gccaggacct	gacgtacctg	tgctggaaat	gaagacggag	3000
acccaagcag	aggacactga	gcccgatcct	ggtgaatcca	aaggggagcc	caggtctgag	3060
atgatggagg	aggatttgca	aggagcttcc	caagttaaag	aagaaacaga	catagcagag	3120
cagaaatcag	aaccaatgga	agtggatgaa	agaaaacctg	aagtgaaagt	agaagttaaa	3180
gaggaagaag	agagtagcag	taacggcaca	gcctctcagt	caacatctcc	ttcgcagccg	3240
cgcaaaaaaa	tctttaaac	agaggagtta	cgccaggccc	tcatgccaac	cctagaagca	3300
ctgtatcgac	aggaccaga	gtcattacct	ttccggcagc	ctgtagatcc	ccagctcctc	3360
ggaattccag	actattttga	catcgtaaag	aatcccatgg	acctctccac	catcaagcgg	3420
aagctggaca	cagggcaata	ccaagagccc	tggcagtagc	tggacgacgt	ctggctcatg	3480
ttcaacaatg	cctggctcta	taatcgcaag	acatcccag	tctataagtt	ttgcagtaag	3540
cttgcaagg	tctttgagca	ggaaattgac	cctgtcatgc	agtccttgg	atattgctgt	3600
ggacgcaagt	atgagttttc	cccacagact	ttgtgtgtgt	atgggaagca	gctgtgtacc	3660

attcctcgcg	atgctgccta	ctacagctat	cagaataggt	atcatttctg	tgagaagtgt	3720
ttcacagaga	tccagggcga	gaatgtgacc	ctgggtgacg	acccttcaca	gccccagacg	3780
acaatttcaa	aggatcagtt	tgaaaagaag	aaaaatgata	ccttagaccc	cgaacctttc	3840
gttgattgca	aggagtgtgg	ccggaagatg	catcagattt	gcgttctgca	ctatgacatc	3900
atttggcctt	caggttttgt	gtgcgacaac	tgcttgaaga	aaactggcag	acctcgaaaa	3960
gaaaacaaat	tcagtgctaa	gaggctgcag	accacaagac	tgggaaacca	cttggaagac	4020
cgagtgaaca	aatttttgcg	gcgccagaat	caccctgaag	ccggggaggt	ttttgtccga	4080
gtggtggcca	gctcagacaa	gacggtggag	gtcaagcccg	ggatgaagtc	acggtttgtg	4140
gattctgggg	aaatgtctga	atctttccca	tatcgaacca	aagctctgtt	tgcttttgag	4200
gaaattgacg	gcgtggatgt	ctgctttttt	ggaatgcacg	tccaagaata	cggctctgat	4260
tgccccctc	caaacacgag	gcgtgtgtac	atttcttata	tggatagtat	tcatttcttc	4320
cggccacgtt	gcctccgcac	agccgtttac	catgagatcc	ttattggata	tttagagtat	4380
gtgaagaaat	tagggtatgt	gacagggcac	atctgggcct	gtcctccaag	tgaaggagat	4440
gattacatct	tccattgcc	cccacctgat	caaaaaatac	ccaagccaaa	acgactgcag	4500
gagtgtgaca	aaaagatgct	ggacaaggcg	tttgcagagc	ggatcatcca	tgactacaag	4560
gatattttca	aacaagcaac	tgaagacagg	ctcaccagtg	ccaaggaact	gccctatttt	4620
gaagggtgatt	tctggcccaa	tgtgttagaa	gagagcatta	aggaactaga	acaagaagaa	4680
gaggagagga	aaaaggaaga	gagcactgca	gccagtga	ccactgaggg	cagtcagggc	4740
gacagcaaga	atgccaagaa	gaagaacaac	aagaaaacca	acaagaacaa	aagcagcatc	4800
agccgcgcca	acaagaagaa	gccagcatg	cccaacgtgt	ccaatgacct	gtcccagaag	4860
ctgtatgcc	ccatggagaa	gcacaaggag	gtcttcttcg	tgatccacct	gcacgctggg	4920
cctgtcatca	acaccctgcc	ccccatcgtc	gaccccgacc	ccctgctcag	ctgtgacctc	4980
atggatgggc	gcgacgcctt	cctcaccctc	gccagagaca	agcactggga	gttctcctcc	5040
ttgcgccgct	ccaagtggtc	cacgctctgc	atgctggtgg	agctgcacac	ccagggccag	5100
gaccgctttg	tctacacctg	caacgagtgc	aagcaccacg	tggagacgcg	ctggcactgc	5160
actgtgtgcg	aggactacga	cctctgcatc	aactgtctata	acacgaagag	ccatgccc	5220
aagatggtga	agtgggggct	gggcctggat	gacgagggca	gcagccaggg	cgagccacag	5280
tcaaagagcc	cccaggagtc	acgccggctg	agcatccagc	gctgcatcca	gtcgctgggtg	5340
cacgcgtgcc	agtgccgcaa	cgccaactgc	tcgctgccat	cctgccagaa	gatgaagcgg	5400
gtggtgcagc	acaccaagg	ctgcaaacgc	aagaccaacg	ggggctgccc	ggtgtgcaag	5460
cagctcatcg	ccctctgctg	ctaccacgcc	aagcactgcc	aagaaaacaa	atgccccgtg	5520
cccttctgcc	tcaacatcaa	acacaagctc	cgccagcagc	agatccagca	ccgcctgcag	5580
caggcccagc	tcatgcgccg	gcggatggcc	accatgaaca	cccgcaacgt	gcctcagcag	5640
agtctgcctt	ctcctacctc	agcaccgccc	gggaccccca	cacagcagcc	cagcacaccc	5700

PCTAU2016050927-seq1-000001-EN-20161013

cagacgccgc	agccccctgc	ccagcccca	ccctcacccg	tgagcatgtc	accagctggc	5760
ttccccagcg	tggcccgga	tcagccccc	accacggtgt	ccacagggaa	gcctaccagc	5820
caggtgccgg	cccccccacc	cccggcccag	ccccctcctg	cagcggtgga	agcggctcgg	5880
cagatcgagc	gtgaggccca	gcagcagcag	cacctgtacc	gggtgaacat	caacaacagc	5940
atgccccag	gacgcacggg	catggggacc	ccggggagcc	agatggcccc	cgtgagcctg	6000
aatgtgcccc	gacccaacca	ggtgagcggg	cccgtcatgc	ccagcatgcc	tcccgggcag	6060
tggcagcagg	cgccccttcc	ccagcagcag	cccatgccag	gcttgcccag	gcctgtgata	6120
tccatgcagg	cccaggcggc	cgtggctggg	ccccggatgc	ccagcgtgca	gccacccagg	6180
agcatctcac	ccagcgtctt	gcaagacctg	ctgcggaccc	tgaagtcgcc	cagctcccct	6240
cagcagcaac	agcaggtgct	gaacattctc	aaatcaaacc	cgcagcta	ggcagctttc	6300
atcaaacagc	gcacagccaa	gtacgtggcc	aatcagccc	gcatgcagcc	ccagcctggc	6360
ctccagtccc	agcccggcat	gcaaccccag	cctggcatgc	accagcagcc	cagcctgcag	6420
aacctgaatg	ccatgcaggc	tggcgtgccg	cggcccgggtg	tgcctccaca	gcagcaggcg	6480
atgggaggcc	tgaaccccc	gggccaggcc	ttgaacatca	tgaacccagg	acacaacccc	6540
aacatggcga	gtatgaatcc	acagtaccga	gaaatgttac	ggaggcagct	gctgcagcag	6600
cagcagcaac	agcagcagca	acaacagcag	caacagcagc	agcagcaagg	gagtgccggc	6660
atgggctggg	gcatggcggg	gcacggccag	ttccagcagc	ctcaaggacc	cggaggctac	6720
ccaccggcca	tgcagcagca	gcagcgcagc	cagcagcatc	tccccctcca	gggcagctcc	6780
atggggccaga	tggcggctca	gatgggacag	cttggccaga	tggggcagcc	ggggctgggg	6840
gcagacagca	cccccaacat	ccagcaagcc	ctgcagcagc	ggattctgca	gcaacagcag	6900
atgaagcagc	agattgggtc	cccaggccag	ccgaaccccc	tgagccccc	gcaacacatg	6960
ctctcaggac	agccacaggc	ctcgcattct	cctggccagc	agatcgccac	gtcccttagt	7020
aaccaggtgc	ggtctccagc	ccctgtccag	tctccacggc	cccagtccca	gcctccacat	7080
tccagcccgt	caccacggat	acagccccag	ccttcgccac	accacgtctc	accccagact	7140
ggttcccccc	accccggact	cgcagtcacc	atggccagct	ccatagatca	gggacacttg	7200
gggaacccc	aacagagtgc	aatgtctccc	cagctgaaca	cccccagcag	gagtgcgctg	7260
tccagcgaac	tgtccctggt	cggggacacc	acgggggaca	cgctagagaa	gtttgtggag	7320
ggctttag						7329

<210> 63
 <211> 1329
 <212> DNA
 <213> Homo sapiens

<400> 63	
atgagggggg	cgatggagct ggagcctgag ctgctgttgc aggaggcccg cgagaacgtg 60
gaggcagcgc	agagctaccg gcgggagctg ggtcaccggc ttgaggggct gcgtgaggcg 120

cggaggcaga	tcaaagaaag	tgcatcacag	acaaggggatg	ttctcaaaca	gcattttaat	180
gatttaaagg	gaacccttgg	aaagctcctg	gatgagcgat	tggtgaccct	tttgcaagag	240
gtggacacca	ttgaacagga	gaccattaaa	ccactagatg	actgccagaa	gctcatagaa	300
cacggagtca	acactgcaga	ggacttagtc	cgagaagggtg	aaatcgccat	gcttggtggt	360
gtggggagaag	agaatgagaa	actgtggagc	tttaccaaaa	aggcctcgca	cattcagttg	420
gacagcttac	cagaagtacc	tttactggtt	gatgtgcctt	gtttatctgc	tcagttggat	480
gactcaattc	ttaacatagt	gaaagaccac	atttttaagc	atggaacagt	agcatctcgc	540
ccaccagtac	agatagaaga	actaatagag	aaacctggag	gcattcattgt	acgatgggtgt	600
aagggtggatg	atgacttttac	agcccaagat	tacaggctcc	agtttcgtaa	atgtacttca	660
aatcattttg	aggatgtata	tgtaggttct	gaaactgaat	tcatagtatt	gcacatagac	720
cccaacgttg	attaccagtt	cagagtctgc	gcccgaggag	atggccgaca	ggagtggagt	780
ccttggaagt	tccccagat	aggtcattcc	acattgggtgc	ctcatgagtg	gacagctggt	840
tttgaggggt	acagtctgag	cagtcgaaga	aatatagcac	ttcggaacga	ttctgaatca	900
tcgggtgttc	tctactccag	agctccgact	tatttctgtg	ggcagacatt	aacattcaga	960
gttgaaactg	tgggacagcc	agacagaaga	gatagcatag	gagtgtgtgc	agaaaaacag	1020
gatggatatg	actctctgca	gcgggatcaa	gctgtgtgca	ttagtacaaa	tgggtgcagtt	1080
tttgtcaatg	gaaaagaaat	gacaaatcag	ttaccgcgag	ttacttctgg	gtccactgtc	1140
acgtttgaca	ttgaagccgt	gactctagga	accaccagta	ataatgaagg	tggacacttc	1200
aagcttcgag	taactataag	ttcaaataat	agagaagtg	tttttgactg	gttacttgat	1260
cagtcttgtg	gttctcttta	ctttggatgc	tcatttttct	atcctggatg	gaaagtgtta	1320
gtgttttag						1329

```
<210> 64
<211> 1860
<212> DNA
<213> Homo sapiens
```

<400>	64						
atggccgcct	cgccgggctc	gggcagcgcc	aaccgcgga	agttcagtga	gaagatcgcg		60
ctgcacacgc	agagacaggc	cgaggagacg	cgggccttcg	agcagctcat	gaccgacctc		120
accctgtcgc	gggttcaatt	tcagaagctt	cagcaactgc	gccttacaca	gtaccatgga		180
ggatccttac	caaatgtgag	ccagctgcgg	agcagtgcgt	cagagtttca	gccgtcattt		240
caccaagctg	ataatgttcg	gggaacccgc	catcacgggc	tggtggagag	gccatccagg		300
aaccgcttcc	acccctcca	ccgaaggtct	ggggacaagc	cagggcgaca	atttgatggt		360
agtgtttttg	gagccaatta	ttcctcacag	cctctggatg	agagttggcc	aaggcagcag		420
cctccttgga	aagacgaaaa	gcctcctggg	ttcaggctga	catctgcact	taacaggacc		480
aattctgatt	ctgctcttca	cacgagtgtc	ctgagtacca	agccccagga	cccctatgga		540
ggagggggcc	agtcggcctg	gcctgcccc	tacatggggt	tctgtgatgg	tgagaataat		600

ggacatgggg	aagtagcatc	tttcctggc	ccattgaaag	aagagaatct	gttaaagtgt	660
ccgaagccac	tgccaaaaca	actgtgggag	accaaggaga	ttcagtcctt	gtcaggacgc	720
cctcgatcct	gtgatgttg	aggtggcaat	gcttttccac	ataatgggtca	aaacctaggg	780
ctctcacct	tcttggggac	cttgaacact	ggaggggtcat	tgccagatct	aaccaacctc	840
cactactcga	caccttgcc	agcctccctg	gacaccaccg	accaccactt	tggcagtatg	900
agtgtgggga	atagtgtgaa	caacatccca	gctgctatga	cccacctggg	tataagaagc	960
tcctctggtc	tccagagttc	tcggagtaac	ccctccatcc	aagccacgct	caataagact	1020
gtgcttttct	cttccttaaa	taaccaccca	cagacatctg	ttcccaacgc	atctgctctt	1080
cacctttcgc	tccgtctgtt	ttcccttagc	aacctatctc	tttccaccac	aaacctgagc	1140
ggcccgtctc	ggcgtcggca	gcctcccgtc	agccctctca	cgctttctcc	tggccctgaa	1200
gcacatcaag	gtttcagcag	acagctgtct	tcaaccagcc	cactggcccc	atctcctacc	1260
tcccagatgg	tgtcctcaga	ccgaagccaa	ctttcctttc	tgcccacaga	agctcaagcc	1320
caggtgtcgc	cgccaccccc	ttaccctgca	ccccaggagc	tcaccagcc	cctcctgcag	1380
cagccccgcg	cccctgaggg	ccctgcccag	cagccccagg	cagcctctct	actgccacag	1440
tcagactttc	agcttctccc	ggcccagggc	tcattctttga	ccaacttctt	cccagatgtg	1500
ggttttgacc	agcagtccat	gaggccaggc	cctgcctttc	ctcaacaggt	gcctctggtg	1560
caacaagggt	cccgagaact	gcaggactct	tttcatttga	gaccaagccc	gtattccaac	1620
tgcgggagtc	tcccgaacac	catcctgcca	gaagactcca	gcaccagcct	gttcaaagac	1680
ctcaacagtg	cgctggcagg	cctgcctgag	gtcagcctga	acgtggacac	tccatttcca	1740
ctggaagagg	agctgcagat	tgaaccctg	agcctggacg	gactcaacat	gttaagtgc	1800
tccagcatgg	gcctgctgga	cccctctgtt	gaagagacgt	ttcgagctga	cagactgtga	1860

<210> 65
 <211> 1563
 <212> DNA
 <213> Homo sapiens

<400> 65						
atgtcaattc	cactgaagtc	ctcatttctg	ctgagctacc	tgtgcaccct	gcctccggct	60
ctcctgagca	gagagatcct	gatggctgac	tcagaagcac	tcccctccct	tgctggggac	120
ccagtggctg	tggaagcctt	gctccggggc	gtgtttgggg	ttgttggtga	tgaggccatt	180
cagaaaggaa	ccagtgtctc	ccagaaggtc	tgtgagtgga	aggagcctga	ggagctgaag	240
cagctgctgg	atttggagct	gcggagccag	ggcgagtcac	agaagcagat	cctggagcgg	300
tgtcgggctg	tgattcgcta	cagtgctcaag	actggtcacc	ctcggttctt	caaccagctc	360
ttctctgggt	tggatcccca	tgctctggcc	gggcgcatta	tactgagag	cctcaacacc	420
agccagtaca	catatgaaat	cgccccctg	tttgtgtctca	tggaagagga	ggtgctgagg	480
aaactgcggg	ccctggtggg	ctggagctct	ggggacggaa	tcttctgccc	tggtggctcc	540

PCTAU2016050927-seq1-000001-EN-20161013

atctccaaca	tgtatgctgt	aaatctggcc	cgctatcagc	gctacccgga	ttgcaagcag	600
aggggcctcc	gcacactgcc	gcccctggcc	ctattcacat	cgaaggagt	tcactactcc	660
atccagaagg	gagctgcgtt	tctgggactt	ggcaccgaca	gtgtccgagt	ggtcaaggct	720
gatgagagag	ggaaaatgg	ccccgaggat	ctggagaggc	agattggtat	ggccgaggct	780
gaggggtgctg	tgccgttcct	ggtcagtgcc	acctctggca	ccactgtgct	aggggccttt	840
gaccccctgg	aggcaattgc	tgatgtgtgc	cagcgatcatg	ggctatggct	gcatgtggat	900
gctgcctggg	gtgggagcgt	cctgctgtca	cagacacaca	ggcatctcct	ggatgggatc	960
cagaggggctg	actctgtggc	ctggaatccc	cacaagctcc	tcgcagcagg	cctgcaatgc	1020
tctgcacttc	ttctccagga	tacctgaac	ctgctcaagc	gctgccatgg	gtcccaggcc	1080
agctaccttt	tccagcagga	caagttctac	gatgtggctc	tggacacggg	agacaagggtg	1140
gtgcagtgtg	gccgccgtgt	ggactgtctg	aagctgtggc	tcatgtggaa	ggcacagggc	1200
gatcaagggc	tggagcggcg	catcgaccag	gcctttgtcc	ttgcccggta	cctggtggag	1260
gaaatgaaga	agcgggaagg	gtttgagcta	gtcatggagc	ctgagtttgt	caatgtgtgt	1320
ttctggttcg	tacccccag	cctgagagg	aagcaggaga	gtccagatta	ccacgaaagg	1380
ctgtcaaagg	tggccccctg	gctcaaggag	cgcatggtga	aggagggctc	catgatgatt	1440
ggctaccagc	cccacgggac	ccggggcaac	ttcttccgtg	tggttgtggc	caactctgca	1500
ctgacctgtg	ctgatatgga	cttctctctc	aacgagctgg	agcggctagg	ccaggacctg	1560
tga						1563

<210> 66
 <211> 2694
 <212> DNA
 <213> Homo sapiens

<400> 66	
atggtgctgg	cccaggggct gctctccatg gccctgctgg ccctgtgctg ggagcgcagc 60
ctggcagggg	cagaagaaac catcccgtg cagaccctgc gctgctacaa cgactacacc 120
agccacatca	cctgcagggtg ggcagacacc caggatgccc agcggctcgt caacgtgacc 180
ctcattcgcc	gggtgaatga ggacctctg gagccagtgt cctgtgacct cagtgatgac 240
atgccctggt	cagcctgccc ccatccccgc tgcgtgccca ggagatgtgt cattccctgc 300
cagagttttg	tcgtcactga cgttgactac ttctcattcc aaccagacag gcctctgggc 360
acccggctca	ccgtcactct gaccagcat gtccagcctc ctgagcccag ggacctgcag 420
atcagcaccg	accaggacca cttcctgctg acctggagt
agccactggt	tgtccccagg ggatctggag tttgaggtgg tctacaagcg gcttcaggac 540
tcttgggagg	acgcagccat cctcctctcc aacacctccc aggccaccct ggggccagag 600
cacctcatgc	ccagcagcac ctacgtggcc cgagtacgga cccgcctggc cccaggttct 660
cggctctcag	gacgtcccag caagtggagc ccagaggttt gctgggactc ccagccaggg 720
gatgaggccc	agccccagaa cctggagtgc ttctttgacg gggccgccgt gctcagctgc 780

tcctgggagg	tgaggaagga	ggtggccagc	tcggtctcct	ttggcctatt	ctacaagccc	840
agcccagatg	caggggagga	agagtgtctc	ccagtgtctga	gggaggggct	cggcagcctc	900
cacaccaggc	accactgcca	gattcccgtg	cccgaccccg	cgaccacagg	ccaatacatc	960
gtctctgttc	agccaaggag	ggcagagaaa	cacataaaga	gctcagtga	catccagatg	1020
gcccctccat	ccctcaacgt	gaccaaggat	ggagacagct	acagcctgcg	ctgggaaaca	1080
atgaaaatgc	gatacgaaca	catagaccac	acatttgaga	tccagtacag	gaaagacacg	1140
gccacgtgga	aggacagcaa	gaccgagacc	ctccagaacg	cccacagcat	ggccctgcca	1200
gccctggagc	cctccaccag	gtactggggc	aggggtgagg	tcaggacctc	ccgcaccggc	1260
tacaacggga	tctggagcga	gtggagttag	gcgcgctcct	gggacaccga	gtcggtgctg	1320
cctatgtggg	tgctggccct	catcgtgatc	ttcctcacca	tcgctgtgct	cctggccctc	1380
cgcttctgtg	gcatctacgg	gtacaggctg	cgcagaaagt	gggaggagaa	gatccccaac	1440
cccagcaaga	gccacctgtt	ccagaacggg	agcgcagagc	tttggccccc	aggcagcatg	1500
tcggccttca	ctagcgggag	tccccacac	cagggggcgt	ggggcagccg	cttccttgag	1560
ctggaggggg	tgttccctgt	aggattcggg	gacagcgagg	tgtcacctct	caccatagag	1620
gacccaagc	atgtctgtga	tccaccatct	gggcctgaca	cgactccagc	tgcctcagat	1680
ctaccacag	agcagcccc	cagccccag	ccaggcccg	ctgccgcctc	ccacacacct	1740
gagaaacagg	cttcagctt	tgacttcaat	gggccctacc	tggggccg	ccacagccgc	1800
tccctacctg	acatcctggg	ccagccggag	ccccacagg	aggggtgggag	ccagaagtcc	1860
ccacctccag	ggtccctgga	gtacctgtgt	ctgcctgctg	gggggcaggt	gcaactggtc	1920
cctctggccc	aggcgatggg	accaggacag	gccgtggaag	tggagagaag	gccgagccag	1980
ggggctgcag	ggagtccctc	cctggagtcc	gggggaggcc	ctgcccctcc	tgctcttggg	2040
ccaaggggtg	gaggacagga	ccaaaaggac	agccctgtgg	ctatacccat	gagctctggg	2100
gacactgagg	accctggagt	ggcctctggt	tatgtctcct	ctgcagacct	ggtattcacc	2160
ccaaactcag	gggcctcgtc	tgtctcccta	gttccctctc	tgggcctccc	ctcagaccag	2220
acccccagct	tatgtcctgg	gctggccagt	ggaccccctg	gagccccagg	ccctgtgaag	2280
tcagggtttg	agggtatgt	ggagctccct	ccaattgagg	gccggtcccc	caggtcacca	2340
aggaacaatc	ctgtcccccc	tgaggccaaa	agccctgtcc	tgaaccagg	ggaacgccc	2400
gcagatgtgt	ccccaacatc	cccacagccc	gagggcctcc	ttgtcctgca	gcaagtgggc	2460
gactattgct	tcctccccgg	cctggggccc	ggccctctct	cgctccggag	taaaccttct	2520
tccccgggac	ccggtcctga	gatcaagaac	ctagaccagg	cttttcaagt	caagaagccc	2580
ccaggccagg	ctgtgcccc	ggtgcccgtc	attcagctct	tcaaagccct	gaagcagcag	2640
gactacctgt	ctctgcccc	ttgggaggtc	aacaagcctg	gggaggtgtg	ttga	2694

<210> 67

<211> 1248

<212> DNA
 <213> Homo sapiens

<400> 67
 atggagctga gagtcgggaa caggtaccgg ctgggccgga agatcggcag cggctccttc 60
 ggagacatct atctcggtag ggacattgct gcaggagaag aggttgccat caagcttgaa 120
 tgtgtcaaaa ccaaacaccc tcagctccac attgagagca aaatctacaa gatgatgcag 180
 ggaggagtgg gcatccccac catcagatgg tgcggggcag aggggggacta caacgtcatg 240
 gtgatggagc tgctggggcc aagcctggag gacctcttca acttctgctc caggaaattc 300
 agcctcaaaa ccgtcctgct gcttgctgac caaatgatca gtcgcatcga atacattcat 360
 tcaaagaact tcatccaccg ggatgtgaag ccagacaact tcctcatggg cctggggaag 420
 aagggcaacc tgggtgtacat catcgacttc gggctggcca agaagtaccg ggatgcacgc 480
 acccaccagc acatccccta tcgtgagaac aagaacctca cggggacggc gcggtacgcc 540
 tccatcaaca cgcaccttgg aattgaacaa tcccgaagag atgacttgga gtctctgggc 600
 tacgtgctaa tgtacttcaa cctgggctct ctcccctggc aggggctgaa ggctgccacc 660
 aagagacaga aatacgaaag gattagcgag aagaaaatgt ccacccccat cgaagtgttg 720
 tgtaaaggct acccttccga atttgccaca tacctgaatt tctgccgttc cttgccgttt 780
 gacgacaagc ctgactactc gtacctgcgg cagcttttcc ggaatctgtt ccatcgccag 840
 ggcttctcct atgactacgt gttcgactgg aacatgctca aatttggtgc cagccggggc 900
 gccgatgacg ccgagcggga gcgcaggagc cgagaggagc ggctgagaca ctcgcggaac 960
 ccggctaccc gcggcctccc ttccacagcc tccggccgcc tgcgggggac gcaggaagtg 1020
 gctcccccca caccctcac ccctacctca cacacggcta acacctcccc ccggcccgtc 1080
 tccggcatgg agagagagcg gaaagtgagt atgcggctgc accgcggggc ccccgtaaac 1140
 atctcctcgt ccgacctcac aggccgacaa gatactctc gcatgtccac ctacagatt 1200
 cctggtcggg tggcttcag tggctctcag tctgtcgtgc accgatga 1248

<210> 68
 <211> 441
 <212> DNA
 <213> Homo sapiens

<400> 68
 atggccgggc ccctgcgcgc cccgtgctc ctgctggcca tcctggccgt ggccctggcc 60
 gtgagccccg cggccggctc cagtcccggc aagccgccgc gcctagtggg agggcccatg 120
 gacgccagcg tggaggagga ggggtgtgcg cgtgactgg actttgccgt cggcgagtac 180
 aacaaagcca gcaacgacat gtaccacagc cgcgcgctgc aggtggtgcg cggccgaag 240
 cagatcgtag ctgggggtgaa ctacttcttg gacgtggagc tggggccgaac cacgtgtacc 300
 aagaccagc ccaacttgga caactgcccc ttccatgacc agccacatct gaaaaggaaa 360
 gcattctgct ctttcagat ctacgtgtg ctttggcagg gcacaatgac cttgtcgaag 420
 tccacctgtc aggacgccta g 441

<210> 69
 <211> 1338
 <212> DNA
 <213> Homo sapiens

<400> 69
 atggcccttg tggataagca caaagtcaag agacagcgat tggacagaat ttgtgaaggt 60
 atccgcccc agatcatgaa cggccccctg ccccccgcc ccctggtggc gctgctggac 120
 ggccgcgact gcaactgtgga gatgcccac ctgaaggacc tggccactgt ggccttctgt 180
 gacgcgagc cgacgcagga aatccacgag aaggttctaa acgaagccgt gggcgccatg 240
 atgtaccaca ccatcacct caccagggag gacctggaga agttcaaggc cctgagagtg 300
 atcgtgcgga taggcagtgg ctatgacaac gtggacatca aggctgccgg cgagctcgga 360
 attgccgtgt gcaacatccc gtctgcagcc gtggaagaga cagcggactc taccatctgc 420
 cacatcctca acctgtacc gaggaacacg tggctgtacc aggcactgcg ggaaggcacg 480
 cgggttcaga gcgtggagca gatccgcgag gtggcctcgg gagcggccc catccgtggg 540
 gagacgctgg gcctcattgg ctttggtcgc acggggcagg cggttgcagt tcgagccaag 600
 gcctttggat tcagcgtcat attttatgac ccctacttgc aggatgggat cgagcgggcc 660
 ctgggcgtgc agaggggtcta caccctgcag gatttgcgtgt atcagagcga ctgcgtctcc 720
 ttgcaactgca atctcaacga acataaccac cacctcatca atgactttac cataaagcag 780
 atgaggcagg gagcattcct tgtgaacgca gcccggtggc gcctggtgga cgagaaagcc 840
 ttagcacaag ccctcaagga gggcaggata cgaggggcag ccctcgacgt gcatgagtca 900
 gagcccttca gctttgtcga ggggtccgtt aaagatgccc cgaatctcat ctgcactcct 960
 cacactgcct ggtacagtga gcaggcgtca ctggagatga gggaggcagc tgccaccgag 1020
 atccgcccag ccatcacagg tcgcatcca gaaagcttaa gaaattgtgt gaacaaggaa 1080
 ttctttgtca catcagcgcc ttggtcagta atagaccagc aagcaattca tctgagctc 1140
 aatggtgcca catacagata tccgccaggc atcgtgggtg tggctccagg aggacttcct 1200
 gcagccatgg aagggatcat ccctggaggc atcccagtga ctcaaacct cccgacagtg 1260
 gcacatcctt cccaagcgcc ctctcccaac cagcccacaa aacacgggga caatcgagag 1320
 caccccaacg agcaatag 1338

<210> 70
 <211> 816
 <212> DNA
 <213> Homo sapiens

<400> 70
 atggaacacg gctccatcat caccaggcg cggagggaag acgccctggt gtcaccaag 60
 caaggcctgg tctccaagtc ctctcctaag aagcctcgtg gacgtaacat cttcaaggcc 120
 cttttctgct gttttcgcgc ccagcatgtt ggccagtcaa gttcctccac tgagctcgct 180
 gcgtataagg aggaagcaaa caccattgct aagtcggatc tgctccagtg tctccagtac 240

cagttctacc	agatcccagg	gacctgcctg	ctcccagagg	tgacagagga	agatcaagga	300
aggatctgtg	tggtcattga	cctcgatgaa	acccttgtgc	atagctcctt	taagccaatc	360
aacaatgctg	acttcatagt	gcctatagag	attgagggga	ccactcacca	ggtgtatgtg	420
ctcaagaggc	cttatgtgga	tgagttcctg	agacgcatgg	gggaactctt	tgaatgtgtt	480
ctcttcactg	ccagcctggc	caagtatgcc	gaccctgtga	cagacctgct	ggaccggtgt	540
ggggtgttcc	gggcccgcct	attccgtgag	tcttgcgtgt	tccaccaggg	ctgctacgtc	600
aaggacctca	gccgcctggg	gagggacctg	agaaagaccc	tcctcctgga	caactcgcct	660
gcttcttaca	tattccaccc	cgagaatgca	gtgcctgtgc	agtcctgggt	tgatgacatg	720
gcagacactg	agttgctgaa	cctgatccca	atctttgagg	agctgagcgg	agcagaggac	780
gtctacacca	gccttgggca	gctgcggggc	ccttag			816

<210> 71
 <211> 2331
 <212> DNA
 <213> Homo sapiens

<400> 71						
atgtcgtcaa	cccggagcca	gaacccccac	ggcctgaagc	agattggcct	ggaccagatc	60
tgggacgacc	tcagagccgg	catccagcag	gtgtacacac	ggcagagcat	ggccaagtcc	120
agatatatgg	agctctacac	tcattgtttat	aactactgta	ctagtgttca	ccagtcaaac	180
caagcacgag	gagctggagt	tcctccttct	aagtcgaaaa	aggggcagac	acctggagga	240
gctcagtttg	ttggcctgga	attatataaa	cgacttaagg	aatttttgaa	gaattacttg	300
acaaatcttc	ttaaggatgg	agaagatttg	atggatgaga	gtgtactgaa	attctacact	360
caacaatggg	aagattatcg	atcttcaagc	aaagtgtcta	atggaatttg	tgcctacctc	420
aatagacatt	gggttcgccg	tgaatgtgac	gaaggacgaa	aaggaatata	tgaaatctat	480
tcgcttgcat	tggtgacttg	gagagactgt	ctgttcaggc	cactgaataa	acaggtaaca	540
aatgctgttt	taaagctgat	tgaaaaggaa	aggaatggtg	aaaccatcaa	tacaagattg	600
attagtggag	ttgtacagtc	ttacgtggaa	ttggggctga	atgaagatga	tgcatttgca	660
aagggcccta	cgtaaacagt	gtataaagaa	tcctttgaat	ctcaattttt	ggctgacaca	720
gagagatttt	ataccagaga	gagtactgaa	ttcttgcagc	agaaccaggt	tactgaatat	780
atgaaaaagg	cagaggctcg	tctgcttgag	gaacaacgaa	gagttcaggt	ttaccttcac	840
gaaagcacac	aagatgaatt	agcaaggaaa	tgtgaacaag	tcctcattga	aaaacacttg	900
gaaattttcc	acacagaatt	tcagaattta	ttggatgctg	acaaaaatga	agatttggga	960
cgcatgtata	atcttgtatc	tagaatccag	gatggcctag	gagaattgaa	aaaactgttg	1020
gagacacaca	ttcataatca	gggtcttgca	gccattgaaa	agtgtggaga	agctgcttta	1080
aatgacccca	aaatgtatgt	acagacagtg	cttgatgttc	ataaaaaata	caatgccctg	1140
gtaatgtctg	cattcaacaa	tgacgctggc	tttgtggctg	ctcttgataa	ggcttgtggt	1200

PCTAU2016050927-seq1-000001-EN-20161013

cgcttcataa acaacaacgc gggtaccaag atggcccaat catccagtaa atcccctgag	1260
ttgctggctc gatactgtga ctccttggtg aagaaaagtt ccaagaaccc agaggaggca	1320
gaactagaag acacactcaa tcaagtgatg gttgtcttca agtacataga agacaaagac	1380
gtatttcaga agttctatgc gaagatgctc gccaaagggc tcgtccacca gaacagtgca	1440
agtgacgatg ccgaagccag catgatctcc aagttaaagc aagcttgccg gttcgagtac	1500
acctctaaac ttcagcgcat gtttcaagac attggcgtga gcaaagatct gaacgagcaa	1560
ttcaaaaagc acttgacaaa ctcagaaccc ctagacttgg atttcagcat tcaagtgctg	1620
agctccgggt cctggccctt ccagcagtct tgtacatttg ccttgccgtc agagttggaa	1680
cgtagtattc agcgattcac agctttctac gccagccgcc acagtggccg aaaattgacg	1740
tggttatata agttgtctaa aggagaattg gtaactaact gcttcaaaaa cagatatact	1800
ttgcaggcgt cgacattcca gatggctatc ctgcttcagt acaacacgga agatgcctac	1860
actgtgcagc agctgaccga cagcactcaa attaaaatgg acattttggc gcaagtttta	1920
cagattttat taaagtcgaa gctattggtc ttggaagatg aaaatgcaaa tgttgatgag	1980
gtggaattga agccagatac ctttaataaaa ttatatcttg gttataaaaa taagaaatta	2040
agggttaaca tcaatgtgcc aatgaaaacc gaacagaagc aggaacaaga aaccacacac	2100
aaaaacatcg aggaagaccg caaactactg attcaggcgg ccacgtgag aatcatgaag	2160
atgaggaagg ttctgaaaca ccagcagtta cttggcgagg tcctcactca gctgtcctcc	2220
aggttcaaac ctcgagtccc tgtgatcaag aaatgcattg acattctaata tgagaaagaa	2280
tatttgagc gagtgatgg tgaaaaggac acctacagtt acttggctta a	2331

<210> 72
 <211> 2871
 <212> DNA
 <213> Homo sapiens

<400> 72	
atgagttcag gcttatggag ccaagaaaaa gtcacttcac cctactggga agagcggatt	60
ttttacttgc ttcttcaaga atgcagcgtt acagacaaac aaacacaaaa gtcctttaa	120
gtaccgaagg gaagtatagg acagtatatt caagatcgtt ctgtggggca ttcaaggatt	180
ccttctgcaa aaggcaagaa aaatcagatt ggattaaaaa ttctagagca acctcatgca	240
gttctctttg ttgatgaaaa ggatgttgta gagataaatg aaaagttcac agagttactt	300
ttggcaatta ccaattgtga ggagagggtc agcctgttta aaaacagaaa cagactaagt	360
aaaggcctcc aaatagacgt gggctgtcct gtgaaagtac agctgagatc tggggaagaa	420
aaatttcctg gagttgtacg cttcagagga cccctgttag cagagaggac agtctccgga	480
atattctttg gagttgaatt gctggaagaa ggtcgtggtc aaggtttcac tgacggggtg	540
taccaaggga aacagctttt tcagtgtgat gaagattgtg gcgtgtttgt tgcattggac	600
aagctagaac tcatagaaga tgatgacact gcattggaaa gtgattacgc aggtcctggg	660
gacacaatgc aggtcgaact tcctcctttg gaaataaact ccagagtttc tttgaagggt	720

ggagaaacaa	tagaatctgg	aacagttata	ttctgtgatg	ttttgccagg	aaaagaaagc	780
ttaggatatt	ttgttgggtg	ggacatggat	aaccctattg	gcaactggga	tggaagattt	840
gatggagtgc	agctttgtag	ttttgcgtgt	gttgaaagta	caattctatt	gcacatcaat	900
gatatcatcc	cagctttatc	agagagtgtg	acgcaggaaa	ggaggcctcc	caaacttgcc	960
tttatgtcaa	gaggtgttgg	ggacaaaggt	tcatccagtc	ataataaacc	aaaggctaca	1020
ggatctacct	cagaccctgg	aaatagaaac	agatctgaat	tattttatac	cttaaattggg	1080
tcttctgttg	actcacaacc	acaatccaaa	tcaaaaaata	catggtacat	tgatgaagtt	1140
gcagaagacc	ctgcaaaatc	tcttacagag	atatctacag	actttgaccg	ttcttcacca	1200
ccactccagc	ctcctcctgt	gaactcactg	accaccgaga	acagattcca	ctctttacca	1260
ttcagtctca	ccaagatgcc	caataccaat	ggaagtattg	gccacagtcc	actttctctg	1320
tcagcccagt	ctgtaatgga	agagctaaac	actgcacccg	tccaagagag	tccacccttg	1380
gccatgcctc	ctgggaactc	acatggtcta	gaagtgggct	cattggctga	agttaaggag	1440
aaccctcctt	tctatggggg	aatccgttgg	atcggtcagc	caccaggact	gaatgaagtg	1500
ctcgtctggc	tggaactgga	agatgagtgt	gcaggctgta	cggatggaac	cttcagaggc	1560
actcggtatt	tcacctgtgc	cctgaagaag	gcgctgtttg	tgaaactgaa	gagctgcagg	1620
cctgactcta	ggtttgcata	attgcagccg	gtttccaatc	agattgagcg	ctgtaactct	1680
ttagcatttg	gaggctactt	aagtgaagta	gtagaagaaa	atactccacc	aaaaatggaa	1740
aaagaaggct	tggagataat	gattgggaag	aagaaaggca	tccaggggtca	ttacaattct	1800
tgttacttag	actcaacctt	attctgctta	tttgctttta	gttctgttct	ggacactgtg	1860
ttacttagac	ccaaagaaaa	gaacgatgta	gaatattata	gtgaaacca	agagctactg	1920
aggacagaaa	ttgttaatcc	tctgagaata	tatggatatg	tgtgtgccac	aaaaattatg	1980
aaactgagga	aaatacttga	aaaggtggag	gctgcatcag	gatttacctc	tgaagaaaaa	2040
gatcctgagg	aattcttgaa	tattctgttt	catcatattt	taagggtaga	acctttgcta	2100
aaaataagat	cagcagggtca	aaaggtacaa	gattgttact	tctatcaa	ttttatggaa	2160
aaaaatgaga	aagttggcgt	tcccacaatt	cagcagttgt	tagaatggtc	ttttatcaac	2220
agtaacctga	aatttgacga	ggcaccatca	tgtctgatta	ttcagatgcc	tcgatttgga	2280
aaagacttta	aactatttaa	aaaaattttt	ccttctctgg	aattaaatat	aacagattta	2340
cttgaagaca	ctcccagaca	gtgccggata	tgtggagggc	ttgcaatgta	tgagtgtaga	2400
gaatgctacg	acgatccgga	catctcagct	ggaaaaatca	agcagttttg	taaaacctgc	2460
aacactcaag	tccaccttca	tccgaagagg	ctgaatcata	aatataaccc	agtgtcactt	2520
cccaaagact	tacccgactg	ggactggaga	cacggctgca	tcccttgcca	gaatatggag	2580
ttatttgctg	ttctctgcat	agaaacaagc	cactatgttg	cttttgtgaa	gtatgggaag	2640
gacgattctg	cctggctctt	ctttgacagc	atggccgata	gggatggtgg	tcagaatggc	2700
ttcaacattc	ctcaagtcac	cccatgccca	gaagtaggag	agtacttgaa	gatgtctctg	2760

gaagacctgc attccttgga ctccaggaga atccaaggct gtgcacgaag actgctttgt	2820
gatgcatata tgtgcatgta ccagagtcca acaatgagtt tgtacaaata a	2871

<210> 73
 <211> 1185
 <212> DNA
 <213> Homo sapiens

<400> 73 atggacctgt gccacccaga gcccgcggag ctgagcagcg gggagacgga agagttacag	60
aggatcaagt ggcaccgaaa gcagctcctg gaggacatcc agaagctgaa ggatgagatt	120
gcagatgtgt ttgccaaat cgactgcttc gagagtgcgg aggagagccg gatggcccag	180
aaggagaagg agctgtgtat tgggcgcaag aagttcaaca tggaccccgcc caaggggtatc	240
cagtatttca ttgagcacia gctgctgacc cctgacgtcc aggacattgc acggttcctg	300
tataaaggcg agggcctcaa caagacagcc attggtacct acctggggga gagggatccc	360
atcaacctgc aggtcctcca ggccttcgtg gactgccacg agttcgccaa cctcaacctc	420
gtccaggccc tcaggcagtt cctgtggagc ttccggctgc cgggcgaggc ccagaagata	480
gaccggatga tggaggcctt tgccactcga tactgcctct gcaaccaggc cgtcttccag	540
tccacagaca cctgctacgt gttgtccttc tccatcatca tgctcaacac cagcctccac	600
aatcccaacg tccgggacag gccgcctttt gagcgctttg tgtccatgaa ccgcggcatc	660
aacaatggta gcgacctgcc cgaggaccag ctgcggaacc tcttcgacag catcaagagt	720
gagccattct ccatccctga ggacgacggc aatgacctca ctacacctt cttcaatcca	780
gaccgggagg gttggctgct caagctaggg ggccgcgtga agacgtggaa acggcgctgg	840
ttcatcctga ccgacaactg cctctactac ttcgagttca ccactgacaa ggagccacgg	900
ggaattatac ctcttgagaa cctctcggtg cagaaggctg atgaccccaa gaagccattc	960
tgcttgagc tctacaacct tagctgccga ggccagaaaa tcaaggcctg caagaccgat	1020
ggcgacggca ggggtggtga gggcaagcac gaatcgtacc gcatctcagc caccagtgcc	1080
gaggaacgtg accagtggat cgagtccatc cgagccagca tcaccctgtgt ccccttctac	1140
gacctggtct ctactcgaa gaagaagatt gccagcaagc agtga	1185

<210> 74
 <211> 1263
 <212> DNA
 <213> Homo sapiens

<400> 74 atggagacca aacgggtgga gattcccggc agcgtcctgg acgatctctg cagccgattt	60
attttgcata ttcccagcga ggaaagagac aatgcaatcc gagtgtgttt tcagattgaa	120
cttgcccatt ggttttactt ggatttctac atgcagaaca caccaggatt acctcagtgt	180
gggataagag actttgctaa agctgtcttc agtcattgtc cgtttttgct gcctcaaggt	240
gaagatgtgg aaaaagtttt ggatgaatgg aaggaatata aaatgggagt accaacatat	300

ggtgcaatta ttcttgatga gacacttgaa aatgtactac tagttcaggg gtacctagca	360
aatcagggt ggggatttcc aaaaggaaaa gtaaataaag aagaagctcc tcatgattgt	420
gctgctagag aggtctttga agaaactggg tttgatataa aagactatat ttgtaaggat	480
gattacattg aacttcgaat caatgaccag cttgctcggt tgtacatcat tccaggaatt	540
ccaaaagaca caaaatttaa cccaaaaact agaagagaaa ttcggaacat tgagtgggtc	600
tctattgaga aattgccttg tcatagaaat gatatgaccc ccaaattcaa acttggtttg	660
gcacctaaca aattttttat ggccattccc tttatcagac cattaaggga ctggctttct	720
cgaagatttg gcgattcctc agacagtgaac aatggatttt cctcaactgg tagcacgccg	780
gctaaacca ctgtggaaaa attgagtcga accaaattcc gccacagtca gcagttattt	840
cctgacgggt ctcttggtga ccagtgggta aagcacaggc aaccactgca gcaaaagcca	900
tataataatc attctgaaat gtctgacctt ttaaaaggaa agaataaaag tatgagggga	960
aatggcagaa aacagtatca agattcacct aatcaaaaga aaagaacaaa tgggcttcag	1020
ccagcaaagc agcagaattc tttgatgaag tgtgaaaaga aacttcattc acggaaactt	1080
caggataatt ttgaaacaga tgctgtatat gacttgacct gctccagtga agaccagttg	1140
ctagaacatg ctgagggaca gcccggtggc tgtaatggac attgcaagtt ccccttttca	1200
tccagagcct ttttgagttt caagtttgac cataatgcta taatgaaaat cttggacctt	1260
tga	1263

<210> 75
 <211> 5139
 <212> DNA
 <213> Homo sapiens

<400> 75	
atggaaaagaa atgttcttac aacattttca caggaaatgt cccagttaat tttgaatgaa	60
atgccaaaag ctgaatatcc cagttttattc aatgattttg ttgaatctga attttttttg	120
attgatgggg attcattact tatcacatgt atctgtgaga tatcatttaa gcctgggcag	180
aacctccatt tcttctatct ggttgaacgc tatcttgtgg atcttattag caaaggagga	240
caattcacca tagttttctt caaggatgcc gagtatgcgt atttcaactt ccctgaactt	300
ctttctttga gaactgcttt aattcttcat cttcagaaga ataccaccat tgatgttcga	360
acaacatttt cgagatgctt atcaaaagag tggggaagtt tcttggaaga gagttacca	420
tatttcctga tagttgcaga cgaaggcctg aacgatctac aaacacagct tttcaacttt	480
ttaatcattc attcttgggc aaggaaggtc aacgttgtac tttcctcagg gcaagaatct	540
gatgttcttt gcctttatgc ataccttctt ccaagcatgt acagacacca gattttttcc	600
tggaagaata agcagaacat taaagatgct tatacaaccc tgcttaacca gttggaaaga	660
tttaagcttt cagcattagc acctcttttt ggaagtttaa aatggaataa tattacggaa	720
gaggcacaca agactgtatc tctgcttaca caagtctggc cagaaggatc tgacattcgg	780

cgtgtctttt gtgttacttc atgctcatta tctttgagaa tgtaccatcg ctttttagga	840
aacagagagc cctcctctgg tcaggaaact gagatccaac aggtgaacag taattgctta	900
accctgcagg agatggaaga tttgtgtaaa ctgcattgtc tctactgtgg ttttctactc	960
catctgcctc ttttctcaaag agcttgtgct agagtcatca cttcccattg ggctgaggac	1020
atgaagcctt tattacaaat gaaaaagtgg tgtgaatatt tcatcttaag aaatatacat	1080
acttttgaat ttggaatct gaatttaatt cacctttctg acttaaatga tgagcttttg	1140
ttgaagaata ttgcttttta ctatgaaaat gaaaatgtaa aaggcctaca tttgaatttg	1200
ggagatacca ttatgaaaga ttatgaatat ctctggaata ccgtatcaaa gttggtcaga	1260
gactttgagg ttggacagcc atttcctctg agaacaacaa aagtttgttt tcttgaaaag	1320
aaaccatcac caatcaaaga cagctccaat gaaatggtgc ccaatttggg ttttattcca	1380
acgtcatctt ttgtggttga taaatttgct ggagatatatt tgaaagattt gccttttcta	1440
aagagtgatg atcctattgt tacttctactg gttaaacaaa aggaatttga tgaacttggtg	1500
cactggcatt ctcataaacc cctgagtgat gattatgaca ggtccagggtg tcagtttgat	1560
gaaaaatcta gagaccctcg tgttcttaga tctgtgcaaa agtatcatgt tttccaacgg	1620
ttttatggga attcattaga aacagtctct tcgaaaatca tcgtgactca aactattaag	1680
tcaaagaagg attttagtgg gcccaagagc aaaaaggcac acgagaccaa ggctgaaata	1740
attgctagag agaataagaa aagggttattt gccagggaag aacaaaagga agagcaaaag	1800
tggaatgctt tgtcattttc tattgaagag caattgaaag aaaatttaca ctctggaata	1860
aagagcctgg aagatttttt gaaatcctgt aaaagtagct gtgtgaaact tcaggttgaa	1920
atgggtgggg taactgcttg cttgaaagcc tggaaagaac attgccgaag tgaagaaggt	1980
aaaaccacga aagatttaag tatagctgtt cagggtgatga aaaggatcca ctccttgatg	2040
gaaaaatact cagaactttt acaagaagat gatcggcaac tcatagccag atgccttaag	2100
tatttaggat ttgatgagtt ggcaagttct ttacatccag cccaggatgc agaaaatgat	2160
gtaaaagtga agaaaaggaa taaatattca gttggcattg ggccagctcg gttccaactg	2220
caatacatgg gccattattt gatacgagat gagagaaaag acccagatcc cagggtccag	2280
gattttattc ccgacacatg gcagcgagag ctccttgatg ttgtggataa gaatgagtca	2340
gcagtgattg ttgccccaac gtcctcaggc aaaacctatg cctcctacta ctgtatggag	2400
aaagtgctga aggagagcga cgacgggggtg gtcgtgtacg ttgcaccac aaaggccctt	2460
gttaatcaag tggcagcaac tgttcagaat cgttttacga aaaatctgcc aagtggtgaa	2520
gttctctgtg gtgttttcac cagggagtat cgtcatgatg ccttaaactg tcaggctatt	2580
attacagtgc ctgcctgctt tgaaattctg ctgcttgctc ctcatcgcca aaactgggtg	2640
aaaaagatca gatatgttat atttgatgag gttcattgtc ttggtggaga aattggagca	2700
gaaatctggg aacatctcct tgtcatgatc cgatgtccct ttttggctct ttcagctacc	2760
ataagtaatc ctgaacatct caccgagtgg ctacaatcgg taaaatggta ctggaaacaa	2820

gaagacaaaa	taattgaaaa	taataccgct	tctaaaagac	atgtgggtcg	tcaggccggc	2880
tttcccaaag	actacttgca	agtaaaacaa	tcgtataaag	ttagacttgt	gctctatgga	2940
gagaggtata	atgatctaga	gaagcatgta	tgttcaataa	aacatggtga	cattcatttt	3000
gatcattttc	acccatgtgc	tgactaaca	acagatcata	ttgaaaggta	tggattccct	3060
cctgatctta	ccctttcacc	tcgagaaagc	atccagctgt	atgatgccat	gtttcaaatt	3120
tggaaaagtt	ggcctcgggc	ccaggaactg	tgcccagaaa	acttcattca	ttttaacaat	3180
aaattagtca	ttaaaaagat	ggatgctagg	aaatatgaag	agagtctaaa	ggcagaatta	3240
acaagttgga	ttaaaaatgg	caacgtagag	caggccagaa	tggacttca	gaatcttagt	3300
cctgaagcag	atttgagtcc	agaaaacatg	atcaccatgt	ttccacttct	agttgaaaaa	3360
ctaaggaaaa	tggagaagtt	acctgcacta	ttttttttat	tcaagttagg	agctgtagaa	3420
aacgcagctg	aaagtgtgag	cactttccta	aagaaaaagc	aggagacaaa	aaggcctccc	3480
aaagctgata	aagaagccca	tgtcatggct	aacaaacttc	gaaaagttaa	aaaatccata	3540
gagaaacaaa	agatcataga	tgaaaagagc	cagaaaaaaa	ccagaaatgt	ggatcaaagc	3600
ctaatacatg	aagctgaaca	tgataatcta	gtgaagtgtc	tagagaagaa	cctggaaatc	3660
ccacaggact	gcacatatgc	tgatcaaaaa	gcagtggaca	ctgagacttt	gcagaaggta	3720
tttggtcgag	taaaatttga	aagaaaaggt	gaagaattga	aagccttggc	agaaaggggt	3780
attggatatc	atcacagtgc	tatgagtttc	aaagaaaaac	aattagttga	aatcctcttt	3840
agaaaaggat	atcttaggg	ggtgacagct	actggaacac	ttgctttagg	tgtcaacatg	3900
ccttgtaa	atcttaggg	ggtgacagct	actggaacac	ttgctttagg	tgtcaacatg	3960
cagatgtctg	gccgtgctgg	aagaagaggt	caagacctga	tgggagatgt	atatttcttt	4020
gatattccat	tccccaaaat	aggaaaactc	ataaaatcca	atgttcctga	gctgagagga	4080
cacttccctc	tcagcataac	cctggctctg	cgactcatgc	tgctggcttc	caaggagat	4140
gacccagagg	atgccaaagg	aaaggtgcta	tcagtgtctaa	agcattcatt	gctgtccttc	4200
aagcaacca	gagtcatgga	catgttaaaa	ctttacttcc	tgttttcttt	gcagttcctg	4260
gtgaaagagg	gctatttaga	tcaagaaggt	aatcctatgg	ggtttgctgg	acttgatca	4320
catttgcatt	atcatgaacc	ttctaattct	gtttttgtca	gttttcttgt	aaatggactc	4380
ttccatgatc	tctgtcagcc	aaccaggaaa	ggctcaaaac	atttttctca	agacgttatg	4440
gaaaagctag	tattagtatt	ggcacatctc	tttgaagaa	gatattttcc	accaaagttc	4500
caagatgcac	acttcgagtt	ttatcaatca	aaggtgttcc	ttgatgatct	ccctgaggat	4560
tttagtgatg	ctttagatga	atataacatg	aaaattatgg	aggactttac	cactttccta	4620
cgaattgttt	ccaaactggc	tgatatgaat	caggaatatc	aactcccatt	gtcaaaaatc	4680
aaattcacag	gtaaagaatg	tgaagactct	caactcgtat	ctcatttgat	gagctgcaag	4740
gaaggaagag	tagcaatttc	accatttggt	tgtctgtctg	ggaactttga	tgatgatttg	4800
cttcgactag	aaactccaaa	ccatgttact	ctaggcacia	tcggtgtcaa	tcgctctcag	4860

gctccagtgc	tgttgtcaca	gaaatttgat	aaccgaggaa	ggaaaatgtc	gcttaatgcc	4920
tatgcaactgg	atttctacaa	acatgggttcc	ttgataggat	tagtccagga	taacaggatg	4980
aatgaaggag	atgcttatta	tttgttgaag	gattttgcac	tcaccattaa	atctatcagt	5040
gtttccttgc	gtgagctatg	tgaaaatgaa	gacgacaacg	ttgtcttagc	ctttgaacaa	5100
ctgagtacaa	ctttttggga	aaagttaaac	aaagtctaa			5139

<210> 76
 <211> 1653
 <212> DNA
 <213> Homo sapiens

<400> 76	
atggtgcca	aggcagacag
cggcgccttc	ctgctgctct
tcctgctcgt	gctcactgtc
	60
accgagccgc	tgcgccaga
gctgcggtgc	aaccctgggc
agtttgctg	tcgcagcggc
	120
accatccagt	gcacccccct
cccctggcag	tgtgacggct
gggcgacttg	cgaggatgag
	180
agcgacgaag	ccaactgtcc
agaagtgacc	ggggaggtgc
gtcctcatca	tgggaaggag
	240
gctgtggatc	cgcggcaggg
gcgggccaga	ggaggcgacc
cttcgcactt	ccacgcggtg
	300
aacgtggcgc	agcccgttcg
cttcagcagt	ttcctagggg
agtgcccgac	aggggtggcac
	360
cactacgaag	gcacggccag
ctgctaccgg	gtctacctga
gcggggagaa	ctactgggat
	420
gccgcgcaga	cctgccagcg
cctgaatggc	tctctcgcca
ccttctccac	tgaccaggag
	480
ctgcgctttg	tcctggccca
ggaatgggac	cagcccgagc
ggagctttgg	ttggaaggac
	540
cagcgcaagt	tgtgggttgg
ctatcagtat	gttatcactg
gccggaaccg	ctccttggaa
	600
ggtcgcctggg	aggtggcatt
caaaggctct	tcagaggtgt
tcctgcccc	agaccccatc
	660
tttgctcgg	ccatgtctga
gaacgacaac	gtgttctgtg
cccagcttca	gtgcttccat
	720
ttccccacc	tgcgccacca
cgacctccac	agctggcacg
ccgagagctg	ctacgagaag
	780
tcttcatttc	tgtgtaaaag
aagtcaaaca	tgtgttgaca
tcaaggacaa	cgtggtggat
	840
gaagggttct	acttcacccc
taagggggac	gacccatgcc
tgagctgcac	ctgccatgga
	900
ggggagcctg	agatgtgtgt
ggctgctctc	tgtgagaggc
cccagggtg	ccaacagtac
	960
cgcaaggacc	ccaaagagtg
ctgcaagttc	atgtgtcttg
accagatgg	caacagtctg
	1020
tttgactcca	tggccagcgg
gatgcgcctg	gtcgtcagct
gcattctctc	cttctctatc
	1080
ctgtcactgc	tgctcttcat
ggtccaccgg	ctgcgccagc
ggcgccggga	gcgcactcag
	1140
tccctgattg	gagcaaaact
gcaccacttc	aacctcggcc
gcaggatccc	tggctttgat
	1200
tacggcccag	acgggttttg
cacgggcctc	acgccgctgc
atctttctga	cgacggagag
	1260
ggtgggactt	tccatttcca
cgaccctcca	cctccctaca
cggcatacaa	gtacccggac
	1320
atcgccagc	ccgacgaccc
tccgccgcc	tacgaggcct
ccatccaccc	ggacagtgtg
	1380
ttctatgacc	ctgcagacga
tgatgctttt	gagcctgtgg
aggctcagcct	gccagcccct
	1440
ggggatggtg	ggagtgaagg
tgattactc	cggcgccctg
agcagcctct	gcccactgcg
	1500
ggggcctctc	tggcagacct
ggaagactct	gccgacagca
gcagcgccct	gctcgtgccc
	1560

cctgaccctg	cccagagcgg	gagcacccca	gctgcagagg	cactgccagg	gggtggccgc	1620
cacagccgca	gctccctcaa	tactgtggtg	tag			1653

<210> 77
 <211> 2208
 <212> DNA
 <213> Homo sapiens

<400> 77						
atggccaagg	agaggggcct	aataagcccc	agtgattttg	cccagctgca	aaaatacatg	60
gaataactcca	ccaaaaaggt	cagtgatgtc	ctaaagctct	tcgaggatgg	cgagatggct	120
aaatatgtcc	aaggagatgc	cattgggtac	gagggattcc	agcaattcct	gaaaatctat	180
ctcgaagtgg	ataatgttcc	cagacaccta	agcctggcac	tgtttcaatc	ctttgagact	240
ggtcactgct	taaatgagac	aaatgtgaca	aaagatgtgg	tgtgtctcaa	tgatgtttcc	300
tgctactttt	cccttctgga	gggtggtcgg	ccagaagaca	agttagaatt	caccttcaag	360
ctgtacgaca	cggacagaaa	tgggatcctg	gacagctcag	aagtggacaa	aattatccta	420
cagatgatgc	gagtggctga	atacctggat	tgggatgtgt	ctgagctgag	gccgattctt	480
caggagatga	tgaaagagat	tgactatgat	ggcagtggct	ctgtctctca	agctgagtgg	540
gtccgggctg	gggccaccac	cgtgccactg	ctagtgtctg	tgggtctgga	gatgactctg	600
aaggacgacg	gacagcacat	gtggaggccc	aagaggttcc	ccagaccagt	ctactgcaat	660
ctgtgcgagt	caagcattgg	tcttggcaaa	cagggactga	gctgtaacct	ctgtaagtac	720
actgttcacg	accagtgtgc	catgaaagcc	ctgccttgtg	aagtcagcac	ctatgccaa	780
tctcggaagg	acattgggtg	ccaatcacat	gtgtgggtgc	gaggaggctg	tgagtccggg	840
cgctgcgacc	gctgtcagaa	aaagatccgg	atctaccaca	gtctgaccgg	gctgcattgt	900
gtatggtgcc	acctagagat	ccacgatgac	tgcttgcag	cggtgggcca	tgagtgtgac	960
tgtgggctgc	tccgggatca	catcctgcct	ccatcttcca	tctatcccag	tgtcctggcc	1020
tctggaccgg	atcgtaaaaa	tagcaaaaca	agccagaaga	ccatggatga	tttaaatttg	1080
agcacctctg	aggctctgcg	gattgaccct	gttcctaaca	cccaccact	tctcgtcttt	1140
gtcaatccta	agagtggcgg	gaagcagggg	caaaggggtg	tctggaagtt	ccagtatata	1200
ttaaaccctc	gacaggtggt	caacctccta	aaggatggtc	ctgagatagg	gctccgatta	1260
ttcaaggatg	ttcctgatag	ccggattttg	gtgtgtggtg	gagacggcac	agtaggctgg	1320
attctagaga	ccattgacaa	agctaacttg	ccagttttgc	ctcctgttgc	tgtgttgccc	1380
ctgggtactg	gaaatgatct	ggctcgatgc	ctaagatggg	gaggagggtta	tgaaggacag	1440
aatctggcaa	agatcctcaa	ggatttagag	atgagtaaag	tggtacatat	ggatcgatgg	1500
tctgtggagg	tgatacctca	acaaactgaa	gaaaaaagtg	accagtcctc	ctttcaaatc	1560
atcaataact	acttctctat	tggcgtggat	gcctctattg	ctcatcgatt	ccacatcatg	1620
cgagagaaaat	atccggagaa	gttcaacagc	agaatgaaga	acaagctatg	gtacttcgaa	1680

PCTAU2016050927-seql-000001-EN-20161013

tttgccacat ctgaatccat cttctcaaca tgcaaaaagc tggaggagtc tttgacagtt	1740
gagatctgtg ggaaaccgct ggatctgagc aacctgtccc tagaaggcat cgcagtgcta	1800
aacatcccta gcatgcatgg tggctccaac ctctggggtg ataccaggag accccatggg	1860
gatatctatg ggatcaacca ggccttaggt gctacagcta aagtcatcac cgaccctgat	1920
atcctgaaaa cctgtgtacc agacctaatg gacaagagac tgggaagtgg tgggctggag	1980
ggtgcaattg agatgggcca aatctatacc aagctcaaga atgctggacg tcggctggcc	2040
aagtgtcttg agatcacctt ccacaccaca aaaacccttc ccatgcaa at tgacggagaa	2100
ccctggatgc agacgccctg tacaatcaag atcacccaca agaaccagat gcccatgctc	2160
atgggcccac cccccgctc caccaatttc tttggcttct tgagctaa	2208

<210> 78
 <211> 2037
 <212> DNA
 <213> Homo sapiens

<400> 78	
atggagcttc ggtcctacca atgggaggtg atcatgcctg ccctggaggg caagaatata	60
atcatctggc tgcccacggg tgccgggaag acccgggagg ctgcttatgt ggccaagcgg	120
cacctagaga ctgtggatgg agccaaggtg gttgtattgg tcaacagggg gcacctggtg	180
accagcatg gtgaagagtt caggcgcctg ctggatggac gctggaccgt gacaaccctg	240
agtggggaca tgggaccacg tgctggcttt ggccacctg cccggtgcca tgacctgctc	300
atctgcacag cagagcttct gcagatggca ctgaccagcc ccgaggagga ggagcacgtg	360
gagctcactg tcttctccct gatcgtggtg gatgagtgcc accacacgca caaggacacc	420
gtctacaacg tcatcatgag ccagtagcta gaacttaaac tccagagggc acagccgcta	480
ccccaggtgc tgggtctcac agcctcccca ggcactggcg gggcctccaa actcgatggg	540
gcatcaacc acgtcctgca gctctgtgcc aacttgga cgtggtgcat catgtcaccc	600
cagaactgct gccccagct gcaggagcac agccaacagc cttgcaaaca gtacaacctc	660
tgccacaggc gcagccagga tccgtttggg gacttgctga agaagctcat ggaccaaata	720
catgaccacc tggagatgcc tgagttgagc cggaaatttg ggacgcaa at gtatgagcag	780
caggtggtga agctgagtga ggctgaggct ttggctgggc ttcaggagca acgggtgtat	840
gcgcttcacc tgaggcgcta caatgacgcg ctgctcatcc atgacaccgt ccgcgccgtg	900
gatgccttgg ctgcgctgca ggatttctat cacagggagc acgtcactaa aaccagatc	960
ctgtgtgccg agcgccggct gctggccctg ttcgatgacc gcaagaatga gctggccac	1020
ttggcaactc atggcccaga gaatccaaa ctggagatgc tggaaaagat cctgcaaagg	1080
cagttcagta gctctaacag ccctcggggg atcatcttca cccgcacccg ccaaagcgca	1140
cactccctcc tgctctggct ccagcagcag cagggcctgc agactgtgga catccgggcc	1200
cagctactga ttggggctgg gaacagcagc cagagcacc acatgacca gagggaccag	1260
caagaagtga tccagaagtt ccaagatgga accctgaacc ttctggtggc cagcagtggt	1320

gcggaggagg	ggctggacat	cccacattgc	aatgtggtgg	tgcgttatgg	gctcttgacc	1380
aatgaaatct	ccatgggtcca	ggccaggggc	cgtgcccggg	ccgatcagag	tgtatacgcg	1440
ttttagtag	ctgaaggtag	ccgggagctg	aagcgggagc	tgatcaacga	ggcgtggag	1500
acgctgatgg	agcaggcagt	ggctgctgtg	cagaaaatgg	accaggccga	gtaccaggcc	1560
aagatccggg	atctgcagca	ggcagccttg	accaagcggg	cggcccaggc	agcccagcgg	1620
gagaaccagc	ggcagcagtt	cccagtggag	cacgtgcagc	tactctgcat	caactgcatg	1680
gtggctgtgg	gccatggcag	cgacctgcgg	aaggtggagg	gcaccacca	tgtcaatgtg	1740
aaccccaact	tctcgaacta	ctataatgtc	tccagggatc	ctgtggtcat	caacaaagtc	1800
ttcaaggact	ggaagcctgg	gggtgtcatc	agctgcagga	actgtgggga	ggctctgggt	1860
ctgcagatga	tctacaagtc	agtgaagctg	ccagtgtcta	aagtccgcag	catgctgctg	1920
gagaccctc	aggggcggat	ccaggccaaa	aagtgggtccc	gcgtgccctt	ctccgtgcct	1980
gactttgact	tcctgcagca	ttgtgccgag	aacttgtcgg	acctctccct	ggactga	2037

<210> 79
 <211> 1689
 <212> DNA
 <213> Homo sapiens

<400> 79						
atggacgaca	aaggcgaccc	gagcaatgag	gaggcaccta	aggccatcaa	accaccagc	60
aaagagttca	ggaaaacatg	gggttttcga	aggaccacta	tcgccaagcg	agagggcgca	120
ggggacgcgg	aggctgaccc	actggagccg	ccacccccac	agcagcagct	gggcctgtcc	180
ctgcgccgca	gtgggaggca	gccaagcgc	actgagcgcg	tggagcagtt	cctgaccatt	240
gcgcggcgcc	gcggcaggag	gagcatgcct	gtctccctgg	aggattctgg	tgagcccacg	300
tcctgccccg	ccacagacgc	cgagacagcc	tccgagggca	gcgtggaaag	cgcttctgag	360
accagaagcg	gccccagtc	tgcttccaca	gctgtgaagg	aacgaccagc	ctcttctgaa	420
aaggtgaaag	gaggggatga	ccacgatgac	acctccgata	gtgacagcga	tggcctgacc	480
ttgaaagagc	ttcagaatcg	ccttcgcagg	aagcgggaac	aggagcccac	tgagaggccc	540
ctgaaaggga	tccagagtcg	cctgcggaag	aagcgccggg	aggaggggtcc	cgccgagact	600
gtgggctccg	aggccagtga	cactgtggag	ggcgtcctgc	ccagtaagca	ggagcccag	660
aacgatcagg	gggttgtgtc	ccaggctggg	aaagatgaca	gagagagtaa	gttgagggga	720
aaggcggctc	aggacatcaa	agatgaggag	cctggagact	tgggccgacc	gaagcctgaa	780
tgtgaggggt	acgaccccaa	cgccctgtat	tgcatttgcc	gccagcctca	caacaacagg	840
tttatgattt	gctgtgaccg	ctgtgaagaa	tggtttcatg	gcgattgtgt	gggcatttct	900
gaggctcgag	ggaggctttt	ggaaaggaat	ggggaagact	atatctgccc	aaactgcacc	960
attctgcaag	tgcaggatga	gactcattca	gaaacggcag	atcagcagga	agctaaatgg	1020
agacctggag	atgctgatgg	caccgattgt	acaagtatag	gaacaataga	gcagaagtct	1080

agcgaagacc aagggataaa gggtagaatt gagaaagctg caaatccaag tggcaagaag	1140
aaactcaaga tcttcagacc tgtgatagag gcgcctgggtg cctcaaaatg tattggcccc	1200
gggtgctgtc acgtggcgca gcccgactcg gtgtactgca gtaatgactg tatcctcaaa	1260
cacgccgcag cgacaatgaa gtttctaagc tcaggtaaag aacagaagcc aaagcctaaa	1320
gaaaagatga agatgaagcc agagaagccc agtcttccga aatgcggtgc tcaggcaggt	1380
attaaaatct cttctgtgca caagagacca gctccagaaa aaaaagagac cacagtgaag	1440
aaggcagtgg tggtcctgc gcggagtga gactcggga aggaagcagc ttgtgagagc	1500
agcacgccgt cgtgggcgag cgatcacaat tacaatgcag taaagccaga aaagactgct	1560
gctccctcgc cgtcactgtt gtataaatgt atgtatcacc taggggttgg cctcctggac	1620
ccctcccgtt ctttctggat agccatcccc tgggcctgtc caggactggg agttgcagct	1680
ttgtgttaa	1689

<210> 80
 <211> 6207
 <212> DNA
 <213> Homo sapiens

<400> 80	
atgcaggctg ataatgcag gacaagtagt agaagtgtca aaaaggaact ggtgattgag	60
tccccctgc aatacaagga tgcagctcag ggcgaagtgg aagcagagag cccgggccct	120
gtgccggcaa agccaaagct aattgagcca ctcgactatg aaaatgtcat cgtccagaag	180
aagactcaga tcctgaacga ctgtttacgg gagatgctgc tcttccctta cgatgacttt	240
cagacggcca tcctgagacg acagggtcga tacatatgct caacagtgcc tgcgaaggcg	300
gaagaggaag cacagagctt gtttgttaca gagtgcacaa aaacctataa ctctgactgg	360
catcttgtga actataaata tgaagattac tcaggagagt ttcgacagct tccgaacaaa	420
gtgggtcaagt tggataaact tccagttcat gtctatgaag ttgacgagga ggtcgacaaa	480
gatgaggatg ctgcctccct tggttcccag aagggtggga tcaccaagca tggctggctg	540
tacaaaggca acatgaacag tgccatcagc gtgaccatga ggtcatttaa gagacgattt	600
ttccacctga ttcaacttgg cgatggatcc tataatttga atttttataa agatgaaaag	660
atctccaaag aacaaaaagg atcaatattt ctggattcct gtatgggtgt cgttcagaac	720
aacaaagtca ggcgttttgc ttttgagctc aagatgcagg acaaaagtag ttatctcttg	780
gcagcagaca gtgaagtgga aatggaagaa tggatcaca ttctaaataa gatcctccag	840
ctcaactttg aagctgcaat gcaagaaaag cgaaatggcg actctcacga agatgatgaa	900
caaagcaaat tggaaggttc tggttccggt ttagatagct acctgccgga acttgccaag	960
agtgcagag aagcagaaat caaactgaaa agtgaaagca gagtcaaact tttttatttg	1020
gaccagatg cccagaagct tgactttctc tcagctgagc cagaagtga gtcatttgaa	1080
gagaagtgtg gaaaaaggat ccttgtcaag tgcaatgatt tatctttcaa tttgcaatgc	1140
tgtgttgccg aaaatgaaga aggaccact acaaatgttg aacctttctt tgttactcta	1200

tccctgtttg	acataaaaata	caaccggaag	atttctgccg	atttccacgt	agacctgaac	1260
catttctcag	tgaggcaaat	gctcgccacc	acgtccccgg	cgctgatgaa	tggcagtggg	1320
cagagcccat	ctgtcctcaa	gggcatcctt	catgaagccg	ccatgcagta	tccgaagcag	1380
ggaatatttt	cagtcacttg	tcctcatcca	gatataatttc	ttgtggccag	aattgaaaaa	1440
gtccttcagg	ggagcatcac	acattgcgct	gagccatata	tgaaaagttc	agactcttct	1500
aaggtggccc	agaaggtgct	gaagaatgcc	aagcaggcat	gccaaagact	aggacagtat	1560
agaatgccat	ttgcttgggc	agcaaggaca	ttgtttaagg	atgcatctgg	aaatcttgac	1620
aaaaatgcca	gattttctgc	catctacagg	caagacagca	ataagctatc	caatgatgac	1680
atgctcaagt	tacttgacaga	ctttcgaaaa	cctgagaaga	tggctaagct	cccagtgatt	1740
ttaggcaatc	tagacattac	aattgataat	gtttcctcag	acttccctaa	ttatgttaat	1800
tcatcataca	ttcccacaaa	acaatttgaa	acctgcagta	aaactcccat	cacgtttgaa	1860
gtggaggaat	ttgtgccctg	cataccaaaa	cacactcagc	cttacaccat	ctacaccaat	1920
cacctttacg	tttatcctaa	gtacttgaaa	tacgacagtc	agaagtcttt	tgccaaggct	1980
agaaaatattg	cgatttgcac	tgaattcaaa	gattcagatg	aggaagactc	tcagcccctt	2040
aagtgcattt	atggcagacc	tgggtgggcca	gttttcacaa	gaagcgcctt	tgctgcagtt	2100
ttacaccatc	acaaaaacc	agaattttat	gatgagatta	aaatagagtt	gcccactcag	2160
ctgcatgaaa	agcaccacct	gttgctcaca	ttcttccatg	tcagctgtga	caactcaagt	2220
aaaggaagca	cgaagaagag	ggatgtcggt	gaaacccaag	ttggctactc	ctggcttccc	2280
ctcctgaaa	acggaagggt	ggtgacaagc	gagcagcaca	tcccggcttc	ggcgaacctt	2340
ccttcgggct	atcttggcta	ccaggagctt	gggatgggca	ggcattatgg	tccggaaatt	2400
aatgggtag	atggaggcaa	gccactgctg	aaaattttcca	ctcatctggt	ttctacagtg	2460
tatactcagg	atcagcattt	acataatttt	ttccagtact	gtcagaaaac	cgaatctgga	2520
gccaagcct	taggaaacga	acttgtaaag	taccttaaga	gtctgcatgc	gatggaaggc	2580
cacgtgatga	tcgccttctt	gcccactatc	ctaaaccagc	tgttccgagt	cctcaccaga	2640
gccacacagg	aagaagtcgc	ggttaacgtg	actcgggtca	ttattcatgt	ggttgcccag	2700
tgcatgagg	aaggattgga	gagccacttg	aggtcatatg	ttaagtacgc	gtataaggct	2760
gagccatatg	ttgcctctga	atacaagaca	gtgcatgaag	aactgaccaa	atccatgacc	2820
acgatttctca	agccttctgc	cgatttcttc	accagcaaca	aactactgaa	gtactcatgg	2880
tttttctttg	atgtactgat	caaattctatg	gctcagcatt	tgatagagaa	ctccaaagtt	2940
aagttgctgc	gaaaccagag	atttcctgca	tcctatcatc	atgcagtgga	aaccgttgta	3000
aatatgctga	tgccacacat	cactcagaag	tttcgagata	atccagaggc	atctaagaac	3060
gcgaatcata	gccttgctgt	cttcatcaag	agatgtttca	ccttcatgga	caggggcttt	3120
gtcttcaagc	agatcaacaa	ctacattagc	tgttttgctc	ctggagaccc	aaagaccctc	3180
tttgaataca	agtttgaatt	tctccgtgta	gtgtgcaacc	atgaacatta	tattccgttg	3240

aacttaccaa	tgccatttgg	aaaaggcagg	attcaaagat	accaagacct	ccagcttgac	3300
tactcattaa	cagatgagtt	ctgcagaaac	cacttcttgg	tgggactggt	actgagggag	3360
gtggggacag	ccctccagga	gttccgggag	gtccgtctga	tcgccatcag	tgtgctcaag	3420
aacctgctga	taaagcattc	ttttgatgac	agatatgctt	caaggagcca	tcaggcaagg	3480
atagccaccc	tctacctgcc	tctgttttgt	ctgctgattg	aaaacgtcca	gcggatcaat	3540
gtgagggatg	tgtcaccctt	ccctgtgaac	gcgggcatga	ctgtgaagga	tgaatccctg	3600
gctctaccag	ctgtgaatcc	gctggtgacg	ccgcagaagg	gaagcacctt	ggacaacagc	3660
ctgcacaagg	acctgctggg	cgccatctcc	ggcattgctt	ctccatatac	aacctcaact	3720
ccaaacatca	acagtgtgag	aaatgctgat	tcgagaggat	ctctcataag	cacagattcg	3780
ggtaacagcc	ttccagaaag	gaatagttag	aagagcaatt	ccctggataa	gcaccaacaa	3840
agtagcacat	tgggaaattc	cgtggttcgc	tgtgataaac	ttgaccagtc	tgagattaag	3900
agcctactga	tgtgtttcct	ctacatctta	aagagcatgt	ctgatgatgc	tttgtttaca	3960
tattggaaca	aggcttcaac	atctgaactt	atggatTTTT	ttacaatatc	tgaagtctgc	4020
ctgcaccagt	tccagtacat	ggggaagcga	tacatagcca	gaacaggaat	gatgcatgcc	4080
agattgcagc	agctgggcag	cctggataac	tctctcactt	ttaaccacag	ctatggccac	4140
tcggacgcag	atgttctgca	ccagtcatta	cttgaagcca	acattgctac	tgaggtttgc	4200
ctgacagctc	tggacacgct	ttctctatTT	acattggcgt	ttaagaacca	gctcctggcc	4260
gaccatggac	ataatcctct	catgaaaaaa	gtttttgatg	tctacctgtg	ttttcttcaa	4320
aaacatcagt	ctgaaacggc	tttaaaaaat	gtcttctactg	ccttaagggtc	cttaatttat	4380
aagtttccct	caacattcta	tgaaggggaga	gcggacatgt	gtgcggctct	gtgttacgag	4440
attctcaagt	gctgtaactc	caagctgagc	tccatcagga	cggaggcctc	ccagctgctc	4500
tacttcctga	tgaggaacaa	ctttgattac	actggaaaga	agtcctttgt	ccggacacat	4560
ttgcaagtca	tcatatctgt	cagccagctg	atagcagacg	ttgttggcat	tgggggaacc	4620
agattccagc	agtccttgct	catcatcaac	aactgtgcca	acagtgaccg	gcttattaag	4680
cacaccagct	tctcctctga	tgtgaaggac	ttaaccaaaa	ggatacgcac	ggtgctaattg	4740
gccaccgccc	agatgaagga	gcatgagaac	gaccagaga	tgctggtgga	cctccagtac	4800
agcctggcca	aatcctatgc	cagcacgccc	gagctcagga	agacgtggct	cgacagcatg	4860
gccaggatcc	atgtcaaaaa	tggcgatctc	tcagaggcag	caatgtgcta	tgtccacgta	4920
acagccctag	tggcagaata	tctcacacgg	aaagaagcag	tccagtggga	gccgccctt	4980
ctccccaca	gccatagcgc	ctgcctgagg	aggagccggg	gaggcgtggt	tagacaagga	5040
tgcaccgcct	tcagggctcat	taccccaaac	atcgacgagg	aggcctccat	gatggaagac	5100
gtggggatgc	aggatgtcca	tttcaacgag	gatgtgctga	tggagctcct	tgagcagtgc	5160
gcagatggac	tctggaaagc	cgagcgctac	gagctcatcg	ccgacatcta	caaacttatc	5220
atccccattt	atgagaagcg	gagggatttt	gagaggctgg	cccatctgta	tgacacgctg	5280

PCTAU2016050927-seq1-000001-EN-20161013

caccgggcct acagcaaagt gaccgaggtc atgcactcgg gccgcaggct tctggggacc	5340
tacttccggg tagccttctt cgggcaggca gcgcaatacc agtttacaga cagtgaacaa	5400
gatgtggagg gattctttga agatgaagat ggaaaggagt atattttacaa ggaacccaaa	5460
ctcacaccgc tgtcggaaat ttctcagaga ctccttaaac tgtactcgga taaatttgg	5520
tctgaaaatg tcaaaatgat acaggattct ggcaagggtca accctaagga tctggattct	5580
aagtatgcat acatccaggt gactcacgtc atccccttct ttgacgaaaa agagttgcaa	5640
gaaaggaaaa cagagtttga gagatccac aacatccgcc gcttcatgtt tgagatgcca	5700
tttacgcaga ccgggaagag gcagggcggg gtggaagagc agtgcaaacg gcgcaccatc	5760
ctgacagcca tacactgctt cccttatgtg aagaagcgca tccctgtcat gtaccagcac	5820
cacactgacc tgaaccccat cgagggtggc attgacgaga tgagtaagaa ggtggcggag	5880
ctccggcagc tgtgctctc ggccgaggtg gacatgatca aactgcagct caaactccag	5940
ggcagcgtga gtgttcaggt caatgctggc ccactagcat atgcgcgagc tttcttagat	6000
gatacaaaca caaagcgata tcctgacaat aaagtgaagc tgcttaagga agttttcagg	6060
caatttgtgg aagcttgagg tcaagcctta gcggtaaacg aacgtctgat taaagaagac	6120
cagctcgagt atcaggaaga aatgaaagcc aactacaggg aaatggcgaa ggagctttct	6180
gaaatcatgc atgagcagct gggatga	6207

<210> 81
 <211> 1491
 <212> DNA
 <213> Homo sapiens

<400> 81 atgactcggg gagccagact gcgatcagac gcgcgtgccc agctgaacca gctgtctcta	60
gacggaggga cgggaagtgg ccagaagggg aagtgtgagg agttcccgtc cagcctgtca	120
tcagtctccc caggtcttga agcggcggcc ctgctcctgg ccgtgaccat ggaccctctg	180
gagacccta tcaaggatgg catcctctac cagcagcatg tcaagtttgg caagaagtgc	240
tggcggaagg tgtgggctct gctgtatgca ggaggccat caggcgtggc acggctggag	300
agctgggagg tccgggatgg tggcctggga gcagcgggtg acaggtcggc agggcctggc	360
cggcgagggg agcgacgggt catccgcctg gctgactgtg tgtccgtgct gccggctgac	420
ggcgagagct gccccggga caccggtgcc ttctgtctca ccaccaccga gcgaagccat	480
ctactggctg ctacgaccg ccaggcctgg atgggcccc tctgccagct ggccttccc	540
gggacagggg aggctcctc aggatccaca gatgccagct ctccaagag gggcctggctc	600
cccatggagg aaaactccat ctactcctcc tggcaggaag tgggcgagtt tcccgtggtg	660
gtgcagagga ctgaggccgc caccgctgc cagctgaagg ggccggccct gctggtgctg	720
ggcccagacg ccatccagct gagggaggcc aagggcacc aggcctcta cagctggccc	780
taccacttcc tgcgcaagtt cggctccgac aagggcgtgt tctcctttga ggccggccgt	840

PCTAU2016050927-seq1-000001-EN-20161013

cgctgccact	cggttgaggg	cctctttgcc	ttcagcaccc	cctgtgcccc	tgacctgtgc	900
agggctgtgg	ccggggccat	cgcccgccag	cgggagcggc	tgccagagct	gaccaggccc	960
cagccctgcc	ccctgccacg	ggccacctct	ctgccctccc	tgacaccccc	cggagagctt	1020
cgggagatgc	caccaggacc	tgagccaccc	acgtccagga	aaatgcacct	ggccgagccc	1080
ggacccccaga	gcctgccgct	actgctaggc	ccggagccca	acgatctggc	gtccgggctc	1140
tacgcttcag	tgtgcaagcg	tgccagtggg	ccccaggca	atgagcacct	ctatgagaac	1200
ctgtgtgtgc	tggaggccag	ccccacgctg	cacggtgggg	aacctgagcc	gcacgagggc	1260
cccggcagcc	gcagccccac	aaccagtccc	atctaccaca	acggccagga	cttgagctgg	1320
cccggccccg	ccaacgacag	taccctggag	gccagtagc	ggcggctgct	ggagctggat	1380
caggtggagg	gcacaggccg	ccctgaccct	caggcaggtt	tcaaggccaa	gctggtgacc	1440
ctgctgagtc	gtgagcggag	gaagggccca	gcccttctgt	accggccctg	a	1491

<210> 82
 <211> 1461
 <212> DNA
 <213> Homo sapiens

<400> 82	
atgcagccct	ccggcctcga
gggtcccggc	acgtttggtc
ggtggcctct	gctgagtctg
60	
ctgctcctgc	tgctgctgct
ccagcctgta	acctgtgcct
acaccacgcc	aggccccccc
120	
agagccctca	ccacgctggg
cgccccaga	gccacacca
tgccgggcac	ctacgctccc
180	
tcgaccacac	tcagtagtcc
cagcacccag	ggcctgcaag
agcaggcacg	ggccctgatg
240	
cgggacttcc	cgctcgtgga
cggccacaac	gacctgcccc
tggtcctaag	gcaggtttac
300	
cagaaagggc	tacaggatgt
taacctgcgc	aatttcagct
acggccagac	cagcctggac
360	
aggcttagag	atggcctcgt
gggcgcccag	ttctggctcag
cctatgtgcc	atgccagacc
420	
caggaccggg	atgccctgcg
cctcacctcg	gagcagattg
acctcatacg	ccgcatgtgt
480	
gcctcctatt	ctgagctgga
gcttgtgacc	tcggctaaag
ctctgaacga	cactcagaaa
540	
ttggcctgcc	tcacggtgtg
agaggggtgg	cactcgtctg
acaatagcct	ctccatctta
600	
cgtaccttct	acatgctggg
agtgcgctac	ctgacgctca
cccacacctg	caacacaccc
660	
tgggcagaga	gctccgctaa
gggcgtccac	tccttctaca
acaacatcag	cgggctgact
720	
gactttggtg	agaaggtggt
ggcagaaatg	aaccgcctgg
gcatgatggt	agacttatcc
780	
catgtctcag	atgctgtggc
acggcggggc	ctggaagtgt
cacaggcacc	tgtgatcttc
840	
tcccactcgg	ctgcccgggg
tgtgtgcaac	agtgtctgga
atgttcctga	tgacatcctg
900	
cagcttctga	agaagaacgg
tggcgtcgtg	atggtgtctt
tgtccatggg	agtaatacag
960	
tgcaacccat	cagccaatgt
gtccactgtg	gcagatcact
tcgaccacat	caaggctgtc
1020	
attggatcca	agttcatcgg
gattggtgga	gattatgatg
gggccggcaa	attccctcag
1080	
gggctggaag	acgtgtccac
ataccgggtc	ctgatagagg
agttgctgag	tcgtggctgg
1140	
agtgaggaag	agcttcaggg
tgtccttcgt	ggaaacctgc
tcggggtctt	cagacaagtg
1200	

PCTAU2016050927-seq1-000001-EN-20161013

gaaaaggtac aggaagaaaa caaatggcaa agccccttgg aggacaagtt cccggatgag	1260
cagctgagca gttcctgcc ctccgacctc tcacgtctgc gtcagagaca gagtctgact	1320
tcaggccagg aactcactga gattcccata cactggacag ccaagttacc agccaagtgg	1380
tcagtctcag agtcctcccc ccacatggcc ccagtccttg cagttgtggc caccttccca	1440
gtccttattc tgtggctctg a	1461

<210> 83
 <211> 1176
 <212> DNA
 <213> Homo sapiens

<400> 83 atggcggctg tggtggagaa tgtagtgaag ctccttgggg agcagtacta caaagatgcc	60
atggagcagt gccacaatta caatgctcgc ctctgtgctg agcgagcgt gcgcctgcct	120
ttcttggact cacagaccgg agtagcccag agcaattgtt acatctggat ggaaaagcga	180
caccgggggtc caggattggc ctccggacag ctgtactcct accctgcccg gcgctggcgg	240
aaaaagcggc gagcccatcc ccctgaggat ccacgacttt ctttcccatc tattaagcca	300
gacacagacc agaccctgaa gaaggagggg ctgatctctc aggatggcag tagtttagag	360
gctctgttgc gactgaccc cctggagaag cgaggtgccc cggatccccg agttgatgat	420
gacagcctgg gcgagtttcc tgtgaccaac agtcgagcgc gaaagcggat cctagaacca	480
gatgacttcc tggatgacct cgatgatgaa gactatgaag aagatactcc caagcgctcg	540
ggaaagggga aatccaagg taagggtgtg ggcagtgccc gtaagaagct ggatgcttcc	600
atcctggagg accgggataa gccctatgcc tgtgacattt gtggaaaacg ttacaagaac	660
cgaccaggcc tcagttacca ctatgccac tcccacttgg ctgaggagga gggcgaggac	720
aaggaagact ctcaaccacc cactcctgtt tcccagaggt ctgaggagca gaaatccaaa	780
aagggctctg atggattggc cttgccaac aactactgtg acttctgcct gggggactca	840
aagattaaca agaagacggg acaacccgag gagctggtgt cctgttctga ctgtggccgc	900
tcagggcatc catcttgct ccaatttacc cccgtgatga tggcggcagt gaagacatac	960
cgctggcagt gcatcgagt caaatgttgc aatatctgcg gcacctccga gaatgacgac	1020
cagttgctct tctgtgatga ctgcgatcgt ggctaccaca tgtactgtct caccctgtcc	1080
atgtctgagc cccctgaagg aagttggagc tgccacctgt gtctggacct gttgaaagag	1140
aaagcttcca tctaccagaa ccagaactcc tcttga	1176

<210> 84
 <211> 1656
 <212> DNA
 <213> Homo sapiens

<400> 84 atggctggtg atctttcagc aggtttcttc atggaggaac ttaatacata ccgtcagaag	60
cagggagtag tacttaaata tcaagaactg cctaattcag gacctccaca tgataggagg	120

PCTAU2016050927-seql-000001-EN-20161013

tttacatttc	aagttataat	agatggaaga	gaatttccag	aaggtgaagg	tagatcaaag	180
aaggaagcaa	aaaatgccgc	agccaaatta	gctgttgaga	tacttaataa	ggaaaagaag	240
gcagttagtc	ctttattatt	gacaacaacg	aattcttcag	aaggattatc	catggggaat	300
tacataggcc	ttatcaatag	aattgcccag	aagaaaagac	taactgtaaa	ttatgaacag	360
tgtgcatcgg	gggtgcatgg	gccagaagga	tttcattata	aatgcaaaat	gggacagaaa	420
gaatatagta	ttggtacagg	ttctactaaa	caggaagcaa	aacaattggc	cgctaaactt	480
gcatactttc	agatattatc	agaagaaacc	tcagtgaaat	ctgactacct	gtcctctggt	540
tcttttgcta	ctacgtgtga	gtcccaaagc	aactctttag	tgaccagcac	actcgcttct	600
gaatcatcat	ctgaagggtga	cttctcagca	gatacatcag	agataaattc	taacagtgac	660
agtttaaaca	gttcttcggt	gcttatgaat	ggtctcagaa	ataatcaaag	gaaggcaaaa	720
agatcttttg	caccagatt	tgaccttcct	gacatgaaag	aaacaaagta	tactgtggac	780
aagaggtttg	gcatggattt	taaagaaata	gaattaattg	gctcagggtg	atttggccaa	840
gttttcaaag	caaaacacag	aattgacgga	aagacttacg	ttattaaacg	tgtaaataat	900
aataacgaga	aggcggagcg	tgaagtaaaa	gcattggcaa	aacttgatca	tgtaaataat	960
gttcactaca	atggctgttg	ggatggattt	gattatgata	ctgagaccag	tgatgattct	1020
cttgagagca	gtgattatga	tcctgagaac	agcaaaaata	gttcaagggtc	aaagactaag	1080
tgctttttca	tccaaatgga	attctgtgat	aaagggacct	tggaacaatg	gattgaaaaa	1140
agaagaggcg	agaaactaga	caaagttttg	gctttggaac	tctttgaaca	aataacaaaa	1200
ggggtggatt	atatacattc	aaaaaaatta	attcatagag	atcttaagcc	aagtaatata	1260
ttcttagtag	atacaaaaaca	agtaaagatt	ggagactttg	gacttgtaac	atctctgaaa	1320
aatgatggaa	agcgaacaag	gagtaaggga	actttgcgat	acatgagccc	agaacagatt	1380
tcttcgcaag	actatggaaa	ggaagtggac	ctctacgctt	tggggctaata	tcttgctgaa	1440
cttcttcattg	tatgtgacac	tgcttttgaa	acatcaaagt	ttttcacaga	cctacgggat	1500
ggcatcatct	cagatatatt	tgataaaaaa	gaaaaaactc	ttctacagaa	attactctca	1560
aagaaacctg	aggatcgacc	taacacatct	gaaataactaa	ggaccttgac	tgtgtggaag	1620
aaaagcccag	agaaaaatga	acgacacaca	tgtttag			1656

<210> 85
 <211> 1059
 <212> DNA
 <213> Homo sapiens

<400> 85						
atggcgtccc	gcaaggaagg	taccggctct	actgccacct	cttcagctc	caccgccggc	60
gcagcaggga	aaggcaaagg	caaaggcggc	tcgggagatt	cagccgtgaa	gcaagtgcag	120
atagatggcc	ttgtggtatt	aaagataatc	aaacattatc	aagaagaagg	acaaggaact	180
gaagttgttc	aaggagtgtc	tttgggtctg	gttgtagaag	atcggttga	aattaccaac	240

tgctttcctt tccctcagca cacagaggat gatgctgact ttgatgaagt ccaatatcag	300
atggaaatga tgcggagcct tcgccatgta aacattgatc atcttcacgt gggctggtat	360
cagtccacat actatggctc attcgttacc cgggcactcc tggactctca gtttagttac	420
cagcatgcca ttgaagaatc tgtcgttctc atttatgatc ccataaaaaac tgcccaagga	480
tctctctcac taaaggcata cagactgact cctaaactga tggaagtttg taaagaaaag	540
gattttttccc ctgaagcatt gaaaaaagca aatatcacct ttgagtacat gtttgaagaa	600
gtgccgattg taattaaaaa ttcacatctg atcaatgtcc taatgtggga acttgaaaag	660
aagtcagctg ttgcagataa acatgaattg ctcagccttg ccagcagcaa tcatttgggg	720
aagaatctac agttgctgat ggacagagtg gatgaaatga gccaagatat agttaaatat	780
aacacataca tgaggaatac tagtaaaca cagcagcaga aacatcagta tcagcagcgt	840
cgccagcagg agaatatgca gcgccagagc cgaggagaac ccccgctccc tgaggaggac	900
ctgtccaaac tcttcaaacc accacagccg cctgccagga tggactcgct gctcattgca	960
ggccagataa acacttactg ccagaacatc aaggagttca ctgccccaaa cttaggcaag	1020
ctcttcattg cccaggctct tcaagaatac aacaactaa	1059

<210> 86
 <211> 2472
 <212> DNA
 <213> Homo sapiens

<400> 86	
atgggaggcc gcgtctttct cgtctttctc gcattctgtg tctggctgac tctgccggga	60
gctgaaaccc aggactccag gggctgtgcc cgggtggtgcc ctcaggactc ctcgtgtgtc	120
aatgccaccg cctgtcgtct caatccaggg ttcagctctt tttctgagat catcaccacc	180
cccatggaga cttgtgacga catcaacgag tgtgcaacac tgtcgaaagt gtcatgcgga	240
aaattctcgg actgctggaa cacagagggg agctacgact gcgtgtgcag cccaggatat	300
gagcctgttt ctggggcaaa aacattcaag aatgagagcg agaacacgtg tcaagatgtg	360
gacgaatgtc agcagaaccc aaggctctgt aaaagctacg gcacctgcgt caacaccctc	420
ggcagctaca cgtgccagt cctgcctggc ttcaagctca aacctgagga cccgaagctc	480
tgcacagatg tgaatgaat cacctccgga caaaacccat gccacagctc caccactgc	540
ctcaacaacg tgggcagcta tcagtgccgc tgccgcccgg gctggcaacc gattccgggg	600
tcccccaatg gcccaaaca taccgtctgt gaagatgtgg acgagtgcag ctccgggcag	660
catcagtgtg acagctccac cgtctgcttc aacaccgtgg gttcatacag ctgccgctgc	720
cgcccaggct ggaagcccag acacggaatc ccgaataacc aaaaggacac tgtctgtgaa	780
gatatgactt tctccacctg gaccccgccc cctggagtcc acagccagac gctttccga	840
ttcttcgaca aagtccagga cctgggcaga gactacaagc caggcttggc caataacacc	900
atccagagca tcttacaggc gctggatgag ctgctggagg cccctgggga cctggagacc	960
ctgccccgct tacagcagca ctgtgtggcc agtcacctgc tggatggcct agaggatgtc	1020

PCTAU2016050927-seq1-000001-EN-20161013

ctcagaggcc	tgagcaagaa	cctttccaat	gggctgttga	acttcagtta	tcctgcaggc	1080
acagaattgt	ccctggagggt	gcagaagcaa	gtagacagga	gtgtcacctt	gagacagaat	1140
caggcagtga	tgcagctcga	ctggaatcag	gcacagaaat	ctggtgaccc	aggcccttct	1200
gtggtgggccc	ttgtctccat	tccagggatg	ggcaagttgc	tggctgaggc	ccctctggtc	1260
ctggaacctg	agaagcagat	gcttctgcat	gagacacacc	agggcttgct	gcaggacggc	1320
tcccccatcc	tgctctcaga	tgtgatctct	gcctttctga	gcaacaacga	cacccaaaac	1380
ctcagctccc	cagttacctt	caccttctcc	caccgttcag	tgatcccgag	acagaagggtg	1440
ctctgtgtct	tctgggagca	tggccagaat	ggatgtggtc	actggggccac	cacaggctgc	1500
agcacaatag	gcaccagaga	caccagcacc	atctgccgtt	gcaccacact	gagcagcttt	1560
gccgtcctca	tggcccacta	cgatgtgcag	gaggaggatc	ccgtgctgac	tgtcatcacc	1620
tacatggggc	tgagcgtctc	tctgctgtgc	ctcctcctgg	cggccctcac	ttttctcctg	1680
tgtaaagcca	tccagaacac	cagcacctca	ctgcatctgc	agctctcgct	ctgcctcttc	1740
ctggcccacc	tcctcttcct	cgtggcaatt	gatcaaaccg	gacacaagggt	gctgtgctcc	1800
atcatcgccg	gtaccttgca	ctatctctac	ctggccacct	tgacctggat	gctgctggag	1860
gccctgtacc	tcttcctcac	tgcacggaac	ctgacgggtg	tcaactactc	aagcatcaac	1920
agattcatga	agaagctcat	gttcctctgt	ggctacggag	tcccagctgt	gacagtggcc	1980
atttctgcag	cctccaggcc	tcacctttat	ggaacacctt	cccgtgctg	gctccaacca	2040
gaaaagggat	ttatatgggg	cttccttggg	cctgtctgcg	ccatcttctc	tgtgaattta	2100
gttctctttc	tggtgactct	ctggattttg	aaaaacagac	tctcctccct	caatagtga	2160
gtgtccaccc	tccggaacac	aaggatgctg	gcattttaag	cgacagctca	gctgttcac	2220
ctgggctgca	cgtggtgtct	gggcatcttg	cagggtgggtc	cggctgccc	ggatcatggcc	2280
tacctcttca	ccatcatcaa	cagcctgcag	gggtgtcttca	tcttcctggg	gtactgcctc	2340
ctcagccagc	aggtccggga	gcaatatggg	aaatgggtcca	aagggatcag	gaaattgaaa	2400
actgagtctg	agatgcacac	actctccagc	agtgtctaagg	ctgacacctc	caaaccagc	2460
acggttaact	ag					2472

<210> 87
 <211> 4116
 <212> DNA
 <213> Homo sapiens

<400> 87						
atgactacaa	aacgaagttt	gtttgtgcgg	ttggtaccat	gtcgctgtct	acgaggggaa	60
gaggagactg	tcactactct	tgattattct	cattgcagct	tagaacaagt	tccgaaagag	120
atttttactt	ttgaaaaaac	cttgaggagaa	ctctatttag	atgctaata	gattgaagag	180
cttccaaagc	aactttttta	ctgtcagtct	ttacacaaac	tgagtttgcc	agacaatgat	240
ttaacaacgt	taccagcatc	cattgcaaac	cttattaatc	tcagggaact	ggatgtcagc	300

aagaatggaa	tacaggagtt	tccagaaaat	ataaaaaatt	gtaaagtttt	gacaattgtg	360
gaggccagt	taaaccctat	ttccaagctc	cctgatggat	tttctcagct	gttaaaccta	420
accagttgt	atctgaatga	tgcttttctt	gagttcttgc	cagcaaattt	tggcagatta	480
actaaactcc	aaatattaga	gcttagagaa	aaccagttaa	aaatgttgcc	taaaactatg	540
aatagactga	cccagctgga	aagactggat	ttgggaagta	acgaattcac	ggaagtgcct	600
gaagtacttg	agcaactaag	tggattgaaa	gagttttgga	tggatgctaa	tagactgact	660
tttattccag	ggtttattgg	tagtttgaaa	cagctcacat	atttggtgtg	ttctaaaaat	720
aatattgaaa	tggttgaaga	aggaatttca	acatgtgaaa	accttcaaga	cctcctatta	780
tcaagcaatt	cacttcagca	gcttcctgag	actattgggt	cgttgaagaa	tataacaacg	840
cttaaaatag	atgaaaacca	gttaatgtat	ctgccagact	ctataggagg	gttaatatca	900
gtagaagaac	tggattgtag	tttcaatgaa	gttgaagctt	tgccttcac	tattgggcag	960
cttactaact	taagaacttt	tgctgtgat	cataattact	tacagcagtt	gccccagag	1020
attggaagct	ggaaaaatat	aactgtgctg	tttctccatt	ccaataaact	tgagacactt	1080
ccagaggaaa	tgggtgatat	gcaaaaatta	aaagtcatta	atttaagtga	taatagatta	1140
aagaatttac	cctttagctt	tacaaagcta	cagcaattga	cagctatgtg	gctctcagat	1200
aatcagtcca	aaccctgat	acctcttcaa	aaagaaactg	attcagagac	ccagaaaatg	1260
gtgcttacca	actacatgtt	ccctcaacag	ccaaggactg	aggatgttat	gtttatatca	1320
gataatgaaa	gttttaacct	ttcattgtgg	gaggaacaga	ggaaacagcg	ggctcaagtt	1380
gcatttgaat	gtgatgaaga	caaagatgaa	agggaggcac	ctcccaggga	gggaaattta	1440
aaaagatatc	caacaccata	cccagatgag	cttaagaata	tgggtcaaac	tgttcaaacc	1500
attgtacata	gattaaaaga	tgaagagacc	aatgaagact	caggaagaga	tttgaaacca	1560
catgaagatc	aacaagatat	aaataaagat	gtgggtgtga	agacctcaga	aagtactact	1620
acagtaaaaa	gcaaagttga	tgaagagaaa	aaatatatga	taggaaactc	tgtacagaag	1680
atcagtgaac	ctgaagctga	gattagtcct	gggagtttac	cagtgactgc	aaatatgaaa	1740
gcctctgaga	acttgaagca	tattgttaac	catgatgatg	tttttgagga	atctgaagaa	1800
ctttcttctg	atgaagagat	gaaaatggcg	gagatgcgac	caccattaat	tgaacctct	1860
attaaccagc	caaaagtcgt	agcacttagt	aataacaaaa	aagatgatac	aaaggaaaca	1920
gattctttat	cagatgaagt	tacacacaat	agcaatcaga	ataacagcaa	ttgttcttct	1980
ccatctcgga	tgtctgattc	agtttctctt	aatactgata	gtagtcaaga	cacctcactc	2040
tgctctccag	tgaacaaac	tcatattgat	attaattcca	aatcaggca	agaagatgaa	2100
aattttaaca	gccttttaca	aatggagat	attttaaaca	gttcaacaga	ggaaaagttc	2160
aaagctcatg	ataaaaaaga	ttttaactta	cctgaatatg	atttgaatgt	tgaagagcga	2220
ttagttctaa	ttgagaaaag	tgttgactca	acagccacag	ctgatgacac	tcacaaatta	2280
gatcatatca	atatgaatct	taataaactt	ataactaatg	atacatttca	accagagatc	2340

atggaaagat caaaaacaca ggatattgtg cttggaacaa gctttttaag cattaattct	2400
aaagaggaaa ctgagcactt ggaaaatgga aacaagtatc ctaatttgga atccgtaaat	2460
aaggtaaattg gacattctga ggaaacttcc cagtctccta ataggactga accacatgac	2520
agtgattgtt ctgttgactt aggtatttcc aaaagcactg aagatctctc ccctcagaaa	2580
agtgggccag ttggatctgt tgtgaaatct catagcataa ctaatatgga gattggaggg	2640
ctaaaaatct atgatattct tagtgataat ggacctcagc agccaagtac aaccgttaaa	2700
atcacatctg ctgttgatgg aaaaaatata gtcaggagca agtctgccac actgttgtat	2760
gatcaacat tgcaggtatt tactggttct tcctcatctt ctgatttaat atcaggaaca	2820
aaggcaattt tcaagtttga ttcaaactat aatcccgaag agccaaatat aataagaggc	2880
cccacaagtg gcccaaatc tgcacctcaa atatatggtc ctccacagta taatatccaa	2940
tacagtagca gtgctgcagt caaagacact ttgtggcact ccaaacaaaa tccccaaata	3000
gaccatgcca gtttctctcc tcagctcctt cctagatcag agagcacaga aaatcaaagt	3060
tatgctaaac attctgcaa tatgaatttc tctaatacata acaatgttcg agctaatact	3120
gcataccatt tacatcagag acttggccca gcaagacatg gggaaatgtg ggccatctca	3180
ccaaacgacc gacttattcc tgcagtaact cgaagtacaa tccagcgaca aagtagtgtg	3240
tcctccacag cctctgtaaa tcttggtgat ccaggctcta caaggcgggc tcagattcct	3300
gaaggagatt atttatcata cagagagttc cactcagcgg gaagaactcc tccaatgatg	3360
ccaggatcac agagaccctt ttctgcacga acatacagca tagatgggcc aaatgcatca	3420
agacctcaga gtgctcgacc ctctattaat gaaataccag agagaactat gtcagttagt	3480
gatttcaatt attcacggac tagtccttca aaaagaccaa atgcaagggt tggttctgag	3540
cattctttat tagatcctcc aggaaaaagt aaagttcctc gtgactggag agaacaagta	3600
cttcgacata ttgaagccaa aaagttagaa aagatgcctt tgagtaatgg acagatgggc	3660
cagccttca ggcctcaggc aaattatagt caaatacatc accccctca ggcattctgtg	3720
gcaaggcatc cctctagaga acaactaatt gattacttga tgctgaaagt ggcccaccag	3780
cctccatata cacagcccca ttgttctcct agacaaggcc atgaactggc aaaacaagag	3840
attcgagtga gggttgaaaa ggatccagaa cttggattta gcatatcagg tgggtctcggg	3900
ggtagaggaa acccattcag acctgatgat gatggatat ttgtaacaag ggtacaacct	3960
gaaggaccag catcaaaatt actgcagcca ggtgataaaa ttattcaggc taatggctac	4020
agttttataa atattgaaca tggacaagca gtgtccttgc taaaaacttt ccagaataca	4080
gttgaactca tcattgtacg agaagtttcc tcataa	4116

<210> 88
 <211> 1410
 <212> DNA
 <213> Homo sapiens

<400> 88	
atgaatgatt tcggaatcaa gaatatggac caggtagccc ctgtggctaa cagttacaga	60

gggacactca agcgccagcc agcctttgac acctttgatg ggtccctgtt tgctgttttt	120
ccttctctaa atgaagagca aacactgcaa gaagtgccaa caggcttgga ttccattttct	180
catgactccg ccaactgtga attgcctttg ttaaccccggt gcagcaaggc tgtgatgagt	240
caagccttaa aagctacctt cagtggcttc aaaaaggaac agcggcgctt gggcattcca	300
aagaaccctt ggctgtggag tgagcaacag gtatgccagt ggcttctctg ggccaccaat	360
gagttcagtc tgggtgaacgt gaatctgcag aggttcggca tgaatggcca gatgctgtgt	420
aaccttggca aggaacgctt tctggagctg gcacctgact ttgtgggtga cattctctgg	480
gaacatctgg agcaaatgat caaagaaaac caagaaaaga cagaagatca atatgaagaa	540
aattcacacc tcacctccgt tcctcattgg attaacagca atacattagg ttttggcaca	600
gagcaggcgc cctatggaat gcagacacag aattacccca aaggcggcct cctggacagc	660
atgtgtccgg cctccacacc cagcgtactc agctctgagc aggagtttca gatgttcccc	720
aagtctcggc tcagctccgt cagcgtcacc tactgctctg tcagtcagga cttcccaggc	780
agcaacttga atttgctcac caacaattct gggactccca aagaccacga ctcccctgag	840
aacgggtcgg acagcttcga gagctcagac tccctcctcc agtcctggaa cagccagtcg	900
tccttgctgg atgtgcaacg ggttccttcc ttcgagagct tcgaagatga ctgcagccag	960
tctctctgcc tcaataagcc aacctatgtt ttcaaggatt acatccaaga gaggagtgc	1020
ccagtggagc aaggcaaacc agttatacct gcagctgtgc tggccggctt cacaggaagt	1080
ggacctattc agctgtggca gtttctcctg gagctgctat cagacaaatc ctgccagtca	1140
ttcatcagct ggactggaga cggatgggag ttttaagctcg ccgaccccga tgaggtggcc	1200
cgccggtggg gaaagaggaa aaataagccc aagatgaact acgagaagct gagccggggc	1260
ttacgctact attacgaca gaacatcatc cacaagacgt cggggaagcg ctacgtgtac	1320
cgcttcgtgt gcgacctcca gaacttgctg gggttcacgc ccgaggaact gcacgccatc	1380
ctgggcgtcc agcccgcac ggaggactga	1410

<210> 89
 <211> 1173
 <212> DNA
 <213> Homo sapiens

<400> 89	
atggacttct ggctttggcc actttacttc ctgccagtat cggggggcct gaggatcctc	60
ccagaagtaa aggtagaggg ggagctgggc ggatcagtta ccatcaagtg cccacttcct	120
gaaatgcatg tgaggatata tctgtgccgg gagatggctg gatctggaac atgtggtacc	180
gtggtatcca ccaccaactt catcaaggca gaatacaagg gccgagttac tctgaagcaa	240
taccacgcga agaattctgtt cctagtggag gtaacacagc tgacagaaag tgacagcgga	300
gtctatgcct gcggagcggg catgaacaca gaccggggaa agaccagaa agtcaccctg	360
aatgtccaca gtgaatacga gccatcatgg gaagagcagc caatgcctga gactccaaaa	420

PCTAU2016050927-seq1-000001-EN-20161013

tggtttcatc	tgccctat	gttccagatg	cctgcatatg	ccagttcttc	caaattcgta	480
accagagtta	ccacaccagc	tcaaaggggc	aagggtccctc	cagttcacca	ctcctcccc	540
accacccaaa	tcaccaccg	ccctcgagt	tccagagcat	cttcagtagc	aggtgacaag	600
ccccgaacct	tcctgccatc	cactacagcc	tcaaaaatct	cagctctgga	ggggctgctc	660
aagccccaga	cgcccagcta	caaccaccac	accaggctgc	acaggcagag	agcactggac	720
tatggctcac	agtctgggag	ggaaggccaa	ggatttcaca	tcctgatccc	gaccatcctg	780
ggccttttcc	tgctggcact	tctggggctg	gtggtgaaaa	gggccgttga	aaggaggaaa	840
gccctctcca	ggcggggccc	ccgactggcc	gtgaggatgc	gcgccctgga	gagctcccag	900
aggccccgcg	ggtcgccgcg	accgcgctcc	caaaacaaca	tctacagcgc	ctgcccgcgg	960
cgcgctcgtg	gagcggacgc	tgcaggcaca	ggggaggccc	ccgttcccgg	ccccggagcg	1020
ccgttgcccc	ccgccccgct	gcagggtgtc	gaatctccct	ggctccatgc	cccatctctg	1080
aagaccagct	gtgaatacgt	gagcctctac	caccagcctg	ccgccatgat	ggaggacagt	1140
gattcagatg	actacatcaa	tgttcctgcc	tga			1173

<210> 90
 <211> 1632
 <212> DNA
 <213> Homo sapiens

<400> 90	
atggcgagcg	gcggtggcgg
gggtaacact	ggcgcggggtg
ggggggccggg	gatgggcctg
60	
agcctggggc	tgggtctggg
tctgagccta	ggcatgagtg
aggccaccag	tgaggcagag
120	
gaggaggcgg	ccacggccga
ggcgggtggga	cgcttgcca
cgacgctgtg	gctgcggctc
180	
cgcggtggg	aggcggtgct
ggcgggcg	cagcggttgc
tgggtgtggga	gaagccgctg
240	
cacagcctgg	tcacggcggc
cgcgctcaac	ggcctcttct
ggttgctgtc	ttcctcgctc
300	
ctccggccct	tcttctact
cagcgtctca	cttttggcct
atcttctgct	ggatctctgg
360	
cagcctcgct	ttctccctga
cgtttcagca	tcattccccag
aggagccaca	ctctgacagt
420	
gaggggtgcg	ggtcaggcgc
ccggccgcac	ctgctgagtg
tgcccgagtt	gtgcagatac
480	
ctggctgaga	gctggctcac
cttcagatt	cacctgcagg
agctgctgca	gtacaagagg
540	
cagaatccag	ctcagttctg
cgttcgagtc	tgctctggct
gtgctgtgtt	ggctgtgttg
600	
ggacactatg	ttccagggat
tatgatttcc	tacattgtct
tgttgagtat	cctgctgtgg
660	
cccctggtgg	tttatcatga
gctgatccag	aggatgtaca
ctcgccctgga	gccctgctc
720	
atgcagctgg	actacagcat
gaaggcagaa	gccaatgccc
tgcatcaca	acacgacaag
780	
aggaagcgtc	aggggaagaa
tgcaccccca	ggaggatgat
agccactggc	agagacagag
840	
agtgaagcgc	aggcagagct
ggctggcttc	tccccagtg
tggatgtgaa	gaaaacagca
900	
ttggccttgg	ccattacaga
ctcagagctg	tcagatgagg
aggcttctat	cttgagaggt
960	
ggtggcttct	ccgtatccc
ggccacaact	ccgcagctga
ctgatgtctc	cgaggatttg
1020	
gaccagcaga	gcctgccaa
tgaaccagag	gagaccctaa
gccgggacct	aggggagggga
1080	

PCTAU2016050927-seql-000001-EN-20161013

gaggagggag agctggcccc tcccgaagac ctactaggcc gtcctcaagc tctgtcaagg	1140
caagccctgg actcggagga agaggaagag gatgtggcag ctaaggaaac cttgttgagg	1200
ctctcatccc ccctccactt tgtgaacacg cacttcaatg gggcagggtc cccccagat	1260
ggagtgaat gctcccctgg aggaccagt gagacactga gccccgagac agtgagtgg	1320
ggcctcactg ctctgcccgg caccctgtca cctccacttt gccttggttg aagtgaccca	1380
gccccctccc cttccattct cccacctgtt ccccaggact caccagcc cctgcctgcc	1440
cctgaggaag aagaggcact caccactgag gactttgagt tgctggatca gggggagctg	1500
gagcagctga atgcagagct gggcttgagg ccagagacac cgccaaaacc ccctgatgct	1560
ccaccctgg ggcccgacat ccattctctg gtacagtcag accaagaagc tcaggccgtg	1620
gcagagccat ga	1632

<210> 91
 <211> 3207
 <212> DNA
 <213> Homo sapiens

<400> 91 atgttgtag gatccagtc tttttgcct ggagggccca atgggatcat tagaagccag	60
tcctttgagg gtttcaggc cctccaggaa aggcgatcca ggtgtaactc cttcattgaa	120
aattcctccg ctctcaagaa gcctcaggcc aaactgaaga aaatgcacaa tttaggccac	180
aaaaacaaca atcccccaa agagcctcag cctaaaaggg tggaagaagt ctacagggcc	240
ttgaaaaatg gacttgatga atatctggag gttcaccaga cggagctgga caagttgaca	300
gctcagttaa aagatatgaa aagaaactct cgcctgggtg tactgtatga cctagacaag	360
caaattaaaa caattgaaag atacatgaga cgcctggagt ttcataataag taaggtagat	420
gaactctatg aagcttattg tatccagcga cgcctccagg atggtgccag caaatgaag	480
caagccttcg caacatcccc tgccagcaaa gctgcccggg agagtctgac agagatcaat	540
cggagcttca aggagtacac agagaatatg tgcaccattg aagtggagct agagaatctg	600
ctgggagaat tctccatcaa gatgaaagg ctggctggct ttgcacgcct ctgtcctgga	660
gatcaatatg aaattttcat gaagtatggc cggcagcggg ggaaactgaa aggcaaaata	720
gaagtaaatg gcaagcagag ctgggatgga gaagaaacag tttttctgcc cctgatagtt	780
gggttcatct ccatcaaggc cacggagctc aaagggtcag caactcacat cctggtagg	840
agcgtgacct gtgagaccaa agagctgttt gcagcccagc ctcaggtagt ggctgtcgac	900
atcaatgacc ttggtacat caaactgaac ctggaaatca cctggtatcc atttgacgtg	960
gaggacatga ccgcatcctc aggcgtggg aacaaggcag cagcccttca gaggagaatg	1020
tccatgtaca gccagggtac cccggaaacg cccaccttca aagaccactc cttctttagg	1080
tggctgcac cttccccaga caagcccagg cggctgtctg tcttgagtgc cttgcaagac	1140
actttctttg ccaagctgca ccgcagccgc tccttcagt acctgccctc cctcaggccg	1200

agtcccaagg	ccgtgctaga	gctctattca	aatctacctg	atgacatctt	tgaaaatgga	1260
aaggcagccg	aggagaaaat	gccactgtcg	ctcagcttca	gtgacctgcc	caacggggac	1320
tgcgccctca	cctcccactc	aacaggctcc	ccttccaact	caacaaatcc	agaaattacc	1380
atcacccctg	cggagtttaa	cctcagcagc	ttggcctccc	agaatgaggg	tatggatgac	1440
accagctcag	catcttccag	gaactccctg	ggagaaggcc	aagagccaaa	gtcacacctg	1500
aaggaggaag	accagagga	gccagaaaa	cctgcctcgg	ccccatctga	ggcttgccgc	1560
cgacagtcct	caggtgctgg	ggctgagcac	ctgttccttg	agaatgatgt	tgcagaagca	1620
cttctgcaag	agtctgagga	ggcctctgag	ctcaagcctg	tggaactgga	cacttcggaa	1680
ggaaacatca	caaagcagct	ggtcaagagg	ctcacatctg	cagaggtgcc	aatggccaca	1740
gacaggctgc	tctctgaggg	ttctgttggg	ggagaatctg	aaggctgcag	atcctttcta	1800
gatggaagct	tagaggatgc	ttttaatggg	cttttacttg	cattagaacc	acataaagag	1860
cagtataaag	agtttcagga	tctgaaccaa	gaagtcatga	atttgatga	tattctaaaa	1920
tgcaagccag	cagtaagccg	cagcaggtct	tccagtttaa	gtctcacagt	tgaaagtgct	1980
ttagaaagct	ttgatttcct	gaacacctct	gattttgacg	aggaggagga	tggatgatgag	2040
gtttgtaatg	ttggcggagg	tgctgactca	gtattttcag	acactgagac	tgagaaacac	2100
agttacaggt	cggttcaccc	agaagccagg	gggcatctca	gtgaagcgct	cactgaagac	2160
acaggagttg	ggaccagtgt	ggcaggaagt	cctctccac	tgaccacagg	caacgagagc	2220
ctggacatca	ccatcgtcag	gcacctccag	tactgcaccc	aactcgtgca	gcaaattggt	2280
ttctcaagca	aaacccatt	tgtggcaaga	agtctcttag	agaagctttc	taggcagatc	2340
caagtgatgg	agaaactcgc	agctgtcagt	gatgagaaca	taggaaatat	cagttctggt	2400
gtggaagcca	taccagaatt	tcacaaaaag	ctgtctttgc	tgtcattctg	gaccaagtgc	2460
tgcagccctg	ttggtgtcta	ccacagccca	gcggacagag	tgatgaagca	gctggaggcc	2520
agctttgcc	gaactgtcaa	caaagaatat	ccaggacttg	cagaccaggt	gtttcgaacc	2580
ctggtgtccc	aaattctgga	ccgggctgag	cctctgcttt	cctccagcct	gtcctcgga	2640
gtcgtcactg	ttttccagta	ttacagttac	ttcaccagcc	acggcgtcag	tgacctggag	2700
agttacctga	gccagctggc	caggcaagtt	tccatggttc	agactctgca	atcactaaga	2760
gatgaaaaac	tgctacaaac	catgagtgtg	cttgctccca	gcaacctcct	ggcccagcag	2820
gaagtactca	ggactctggc	tctgctatta	accagagagg	acaacgaagt	tagtgaggct	2880
gtgacgcttt	acttggcagc	agcctccaaa	aatcagcatt	tcagggaaaa	ggccttgctc	2940
tattactgtg	aagcactaac	aaagacaaac	ctccagctcc	agaaagcagc	ttgcctggct	3000
ctgaaaatcc	ttgaggctac	tgaaagcatt	aaaatgctgg	tgacattgtg	tcaatctgat	3060
actgaagaaa	tcagaaatgt	ggcctcagaa	accctcttgt	ctctgggaga	agatgggcgg	3120
ctggcatatg	aacaattgga	caaatttcct	cgagactgtg	ttaaagtcgg	aggctcgtcat	3180
ggaactgaag	ttgccacagc	cttttaa				3207

<210> 92
 <211> 2532
 <212> DNA
 <213> Homo sapiens

<400> 92
 atggttgacag aagaatcagg tcctggtgca caaaatagtc cataccaact tcgtagaaaa 60
 actcttttgc cgaaaagaac agcgtgtccc acaaagaaca gtatggaggg cgctcaact 120
 tcaactacag aaaactttgg tcatcgtgca aaacgtgcaa gagtgtctgg aaaatcacia 180
 gatctatcag cagcacctgc tgaacagtat cttcaggaga aactgccaga tgaagtgggt 240
 ctaaaaatct tctcttactt gctggaacag gatctttgtg gagcagcttg tgtatgtaaa 300
 cgcttcagtg aacttgctaa tgatccaatt ttgtggaaac gattatatat ggaagtat 360
 gaatatactc gccctatgat gcatcctgaa cctggaaaat tctaccagat taatccagaa 420
 gagtatgaac atccaaatcc ctggaaagag agtttccagc agttgtataa aggtgcacat 480
 gtaaagccag gatttgctga acatttctac agtaaccctg caagatataa aggaagagaa 540
 aatatgttgt attatgatac tattgaagat gcccttggtg gggatcaaga ggctcatttt 600
 gatggactta tctttgttca ttctggaata tatactgatg aatggatata tattgaatct 660
 ccaatcacca tgattggtgc agcacctggg aaagtggcag acaaagttat aattgaaaac 720
 actagagatt caaccttcgt ttttatggaa ggctctgaag atgcttatgt tggatatatg 780
 acaataaggt ttaaccctga tgacaaatct gcacaacacc acaatgcaca ccactgctta 840
 gagattacag taaattgtag ccctattatt gatcactgta tcatccgaag tacatgtaca 900
 gttggttctg cagtatgtgt tagtgggtcaa ggagcatgtc ccaccatcaa gcatgtaac 960
 atcagtgact gtgaaaatgt tggactatat ataacagatc atgcacaggg aatatatgag 1020
 gataatgaaa tttccaataa tgcgttagct gggatttggg ttaaaaatca tggaaaccca 1080
 attattagac ggaatcatat tcatcatgga cgtgatgttg gtgtgttcac atttgatcat 1140
 ggcattgggtt actttgaaag ttgcaatata cacagaaata ggatagcagg ctttgaagta 1200
 aaagcctatg ctaaccctac agtgggttca tgtgaaattc accatgggca gactggagga 1260
 atatatgtcc atgaaaaagg aagaggacaa ttcatagaga ataaaatcta tgcaaacac 1320
 tttgcagggtg tatggattac ctcaaatagt gacccaacaa taaggggaaa ttctatat 1380
 aatggaaatc aaggaggagt ttacatcttt ggtgatggac gaggccttat tgaaggaaat 1440
 gacatttatg gcaatgcatt agcaggaatt caaattagga caaacagttg tccaattggt 1500
 cggcataaca aaattcatga tggccagcat ggtgggattt atgtgcatga aaagggacaa 1560
 ggagtaatag aagagaatga agtttatagt aacactctag ctggagtctg ggtgacaact 1620
 ggcagcactc cagtactgag aagaaaccgg atacacagtg gcaagcaggt tgggtgtttat 1680
 ttttatgaca atggacatgg agtgctagaa gacaatgata tctataatca tatgtattca 1740
 ggggttcaga taaggactgg aagcaacccc aaaattagac gcaacaaaat ctggggagga 1800
 cagaatggtg gaattctagt ttataattct ggtctaggct gtatagaaga caatgaaata 1860

tttgacaatg caatggctgg agtctggatt aagacagata gtaatcctac actaagaaga	1920
aataaaatcc atgatggaag agatggtggc atctgtatat ttaatggggg tcgaggtctc	1980
cttgaagaaa atgatatttt caggaatgct caagcaggtg ttctcatcag cactaatagt	2040
catccaatct taaggaaaaa cagaatattt gatggatttg ccgcaggtat tgaaattaca	2100
aatcacgcaa ctgcaacact agaaggcaat cagattttta acaaccggtt tggaggctta	2160
tttttagcat ctggtgttaa tgtgacaatg aaagataaca aaataatgaa caatcaagat	2220
gccatagaaa aggctgttag tagaggccaa tgtttatata aaatatcaag ttataccagc	2280
tatcccatgc atgatttcta cagatgtcat acttgtaaca ccacagatcg aaatgccata	2340
tgtgtgaact gcattaagaa gtgccatcag ggacatgatg tagagtttat tagacatgat	2400
aggtttttct gtgactgtgg tgctggaaca ctgtctaate cttgtacatt agctggtgag	2460
cctacacatg atacagatac actatatgac tctgctccac ctatagaatc taatacattg	2520
cagcacaact ga	2532

<210> 93
 <211> 1344
 <212> DNA
 <213> Homo sapiens

<400> 93	
atgcctgaca ttatttgggt tttccccct caggcagaag ctgaggaaga ttgtcattct	60
gatactgtca gagcagatga tgatgaagaa aatgaaagtc ctgctgaaac agatctgcag	120
gcacaactcc agatgttccg agctcagtgg atgtttgaac ttgctccagg tgtaagctct	180
agcaatttag aaaatcgacc ttgcagagca gcaagaggct ctctccagaa aacatcggca	240
gataccaaag gaaaacaaga acaggcaaaa gaagaaaagg ctcgagaact cttcctaaaa	300
gcagtagaag aagaacaaaa tggagctctc tatgaagcca tcaagtttta tcgtagggct	360
atgcaacttg tacctgatat agagttcaag attacttata cccggtctcc agatggtgat	420
ggcgttgga acagctacat tgaagataat gatgatgaca gcaaaatggc agatctcttg	480
tcctacttcc agcagcaact cacatttcag gagtctgtgc ttaaactgtg tcagcctgag	540
cttgagagca gtcagattca catatcagtg ctgccaatgg aggtcctgat gtacatcttc	600
cgatgggtgg tgtctagtga cttggacctc agatcattgg agcagttgtc gctggtgtgc	660
agaggattct acatctgtgc cagagaccct gaaatatggc gtctggcctg cttgaaagtt	720
tggggcagaa gctgtattaa acttgttccg tacacgtcct ggagagagat gtttttagaa	780
cggcctcgtg ttcggtttga tggcgtgtat atcagtaaaa ccacatatat tcgtcaaggg	840
gaacagtctc ttgatggttt ctatagagcc tggcaccaag tggaatatta caggtacata	900
agattctttc ctgatggcca tgtgatgatg ttgacaaccc ctgaagagcc tcagtccatt	960
gtccacggt taagaactag gaataccagg actgatgcaa ttctactggg tcaactatcg	1020
ttgtcacaag acacagacaa tcagaccaa gtatttgctg taataactaa gaaaaagaa	1080

gaaaaaccac ttgactataa atacagatat tttcgtcgtg tccctgtaca agaagcagat	1140
cagagttttc atgtggggct acagctatgt tccagtggtc accagagggt caacaaactc	1200
atctggatac atcattcttg tcacattact taaaaatcaa ctggtgagac tgcagtcagt	1260
gcttttgaga ttgacaagat gtacaccccc ttgttcttcg ccagagtaag gagctacaca	1320
gctttctcag aaaggcctct gtag	1344

<210> 94
 <211> 1098
 <212> DNA
 <213> Homo sapiens

<400> 94 atgggggtcc cgcgccctca gccctgggcg ctggggctcc tgctctttct ccttcctggg	60
agcctgggcg cagaaagcca cctctccctc ctgtaccacc ttaccgcggt gtcctcgct	120
gccccgggga ctctgcctt ctgggtgtcc ggctggctgg gccgcagca gtacctgagc	180
tacaatagcc tgcggggcga ggcggagccc tgtggagctt gggctctggga aaaccagggtg	240
tcctggtatt gggagaaaga gaccacagat ctgaggatca aggagaagct ctttctggaa	300
gctttcaaag ctttgggggg aaaaggtccc tacactctgc agggcctgct gggctgtgaa	360
ctgggccctg acaacacctc ggtgcccacc gccagttcg ccctgaacgg cgaggagttc	420
atgaatttcg acctcaagca gggcacctgg ggtggggact ggcccagggc cctggctatc	480
agtcagcggg ggcagcagca ggacaaggcg gccacaagg agctcacctt cctgctattc	540
tcctgcccgc accgcctgcg ggagcacctg gagaggggcc gcggaaacct ggagtggaag	600
gagccccct ccatgcgcct gaaggcccga cccagcagcc ctggcttttc cgtgcttacc	660
tgcagcgct tctcttcta ccctccggag ctgcaacttc ggttcctgcg gaatgggctg	720
gccgctggca ccggccaggg tgacttcggc cccaacagt acggatcctt ccacgcctcg	780
tcgtcactaa cagtcaaaag tggcgatgag caccactact gctgcattgt gcagcacgcg	840
gggctggcgc agcccctcag ggtggagctg gaatctccag ccaagtcctc cgtgctcgtg	900
gtgggaatcg tcatcggtgt cttgctactc acggcagcgg ctgtaggagg agctctgttg	960
tggagaagga tgaggagtgg gctgccagcc ccttgatct cccttcgtgg agacgacacc	1020
ggggtcctcc tgccacccc aggggaggcc caggatgctg atttgaagga tgtaaagtgtg	1080
attccagcca ccgcctga	1098

<210> 95
 <211> 2469
 <212> DNA
 <213> Homo sapiens

<400> 95 atgggcttct cttccgagct gtgcagcccc cagggccacg gggctctgca gcaaatgcag	60
gaggccgagc ttcgtctact ggagggcatg agaaagtgga tggcccagcg ggtcaagagt	120
gacagggagt atgcaggact gcttcaccac atgtccctgc aggacagtgg gggccagagc	180

cgggccatca	gccctgacag	ccccatcagt	cagtcctggg	ctgagatcac	cagccaaact	240
gagggcctga	gccgcttgct	gcggcagcac	gcagaggatc	tgaactcagg	gccctgagc	300
aagctgagcc	tgctcatccg	ggaacggcag	cagcttcgca	agacctacag	cgagcagtgg	360
cagcagctgc	agcaggagct	caccaagacc	cacagccagg	acattgagaa	gctgaagagc	420
cagtaccgag	ctctggcacg	ggacagtgcc	caagccaagc	gcaagtacca	ggaggccagc	480
aaagacaagg	accgtgacaa	ggctaaggac	aagtatgtgc	gcagcctgtg	gaagctcttt	540
gctcaccaca	accgctatgt	gctgggcgtg	cgggctgcgc	agctacacca	ccagcaccac	600
caccagctcc	tgctgcccgg	cctgctgcgg	tactgcagg	acctgcacga	ggagatggct	660
tgcatcctga	aggagatcct	gcaggaatac	ctggagatta	gcagcctggt	gcaggatgag	720
gtggtggcca	ttcaccggga	gatggctgca	gctgctgccc	gcatccagcc	tgaggctgag	780
taccaaggct	tcctgcgaca	gtatgggtcc	gcacctgacg	tcccaccctg	tgtcacgttc	840
gatgagtcac	tgcttgagga	gggtgaaccg	ctggagcctg	gggagctcca	gctgaacgag	900
ctgactgtgg	agagcgtgca	gcacacgtg	acctcagtga	cagatgagct	ggctgtggcc	960
accgagatgg	tgttcaggcg	gcaggagatg	gttacgcagc	tgcaacagga	gctccggaat	1020
gaagaggaga	acaccaccc	ccgggagcgg	gtgcagctgc	tgggcaagag	gcaagtgctg	1080
caagaagcac	tgaggggct	gcaggtagcg	ctgtgcagcc	aggccaagct	gcaggcccag	1140
caggagttag	tgagaccaa	gctgggagcac	ctggggcccc	gcgagcccc	gcctgtgctg	1200
ctcctgcagg	atgaccgcca	ctccacgtcg	tcctcggagc	aggagcgaga	ggggggaagg	1260
acaccacgc	tggagatcct	taagagccac	atctcaggaa	tcttcgccc	caagttctcg	1320
ctccctccac	cgctgcagct	cattccggag	gtgcagaagc	ccctgcatga	gcagctgtgg	1380
taccacgggg	ccatcccag	ggcagagggtg	gctgagctgc	tgggtgactc	tggggacttc	1440
ctggtgcggg	agagccagg	caagcaggag	tacgtgctgt	cgggtgctgtg	ggatgggtctg	1500
ccccggcact	tcctcatcca	gtccttggtg	aacctgtacc	gactggaagg	ggaaggcttt	1560
cctagcattc	ctttgctcat	cgaccaccta	ctgagcacc	agcagcccct	caccaagaag	1620
agtgggtgtg	tcctgcacag	ggctgtgccc	aaggacaagt	gggtgctgaa	ccatgaggac	1680
ctggtgttgg	gtgagcagat	tggacggggg	aactttggcg	aagtgttcag	cggacgcctg	1740
cgagccgaca	acaccctggt	ggcgggtgaag	tcttgtcgag	agacgctccc	acctgacctc	1800
aaggccaagt	ttctacagga	agcaggatc	ctgaagcagt	acagccacc	caacatcgtg	1860
cgtctcattg	gtgtctgcac	ccagaagcag	cccatctaca	tcgtcatgga	gcttgtgcag	1920
gggggcgact	tcctgacctt	cctccgcacg	gagggggccc	gcctgcgggt	gaagactctg	1980
ctgcagatgg	tgggggatgc	agctgctggc	atggagtacc	tggagagcaa	gtgctgcatc	2040
caccgggacc	tggctgctcg	gaactgcctg	gtgacagaga	agaatgtcct	gaagatcagt	2100
gactttggga	tgtcccgaga	ggaagccgat	ggggtctatg	cagcctcagg	gggcctcaga	2160
caagtccccg	tgaagtggac	cgcacctgag	gcccttaact	acggccgcta	ctcctccgaa	2220

agcgacgtgt	ggagctttgg	catcttgctc	tgggagacct	tcagcctggg	ggcctcccc	2280
tatcccaacc	tcagcaatca	gcagacacgg	gagtttgtgg	agaagggggg	ccgtctgccc	2340
tgcccagagc	tgtgtcctga	tgccgtgttc	aggctcatgg	agcagtgtctg	ggcctatgag	2400
cctgggcagc	ggcccagctt	cagcaccatc	taccaggagc	tgcagagcat	ccgaaagcgg	2460
catcgggtga						2469

<210> 96
 <211> 1590
 <212> DNA
 <213> Homo sapiens

<400> 96						
atgggctgtg	tgttctgcaa	gaaattggag	ccgggtggcca	cggccaagga	ggatgctggc	60
ctggaagggg	acttcagaag	ctacggggca	gcagaccact	atgggcctga	ccccactaag	120
gcccggcctg	catcctcatt	tgcccacatc	cccaactaca	gcaacttctc	ctctcaggcc	180
atcaaccctg	gcttccttga	tagtggcacc	atcaggggtg	tgtcagggat	tggggtgacc	240
ctgttcattg	ccctgtatga	ctatgaggct	cgaactgagg	atgacctcac	cttcaccaag	300
ggcgagaagt	tccacatcct	gaacaatact	gaaggtgact	ggtgggaggc	tcggtctctc	360
agctccggaa	aaactggctg	cattcccagc	aactacgtgg	cccctgttga	ctcaatccaa	420
gctgaagagt	ggtactttgg	aaagattggg	agaaaggatg	cagagaggca	gctgctttca	480
ccaggcaacc	cccagggggc	ctttctcatt	cgggaaagcg	agaccaccaa	aggtgcctac	540
tccctgtcca	tccgggactg	ggatcagacc	agaggcgatc	atgtgaagca	ttacaagatc	600
cgcaaactgg	acatgggcgg	ctactacatc	accacacggg	ttcagttcaa	ctcggtgcag	660
gagctgggtg	agcactacat	ggaggtgaat	gacgggctgt	gcaacctgct	catcgcgccc	720
tgcaccatca	tgaagccgca	gacgctgggc	ctggccaagg	acgcctggga	gatcagccgc	780
agctccatca	cgctggagcg	ccggctgggc	accggctgct	tcggggatgt	gtggctgggc	840
acgtggaacg	gcagcactaa	ggtggcggtg	aagacgtga	agccgggcac	catgtccccg	900
aaggccttcc	tggaggaggc	gcaggtcatg	aagctgctgc	ggcacgacaa	gctggtgcag	960
ctgtacgccg	tgggtgtcga	ggagcccatc	tacatcgtga	ccgagttcat	gtgtcacggc	1020
agcttgctgg	attttctcaa	gaaccagag	ggccaggatt	tgaggctgcc	ccaattgggtg	1080
gacatggcag	cccaggtagc	tgagggcatg	gcctacatgg	aacgcatgaa	ctacattcac	1140
cgcgacctga	gggcagccaa	catcctgggt	ggggagcggc	tggcgtgcaa	gatcgagac	1200
tttggttg	cgcgtctcat	caaggacgat	gagtacaacc	cctgccaaagg	ttccaagttc	1260
cccatcaagt	ggacagcccc	agaagctgcc	ctctttggca	gattcaccat	caagtcagac	1320
gtgtggtcct	ttgggatcct	gctcactgag	ctcatcacca	agggccgaat	cccctaccca	1380
ggcatgaata	aacgggaagt	gttgaacag	gtggagcagg	gctaccacat	gccgtgcctt	1440
ccaggctgcc	cagcatccct	gtacagggcc	atggaacaga	cctggcgtct	ggacccggag	1500
gagaggccta	ccttcgagta	cctgcagtcc	ttcctggagg	actacttcac	ctccgctgaa	1560

ccacagtacc agcccgggga tcagacatag 1590

<210> 97
 <211> 1287
 <212> DNA
 <213> Homo sapiens

<400> 97
 atgggcaatt gccacacggt ggggccaac gaggcgctgg tggtttcagg gggctgttgt 60
 ggttccgact ataaacagta cgtgtttggc ggctgggcct gggcctggtg gtgtatctcc 120
 gacactcaga ggatttcctt agagattatg acgttgacgc cccgctgcga ggacgtagag 180
 acggccgagg gggtagcttt aactgtgacg ggtgtcgccc aggtgaagat catgacggag 240
 aaggaactcc tggccgtggc ttgtgagcag tttctgggta agaattgtga ggacatcaaa 300
 aacgtcgtcc tgcagaccct ggaggacat ctgcgctcca tcctcgggac cctgacagtg 360
 gagcagattt atcaggaccg ggaccagttt gccaaactgg tgcgggaggt ggcagcccct 420
 gatgttggcc gcatgggcat tgagatcctc agcttcacca tcaaggacgt gtatgacaaa 480
 gtggactatc tgagctccct gggcaagacg cagactgccg tgggtgcagag agatgctgac 540
 attggcgtgg ccgaggctga acgggacgca ggcattccgg aagctgagtg caagaaggag 600
 atgctggatg tgaagttcat ggcagacacc aagattgctg actctaagcg agccttcgag 660
 ctgcaaaagt cagccttcag tgaggagggtt aacatcaaga cagctgaggc ccagttggcc 720
 tatgagctgc agggggcccc tgaacagcag aagatccggc aggaagagat tgagattgag 780
 gttgtgcagc gcaagaaaca gattgccgtg gaggcacagg agatcctgcg tacggacaag 840
 gagctcatcg ctacagtgcg ccggcctgcc gaggccgagg cccaccgcat ccagcagatt 900
 gccgaggggtg aaaaggtgaa gcaggtcctc ttggcacagg cagaggctga gaagatccgc 960
 aaaatcgggg aggcggaagc ggcagtcacg gaggcgatgg gcaaggcaga ggctgagcgg 1020
 atgaagctca aggcagaagc ctaccagaaa tacggggatg cagccaagat ggccttggtg 1080
 ctagaggccc tgccccagat tgctgcaaaa atcgtgccc cacttaccaa ggtcgatgag 1140
 attgtggtcc tcagtggaga caacagtaag gtcacatcag aagtgaaccg actgctggcc 1200
 gagctgcctg cctctgtgca tgccctcaca ggcgtggacc tgtctaagat acccctgatc 1260
 aagaaggcca ctggtgtgca ggtgtga 1287

<210> 98
 <211> 1854
 <212> DNA
 <213> Homo sapiens

<400> 98
 atgagctggg gcaccgagct ctgggatcag tttgacaact tagaaaaaca cacacagtgg 60
 ggaattgata ttcttgagaa atatatcaag tttgtgaaag aaaggacaga gattgaactc 120
 agctatgcaa agcaactcag gaatctttca aagaagtacc aacctaaaaa gaactcgaag 180
 gaggaagaag aatacaagta tacgtcatgt aaagctttca tttccaacct gaacgaaatg 240

PCTAU2016050927-seq1-000001-EN-20161013

aatgattacg	cagggcagca	tgaagttatc	tccgagaaca	tggcatcaca	gatcattgtg	300
gacttggcac	gctatgttca	ggaactgaaa	caggagagga	aatcaaactt	tcacgatggc	360
cgtaaagcac	agcagcacat	cgagacttgc	tggaagcagc	ttgaatctag	taaaaggcga	420
tttgaacgcg	attgcaaaga	ggcggacagg	gcgcagcagt	actttgagaa	aatggacgct	480
gacatcaatg	tcacaaaagc	ggatgttgaa	aaggccccgac	aacaagctca	aatacgtcac	540
caaatggcag	aggacagcaa	agcagattac	tcatccattc	tccagaaatt	caaccatgag	600
cagcatgaat	attaccatac	tcacatcccc	aacatcttcc	agaaaataca	agagatggag	660
gaaaggagga	ttgtgagaat	gggagagtcc	atgaagacat	atgcagaggt	tgatcggcag	720
gtgatcccaa	tcattgggaa	gtgcctggat	ggaatagtaa	aagcagccga	atcaattgat	780
cagaaaaatg	attcacagct	ggtaatagaa	gcttataaat	cagggtttga	gcctcctgga	840
gacattgaat	ttgaggatta	cactcagcca	atgaagcgca	ctgtgtcaga	taacagcctt	900
tcaaattcca	gaggagaagg	caaaccagac	ctcaaatttg	gtggcaaatc	caaaggaaag	960
ttatggccgt	tcatcaaaaa	aaataagctt	atgtcccttt	taacatcccc	ccatcagcct	1020
ccccctcccc	ctcctgcctc	tgcctcaccc	tctgtgttcc	ccaacggccc	ccagtctccc	1080
aagcagcaaa	aggaaccctt	ctcccatcgc	ttcaacgagt	tcatgacctc	caaacccaaa	1140
atccactgct	tcaggagcct	aaagcgtggg	ctttctctca	agctgggtgc	aacaccggag	1200
gatttcagca	acctcccacc	tgaacaaaga	aggaaaaagc	tgcagcagaa	agtcgatgag	1260
ttaaataaag	aaattcagaa	ggagatggat	caaagagatg	ccataacaaa	aatgaaagat	1320
gtctacctaa	agaatcctca	gatgggagac	ccagccagtt	tggatcacaa	attagcagaa	1380
gtcagccaaa	atatagagaa	actgcgagta	gagaccaga	aatttgaggc	ctggctggct	1440
gaggttgaag	gccggctccc	agcacgcagc	gagcaggcgc	gccggcagag	cggactgtac	1500
gacagccaga	accacccac	agtcaacaac	tgcgcccagg	accgtgagag	cccagatggc	1560
agttacacag	aggagcagag	tcaggagagt	gagatgaagg	tgctggccac	ggattttgac	1620
gacgagtttg	atgatgagga	gcccctccct	gccatagggg	cgtgcaaagc	tctctacaca	1680
tttgaaggtc	agaatgaagg	aacgatttcc	gtagttgaag	gagaaacatt	gtatgtcata	1740
gaggaagaca	aaggcgatgg	ctggacccgc	attcgagaaa	atgaagatga	agagggttat	1800
gtccccactt	catatgtcga	agtctgtttg	gacaaaaatg	ccaaagattc	ctag	1854

<210> 99
 <211> 1725
 <212> DNA
 <213> Homo sapiens

<400> 99						
atggcttctg	acctagagag	tagcctcacc	tccatagact	ggctccccca	gctgaccctc	60
cgagctacca	ttgagaagct	tggaagtgcc	tcccaggctg	ggcctcccgg	gagcagccgc	120
aagtgttcac	cagggtcacc	cacagatcct	aatgccaccc	tgagcaaaga	cgaggcagca	180

PCTAU2016050927-seq1-000001-EN-20161013

gtgcaccagg	acggcaagcc	acgatacagc	tatgccactc	tcatacaccta	tgccatcaac	240
tcctctccag	ccaagaagat	gaccctcagc	gagatttacc	gctggatctg	tgataacttc	300
ccctattaca	agaatgctgg	cattgggttg	aagaattcaa	tacggcacaa	cctttctctc	360
aacaagtgtt	tccggaaggt	gcccagacct	cgggatgacc	ctgggaaggg	ttcctattgg	420
acaattgaca	cctgccctga	catttcccga	aagagaagac	accctccaga	tgatgatctg	480
tccaagact	caccagaaca	ggaggcaagc	aagagccac	ggggaggcgt	tgaggagggt	540
ggagaagcct	cactgcctcc	tgaggggaat	ccgcagatgt	catttcagag	ccccacatct	600
atagccagct	acagccaggg	cacaggatct	gtggatggtg	gagcagtggc	agcaggggct	660
tcaggccgag	aaagtgtga	gggtccccct	cccctctata	acaccaacca	tgactttaaa	720
ttctcctact	cagagatcaa	ctttcaggat	ctaagctggt	ccttccgcaa	cctctataag	780
tccatgctgg	agaagtcttc	ttcctcctct	cagcacggct	tttcttctct	cctgggggac	840
atcccaccct	cgaacaacta	ctacatgtat	cagcagcagc	agccaccgcc	acctcaacag	900
cagcagcagc	agcagcagcc	gccacagcca	cctccccagc	agtcccagcc	acagcagcag	960
caggcacctg	cccagggccc	ctcagctgta	gggggtgctc	ctccactgca	cacccaagc	1020
acagatgggt	gtaccccacc	agggggaaag	caagctgggg	cggaaggcta	tgggcctccc	1080
cctgtaatgg	ccatgcatcc	accccgcgtg	cagcatggag	gctaccacc	tcatacagc	1140
catccccact	cccaccctgc	ccagcagcca	ccacctccac	agccacaggc	acaaggccag	1200
gctcccatca	acaacactgg	ctttgccttt	ccttctgact	ggtgctctaa	tattgactct	1260
ttaaaggaaa	gcttcaagat	ggtgaatcgg	ctcaattggt	ccagcattga	gcagtcacaa	1320
ttctcagaac	tgatggagag	tctacgacag	gcagagcaga	agaactggac	cctcgaccag	1380
catcacattg	ccaatctgtg	tgactccctc	aaccacttcc	ttactcagac	tggtcacgtg	1440
ccccctcaag	ggggtacca	ccgcccacca	gcccctgccc	gtattgctga	ctcctgtgcc	1500
ctcaccagt	gcaaacagga	gtcagccatg	agccaagtga	actcttatgg	gcaccacaaa	1560
gctccccacc	tctaccctgg	cccatcacca	atgtacccaa	tccccacca	ggactcagca	1620
ggatacaatc	gccagcaca	ccatatggtc	cctcggccat	cagtgccacc	tcctggtgcc	1680
aatgaggaga	tcctgatga	cttcgactgg	gacttgatca	cttag		1725

<210> 100
 <211> 1968
 <212> DNA
 <213> Homo sapiens

<400> 100	
atggccgagg	cgctcaggt ggtggagatc gaccgggact tcgagccgct gccccggccg 60
cgctcgtgca	cctggccgct gccaggccg gagtttagcc agtccaactc ggccacctcc 120
agcccgccgc	cgctgggcag cgcggtgcc aaccccgacg ccgcgccggg cctgccctcg 180
gcctcggctg	ccgctgtcag cgccgacttc atgagcaacc tgagcttgct ggaggagagc 240
gaggacttcc	cgcaggcgcc cggctccgtg gcggcgccgg tggcgccggc ggccgcccgc 300

PCTAU2016050927-seq1-000001-EN-20161013

gccgccaccg	gggggctgtg	cggggacttc	cagggcccgg	aggcgggctg	cctgcaccca	360
gcgccaccgc	agcccccgcc	gcccggggccg	ctgtcgcagc	acccgccggt	gcccccgcc	420
gccgctgggc	cgctcgcggg	gcagccgcgc	aagagcagct	cgtcccgccg	caacgcgtgg	480
ggcaacctgt	cctacgccga	cctcatcacc	aaggccatcg	agagctcggc	ggagaagcgg	540
ctcacgctgt	cgcagatcta	cgagtggatg	gtcaagagcg	tgccctactt	caaggataag	600
ggtgacagca	acagctcggc	gggctggaag	aattcaattc	gtcataatct	gtccctacac	660
agcaagttca	ttcgtgtgca	gaatgaagga	actggaaaaa	gttcttggtg	gatgctcaat	720
ccagaggggtg	gcaagagcgg	gaaatctcct	aggagaagag	ctgcatccat	ggacaacaac	780
agtaaatttg	ctaagagccg	aagccgagct	gccagaaga	aagcatctct	ccagtctggc	840
caggaggggtg	ctggggacag	ccctggatca	cagttttcca	aatggcctgc	aagccctggc	900
tctcacagca	atgatgactt	tgataactgg	agtacatttc	gccctcgaac	tagtctcaat	960
gctagtacta	ttagtgggag	actctcacc	attatgaccg	aacaggatga	tcttgagaa	1020
ggggatgtgc	attctatggt	gtacccgcca	tctgccgcaa	agatggcctc	tactttaccc	1080
agtctgtctg	agataagcaa	tcccgaaaac	atggaaaatc	ttttggataa	tctcaacctt	1140
ctctcatcac	caacatcatt	aactgtttcg	accagtcct	cacctggcac	catgatgcag	1200
cagacgccgt	gctactcgtt	tgcgccacca	aacaccagtt	tgaattcacc	cagcccaaac	1260
tacaaaaaat	atacatatgg	ccaatccagc	atgagccctt	tgccccagat	gcctatacaa	1320
acacttcagg	acaataagtc	gagttatgga	ggtatgagtc	agtataactg	tgcgccctgga	1380
ctcttgaagg	agttgctgac	ttctgactct	cctccccata	atgacattat	gacaccagtt	1440
gatcctgggg	tagcccagcc	caacagccgg	gttctgggcc	agaacgtcat	gatgggacct	1500
aattcgggtca	tgtcaaccta	tggcagccag	gcattctcata	acaaaatgat	gaatcccagc	1560
tcccatatcc	accctggaca	tgctcagcag	acattctgcag	ttaacgggcg	ttccctgccc	1620
cacacggtaa	gcacatgcc	ccacacctcg	ggtatgaacc	gcctgacca	agtgaagaca	1680
cctgtacaag	tgctctgcc	ccaccccatg	cagatgagtg	ccctgggggg	ctactcctcc	1740
gtgagcagct	gcaatggcta	tggcagaatg	ggccttctcc	accaggagaa	gctcccaagt	1800
gacttggtatg	gcatgttcat	tgagcgctta	gactgtgaca	tggaatccat	cattcggaat	1860
gacctcatgg	atggagatac	attggatttt	aactttgaca	atgtgttgcc	caaccaaagc	1920
ttccacaca	gtgtcaagac	aacgacacat	agctgggtgt	caggctga		1968

<210> 101
 <211> 2022
 <212> DNA
 <213> Homo sapiens

<400> 101	
atggcagagg	caccggcttc cccggccccg ctctctccgc tcgaagtgga gctggacccg 60
gagttcgagc	cccagagccg tccgcgatcc tgtacgtggc ccctgcaaag gccggagctc 120

PCTAU2016050927-seq1-000001-EN-20161013

caagcgagcc	ctgccaagcc	ctcgggggag	acggccgccc	actccatgat	ccccgaggag	180
gaggacgatg	aagacgacga	ggacggcggg	ggacggggccg	gctcggccat	ggcgatcggc	240
ggcgggcgcg	ggagcgggcac	gctggggtcc	gggctgctcc	ttgaggactc	ggcccgggtg	300
ctggcaccgc	gagggcaaga	ccccgggtct	gggccagcca	ccgcgggcggg	cgggctgagc	360
gggggtacac	aggcgctgct	gcagcctcag	caaccgctgc	caccgcccga	gccgggggag	420
gctggggggct	ccgggcagcc	gaggaatgt	tcgtcgcggc	ggaacgcctg	gggaaacctg	480
tcctacgcgg	acctgatcac	ccgcgccatc	gagagctccc	cggacaaacg	gctcactctg	540
tcccagatct	acgagtggat	ggtgcgttgc	gtgccctact	tcaaggataa	gggcgacagc	600
aacagctctg	ccggctggaa	gaactccatc	cggcacaacc	tgtcactgca	tagtcgattc	660
atgcgggtcc	agaatgaggg	aactggcaag	agctcttggg	ggatcatcaa	ccctgatggg	720
gggaagagcg	gaaaagcccc	ccggcgggcg	gctgtctcca	tggacaatag	caacaagtat	780
accaagagcc	gtggccgcgc	agccaagaag	aaggcagccc	tgcagacagc	ccccgaatca	840
gctgacgaca	gtccctccca	gctctccaag	tggcctggca	gccccacgtc	acgcagcagt	900
gatgagctgg	atgcgtggac	ggacttccgt	tcacgcacca	attctaacgc	cagcacagtc	960
agtggccgcc	tgtcgcccat	catggcaagc	acagagttgg	atgaagtcca	ggacgatgat	1020
gcgcctctct	cgcccatgct	ctacagcagc	tcagccagcc	tgtcaccttc	agtaagcaag	1080
ccgtgcacgg	tggaaactgcc	acggctgact	gatatggcag	gcaccatgaa	tctgaatgat	1140
gggctgactg	aaaacctcat	ggacgacctg	ctggataaca	tcacgctccc	gccatcccag	1200
ccatcgccca	ctgggggact	catgcagcgg	agctctagct	tcccgtatac	caccaagggc	1260
tcgggcctgg	gtccccaac	cagctccttt	aacagcacgg	tgttcggacc	ttcatctctg	1320
aactccctac	gccagtctcc	catgcagacc	atccaagaga	acaagccagc	taccttctct	1380
tccatgtcac	actatggtaa	ccagacactc	caggacctgc	tcacttcgga	ctcacttagc	1440
cacagcgatg	tcgatgatgc	acagtcggac	cccttgatgt	ctcaggccag	caccgctgtg	1500
tctgcccaga	attcccgcgc	gaacgtgatg	cttcgcaatg	atccgatgat	gtcctttgct	1560
gccagccta	accaggaag	tttgggtcaat	cagaacttgc	tccaccacca	gcaccaaacc	1620
cagggcgctc	ttgggtggcag	ccgtgccttg	tcgaattctg	tcagcaacat	gggcttgagt	1680
gagtccagca	gccttgggtc	agccaaacac	cagcagcagt	ctcctgtcag	ccagtctatg	1740
caaaccctct	cggactctct	ctcaggctcc	tccttgtact	caactagtgc	aaacctgccc	1800
gtcatggggc	atgagaagtt	ccccagcgac	ttggacctgg	acatgttcaa	tgggagcttg	1860
gaatgtgaca	tggagtccat	tatccgtagt	gaactcatgg	atgctgatgg	gttggatttt	1920
aactttgatt	ccctcatctc	cacacagaat	gttgttggtt	tgaacgtggg	gaacttcact	1980
ggtgctaagc	aggcctcatc	tcagagctgg	gtgccaggct	ga		2022

<210> 102
 <211> 9042
 <212> DNA

<213> Homo sapiens

<400> 102

atggccagcc agcaggattc gggcttcttt gagatcagta tcaaataattt actgaaatcc	60
tggagtaata cttctcccgt tggcaacggg tacatcaagc ctccgggtcc acctgcttct	120
ggcacgcaca gggagaaaagg gccgccaacc atgctaccca tcaatgtgga cccagacagt	180
aaaccaggag aatatgtcct caaaagttaa tttgtcaact tcaccactca ggctgaacgc	240
aagattcgta tcattatggc agagcccctg gaaaagccat tgacaaaatc tctgcaacgt	300
ggagaagacc cccaatttga tcaggtcac agctcaatga gctccctttc tgagtactgc	360
ctgccttcca ttctacgtac attatttgac tgggtataaaa ggcaaaatgg cattgaggat	420
gaatcacatg aatacagacc aagaacaagc aataaatcaa aaagcgatga acaacagcga	480
gattatttaa tggaaagacg ggacctcgcc attgatatta ttttttcttt agtattaata	540
gaagttttga aacagattcc acttcacatc gtaatagaca gtttaataca tgatgttatt	600
aacttggctt tcaagcactt taaatacaaa gaagggtacc ttgggtccaa cactggcaat	660
atgcatattg tggcagacct gtatgcagaa gtcattggag tgttggcaca agccaaattc	720
cctgctgtaa agaagaaatt tatggcggag ctaaaagaat tacggcacaa agagcagaac	780
ccatatgtgg ttcaaagcat tatcagctta ataatgggca tgaaattctt tcgaattaag	840
atgtatccag tggaggattt tgaggcctct cttcagttta tgcaggaatg tgcacattac	900
ttcctcgagg tcaaagacaa agatatcaag catgccttgg ctgggctttt tgttgaaata	960
cttgttccag ttgctgctgc tgttaaaaat gaagtaaag ttccctgcct tagaaatttt	1020
gtggaaagcc tgtatgacac cacgctggaa ctttcttctc gaaagaagca ttccttggcc	1080
ttgtaccccc tggtgacctg tttgctctgt gtcagtcaga agcagctgtt cctgaacagg	1140
tggcacattt tcctcaacaa ctgcttgtcc aaccttaaaa acaaagatcc caagatggct	1200
cgagttgcac tggaaatctct ctacagatta ctttgggttt acatgattcg aattaaatgt	1260
gaaagcaaca cagctactca gagccgactt ataaccatca tcacaacact tttcccaaaa	1320
gggtcccgcg gtgtggtacc aaggacatg cctctgaaca tctttgtgaa aatcatccag	1380
ttcattgccc aggaacgttt agattttgca atgaaagaaa tcattttcga ttttctttgt	1440
gtgggaaaac cagcaaaagc attcagtctc aaccagaga gaatgaacat tggtttacgg	1500
gcattcttgg tcatagctga tagcttgag cagaaagatg gggaacctcc catgccggtt	1560
acaggagccg ttcttccttc aggaacacg ttaagagtaa agaaaacata tttgagtaaa	1620
acactaactg aagaggaagc caaaatgata ggcattgcct tatattactc tcaagtacga	1680
aaagctgtag acaacatttt aaggcacctt gataaagaag taggaagggtg tatgatgctg	1740
actaatgtac agatgttaaa caaagaaccg gaagacatga tcacgggtga gagaaagcca	1800
aaaatagatc ttttcaggac ctgtgttgct gctattcctc gactgcttcc tgatgggatg	1860
tcaaaacttg aacttattga cttactggct aggctctcta ttcatatgga tgatgaattg	1920
cgacatattg cacaaaattc tcttcagggt ttacttgttg acttctcaga ttggagggaa	1980

gatgtactat	ttggctttac	caacttcctg	ctccgggaag	taaatgatat	gcatcacaca	2040
ctccttgatt	cgtccctgaa	gttgctgctg	cagctgctca	cccagtggaa	actagtcatc	2100
cagacacaag	gaaaagtcta	tgaacaagcc	aacaaaatca	gaaattcaga	gctcatcgca	2160
aatggctcca	gtcacagaat	tcagtcggaa	cgaggtcccc	actgcagtgt	actccacgct	2220
gtagaagggt	ttgctctggt	tttactctgc	agtttccagg	tggccacacg	caaactgtcc	2280
gttttaatac	tcaaggaaat	tcgagcgttg	tttattgccc	tggggcagcc	tgaggatgac	2340
gacaggccga	tgattgatgt	catggatcag	ctaagttctt	ccattctaga	aagttttatt	2400
catgtagcag	tttcggattc	agcaacatta	ccactcacc	acaatgtgga	tctgcagtgg	2460
ttggtggaat	ggaacgcagt	cctgggtcaat	agccattatg	atgtgaaaag	cccttcccat	2520
gtctggatat	ttgcacagtc	tgtcaaagac	ccctgggtcc	tctgcctctt	cagcttcctc	2580
cggcaggaga	acttacccaa	gcactgcccc	acagccctca	gctatgcctg	gccttatgcc	2640
ttcactcggc	tccagtcggt	gatgcctctg	gtggacccaa	atagcccaat	taatgccaa	2700
aaaaccagca	ctgccggcag	cggagacaac	tatgttactt	tgtggagaaa	ttacctaat	2760
ctttgttttg	gagttgcaa	acccagtatt	atgagccag	gacacttaag	agcttccact	2820
ccagaaataa	tggcgaccac	acctgatggt	acagtgagct	acgataacaa	ggccataggg	2880
accccatcgg	tgggagttct	gttaaagcag	ttggtgcctt	tgatgagact	agagagcatt	2940
gagatcacag	agtccttagt	tttaggattt	ggaagaacaa	attcccttgt	tttcagagaa	3000
ttggtagaag	aacttcattc	attaatgaaa	gaagctctgg	aaagaagacc	agagaacaag	3060
aaacgccgag	aacggcgaga	cttggttaagg	ctacaactac	ttcgaatfff	tgaacttttg	3120
gctgatgctg	gtgtaataag	tgacagcaca	aatggagccc	tagagcggga	tacttttagcc	3180
ctgggagctt	tgttcttaga	atatgtggac	ttgaccgcga	tgctcctaga	agctgaaaat	3240
gacaaagaag	ttgaaattct	taaagatatc	cgggcacatt	ttagtgcaat	ggtggccaac	3300
ttgattcagt	gtgttccagt	tcaccaccga	agatttctct	tccccagca	aagtctgagg	3360
caccaccttt	tcatcttatt	cagccagtgg	gcaggaccct	tcagcattat	gttctactct	3420
ctggatcggt	acagtgcag	aatcatcag	attacaagat	atcagtattg	tgcatataaa	3480
gcaatgtcag	cagtactgtg	ctgtggccct	gtctttgaca	atgtgggcct	ttccccagat	3540
ggctacctat	ataaatggct	tgacaacatt	ctggcttgct	aagatttacg	agttcatcaa	3600
cttggtgctg	aagttgttgt	cttgctactg	gaacttaatc	ctgaccaa	aaatcttttt	3660
aactgggcaa	ttgaccgatg	ctacacaggt	tcctaccaac	ttgcatctgg	ctgcttcaaa	3720
gccatagcaa	ctgtgtgtgg	aagcaggaac	tatcccttcg	acatagtgc	attgttaaac	3780
cttggttctat	tcaaggcctc	tgacaccaac	agagagattt	atgaaatctc	catgcagctc	3840
atgcagatcc	ttgaagcaaa	gctttttgta	tactcaaaga	aagtcgctga	gcaaagaccg	3900
ggaagtattc	tctatggaac	acacggcccc	ctgccacccc	tctacagcgt	gtcacttgcc	3960
ctcttgtcat	gtgagctggc	caggatgtac	cctgagctca	cactccccct	cttctcagag	4020

gtaagccagc	gattccccac	aacacacccc	aacgggcgcc	agatcatgct	tacctacctg	4080
ctgccctggc	tgcacaacat	cgagctggtg	gacagcaggc	tcctcctccc	ggggtcgagc	4140
cccagcagcc	cagaggacga	agtcaaggac	cggaaggtg	acgtgactgc	ttctcacggg	4200
ctgagaggaa	atggctgggg	ctctccagaa	gccacgtcac	tggtcctgaa	caacctcatg	4260
tacatgacgg	ccaagtatgg	agatgaagtt	cctgggccag	aaatggaaaa	tgcttggaat	4320
gctttagcca	acaatgagaa	atggagcaac	aacctgagga	tcaccttgca	gttcctgatt	4380
agcctctgtg	gggtcagcag	cgacacagtt	ctcctaccct	atattaaaaa	agtggaata	4440
tacttgtgcc	gtaacaacac	cattcaaac	atggaagagc	ttctctttga	gctgcagcag	4500
acagagcccg	tgaaccccat	cgtccagcat	tgtgacaacc	cgcccttcta	ccgcttcacg	4560
gccagtagca	aggcttccgc	agcagcctca	ggaaccacct	ctagcagcaa	tacagtggtt	4620
gctggccagg	aaaatttccc	agatgctgag	gagaacaaga	tattgaaaga	atctgatgaa	4680
aggtttagta	atgtcatcag	agcccacact	cgcctcgagt	caagatacag	caatagctct	4740
ggaggatcct	acgatgaaga	taaaaatgat	ccaatttctc	cctacacggg	ctggttgctg	4800
actattacag	agaccaagca	gccgcagccc	ttaccgatgc	cttgactagg	aggatgctgg	4860
gccccctgg	ttgactatct	cccggagacc	atcactcccc	gggggccact	ccacaggtgc	4920
aatattgctg	taatttttat	gactgaaatg	gtggtggatc	acagtgtacg	agaagactgg	4980
gcgcttcac	taccattatt	acttcatgct	gtcttcttag	gttttagacca	ctaccggcct	5040
gaagtctttg	aacacagcaa	aaaactgctt	cttcacctct	tgattgccct	ctcttgcaac	5100
agcaatttcc	attccattgc	ttccgtgctc	ctgcagaccc	gagagatggg	tgaagctaag	5160
actctaaccg	tgcagccagc	ctaccaacct	gaatatctct	atacagggtg	ctttgacttc	5220
ctgagagagg	accagtcac	cccgggtgcct	gactcagggc	ttagttcaag	ctccacctcc	5280
tctagcatca	gtctgggagg	cagcagtgga	aacctccac	agatgacca	ggaggtagaa	5340
gatgtggaca	cagctgctga	aacagatgag	aaggcaaaca	agctcattga	gtttctcacg	5400
accagggcat	ttggtccact	ttggtgccat	gaagacatca	cacctaaaaa	tcaaaattca	5460
aagagtgctg	aacagctcac	taattttcta	cgtcacgttg	tatctgtatt	taaagattcc	5520
aaatcagggt	tccatctgga	gcaccagttg	agtgaagttg	cattgcagac	agccctcgca	5580
agctcttcaa	ggcactatgc	tggtcgggtc	ttccagatat	tccgggccct	caagcaacct	5640
ctgtcagcac	atgccttatc	tgaccttctc	tcaagattgg	tggagggtgat	aggagaacat	5700
ggagatgaga	ttcagggtta	tgtaatggaa	gcgctcctaa	ccttgagggc	ggctgtggat	5760
aacttgctg	actgcttgaa	gaacagtgac	ctcctaactg	tattgtcccg	ctcttctca	5820
ccagatttaa	gctccagcag	taaactaaca	gcaagcagaa	agagcacagg	acaactaaac	5880
atgaaccgg	gaaccaccag	cggcaacacc	gcaactgccg	aacggagccg	gcatcaacga	5940
agcttctctg	tgccaagaa	gtttggtgtc	atcgaccgat	cctctgacct	acctcgaagt	6000
gccacactgg	acagaattca	ggcttgtacc	caacaaggcc	tctcctcaaa	aaccagaagc	6060

tcatcctcct	tgaaggacag	tctcacggac	ccatcccaca	taaaccatcc	caccaacctg	6120
ctggccacca	tattctgggt	cacagtggcc	ttgatggagt	ctgattttga	gtttgaatac	6180
ttaatggcct	taaggctggt	gagcagacta	ctggcacata	tgccactcga	taaggctgag	6240
aaccgagaaa	agcttgagaa	actccaggca	cagctgaagt	gggccgactt	ctccgggctg	6300
cagcagctgc	tgctgaaagg	attcacatcc	ctcaccacca	cagacctgac	cctgcagctc	6360
ttcagtctgc	tgacaccagt	gtccaaaata	tccatgggtg	atgcatccca	cgctattggg	6420
tttccactga	atgtcttggt	tctcctgcct	cagctgattc	agcattttga	aaatcccaat	6480
cagttctgta	aggatatagc	cgaaaggatt	gctcaggttt	gtttagaaga	gaagaacccc	6540
aaactttcaa	atcttgacac	tgtcatgact	ctttataaaa	cgcacagcta	cacgaggggac	6600
tgtgccacgt	gggtcaatgt	ggtctgtcga	taccttcatg	aagcatatgc	tgacattacc	6660
ttgaatatgg	ttacctacct	ggcagagctg	ctggagaagg	gcctccctag	tgtgcagcag	6720
cccctgctcc	aggtgatcta	cagtcttctc	agctacatgg	acctttctgt	cgttcctgtc	6780
aaacagttca	atgtggaagt	tctgaagaca	attgaaaaat	atgtgcaaag	tgttcactgg	6840
agagaagctc	tgaatatctt	gaagctggta	gtttctcggg	cagccagcct	tgttttacct	6900
tcataccagc	acagtgcact	ctcaaaaata	gaaatacatc	gagtgtggac	tagtgcttcc	6960
aaggaattac	ctgggaaaac	cctggacttc	cacttcgata	tttcggagac	tccaatcatc	7020
gggaggcggg	atgatgagct	gcagaattct	tctgggcgtg	atgggaagcc	cagggccatg	7080
gccgtcacc	ggagcacatc	ttccacttcc	tcaggctcca	actccaacgt	ccttgttcca	7140
gtgagctgga	aaaggcccca	gtattctcag	aagagaacaa	aagagaagtt	ggtacatgtc	7200
ctttctctgt	gtggccaaga	agtaggattg	agcaaaaatc	catcagtgat	tttttcatcg	7260
tgtggggatc	tggatctgct	tgagcaccag	acaagcttgg	tatcttctga	ggacgggtgcc	7320
cgagagcagg	agaacatgga	tgacacaaac	agcgagcagc	agtttagagt	cttcagagac	7380
ttcgacttcc	tagatgtgga	gctggaggat	ggagaggggtg	agagtatgga	caatttcaac	7440
tggggagtgc	gcagacgttc	tctggacagc	ctggataagt	gtgatatgca	gattctggag	7500
gagcgccaac	tgtcaggaag	cactcctagc	ctgaataaaa	tgccacctga	ggactccgat	7560
gaatcatccg	aggaggagga	cctcacagcc	agccagatcc	tggagcactc	agacctaatc	7620
atgactctct	ccccctctga	agagacgaat	cccatggagc	tgctcaccac	agcctgtgac	7680
tcgacccttg	cagaacctca	ttcctttaac	accagaatgt	ccagctttga	tgcttccttg	7740
cctgatatga	ataatctgca	gatttctgag	ggttcaaagg	ctgaagctgt	tcgtgaggag	7800
gaggacacca	ccgtgcatga	ggatgatctt	tctagttcca	tcaatgaact	cccagcagct	7860
tttgaatgca	gcgacagctt	tagcctggac	atgactgagg	gggaagaaaa	aggcaatcgg	7920
gcactggacc	agtttaccct	ggcgagcttt	ggagaagggtg	acaggggagt	ctctccccct	7980
ccctcgccct	tcttctcagc	catccttgcc	gcctttcagc	ccgcagcctg	tgacgatgcc	8040
gaggaggcct	ggcgagacca	catcaaccag	cttatgtgtg	actcagatgg	ctcctgtgct	8100

gtgtatacat	ttcatgtgtt	ctcctccttg	tttaagaata	ttcagaaaag	gttctgcttc	8160
ctaacctgtg	atgcagccag	ttaccttgga	gataacctcc	ggggaatcgg	atccaaattt	8220
gtcagctctt	cccagatgct	cacctcctgc	tctgaatgtc	ctacactttt	tgtggatgcc	8280
gagactctcc	tttcatgtgg	acttctggac	aagctcaagt	tcagtgtgtt	agaactgcaa	8340
gaatatttgg	atacctacaa	caacaggaaa	gaggccacac	tctcttggct	tgcaaattgt	8400
aaggcaacat	ttgcaggggg	atcaagagat	ggagtaatta	cctgtcaacc	aggggactcc	8460
gaagaaaagc	aattggaact	gtgtcagaga	ttatataagc	tacacttcca	gctgctattg	8520
ctttttcagt	cctactgtaa	gctcatcggc	caggtgcacg	aagttagctc	catgccagag	8580
ctgctgaata	tgtccagggg	actgagtgc	ctaaagaaac	acctgaagga	agccagtgc	8640
gtcattgcag	ctgacctctt	ctattcagac	ggcgcgtggt	ccgagcccac	cttcacgtcc	8700
actgaagcag	ccatccagtc	catgctggag	tgcctgaaga	acaacgaact	cggcaaagct	8760
ttgcggcaga	tcagggagtg	cagaagtctg	tggcccaatg	acatctttgg	aagcagttct	8820
gatgatgagg	tccagacact	actgaatatt	tatttccgtc	accaaactct	gggacagacg	8880
gggtacttatg	ccctgggtggg	gtctaaccag	agcctgaccg	agatctgcac	caagctgatg	8940
gagctgaaca	tggagatccg	ggacatgatc	cgcagggccc	agagttaccg	agtcctcact	9000
acttttcttc	cagactccag	tgtttctggc	actagtctct	ga		9042

<210> 103
 <211> 2490
 <212> DNA
 <213> Homo sapiens

<400> 103						
atggcgaaat	ataacacggg	gggcaacccg	acagaggatg	tctcagtcaa	tagccgaccc	60
ttcagagtca	cagggccaaa	ctcatcttca	ggaatacaag	caagaaagaa	cttattcaac	120
aaccaaggaa	atgccagccc	tcctgcagga	cccagcaatg	tacctaagtt	tgggtcccca	180
aagccacctg	tggcagtcaa	accttcttct	gaggaaaagc	ctgacaagga	acccaagccc	240
ccgtttctaa	agcccactgg	agcaggccaa	agattcggaa	caccagccag	cttgaccacc	300
agagaccccg	aggcgaaagt	gggatttctg	aaacctgtag	gccccagcc	catcaacttg	360
cccaaagaag	attccaaacc	tacatttccc	tggcctcctg	gaaacaagcc	atctcttcac	420
agtgtaaacc	aagaccatga	cttaaagcca	ctaggcccga	aatctgggcc	tactcctcca	480
acctcagaaa	atgaacagaa	gcaagcgttt	cccaaattga	ctgggggttaa	agggaaattt	540
atgtcagcat	cacaagatct	tgaaccaag	cccctcttcc	ccaaaccgc	ctttggccag	600
aagccgcccc	taagtaccga	gaactcccat	gaagacgaaa	gccccatgaa	gaatgtgtct	660
tcatcaaaaag	gggtccccagc	tcccctggga	gtcaggtcca	aaagcggccc	tttaaaacca	720
gcaaggggaag	actcagaaaa	taaagaccat	gcaggggaga	tttcaagttt	gccctttcct	780
ggagtgggtt	tgaaacctgc	tgcgagcagg	ggaggcccag	gtctctccaa	aaatggtgaa	840

gaaaaaaagg	aagataggaa	gatagatgct	gctaagaaca	ccttccagag	caaaataaat	900
caggaagagt	tggcctcagg	gactcctcct	gccaggttcc	ctaaggcccc	ttctaagctg	960
acagtggggg	ggccatgggg	ccaaagtcag	gaaaaggaaa	agggagacaa	gaattcagcc	1020
accccgaaac	agaagccatt	gcctcccttg	tttaccttgg	gtccacctcc	acaaaaaccc	1080
aacagaccac	caaagtgtga	cctgacgaaa	ttccacaaaa	cctcttctgg	aaacagtact	1140
agcaaaggcc	agacgtctta	ctcaacaact	tccctgccac	cacctccacc	atcccatccg	1200
gccagccaac	caccattgcc	agcatctcac	ccatcacaac	caccagtccc	aagcctacct	1260
cccagaaaca	ttaaacctcc	gtttgacctt	aaaagccctg	tcaatgaaga	caatcaagat	1320
ggtgtcacgc	actctgatgg	tgctggaaat	ctagatgagg	aacaagacag	tgaaggagaa	1380
acatatgaag	acatagaagc	atccaaagaa	agagagaaga	aaagggaaaa	ggaagaaaag	1440
aagaggttag	agctggagaa	aaaggaacag	aaagagaaaag	aaaagaaaaga	acaagaaata	1500
aagaagaaat	ttaaactaac	aggccctatt	caagtcattc	atcttgcaaa	agcttgttgt	1560
gatgtcaaag	gaggaaagaa	tgaactgagc	ttcaagcaag	gagagcaaata	tgaaatcatc	1620
cgcattcacag	acaaccacga	aggaaaatgg	ttgggcagaa	cagcaagggg	ttcatatggc	1680
tatatataaa	caactgctgt	agagattgac	tatgattctt	tgaaactgaa	aaaagactct	1740
cttgggtgcc	cttcaagacc	tattgaagat	gaccaagaag	tatatgatga	tgttgcagag	1800
caggatgata	ttagcagcca	cagtcagagt	ggaagtggag	ggatattccc	tccaccacca	1860
gatgatgaca	tttatgatgg	gattgaagag	gaagatgctg	atgatggctc	cacactacag	1920
gttcaagaga	agagtaatac	gtggtcctgg	gggattttga	agatgttaaa	gggaaaagat	1980
gacagaaaaga	aaagtatacg	agagaaacct	aaagtctctg	actcagacaa	taatgaaggt	2040
tcattctttcc	ctgctcctcc	taaacaattg	gacatgggag	atgaagttta	cgatgatgtg	2100
gataacctctg	atttcctgtt	ttcatcagca	gagatgagtc	aaggaaactaa	tgttggaaaa	2160
gctaagacag	aagaaaagga	ccttaagaag	ctaaaaaagc	aggaaaaaga	agaaaaagac	2220
ttcaggaaaa	aatttaaata	tgatggtgaa	attagagtcc	tatattcaac	taaagttaca	2280
acttcataaa	cttctaaaaa	gtggggaacc	agagatctac	aggtaaaacc	tggtgaatct	2340
ctagaagtta	tacaaaccac	agatgacaca	aaagttctct	gcagaaatga	agaagggaaa	2400
tatggttatg	tccttcggag	ttacctagcg	gacaatgatg	gagagatcta	tgatgatatt	2460
gctgatggct	gcatctatga	caatgactag				2490

<210> 104
 <211> 354
 <212> DNA
 <213> Homo sapiens

<400> 104	atgaagtctg	tgtacaaaga	agagcatccg	ttcgagaagc	gccgctctga	gggcgagaag	60
	atccgaaaga	aatacccggg	ccgggtgccg	gtgatagtag	aaaaggctcc	caaagctcgg	120
	ataggagacc	tggaacaaaa	gaaataacctg	gtgccttctg	atctcacagt	tggtcagttc	180

PCTAU2016050927-seq1-000001-EN-20161013

tacttcttga tccggaagcg aattcatctc cgagctgagg atgccttggt tttctttgtc	240
aacaatgtca ttccaccac cagtgccaca atgggtcagc tgtaccagga acaccatgaa	300
gaagacttct ttctctacat tgcctacagt gacgaaagtg tctacggtct gtga	354

<210> 105
 <211> 5055
 <212> DNA
 <213> Homo sapiens

<400> 105	
atggaggatc ttgttcaaga tggggtggct tcaccagcta cccctgggac cgggaaatct	60
aagctggaac cattgccaa agaagacctc atcaagtttg ccaagaaaca gatgatgcta	120
atacagaaag ctaaatacaag gtgtacagaa ttggagaaag aaattgaaga actcagatca	180
aaacctgtta ctgaaggaac tggatgatatt attaaaggcat taactgaacg tctggatgct	240
cttcttcttg aaaaagcaga gactgagcaa cagtgtcttt ctctgaaaaa ggaaaatata	300
aaaatgaagc aagaggttga ggattctgta acaagatgg gagatgcaca taaggagttg	360
gaacaatcac atataaacta tgtgaaagaa attgaaaatt tgaaaaatga gttgatggca	420
gtacgttcca aatacagtga agacaaagct aacttacaaa agcagctgga agaagcaatg	480
aatacgcaat tagaactttc agaacaactt aaatttcaga acaactctga agataatgtt	540
aaaaaactac aagaagagat tgagaaaatt aggccaggct ttgaggagca aattttatat	600
ctgcaaaagc aattagacgc taccactgat gaaaagaagg aaacagttac tcaactccaa	660
aatatcattg aggctaattc tcagcattac caaaaaata ttaatatgtt gcaggaagag	720
cttttacagt tgaaagctat acaccaagaa gaggtgaaag agttgatgtg ccagattgaa	780
gcatcagcta aggaacatga agcagagata aataagttga acgagctaaa agagaactta	840
gtaaaacaat gtgaggcaag tgaaaagaac atccagaaga aatatgaatg tgagttagaa	900
aatttaagga aagccacctc aatgcaaac caagacaatc agatatgttc tatttctctg	960
caagaaaata catttgtaga acaagtagta aatgaaaaag tcaaactctt agaagatacc	1020
ttaaagaac ttgaatctca acacagtatc ttaaagatg aggttaactta tatgaataat	1080
cttaagttaa aacttgaaat ggatgctcaa catataaagg atgagttttt tcatgaacgg	1140
gaagacttag agtttaaaat taatgaatta ttactagcta aagaagaaca gggctgtgta	1200
attgaaaaat taaaatctga gctagcaggt taaataaac agttttgcta tactgtagaa	1260
cagcataaca gagaagtaca gagtcttaag gaacaacatc aaaaagaaat atcagaacta	1320
aatgagacat ttttgtcaga ttcagaaaaa gaaaaattaa cattaatgtt tgaaatacag	1380
ggtcttaagg aacagtgtga aaacctacag caagaaaagc aagaagcaat tttaaattat	1440
gagagtttac gagagattat ggaaatttta caaacagaac tgggggaatc tgctggaaaa	1500
ataagtcaag agttcgaatc aatgaagcaa cagcaagcat ctgatgttca tgaactgcag	1560
cagaagctca gaactgcttt tactgaaaaa gatgcccttc tcgaaactgt gaatcgccctc	1620

cagggagaaa	atgaaaagtt	actatctcaa	caagaattgg	taccagaact	tgaaaatacc	1680
ataaagaacc	ttcaagaaaa	gaatggagta	tacttactta	gtctcagtca	aagagatacc	1740
atgttaaaaag	aattagaagg	aaagataaat	tctcttactg	aggaaaaaga	tgattttata	1800
aataaactga	aaaattccca	tgaagaaatg	gataatttcc	ataagaaatg	tgaaagggaa	1860
gaaagattga	ttcttgaact	tgggaagaaa	gtagagcaaa	caatccagta	caacagtgaa	1920
ctagaacaaa	aggtaaata	attaacagga	ggactagagg	agacttttaa	agaaaaggat	1980
caaaatgacc	aaaaactaga	aaaacttatg	gttcaaatga	aagttctctc	tgaagacaaa	2040
gaagtattgt	cagctgaagt	gaagtctctt	tatgaggaaa	acaataaact	cagttcagaa	2100
aaaaaacagt	tgagtaggga	tttgagggtt	tttttgtctc	aaaaagaaga	tgttatcctt	2160
aaagaacata	ttactcaatt	agaaaagaaa	cttcagttaa	tggttgaaga	gcaagataat	2220
ttaaataaac	tgcttgaaaa	tgagcaagtt	cagaagttat	ttgttaaaac	tcagttgtat	2280
ggttttctta	aagaaatggg	atcagaagtt	tcagaagaca	gtgaagagaa	agatgttggt	2340
aatgtcctac	aggcagtcgg	tgaatccttg	gcaaaaataa	atgaggaaaa	atgcaacctg	2400
gcttttcagc	gtgatgaaaa	agtattagag	ttagaaaaag	agattaagtg	ccttcaagaa	2460
gagagtgtag	ttcagtgtga	agaacttaag	tctttattga	gagactatga	gcaagagaaa	2520
gttctcttaa	ggaaagagtt	agaagaaata	cagtcagaaa	aagaggccct	gcagtctgat	2580
cttctagaaa	tgaagaatgc	taatgaaaaa	acaaggcttg	aaaatcagaa	tcttttaatt	2640
caagttgaag	aagtatctca	aacatgtagc	aaaagtgaaa	tccataatga	aaaagaaaaa	2700
tgttttataa	aggaacatga	aaacctaaag	ccactactag	aacaaaaaga	attacgagat	2760
aggagagcag	agttgatact	attaaaggat	tccttagcaa	aatcaccttc	tgtaaaaaat	2820
gatcctctgt	cttcagtaaa	agagttggaa	gaaaaaatag	aaaatctgga	aaaagaatgc	2880
aaagaaaagg	aggagaaaat	aaataagata	aaattagttg	ccgtaaaggc	aaagaaagaa	2940
ctagattcca	gcagaaaaga	gaccagact	gtgaaggaag	aacttgaatc	tcttcgatca	3000
gaaaaggacc	agttatctgc	ttccatgaga	gatctcattc	aaggagcaga	aagctataag	3060
aatcttttat	tagaatatga	aaagcagtca	gagcaactgg	atgtggaaaa	agaacgtgct	3120
aataattttg	agcatcgtat	tgaagacctt	acaagacaat	taagaaattc	gactttgcag	3180
tgtgaaacaa	taaattctga	taatgaagat	ctcctggctc	gtattgagac	attacagtct	3240
aatgccaaat	tattagaagt	acagatttta	gaagtccaga	gagccaaagc	aatggtagac	3300
aaagaattag	aagctgaaaa	acttcagaaa	gaacagaaga	taaaggaaca	tgccactact	3360
gtaaatgaac	ttgaagaact	tcaggtacaa	cttcaaaagc	aaaagaaaca	gcttcagaaa	3420
accatgcaag	aattagagct	ggttaaaaag	gatgcccaac	aaaccacatt	gatgaatatg	3480
gaaatagctg	attatgaacg	tttgatgaaa	gaactaaatc	aaaagttaac	taataaaaac	3540
aacaagatag	aagatttgga	gcaagaaata	aaaattcaaa	aacagaaaca	agaaacccta	3600
caagaagaaa	taacttcatt	acagtcttca	gtacaacaat	atgaagaaaa	aaacaccaaa	3660

atcaagcaat tgcttgtgaa aaccaaaaag gaactggcag attcaaagca agcagaaaact	3720
gatcacttaa tacttcaagc atctttaaaa ggtgagctgg aggcaagcca gcagcaagta	3780
gaagtctata aaatacagct ggctgaaata acatcagaga agcacaaaat ccacgagcac	3840
ctgaaaacct ctgcggaaca gcaccagcgt acgctaagtg cataccagca gagagtgaca	3900
gcactacagg aagagtgccg tgctgccaag gcagaacaag ctactgtaac ctctgaattc	3960
gagagctaca aagtccgagt tcataatgtt ctaaaacaac agaaaaataa atctatgtct	4020
caggctgaaa ctgagggcgc taaacaagaa agggaacatc tggaaatgct gattgaccag	4080
ctaaaaatca aattacaaga tagccaaaat aacttacaga ttaatgtatc tgaacttcaa	4140
acattgcagt ctgaacatga tacactgcta gaaaggcaca acaagatgct gcaggaaaact	4200
gtgtccaaag aggcggaact ccgggaaaaa ttgtgttcaa tacagtcaga gaacatgatg	4260
atgaaatctg aacatacaca gactgtgagt cagctaacat cccagaacga ggtccttcga	4320
aatagcttcc gagatcaagt gcgacatttg caggaagaac acagaaagac agtggagaca	4380
ttacagcagc agctctccaa gatggaagca cagctcttcc agcttaagaa tgaaccgacc	4440
acaagaagcc cagtttcctc tcaacaatct ttgaagaacc ttcgagaaaag gagaaacaca	4500
gacctccgc ttctagacat gcacactgta acccggaag agggagaagg catggagaca	4560
actgatacgg agtctgtgtc ttccgccagc acatacacac agtctttaga gcagctgctt	4620
aactctcccg aaactaaact tgagcctcca ttatggcatg ctgaatttac caaagaagaa	4680
ttggttcaga agctcagttc caccacaaaa agtgcagatc acttaaacgg cctgcttcgg	4740
gaaacagaag caaccaatgc aattcttatg gagcaaatta agcttctcaa aagtgaata	4800
agaagattgg aaaggaatca agagcgagag aagtctgcag ctaacctgga atacttgaag	4860
aacgtcttgc tgcagttcat tttcttgaag ccaggtagtg aaagagagag acttcttcct	4920
gttataaata cgatgttgca gctcagccct gaagaaaagg gaaaacttgc tgcggttgct	4980
caaggtgagg aagaaaatgc ttcccgttct tctggatggg catcctatct tcatagttgg	5040
tctggacttc gatag	5055

<210> 106
 <211> 2913
 <212> DNA
 <213> Homo sapiens

<400> 106	
atggacgcag cagagccggg actccccca ggtcctgagg gcaggaagag gtacagtgac	60
atcttccgga gcctggacaa cctcgaaatc tactgggga acgtgaccct tgagatgctg	120
gctggagacc ctctactctc agaagacca gaacctgaca agaccctac agccactgtt	180
accaacgaag ccagctgttg gagcggcccc tcccagagg gtcctgtacc cctcacaggg	240
gaggaactgg acttgcggct cattcggaca aaggggggtg tggacgcagc cctggaatat	300
gccaagacct ggagccgcta tgccaaggaa ctgcttgctt ggactgaaaa gagagccagc	360
tatgagctgg agtttgctaa gagcaccatg aagatcgctg aagctggcaa ggtgtccatt	420

caacagcaga gccacatgcc tctgcagtac atctacaccc tgtttctgga gcacgatctc	480
agcctgggaa ccctggccat ggagacagtg gccagcaga aaagagacta ctaccagccc	540
ctcgccgcca aacggactga gattgagaag tggcggaagg agttcaagga gcagtggatg	600
aaggagcaga agcggatgaa tgaggcggtg caggcactgc ggcgcgcca gctgcagtat	660
gtgcaacgca gcgaggacct gcgggcacgc tcccaggggt cccctgagga ctcggccccc	720
caggcctcgc cgggacctag caagcagcag gagcggcggc ggcgctcgcg agaggaggcc	780
caggccaagg cgcaggaggc cgaggcgtg taccaggcct gtgtccgcga ggccaacgcg	840
cggcagcagg acctggagat cgccaagcag cgaatcgtgt cgcacgtgcg caagctggtg	900
tttcaggggg atgaagtgtt gaggcgggtg acgctgagtc tcttcgggct gcggggggcg	960
caggcagagc gtggcccccg cgccttcgcc gccctggccg agtgctgtgc gccctttgag	1020
ccgggccagc gctaccagga gtttgtacgg gcgctgcggc ccgaggcccc gccgcccccg	1080
ccgcccgcct tctccttcca ggagttcctt ccctccttga acagctcccc tctggacatc	1140
agaaagaagc tctctgggcc tcttcctcca aggctggatg agaattcagc tgagccaggc	1200
ccttgggagg atccgggcac aggttggcgc tggcaagga ctccaggccc cactccgggc	1260
agcgtgtgtg acagcgtggg tggcggcagc gagtctcggc ccctggactc acccacttcc	1320
agcccaggcg ctggcacgag gcagctggtg aaggcttcgt ccacaggcac tgagtctca	1380
gatgactttg aggagcgaga ccctgacctg ggagacgggc tggagaatgg gctgggcagc	1440
cccttcggga agtggacact gtccagcgcg gctcagacct accagctgcg gcgactgcgg	1500
ggcccagcca agtgccgcga gtgcgaagcc ttcattggtca gcgggacgga gtgtgaggag	1560
tgctttctga cctgccacaa gcgctgcctg gagactctcc tgatcctctg tggacacagg	1620
cggctcccag cccggacacc cctttttggg gttgacttcc tgcagctacc cagggacttc	1680
ccggaggagg taccctttgt ggtcacgaag tgcagggtg agatagaaca ccgtgccctg	1740
gatgtgcagg gcatttaccg ggtcagcggg tcccgggtcc gtgtggagcg gctgtgccag	1800
gctttcgaga atggccgagc gttggtggag ctgtcgggga actcgctca tgacgtctcg	1860
agtgtcctca agcgatttct tcaggagctc accgagcccg tgatcccctt ccacctctac	1920
gacgccttca tctctctggc taagaccttg catgcagacc ctggggacga ccctgggacc	1980
cccagcccca gccctgaggt tatccgctcg ctgaagacct tcttgggtaca gctgcctgac	2040
tctaactaca acacctgcg gcacctggtg gcccatctgt tcagggtggc tgcacgattt	2100
atggaaaaca agatgtctgc caacaacctg ggcatttgtt ttgggcccgc actgctgcgg	2160
ccgccggacg gcccgcgggc agccagcgcc atccctgtca cctgcctgct ggactctggg	2220
catcaggccc agcttgtgga gttcctcatc gtgcactacg agcagatctt tgggatggat	2280
gagctcccc aggccactga gccccgccc caagactcca gccagcccc tgggcccctc	2340
acaaccagct cccaaccgcc acccccgcac cttgaccag actcccagcc cccagtccta	2400
gcctcagacc ccggcccaga ccccagcac cacagtacct tggagcagca tcccacggcc	2460

PCTAU2016050927-seq1-000001-EN-20161013

acacctaccg agattccaac tccacagagt gaccagagag aggacgtggc tgaagacacc	2520
aaagatgggg gaggggaagt gtccagccaa ggcccagagg actcactcct ggggacacag	2580
tctcgtggcc acttcagccg ccagccagtg aagtatcccc ggggcggtgt gaggcctgta	2640
accaccagc tgtccagtct ggccctggtg gcttccaagc tgtgagagga gacccccatc	2700
acatcagtgc ccagagggag tttgcggggg cgggggcccc gccctgcagc tgcctcccct	2760
gagggcagcc ccctgcgccg caccgcgtg cccaagcatt ttgagattac ccaggagaca	2820
gcccggctac tctcgaaatt ggacagcgag gctgtgccca gggccacctg ctgcccggac	2880
gtccagcctg aggaagccga ggaccatctc tga	2913

<210> 107
 <211> 1146
 <212> DNA
 <213> Homo sapiens

<400> 107	
atgtccgggg tgggtgcggac cctcagccgc tgcctgctgc cggccgaggc cggcggggcc	60
cgcgagcgca gggcgggag cggcgcgcg cgcgaggccg gaggcgtagc	120
cgcgacatcg acgcgctgct ggcccgcgag cggcgcgcg tccggcgctt ggtgaagatc	180
ctgctgctgg gcgcgggcca gagcggcaag tccacgttcc tcaagcagat gcgcatcatc	240
cacggccgag agttcgacca gaaggcgctg ctggagttcc gcgacaccat cttcgacaac	300
atcctcaagg gctcaaggg tcttgttgat gcacgagata agcttggcat tccttggcag	360
tattctgaaa atgagaagca tgggatgttc ctgatggcct tcgagaacaa ggcggggctg	420
cctgtggagc cggccacctt ccagctgtac gtcccggccc tgagcgact ctggagggat	480
tctggcatca gggaggcttt cagccggaga agcgagtttc agctggggga gtcggtgaag	540
tacttcctgg acaacttga cggatcggc cagctgaatt actttcctag taagcaagat	600
atcctgctgg ctaggaaagc caccaaggga attgtggagc atgacttcgt tattaagaag	660
atccccitta agatggtgga tgtgggcggc cagcgggtccc agcgccagaa gtggttccag	720
tgcttcgacg ggatcacgtc catcctgttc atggtctcct ccagcgagta cgaccaggtc	780
ctcatggagg acaggcgac caaccggctg gtggagtcca tgaacatctt cgagaccatc	840
gtcaacaaca agctcttctt caacgtctcc atcattctct tcctcaacaa gatggacctc	900
ctggtggaga aggtgaagac cgtgagcatc aagaagcact tcccggactt caggggagac	960
ccgcacaggc tggaggacgt ccagcgctac ctggtccagt gcttcgacag gaagagacgg	1020
aaccgcagca agccactctt ccaccattc accaccgcca tcgacaccga gaacgtccgc	1080
ttcgtgttcc atgctgtgaa agacaccatc ctgcaggaga acctgaagga catcatgctg	1140
cagtga	1146

<210> 108
 <211> 1080
 <212> DNA

<213> Homo sapiens

<400> 108

atgactctgg agtccatcat ggcgtgctgc ctgagcgagg aggccaagga agcccggcgg	60
atcaacgacg agatcgagcg gcagctccgc agggacaagc gggacgcccg ccgggagctc	120
aagctgctgc tgctcgggac aggagagagt ggcaagagta cgtttatcaa gcagatgaga	180
atcatccatg ggtcaggata ctctgatgaa gataaaaggg gcttcaccaa gctgggtgtat	240
cagaacatct tcacggccat gcaggccatg atcagagcca tggacacact caagatccca	300
tacaagtatg agcacaataa ggctcatgca caattagttc gagaagttga tgtggagaag	360
gtgtctgctt ttgagaatcc atatgtagat gcaataaaga gtttatggaa tgatcctgga	420
atccaggaat gctatgatag acgacgagaa tatcaattat ctgactctac caaatactat	480
cttaatgact tggaccgctg agctgaccct gcctacctgc ctacgcaaca agatgtgctt	540
agagttcgag tccccaccac agggatcatc gaatacccct ttgacttaca aagtgtcatt	600
ttcagaatgg tcgatgtagg gggccaaagg tcagagagaa gaaaatggat aactgctttt	660
gaaaatgtca cctctatcat gtttctagta gcgcttagtg aatatgatca agttctcgtg	720
gagtcagaca atgagaaccg aatggaggaa agcaaggctc tctttagaac aattatcaca	780
tacccttggg tccagaactc ctcggttatt ctgttcttaa acaagaaaga tcttctagag	840
gagaaaatca tgtattccca tctagtcgac tacttcccag aatatgatgg accccagaga	900
gatgcccagg cagcccagaa attcattctg aagatgttcg tggacctgaa cccagacagt	960
gacaaaatta tctactccca cttcacgtgc gccacagaca ccgagaatat ccgctttgtc	1020
tttgctgccc tcaaggacac catcctccag ttgaacctga aggagtacaa tctggtctaa	1080

<210> 109

<211> 414

<212> DNA

<213> Homo sapiens

<400> 109

atgaggccgc agcaggcgcc ggtgtccgga aaggtgttca ttcagcgaga ctacagcagt	60
ggcacacgct gccagttcca gaccaagttc cctgcggagc tggagaaccg gattgatagg	120
cagcagtttg aagaaacagt tcgaactcta aataaccttt atgcagaagc agagaagctc	180
ggcggccagt catatctcga aggttggttg gcttggttaa cagcatatac catcttccta	240
tgcatggaaa ctattatga gaaggttctg aagaaagtct ccaaatacat tcaagagcag	300
aatgagaaga tctatgtcc acaaggcctc ctctgacag accctattga gcgaggactg	360
cgagttattg aaattacat ttatgaagac agaggcatga gcagtggaag ataa	414

<210> 110

<211> 1425

<212> DNA

<213> Homo sapiens

<400> 110

atggcgcagc atgattttgt tcctgcttgg ctaaatttct caacaccaca gtcagctaag	60

PCTAU2016050927-seq1-000001-EN-20161013

tcacctactg	ccaccttcga	aaaacacgga	gagcacctac	ccagaggaga	aggtagattt	120
ggagtaagcc	gccgtcgaca	taattcctct	gatgggtttt	ttaacaatgg	tcccctacga	180
actgcaggag	attcttggca	ccagccctcc	ctgttccgcc	atgattctgt	ggactctggt	240
gtctctaagg	gagcatatgc	tggaatcaca	gggaacccat	ctggttggca	tagctcttcc	300
cgaggatcatg	atggcatgag	ccaacgtagt	ggagggtggca	cagggaacca	tcgccattgg	360
aatggcagct	tccactcccc	gaaaggggtgt	gcttttcagg	aaaagccacc	tatggagatt	420
aggggaagaaa	agaaagaaga	caagggtgaa	aagttgcagt	ttgaagagga	ggactttcct	480
tccttgaatc	cagaagctgg	caaacagcat	cagccatgca	gacctattgg	gacaccttct	540
ggagtatggg	aaaacccgcc	tagtgccaag	caaccctcca	agatgctagt	tatcaaaaaa	600
gtttccaaag	aggatcctgc	tgctgccttc	tctgctgcat	tcacctcacc	aggatctcac	660
catgcaaattg	ggaacaaatt	gtcatccgtg	gttccaagt	tctataagaa	cctggttcct	720
aagcctgtac	cacctccttc	caagcctaatt	gcatggaaag	ctaacaggat	ggagcacaag	780
tcaggatccc	tttctctag	ccgggagtct	gcttttacca	gtccaatctc	tgttaccaa	840
ccagtggtag	tggctagtgg	tgcagctctg	agttctccca	aagagagtcc	ctccagcacc	900
acccctccaa	ttgagatcag	ctcctctcgt	ctgaccaagt	tgacccgccg	aaccaccgac	960
aggaagagt	agttcctgaa	aactctgaag	gatgaccgga	atggagactt	ctcagagaat	1020
agagactgtg	acaagctgga	agatttgagg	gacaacagca	cacctgaacc	aaaggaaaat	1080
ggggaggaag	gctgtcatca	aatgggtctt	gccctccctg	tagtggaaga	aggggaggtt	1140
ctctcacact	ctctagaagc	agagcacagg	ttattgaaag	ctatggggtt	gcaggaatat	1200
cctgaaaatg	atgagaattg	ccttcccctc	acagaggatg	agctcaaaga	gttccacatg	1260
aagacagagc	agctgagaag	aatgggcttt	ggaaagaatg	gcttcttgca	gagccgcagt	1320
tccagtctgt	tctccccttg	gagaagcact	tgcaaagcag	agtttgagga	ctcagacacc	1380
gaaaccagta	gcagtgaaac	atcagatgac	gatgcctgga	agtag		1425

<210> 111
 <211> 1650
 <212> DNA
 <213> Homo sapiens

<400> 111	
atggcgacgc	ccaggggcct gggggccctg ctctgctcc tcctgctccc gacctcaggt 60
caggaaaagc	ccaccgaagg gccaagaaac acctgcctgg ggagcaacaa catgtacgac 120
atcttcaact	tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac 180
tcctgcaatg	tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag 240
gaaggtttga	cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc 300
accaacactg	cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg 360
atgaaggacg	aggacaagcc ccctgacaga gtgcgacttc ccaagagcct ttttcgatcc 420

ctgccaggca	acaggtctgt	ggtccgcttg	gccgtcacca	ttctggacat	tgggccaggg	480
actctcttca	agggccccc	gctcggcctg	ggagatggca	gcggcgtgtt	gaacaatcgc	540
ctgggtgggtt	tgagtgtggg	acaaatgcat	gtcaccaagc	tggctgagcc	tctggagatc	600
gtcttctctc	accagcgacc	gccccctaac	atgaccctca	cctgtgtatt	ctgggatgtg	660
actaaaggga	ccactggaga	ctgggtcttct	gagggctgct	ccacggaggt	cagacctgag	720
gggaccgtgt	gctgctgtga	ccacctgacc	tttttcgccc	tgctcctgag	accacacctg	780
gaccagtcca	cggtgcatat	cctcacacgc	atctcccagg	cgggctgtgg	ggtctccatg	840
atcttcctgg	ccttcacat	tattctttat	gcctttctga	ggctttcccg	ggagagggttc	900
aagtcagaag	atgccccaaa	gatccacgtg	gccctgggtg	gcagcctgtt	cctcctgaat	960
ctggccttct	tgggtcaatgt	ggggagtggc	tcaaaggggt	ctgatgctgc	ctgctggggc	1020
cggggggctg	tcttccacta	cttcctgctc	tgtgccttca	cctggatggg	ccttgaagcc	1080
ttccacctct	acctgctcgc	tgtcagggtc	ttcaacacct	acttcgggca	ctacttcctg	1140
aagctgagcc	tgggtgggctg	gggcctgccc	gccctgatgg	tcacggcac	tgggagtgcc	1200
aacagctacg	gcctctacac	catccgtgat	agggagaacc	gcacctctct	ggagctatgc	1260
tggttccgtg	aagggaaca	catgtacgcc	ctctatatca	ccgtccacgg	ctacttcctc	1320
atcaccttcc	tctttggcat	ggtggtcctg	gccctgggtg	tctggaagat	cttcaccctg	1380
tcccgtgcta	cagcgggtcaa	ggagcggggg	aagaaccgga	agaagggtgct	caccctgctg	1440
ggcctctcga	gcctgggtggg	tgtgacatgg	gggttgggcca	tcttcacccc	gttgggcctc	1500
tccaccgtct	acatctttgc	acttttcaac	tccttgcaag	gtgtcttcat	ctgctgctgg	1560
ttcaccatcc	tttacctccc	aagtcagagc	accacagtct	cctcctctac	tgcaagattg	1620
gaccaggccc	actccgcatc	tcaagaatag				1650

<210> 112
 <211> 984
 <212> DNA
 <213> Homo sapiens

<400> 112	atgcccgcac	tcctggagcg	ccccaaagctt	tccaacgccca	tggccagggc	gctgcaccgg	60
	cacattatga	tggagcggga	gcgcaagcgg	caggaggaag	aagaggtgga	taagatgatg	120
	gaacagaaga	tgaaggaaga	acaggagaga	aggaagaaaa	aggagatgga	agagagaatg	180
	tcattagagg	agaccaagga	acaaattctg	aagttggagg	agaagctttt	ggctctacag	240
	gaagagaagc	accagctttt	cctgcagctc	aagaaagttt	tacatgagga	agaaaaacgg	300
	aggcgaaagg	aacagagtga	cctgaccacc	ctaaccatcag	ctgcatacca	gcagagcctg	360
	actgttcaca	caggaaactca	tctcctcagc	atgcagggga	gccctggagg	acacaatcgc	420
	ccaggcacc	tcatggcagc	tgacagagcc	aaacaaatgt	ttggaccca	agtgtttacg	480
	acccggcact	acgtgggctc	agcagctgct	tttgacggga	caccagagca	tggacaattc	540
	caaggcagtc	ctgggtggtgc	ctatgggact	gctcagcccc	cacctacta	tgggcccaca	600

cagccagctt atagtcctag tcagcagctc agagctcctt cggcattccc tgcagtgcag	660
tacctatctc agccacagcc acagccctat gctgtgcatg gccactttca gccactcag	720
acaggtttcc tccagcctgg tgggtgccctg tccttgcaaa agcagatgga acatgctaac	780
cagcagactg gcttctccga ctcctcctct ctgcgccccca tgcacccccca ggctctgcat	840
ccagcccctg gactccttgc ttccccccag ctccctgtgc agatgcagcc agcaggaaag	900
tcgggctttg cagctaccag ccaacctggc cctcggtcc ccttcatcca acacagccag	960
aacccgcgat tctaccacaa gtga	984

<210> 113
 <211> 483
 <212> DNA
 <213> Homo sapiens

<400> 113 atggaggctg agagacccca ggaagaagag gatggtgagc agggccccc tcaggatgag	60
gaaggctggc cccctccaaa ctccaccact cggccttggc gatctgctcc tccatcccct	120
cctcctccag ggacccgcca cacagccctg ggaccccgct cggcctccct gctctccctg	180
cagactgaac tccttctgga cctggtggct gaagcccagt cccgccgcct ggaggagcag	240
agggccacct tctacacccc ccaaaacccc tcaagcctag cccctgcccc actccgtcct	300
ctcgaggaca gagaacagct ttacagcact atcctcagtc accagtgccca gcggatggaa	360
gcccagcggc cagagcctcc cctccctcca ggggggcaag agctcctgga gttgctgctg	420
agagttcagg gtgggggtcg aatggaggag caaaggtccc ggccccccac acacacctgc	480
tga	483

<210> 114
 <211> 654
 <212> DNA
 <213> Homo sapiens

<400> 114 atggaagcca tcgccaata tgacttcaaa gctactgcag acgacgagct gagcttcaaa	60
agggggggaca tcctcaaggt tttgaacgaa gaatgtgatc agaactggta caaggcagag	120
cttaatggaa aagacggctt cattcccaag aactacatag aaatgaaacc acatccgtgg	180
ttttttggca aaatccccag agccaaggca gaagaaatgc ttagcaaaca gcggcacgat	240
ggggcctttc ttatccgaga gagtgcagc gctcctgggg acttctccct ctctgtcaag	300
tttgaaacg atgtgcagca cttcaaggtg ctccgagatg gagccgggaa gtacttcctc	360
tgggtggtga agttcaattc tttgaatgag ctggtggatt atcacagatc tacatctgtc	420
tccagaaacc agcagatatt cctgcgggac atagaacagg tgccacagca gccgacatac	480
gtccaggccc tctttgactt tgatccccag gaggatggag agctgggctt ccgcccggga	540
gattttatcc atgtcatgga taactcagac cccaactggt ggaaaggagc ttgccacggg	600
cagaccggca tgtttccccg caattatgtc acccccgtga accggaacgt ctaa	654

<210> 115
 <211> 1302
 <212> DNA
 <213> Homo sapiens

<400> 115
 atgtcagggc ggcccagaac cacctccttt gcggagagct gcaagccggt gcagcagcct 60
 tcagcttttg gcagcatgaa agttagcaga gacaaggacg gcagcaaggt gacaacagtg 120
 gtggcaactc ctgggcaggg tccagacagg ccacaagaag tcagctatac agacactaaa 180
 gtgattggaa atggatcatt tgggtgtgga tatcaagcca aactttgtga ttcaggagaa 240
 ctggctcgcca tcaagaaagt attgcaggac aagagattta agaatcgaga gctccagatc 300
 atgagaaaagc tagatcactg taacatagtc cgattgcgtt atttcttcta ctccagtggc 360
 gagaagaaaag atgaggtcta tcttaatctg gtgctggact atgttccgga aacagtatac 420
 agagttgcca gacactatag tcgagccaaa cagacgctcc ctgtgattta tgtcaagttg 480
 tatatgtatc agctgttccg aagtttagcc tatatccatt cctttggaat ctgccatcgg 540
 gatattaaac cgcagaacct cttgttggat cctgatactg ctgtattaaa actctgtgac 600
 tttggaagtg caaagcagct ggtccgagga gaaccaatg tttcgtatat ctgttctcgg 660
 tactataggg caccagagtt gatctttgga gccactgatt atacctctag tatagatgta 720
 tggctctgctg gctgtgtgtt ggctgagctg ttactaggac aaccaatatt tccaggggat 780
 agtgggtgtg atcagttggt agaaataatc aaggctcctg gaactccaac aaggagcaa 840
 atcagagaaa tgaacccaaa ctacacagaa tttaaattcc ctcaaattaa ggcacatcct 900
 tggactaagg attcgtcagg aacaggacat ttcacctcag gagtgcgggt cttccgaccc 960
 cgaactccac cggaggcaat tgcaactgtg agccgtctgc tggagtatac accaactgcc 1020
 cgactaacac cactggaagc ttgtgcacat tcattttttg atgaattacg ggacccaaat 1080
 gtcaaactac caaatgggcg agacacacct gcactcttca acttcaccac tcaagaactg 1140
 tcaagtaatc cacctctggc taccatcctt attcctcctc atgctcggat tcaagcagct 1200
 gcttcaacc ccacaaatgc cacagcagcg tcagatgcta atactggaga ccgtggacag 1260
 accaataatg ctgcttctgc atcagcttcc aactccacct ga 1302

<210> 116
 <211> 387
 <212> DNA
 <213> Homo sapiens

<400> 116
 atgtggtcga cgagaagccc caacagcacg gcgtggcctc tcagcctcga gcctgatccg 60
 gggatggcct ctgcctccac cacaatgcat actaccacca ttgcagagcc tgatccaggg 120
 atgtctggat ggccggatgg cagaatggag acctccaccc ccaccataat ggacattgtc 180
 gtcattgcag gtgtgattgc tgctgtggcc atcgtcctag tctccctcct cttcgtcatg 240
 ctgcgctaca tgtaccggca caagggcacg taccacacca atgaggccaa gggcacggag 300

tttgctgaga gtgcagatgc agccctgcag ggagaccctg ccctccaaga tgctggtgat	360
agcagcagaa aggagtactt tatttga	387

<210> 117
 <211> 1974
 <212> DNA
 <213> Homo sapiens

<400> 117	
atgccagat acacggtgca cgtacgtggg gaatggctgg cagtgccctg ccaggacgcg	60
cagctcactg tgggctggct gggccgggag gccgtgaggc gctatatcaa gaataagccc	120
gacaatggtg gcttcacctc cgtggatgac gcgcacttcc ttgtgcgccg gtgcaagggc	180
ctgggcctgc tggacaacga ggaccggctc gaggtggccc tagagaacaa cgagttcgtg	240
gaagtgggta tagagggtga tgccatgtct cctgacttca ttccatctca accagaagga	300
gtttatctat acagcaagta ccgggagcct gaaaagtaca tcgagttaga tggagaccgt	360
ctgaccacgg aggatctggt caacttggga aagggacgct acaaaataaa gctcacccca	420
acagctgaga agaggggtgca gaaatccagg gaggtcatag atagcatcat aaaagagaaa	480
acagttgttt acggtattac tacagggtttt gggaaatttg ccagaactgt aattcctatc	540
aataagctac aggagcttca ggtcaactta gtacgctcac attcttcagg tgttgggaaa	600
ccactaagtc ctgagagggtg tcggatgctc ttggcttttaa ggatcaatgt cttagccaaa	660
ggatacagtg gcatttcctt ggagaccctc aaacaagtca tagaaatgtt taatgcctcc	720
tgcttgccct atgtcccaga gaaaggaacc gttggtgcca gtggagacct tgccccactc	780
tctcatcttg ctcttgggct agttggagaa gggaagatgt ggtctccgaa gagtggctgg	840
gctgatgcta aatacgtgct agaagcccat ggattgaaac cagttatttt aaaaccaaaa	900
gagggcctgg cactcatcaa tgggacgcag atgatcacat ccctgggctg tgaagctgta	960
gagcgagcca gtgctattgc acggcaggct gacattgtgg cagccctgac ccttgagggtg	1020
ctgaagggca ccaccaaagc ctttgacact gacattcatg ctcttcgacc tcaccgtggg	1080
caaattgaag ttgcttttcg gtttcgggtca ctcttggact cagatcacca cccatcagaa	1140
atagcagaga gtcacagggt ctgtgatcgc gtccaggatg catacacctt gcgctgctgt	1200
ccacagggtc atggtgtggt gaatgataca atagcatttg tgaagaacat cattaccaca	1260
gaactgaaca gcgcaacaga taatcctatg gtctttgcca ataggggaga gacagtttct	1320
ggaggaaact tccatggtga ataccagcc aaagccctag actacttggc cattggcatc	1380
catgaacttg ctgcaatcag tgagagaaga atcgagcggc tctgcaatcc ctccctcagt	1440
gagctgcctg ccttcctggt ggctgaagggt ggtctgaact ctgggttcat gatagctcac	1500
tgcacggcag cagcccttgt ttctgagaac aaggctctgt gccatccctc gtctgttgac	1560
tccctctcca ccagcgcagc cacggaggac cacgtctcca tgggaggatg ggcagcaagg	1620
aaagccctca gggatcatga gcatgtggag caagtgtgtg ccatcgagct ccttgcagcc	1680

tgccagggca	tagagtttct	acgtcccctg	aaaacaacca	ctccgctgga	gaaggtctat	1740
gacctggtgc	gctctgttgt	aaggccctgg	ataaaagatc	gcttcatggc	cccggacatc	1800
gaggcagccc	acaggctgct	cctggagcag	aaggtttggg	aagtagctgc	tccatacatt	1860
gaaaaataca	gaatggagca	tattccagaa	tcaagacctc	tttctccaac	agccttttca	1920
ctgcaatttc	tgcaacaaga	atccaccaa	atcccggagt	ctgaggacct	ttaa	1974

<210> 118
 <211> 1581
 <212> DNA
 <213> Homo sapiens

<400> 118						
ctgggggggc	gctcaagctg	cgaggatccg	ggctgcccgc	gagacgagga	gcgggcgccc	60
aggatggggt	gcatgaagtc	caagttcctc	caggtcggag	gcaatacatt	ctcaaaaact	120
gaaaccagcg	ccagcccaca	ctgtcctgtg	tacgtgccgg	atccacatc	caccatcaag	180
ccggggccta	atagccacaa	cagcaacaca	ccaggaatca	gggaggcagg	ctctgaggac	240
atcatcgtgg	ttgccctgta	tgattacgag	gccattcacc	acgaagacct	cagcttccag	300
aagggggacc	agatggtggt	cctagaggaa	tccggggagt	ggtggaaggc	tcgatccctg	360
gccacccgga	aggagggcta	catcccaagc	aactatgtcg	cccgcgttga	ctctctggag	420
acagaggagt	ggtttttcaa	gggcatcagc	cggaaggacg	cagagcgcca	actgctggct	480
cccggcaaca	tgctgggctc	cttcatgata	cgggatagcg	agaccactaa	aggaagctac	540
tctttgtccg	tgcgagacta	cgaccctcgg	caggagagata	ccgtgaaaca	ttacaagatc	600
cggaccctgg	acaacggggg	cttctacata	tcccccgaa	gcaccttcag	cactctgcag	660
gagctggtgg	accactacaa	gaaggggaac	gacgggctct	gccagaaact	gtcggtgccc	720
tgcatgtctt	ccaagcccca	gaagccttgg	gagaaagatg	cctgggagat	ccctcgggaa	780
tccctcaagc	tggagaagaa	acttgagact	gggcagtttg	gggaagtctg	gatggccacc	840
tacaacaagc	acaccaaggt	ggcagtgaag	acgatgaagc	caggagagcat	gtcggtgagg	900
gccttcctgg	cagaggccaa	cgtgatgaaa	actctgcagc	atgacaagct	ggtcaaactt	960
catgcggtgg	tcaccaagga	gccatctac	atcatcacgg	agttcatggc	caaaggaagc	1020
ttgctggact	ttctgaaaag	tgatgagggc	agcaagcagc	cattgccaaa	actcattgac	1080
ttctcagccc	agattgcaga	aggcatggcc	ttcatcgagc	agaggaaacta	catccaccga	1140
gacctccgag	ctgccaacat	cttggctctc	gcatccctgg	tgtgtaagat	tgctgacttt	1200
ggcctggccc	gggtcattga	ggacaacgag	tacacggctc	gggaaggggc	caagttcccc	1260
atcaagtgga	cagctcctga	agccatcaac	tttggctcct	tcaccatcaa	gtcagacgtc	1320
tggtcctttg	gtatcctgct	gatggagatc	gtcacctacg	gccggatccc	ttaccagggy	1380
atgtcaaacc	ctgaagtgat	ccgagctctg	gagcgtggat	accggatgcc	tcgcccagag	1440
aactgcccag	aggagctcta	caacatcatg	atgcgctgct	ggaaaaaccg	tccggaggag	1500
cggccgacct	tcgaatacat	ccagagtgtg	ctggatgact	tctacacggc	cacagagagc	1560

cagtaccaac agcagccatg a

1581

<210> 119
 <211> 3075
 <212> DNA
 <213> Homo sapiens

<400> 119
 atggagcggg ggtcgcggag gaagtcgcgg cgcaacgggc gctcgaccgc gggcaaggcc 60
 gccgcgaccc agcccgcgaa gtctccgggc gcacagctct ggctctttcc cagcgccgcg 120
 ggcctccacc gcgcgctgct ccggaggggtg gaggtgacgc gccaaactctg ctgctcgccg 180
 gggcgccctg cggctcttga acgcggcggg gcgggcgtcc aggttcacca gctgctcgcc 240
 gggagcggcg gcgcccggac gccgaaatgc attaaattag gaaaaaacat gaagatacat 300
 tccgtggacc aaggagcaga gcacatgctg attctctcat cagatggaaa accatttgag 360
 tatgacaact atagcatgaa acatctaagg ttgaaagca ttttacaaga aaaaaaata 420
 attcagatca catgtggaga ttaccattct cttgcactct caaaagggtg tgagcttttt 480
 gcctggggac agaacctgca tgggcagctt ggagttggaa ggaaatttcc ctcaaccacc 540
 acaccacaga ttgtggagca cctcgcagga gtacccttgg ctgagatttc tgccggagaa 600
 gccacagca tggccttatt catgtctggc aacatttatt catggggaaa aaatgaatgt 660
 ggacaactag gcctggggca cactgagagt aaagatgac catcccttat tgaaggacta 720
 gacaatcaga aagttgaatt tgtcgcttgt ggtggctctc acagtgcctt actcacacag 780
 gatgggctgc tgtttacttt cgggtctgga aaacatgggc aacttgggtca taattcaaca 840
 cagaatgagc taagaccctg tttggtggct gagcttggtg ggtatagagt gactcagata 900
 gcatgtggaa ggtggcacac acttgcctat gtttctgatt tgggaaaggc cttttccttt 960
 ggttctggaa aagatggaca actgggaaat ggtggaacac gtgaccagct gatgccgctt 1020
 ccagtgaag tatcatcaag tgaagaactc aaacttgaaa gccatactc agaaaaggag 1080
 ttaataatga ttgctggagg gaatcaaagc attttgcctt ggataaagaa agagaattca 1140
 tatgttaatc tgaagaggac aattcctact ctgaatgaag ggactgtaaa gagatggatt 1200
 gctgatgtgg agactaaacg gtggcagagc aaaaaaggg aaatccaaga gatattttca 1260
 tctcctgctt gtctaactgg aagtttttta aggaaaagaa gaactacaga aatgatgcct 1320
 gtttatttgg acttaaataa agcaagaaac atcttcaagg agttaacca aaaggactgg 1380
 attactaaca tgataaccac ctgcctcaaa gataatctgc tcaaagact tccatttcat 1440
 tctccacccc aagaagcttt agaaattttc ttccttctcc cagaatgtcc tatgatgcat 1500
 atttccaaca actgggagag ccttgtggtt ccatttgcaa aggttgtttg taaaatgagt 1560
 gaccagtctt cactggttct ggaagagtat tgggcaactc tgcaagaatc cactttcagc 1620
 aaactggtcc agatgtttta aacagccgtc atatgccagt tggattactg ggatgaaagt 1680
 gctgaggaga atggtaatgt tcaagctctc ctagaaatgt tgaagaagct gcacagggta 1740

aaccaggtga aatgtcaact acctgaaagt attttccaag tagacgaact cttgcaccgt	1800
ctcaattttt ttgtagaagt atgcagaagg tactttgtgga aaatgactgt ggacgcttca	1860
gaaaatgtac aatgctgcgt catattcagt cactttccat ttatctttta taatctgtcg	1920
aaaattaaac tactacatac agacacactt ttaaaaatag agagtaaaaa acataaagct	1980
tatcttaggt cggcagcaat tgaggaagaa agagagtctg aattcgcttt gaggcccacg	2040
tttgatctaa cagtcagaag gaatcacttg attgaggatg ttttgaatca gctaagtcaa	2100
tttgagaatg aagacctgag gaaagagtta tgggtttcat ttagtgagaga aattgggtat	2160
gacctcggag gagtcaagaa agagtctctc tactgtctgt ttgcagagat gatccagccg	2220
gaatatggga tgttcatgta tcctgaaggg gcttcctgca tgtggtttcc tgtcaagcct	2280
aaatttgaga agaaaagata cttctttttt ggggttctat gtggactttc cctgttcaat	2340
tgcaatgttg ccaaccttcc tttcccactg gcactgttta agaaactttt ggaccaaagt	2400
ccatcattgg aagacttgaa agaactcagt cctgatttgg gaaagaattt gcaaacactt	2460
ctggatgatg aaggtgataa ctttgaggaa gtattttaca tccattttta tgtgcactgg	2520
gacagaaacg acacaaactt aattcctaata ggaagtagca taactgtcaa ccagactaac	2580
aagagagact atgtttctaa gtatatcaat tacattttca acgactctgt aaaggcggtt	2640
tatgaagaat ttcggagagg attttataaa atgtgcgacg aagacattat caaattattc	2700
caccccgaag aactgaagga tgtgattgtt ggaaatacag attatgattg gaaaacattt	2760
gaaaagaatg cacgttatga accaggatat aacagttcac atcccacat agtgatgttt	2820
tggaaggctt tccacaaatt gactctggaa gaaaagaaaa aattccttgt atttcttaca	2880
ggaactgaca gactacaaat gaaagattta aataatatga aaataacatt ttgctgtcct	2940
gaaagttgga atgaaagaga ccctataaga gcactgacat gtttcagtgt cctcttcctc	3000
cctaaatatt ctacaatgga aacagttgaa gaagcgcttc aagaagccat caacaacaac	3060
agaggatttg gctga	3075

<210> 120
 <211> 3069
 <212> DNA
 <213> Homo sapiens

<400> 120	
atgtacttct gttggggcgc cgactccagg gagctgcagc gccggaggac ggcgggcagc	60
cccggggctg agctactgca ggcggccagc ggggagcgcc actctctgct gctgctgacc	120
aaccacaggg tcctctcgtg cggagacaac agcaggggtc agctgggccg caggggagcg	180
cagcgcgggg agctgccaga accaattcag gcattggaaa ccctaattgt tgatctcgtg	240
agctgcggga aggagcactc cctggctgtg tgccacaaag gaaggggtctt cgcattggga	300
gctggttctg aagggcagct ggggattgga gaattcaagg aaataagttt cacacctaag	360
aaaataatga ctctgaatga tataaaaata atacaagttt cctgtggaca ctaccactcc	420
ctggcattat caaaagatag ccaagtgttt tcgtggggaa agaagagcca tgggcagctg	480

ggcttgggga	aggagttccc	ctcccaagcc	agcccgagcaga	gggtgagggtc	cctggagggg	540
atcccactgg	ctcaggtggc	tgccggaggg	gtcacagct	ttgccctgtc	tctctgtggg	600
acttcgtttg	gctggggaag	taacagtgcc	gggcagctgg	ccctcagtgg	gcgtaatgtc	660
ccagtgcaaa	gcaacaagcc	tctctcagtc	ggtgcactga	agaatctagg	tgtggtttat	720
atcagctgtg	gtgatgcaca	cactgcggtg	cttaccagcag	acgggaaagt	gttcacattt	780
ggagacaatc	gctctggaca	gctgggatac	agccccactc	ctgagaagag	aggtccacaa	840
cttgtggaaa	gaattgatgg	cctagtttcg	cagatagatt	gtggaagtta	tcacaccctg	900
gcatatgtgc	acaccactgg	tcaggtggta	tcttttggtc	atggaccaag	tgacacaagc	960
aagccaactc	atccggaggc	cctgacagag	aactttgaca	ttagctgcct	gatttctgct	1020
gaagacttcg	tggatgttca	agtcaaacac	atttttgctg	gaacatatgc	caactttgtg	1080
acaactcatc	aggatactag	ttccacacgt	gctcccggga	aaaccctgcc	agaaataagc	1140
cgaattagcc	agtccatggc	agaaaaatgg	atagcagtga	aaagaagaag	tactgaacat	1200
gaaatggcta	aaagtgaaat	tagaatgata	ttttcatctc	ctgcttgtct	gactgcaagt	1260
tttttaaaga	aaagaggaac	tggagaaacg	acttccattg	atgtggactt	agaaatggca	1320
agagatacct	tcaagaagtt	aacaaaaaag	gaatggattt	cttccatgat	aactacgtgt	1380
ctcgaggatg	atctgctcag	agctcttcca	tgccattctc	cacaccaaga	agctttatca	1440
gttttcctcc	tgctcccaga	atgtcctgtg	atgcatgatt	ctaagaactg	gaagaacctg	1500
gtggttccat	ttgcaaaggc	tgtgtgtgaa	atgagtaaac	aatctttgca	agtcctaaag	1560
aagtgttggg	catttttgca	agaatcttct	ctgaatccgc	tgatccagat	gcttaaagca	1620
gccatcatct	ctcagctgct	tcacagact	aaaaccgaac	aggatcactg	taatgttaaa	1680
gctcttttag	gaatgatgaa	agaactgcat	aaggtaaaca	aagctaactg	tcgactacca	1740
gaaaataactt	tcaacataaa	tgaactctcc	aacttattaa	acttttatat	agatagagga	1800
agacagctct	ttcgggataa	ccacctgata	cctgcagaaa	ccccagtc	tgttattttc	1860
agtgattttc	catttatctt	taattcgcta	tccaaaatta	aattattgca	agctgattca	1920
catataaaga	tgcatgtgtc	agaaaagaaa	gcatacatgc	ttatgcatga	aacaattctg	1980
caaaaaaagg	atgaatttcc	tccatcacc	agatttatac	ttagagtcag	acgaagtcgc	2040
ctggttaaag	atgctctgcg	tcaattaagt	caagctgaag	ctactgactt	ctgcaaagta	2100
ttagtgggtg	aatttattaa	tgaattttgt	cctgagctctg	gaggggttag	ttcagagttc	2160
ttccactgta	tgtttgaaga	gatgaccaag	ccagaatatg	gaatgttcat	gtatcctgaa	2220
atgggttcct	gcatgtggtt	tcctgccaag	cctaaacctg	agaagaaaag	atatttcctc	2280
tttggaatgc	tgtgtggact	ctccttattc	aatttaaagt	ttgctaacct	tcctttccca	2340
ctggctctgt	ataaaaaact	tctggaccaa	aagccatcat	tggaagattt	aaaagaactc	2400
agtcctcgg	tggggaagag	tttgcaagaa	gttctagatg	atgctgctga	tgacattgga	2460
gatgcgctct	gcatacgctt	ttctatacac	tgggacaaaa	atgatgttga	cttaattcca	2520

PCTAU2016050927-seql-000001-EN-20161013

aatgggatct ccatacctgt ggaccaaacc aacaagagag actatgtttc taagtatatt	2580
gattacattt tcaacgtctc tgtaaaagca gtttatgagg aatttcagag aggattttat	2640
agagtctgtg agaaggagat acttagacat ttctaccctg aagaactaat gacagcaatc	2700
attggaaata ctgattatga ctggaaacag tttgaacaga attcaaagta tgagcaagga	2760
tacaaaaaat cacatcctac tatacagttg ttttggaagg ctttccacaa actaaccttg	2820
gatgaaaaga aaaaattcct ctttttcctt acaggacgtg ataggctgca tgcaagaggc	2880
atacagaaaa tggaaatagt atttcgctgt cctgaaactt tcagtgaaag agatcaccca	2940
acatcaataa cttgtcataa tattctctcc ctccctaagt attctacaat ggaaagaatg	3000
gaggaagcac ttcaagtagc catcaacaac aacagaggat ttgtctcacc catgctcaca	3060
cagtcataa	3069

<210> 121
 <211> 1908
 <212> DNA
 <213> Homo sapiens

<400> 121	
atgagcgggg cgggcagggc gctggccgcg ctgctgctgg ccgcgtccgt gctgagcgcc	60
gcgctgctgg cccccggcgg ctcttcgggg cgcgatgccc aggccgcgcc gccacgagac	120
ttagacaaaa aaagacatgc agagctgaag atggatcagg ctttgctact catccataat	180
gaacttctct ggaccaactt gaccgtctac tggaaatctg aatgctgtta tcaactgcttg	240
tttcagggtt tggtaaactg tcctcagagt ccaaaagcag ggaagcctag tgctgcagct	300
gcctctgtca gcaccagca cggatctatc ctgcagctga acgacacctt ggaagagaaa	360
gaagtttgta ggttggaata cagatttgga gaatttgga actattctct cttggtaaag	420
aacatccata atggagttag tgaaattgcc tgtgacctgg ctgtgaacga ggatccagtt	480
gatagtaacc ttctgtgag cattgcattc cttattggtc ttgctgtcat cattgtgata	540
tcctttctga ggctcttggt gagtttgat gactttaaca attggatttc taaagccata	600
agttctcgag aaactgatcg cctcatcaat tctgagctgg gatctcccag caggacagac	660
cctctcgatg gtgatgttca gccagcaacg tggcgtctat ctgccctgcc gccccgcctc	720
cgcagcgtgg acaccttcag ggggattgct cttatactca tggctcttgt caattatgga	780
ggaggaaaaat attggtactt caaacatgca agttggaatg ggctgacagt ggctgacctc	840
gtgttcccgt ggtttgattt tattatggga tcttccattt ttctatcgat gacttctata	900
ctgcaacggg ggtgttcaaa attcagattg ctggggaaga ttgcatggag gagtttcctg	960
ttaatctgca taggaattat cattgtgaat cccaattatt gccttggtcc attgtcttgg	1020
gacaagggtc gcattcctgg tgtgctgcag cgattgggag tgacatactt tgtggttgct	1080
gtgttggagc tcctctttgc taaacctgtg cctgaacatt gtgcctcgga gaggagctgc	1140
ctttctcttc gagacatcac gtccagctgg cccagtggc tgctcatcct ggtgctggaa	1200

PCTAU2016050927-seq1-000001-EN-20161013

```

ggcctgtggc tgggcttgac attcctcctg ccagtccttg ggtgccctac tggttatctt 1260
ggtcctgggg gcattggaga ttttggcaag tatccaaatt gcactggagg agctgcaggc 1320
tacatcgacc gcctgctgct gggagacgat cacctttacc agcacccatc ttctgctgta 1380
ctttaccaca ccgaggtggc ctatgacccc gagggcatcc tgggcaccat caactccatc 1440
gtgatggcct ttttaggagt tcaggcagga aaaatactat tgtattacaa ggctcggacc 1500
aaagacatcc tgattcgatt cactgcttgg tgttgatttc ttgggctcat ttctgttgct 1560
ctgacgaagg tttctgaaaa tgaaggcttt attccagtaa acaaaaatct ctggtccctt 1620
tcgtatgtca ctacgctcag ttcttttgcc ttcttcatcc tgctggtcct gtaccagtt 1680
gtggatgtga aggggctgtg gacaggaacc ccattctttt atccaggaat gaattccatt 1740
ctggtatatg tcggccacga ggtgtttgag aactacttcc cttttcagtg gaagctgaag 1800
gacaaccagt cccacaagga gcacctgact cagaacatcg tcgccactgc cctctgggtg 1860
ctcattgcct acatcctcta tagaaagaag attttttgga aaatctga 1908

```

```

<210> 122
<211> 813
<212> DNA
<213> Homo sapiens

```

```

<400> 122
atgcagtacc cgcaccccg ggcggcggcg ggcgccgtgg gggtgccgct gtacgcgccc 60
acgccgctgc tgcaaccgc acaccgacg cccttttaca tcgaggacat cctgggccgc 120
gggcccgcgc cgcccacgc cgccccacg ctgccgtccc ccaactcctc cttcaccagc 180
ctcgtgtccc cctaccggac cccggtgtac gagcccacgc cgatccatcc agccttctcg 240
caccactccg ccgccgcgt ggccgctgcc tacggaccgc gcggcttcgg gggccctctg 300
tacccttcc cgcgacggt gaacgactac acgcacgccc tgctccgcca cgacccctg 360
ggcaaacctc tactctggag ccccttcttg cagaggcctc tgcataaaag gaaaggcggc 420
caggtgagat tctccaacga ccagaccatc gagctggaga agaaattcga gacgcagaaa 480
tatctctctc cgcccagag gaagcgtctg gccaaagtgc tgcagctcag cgagagacag 540
gtcaaaacct ggtttcagaa tcgacgcgct aaatggagga gactaaaaca ggagaaccct 600
caaagcaata aaaaagaaga actggaaagt ttggacagtt cctgtgatca gaggcaagat 660
ttgccagtg aacagaataa aggtgcttct ttggatagct ctcaatgttc gccctcccct 720
gcctcccagg aagaccttga atcagagatt tcagaggatt ctgatcagga agtggacatt 780
gagggcgata aaagctatct taatgctgga tga 813

```

```

<210> 123
<211> 3114
<212> DNA
<213> Homo sapiens

```

```

<400> 123
atggatcggg tggccagctc catgaagcag gtgcccaacc cactgcccaa ggtgctgagc 60

```

cggcgcgggg	tcggcgctgg	gctggaggcg	gcggagcgcg	agagcttcga	gcggactcag	120
actgtcagca	tcaataaggc	cattaatacg	caggaagtgg	ctgtaaagga	aaaacacgcc	180
agaacgtgca	tactggggcac	ccaccatgag	aaagggggcac	agaccttctg	gtctgttgtc	240
aaccgcctgc	ctctgtctag	caacgcagtg	ctctgctgga	agttctgcca	tgtgttccac	300
aaactcctcc	gagatggaca	cccgaacgtc	ctgaaggact	ctctgagata	cagaaatgaa	360
ttgagtgcga	tgagcaggat	gtggggccac	ctgagcgagg	ggtatggcca	gctgtgcagc	420
atctacctga	aactgctaag	aaccaagatg	gagtaccaca	ccaaaaatcc	caggttccca	480
ggcaacctgc	agatgagtga	ccgccagctg	gacgaggctg	gagaaagtga	cgtgaacaac	540
tttttccagt	taacagtgga	gatgtttgac	tacctggagt	gtgaactcaa	cctcttccaa	600
acagtattca	actccctgga	catgtcccgc	tctgtgtccg	tgacggcagc	agggcagtg	660
cgctcgccc	cgctgatcca	ggcatcttgc	gactgcagcc	acctttatga	ctacactgtc	720
aagcttctct	tcaaaactcca	ctcctgcctc	ccagctgaca	ccctgcaagg	ccaccgggac	780
cgcttcatgg	agcagtttac	aaagttgaaa	gatctgttct	accgctccag	caacctgcag	840
tacttcaagc	ggctcattca	gatccccag	ctgcctgaga	accaccccaa	cttctgcga	900
gcctcagccc	tgtcagaaca	tatcagccct	gtggtggtga	tccctgcaga	ggcctcatcc	960
cccgacagcg	agccagtcct	agagaaggat	gacctcatgg	acatggatgc	ctctcagcag	1020
aatttatttg	acaacaagtt	tgatgacatc	tttggcagtt	cattcagcag	tgatcccttc	1080
aatttcaaca	gtcaaaatgg	tgtgaacaag	gatgagaagg	accacttaat	tgagcgacta	1140
tacagagaga	tcagtggatt	gaaggcacag	ctagaaaaca	tgaagactga	gagccagcgg	1200
gttgtgctgc	agctgaaggg	ccacgtcagc	gagctggaag	cagatctggc	cgagcagcag	1260
cacctgcggc	agcaggcggc	cgacgactgt	gaattcctgc	gggcagaact	ggacgagctc	1320
aggaggcagc	gggaggacac	cgagaaggct	cagcggagcc	tgtctgagat	agaaaggaaa	1380
gctcaagcca	atgaacagcg	atatagcaag	ctaaaggaga	agtacagcga	gctgggttcag	1440
aaccacgctg	acctgctgcg	gaagaatgca	gaggtgacca	aacaggtgtc	catggccaga	1500
caagcccagg	tagatttgga	acgagagaaa	aaagagctgg	aggattcggt	ggagcgcac	1560
agtgaccagg	gccagcggaa	gactcaagaa	cagctggaag	ttctagagag	cttgaagcag	1620
gaacttgcca	caagccaacg	ggagcttcag	gttctgcaag	gcagcctgga	aacttctgcc	1680
cagtcagaag	caaactgggc	agccgagttc	gccgagctag	agaaggagcg	ggacagcctg	1740
gtgagtggcg	cagctcatag	ggaggaggaa	ttatctgctc	ttcggaagaa	actgcaggac	1800
actcagctca	aactggccag	cacagaggaa	tctatgtgcc	agcttgccaa	agaccaacga	1860
aaaatgcttc	tggtgggggtc	caggaaggct	gcggagcagg	tgatacaaga	cgccctgaac	1920
cagcttgaag	aacctcctct	catcagctgc	gctgggtctg	cagatcacct	cctctccacg	1980
gtcacatcca	tttccagctg	catcgagcaa	ctggagaaaa	gctggagcca	gtatctggcc	2040
tgcccagaag	acatcagtgg	acttctccat	tccataacct	tgctggccca	cttgaccagc	2100

gacgccattg ctcattggtgc caccacctgc ctcagagccc cacctgagcc tgccgactca	2160
ctgaccgagg cctgtaagca gtatggcagg gaaaccctcg cctacctggc ctccctggag	2220
gaagagggaa gccttgagaa tgccgacagc acagccatga ggaactgcct gagcaagatc	2280
aaggccatcg gcgaggagct cctgcccagg ggactggaca tcaagcagga ggagctgggg	2340
gacctggtgg acaaggagat ggcgggccact tcagctgcta ttgaaactgc cacggccaga	2400
atagaggaga tgctcagcaa atcccagagca ggagacacag gagtcaaatt ggaggtgaat	2460
gaaaggatcc ttggttgctg taccagcctc atgcaagcta ttcaggtgct catcgtggcc	2520
tctaaggacc tccagagaga gattgtggag agcggcaggg gtacagcatc ccctaaagag	2580
ttttatgcca agaactctcg atggacagaa ggacttatct cagcctccaa ggctgtgggc	2640
tggggagcca ctgtcatggt ggatgcagct gatctggtgg tacaaggcag agggaaattt	2700
gaggagctaa tgggtgtgttc tcatgaaatt gctgctagca cagcccagct tgtggctgca	2760
tccaaggtga aagctgataa ggacagcccc aacctagccc agctgcagca ggcctctcgg	2820
ggagtgaacc aggccactgc cggcgttgtg gcctcaacca tttccggcaa atcacagatc	2880
gaagagacag acaacatgga cttctcaagc atgacgtga cacagatcaa acgccaagag	2940
atggattctc aggttagggt gctagagcta gaaaatgaat tgcagaagga gcgtcaaaaa	3000
ctgggagagc ttcggaaaaa gcactacgag cttgctggtg ttgctgaggg ctgggaagaa	3060
ggaacagagg catctccacc tacactgcaa gaagtggtaa ccgaaaaaga atag	3114

<210> 124
 <211> 582
 <212> DNA
 <213> Homo sapiens

<400> 124	
atgggcaaac agaacagcaa gctgcggccc gaggtgctgc aggacctgcg ggagaacacg	60
gagttcaccg accacgagct gcaggagtgg tacaagggtc tcctcaagga ctgccccacc	120
ggccacctga ccgtggacga gttcaagaag atctacgcca acttcttccc ctacggcgac	180
gcttccaagt tcgccgagca cgtcttccgc accttcgaca ccaacggcga cggcaccatc	240
gacttccggg agttcatcat tgcgctgagc gtgacctgcg ggggcaagct ggagcagaag	300
ctcaagtggg ctttcagcat gtacgacctg gacggcaacg gctacatcag ccgcagcgag	360
atgctggaga tcgtgcaggc catctacaag atggtgtcgt ctgtgatgaa gatgccggag	420
gatgagtcca ccccgagaa gcgcacagac aagatcttca ggcagatgga caccaacaat	480
gacggcaaac tgtccttgga agaattcatc agaggtgcc aagagcgacc ctccatcgtc	540
cgctgctgc agtgcgaccc cagcagtgcc agtcagttct ga	582

<210> 125
 <211> 2103
 <212> DNA
 <213> Homo sapiens

<400> 125

atgaagtgcg	tcttggtggc	cactgagggc	gcagaggtcc	tcttctactg	gacagatcag	60
gagtttgaag	agagtctccg	gctgaagttc	gggcagtcag	agaatgagga	agaagagctc	120
cctgccctgg	aggaccagct	cagcaccctc	ctagccccgg	tcattcatctc	ctccatgacg	180
atgctggaga	agctctcgga	cacctacacc	tgcttctcca	cggaaaatgg	caacttcctg	240
tatgtccttc	acctgtttgg	agaatgcctg	ttcattgcc	tcaatggtga	ccacaccgag	300
agcgaggggg	acctgcggcg	gaagctgtat	gtgctcaagt	acctgtttga	agtgcacttt	360
gggctggtga	ctgtggacgg	tcattcttctc	cgaaggagc	tgcgcccccc	agacctggcg	420
cagcgtgtcc	agctgtggga	gcacttccag	agcctgctgt	ggacctacag	ccgcctgcgg	480
gagcaggagc	agtgtctcgc	cgtggaggcc	ctggagcgac	tgattcacc	ccagctctgt	540
gagctgtgca	tagaggcgct	ggagcggcac	gtcatccagg	ctgtcaacac	cagccccgag	600
cggggaggcg	aggaggccct	gcatgccttc	ctgctcgtgc	actccaagct	gctggcattc	660
tactctagcc	acagtgccag	ctccctgctc	ccggccgacc	tgcttgccct	catcctcctg	720
gttcaggacc	tctaccccag	cgagagcaca	gcagaggacg	acattcagcc	ttccccgcgg	780
agggccccga	gcagccagaa	catccccgtg	cagcaggcct	ggagccctca	ctccacgggc	840
ccaactgggg	ggagctctgc	agagacggag	acagacagct	tctccctccc	tgaggagtac	900
ttcacaccag	ctccttcccc	tggcgatcag	agctcaggta	gcaccatctg	gctggagggg	960
ggcacccccc	ccatggatgc	ccttcagata	gcagaggaca	ccctccaaac	actggttccc	1020
cactgccctg	tgcttccgg	cccagaagg	atcttccctg	atgccaacgt	gaaggaaagc	1080
tactgcccc	tagtgccca	caccatgtac	tgctgcccc	tgtggcaggg	catcaacctg	1140
gtgctcctga	ccaggagccc	cagcgcgccc	ctggccctgg	ttctgtccca	gctgatggat	1200
ggcttctcca	tgctggagaa	gaagctgaag	gaagggccgg	agccgggggc	ctccctgctc	1260
tcccagcccc	tcgtgggaga	cctgcgccag	aggatggaca	agtttgtcaa	gaatcgaggg	1320
gcacaggaga	ttcagagcac	ctggctggag	tttaaggcca	aggctttctc	caaaagttag	1380
cccgatcct	cctgggagct	gctccaggca	tgtgggaagc	tgaagcggca	gctctgcgcc	1440
atctaccggc	tgaactttct	gaccacagcc	cccagcaggg	gaggcccaca	cctgccccag	1500
cacctgcagg	accaagtgca	gaggctcatg	cgggagaagc	tgacggactg	gaaggacttc	1560
ttgctggtga	agagcaggag	gaacatcacc	atggtgtcct	acctagaaga	cttcccaggc	1620
ttggtgcact	tcatttatgt	ggaccgcacc	actgggcaga	tggtggcgcc	ttccctcaac	1680
tgagtcaaaa	agacctcgtc	ggagttgggc	aaggggccgc	tggtgcctt	tgtcaaaact	1740
aaggtctggt	ctctgatcca	gctggcgctc	agatacctgc	agaagggtta	caccacgctg	1800
ctgttccagg	agggggattt	ctactgctcc	tacttctctg	ggttcgagaa	tgacatgggg	1860
tacaaactcc	agatgatcga	ggtgcccgtc	ctctccgacg	actcagtgcc	tatcggcattg	1920
ctgggaggag	actactacag	gaagctcctg	cgctactaca	gcaagaaccg	cccaaccgag	1980
gctgtcaggt	gctacgagct	gctggccctg	cacctgtctg	tcattccccac	tgacctgctg	2040

gtgcagcagg ccggccagct ggcccggcgc ctctgggagg cctcccgtat ccccctgctc 2100
tag 2103

<210> 126
<211> 1644
<212> DNA
<213> Homo sapiens

<400> 126
atggccacca tgggtaccatc cgtgttgtgg cccagggcct gctggactct gctggtctgc 60
tgtctgctga cccaggtgt ccaggggcag gagttccttt tgcgggtgga gcccagaac 120
cctgtgctct ctgctggagg gtccctgttt gtgaactgca gtactgattg tcccagctct 180
gagaaaatcg ctttgagac gtccctatca aaggagctgg tggccagtgg catgggctgg 240
gcagccttca atctcagcaa cgtgactggc aacagtcgga tcctctgctc agtgtactgc 300
aatggctctc agataacagg ctccctctaac atcaccgtgt acaggctccc ggagcgtgtg 360
gagctggcac ccctgcctcc ttggcagccg gtgggcccaga acttcaccct gcgctgccaa 420
gtggaggatg ggtcgccccg gaccagctc acggtggtgc tgcttcgctg ggaggaggag 480
ctgagccggc agcccgcagt ggaggagcca gcggaggtca ctgccactgt gctggccagc 540
agagacgacc acggagcccc tttctcatgc cgcacagaac tggacatgca gcccagggg 600
ctgggactgt tcgtgaacac ctacgcccc cgccagctcc gaacctttgt cctgcccgtg 660
acccccccgc gcctcgtggc ccccggttc ttggaggtgg aaacgtcgtg gccggtggac 720
tgcaccctag acgggctttt tccagcctca gaggcccagg tctacctggc gctgggggac 780
cagatgctga atgcgacagt catgaaccac ggggacacgc taacggccac agccacagcc 840
acggcgcgcg cggatcagga gggtgcccgg gagatcgtct gcaacgtgac cctagggggc 900
gagagacggg agggccggga gaacttgacg gtcttttagct tcctaggacc cattgtgaac 960
ctcagcgagc ccaccgccc tgaggggtcc acagtgaccg tgagttgcat ggctggggct 1020
cgagtccagg tcacgttgga cggagttccg gcccgggccc cggggcagcc agctcaactt 1080
cagctaaatg ctaccgagag tgacgacgga cgcagcttct tctgcagtgc cactctcgag 1140
gtggacggcg agttcttgca caggaacagt agcgtccagc tgcgagtcct gtatgggtccc 1200
aaaattgacc gagccacatg ccccagcac ttgaaatgga aagataaaac gagacacgtc 1260
ctgcagtgcc aagccagggg caaccgtac cccgagctgc ggtgtttgaa ggaaggctcc 1320
agccgggagg tgccgggtggg gatcccgttc ttcgtcaacg taacacataa tggctacttat 1380
cagtgccaaag cgtccagctc acgaggcaa tacaccctgg tcgtggtgat ggacattgag 1440
gctgggagct cccactttgt ccccgtcttc gtggcgggtgt tactgaccct gggcgtggtg 1500
actatcgtac tggccttaat gtacgtcttc agggagcacc aacggagcgg cagttaccat 1560
gttagggagg agagcaccta tctgcccctc acgtctatgc agccgacaga agcaatgggg 1620
gaagaaccgt ccagagctga gtga 1644

<210> 127
 <211> 1335
 <212> DNA
 <213> Homo sapiens

<400> 127
 atggcagtga caactcgttt gacatggttg cacgaaaaga tcctgcaaaa tcattttgga 60
 gggaagcggc ttagccttct ctataagggt agtgtccatg gattccgtaa tggagttttg 120
 cttgacagat gttgtaatca agggcctact ctaacagtga tttatagtga agatcatatt 180
 attggagcat atgcagaaga gagttaccag gaaggaaagt atgcttccat catccttttt 240
 gcacttcaag atactaaaat ttcagaatgg aaactaggac tatgtacacc agaaacactg 300
 ttttgttgtg atgttacaaa atataactcc ccaactaatt tccagataga tggaagaaat 360
 agaaaagtga ttatggactt aaagacaatg gaaaatcttg gacttgctca aaattgtact 420
 atctctattc aggattatga agtttttcga tgcgaagatt cactggatga aagaaagata 480
 aaaggggtca ttgagctcag gaagagctta ctgtctgcct tgagaactta tgaaccatat 540
 ggatccctgg ttcaacaaat acgaattctg ctgctgggtc caattggagc tgggaagtcc 600
 agctttttca actcagttag gtctgttttc caagggcatg taacgcatca ggctttggtg 660
 ggcactaata caactgggat atctgagaag tataggacat actctattag agacgggaaa 720
 gatggcaaat acctgccgtt tattctgtgt gactcactgg ggctgagtga gaaagaaggc 780
 ggcctgtgca gggatgacat attctatatc ttgaacggta acattcgtga tagataccag 840
 tttaatccca tggaatcaat caaattaaat catcatgact acattgattc cccatcgctg 900
 aaggacagaa ttcatgtgtt ggcatttgta tttgatgcca gctctattca atacttctcc 960
 tctcagatga tagtaaagat caaaagaatt cgaagggagt tggtaaacgc tgggtgtggtg 1020
 catgtggctt tgctcactca tgtggatagc atggatttga ttacaaaagg tgaccttata 1080
 gaaatagaga gatgtgagcc tgtgaggtcc aagctagagg aagtccaaag aaaacttgga 1140
 tttgctcttt ctgacatctc ggtggtttagc aattattcct ctgagtggga gctggaccct 1200
 gtaaaggatg ttctaattct ttctgctctg agacgaatgc tatgggctgc agatgacttc 1260
 ttagaggatt tgccttttga gcaaataagg aatctaaggg aggaaattat caactgtgca 1320
 caaggaaaaa aatag 1335

<210> 128
 <211> 393
 <212> DNA
 <213> Homo sapiens

<400> 128
 atgcggcaga aggcggtatc gcttttcttg tgctacctgc tgctcttcac ttgcagtggg 60
 gtggaggcag gtaagaaaaa gtgctcggag agctcggaca gcggctccgg gttctggaag 120
 gccctgacct tcatggccgt cggaggagga ctgcagtcg ccgggctgcc cgcgctgggc 180
 ttcaccggcg ccggcatcgc ggccaactcg gtggctgcct cgctgatgag ctggtctgcg 240
 atcctgaatg ggggcggcgt gcccgccggg gggctagtgg ccacgctgca gagcctcggg 300

gctggtggca gcagcgtcgt cataggtaat attggtgccc tgatgggcta cgccacccac	360
aagtatctcg atagtgagga ggatgaggag tag	393

<210> 129
 <211> 3078
 <212> DNA
 <213> Homo sapiens

<400> 129	
atgtcgaatg ggtattccac agacgagaat ttccgctatc tcatctcgtg cttcagggcc	60
agggtgaaaa tgtacatcca ggtggagcct gtgctggact acctgacctt tctgcctgca	120
gaggtgaagg agcagattca gaggacagtc gccacctccg ggaacatgca ggcagttgaa	180
ctgctgctga gcaccttgga gaagggagtc tggcaccttg gttggactcg ggaattcgtg	240
gaggccctcc ggagaaccgg cagccctctg gccgcccgct acatgaacct tgagctcacg	300
gacttgcctt ctccatcgtt tgagaacgct catgatgaat atctccaact gctgaacctc	360
cttcagccca ctctggtgga caagcttcta gttagagacg tcttgataa gtgcatggag	420
gaggaactgt tgacaattga agacagaaac cggattgctg ctgcagaaaa caatggaaat	480
gaatcaggtg taagagagct actaaaaagg attgtgcaga aagaaaactg gttctctgca	540
tttctgaatg ttcttcgtca aacaggaaac aatgaacttg tccaagagtt aacaggctct	600
gattgctcag aaagcaatgc agagattgag aatttatcac aagttgatgg tcctcaagtg	660
gaagagcaac ttctttcaac cacagttcag ccaaactctg agaaggaggt ctggggcatg	720
gagaataact catcagaatc atcttttgca gattcttctg tagtttcaga atcagacaca	780
agtttggcag aaggaagtgt cagctgctta gatgaaagtc ttggacataa cagcaacatg	840
ggcagtgatt caggcaccat gggaagtgat tcagatgaag agaatgtggc agcaagagca	900
tccccggagc cagaactcca gctcaggcct taccaaattg aagttgccca gccagccttg	960
gaagggaaga atatcatcat ctgcctccct acagggagtg gaaaaaccag agtggctggt	1020
tacattgcca aggatcactt agacaagaag aaaaaagcat ctgagcctgg aaaagttata	1080
gttcttgca ataaggtact gctagttgaa cagctcttcc gcaaggagtt ccaaccattt	1140
ttgaagaaat ggtatcgtgt tattggatta agtggtgata cccaactgaa aatatcattt	1200
ccagaagttg tcaagtcctg tgatattatt atcagtacag ctcaaatacct tgaaaactcc	1260
ctcttaaact tggaaaatgg agaagatgct ggtgttcaat tgtcagactt ttccctcatt	1320
atcattgatg aatgtcatca caccaacaaa gaagcagtgt ataataacat catgaggcat	1380
tatttgatgc agaagttgaa aaacaataga ctcaagaaag aaaacaaacc agtgattccc	1440
cttcctcaga tactgggact aacagcttca cctggtgttg gaggggccac gaagcaagcc	1500
aaagctgaag aacacatttt aaaactatgt gccaatcttg atgcatttac tattaact	1560
gttaaagaaa accttgatca actgaaaaac caaatacagg agccatgcaa gaagtttgcc	1620
attgcagatg caaccagaga agatccattt aaagagaaac ttctagaaat aatgacaagg	1680

PCTAU2016050927-seq1-000001-EN-20161013

attcaaactt attgtcaaat gagtccaatg tcagattttg gaactcaacc ctatgaacaa	1740
tggggcattc aaatggaaaa aaaagctgca aaagaaggaa atcgcaaaga acgtgtttgt	1800
gcagaacatt tgaggaagta caatgaggcc ctacaaatta atgacacaat tcgaatgata	1860
gatgcgtata ctcatcttga aactttctat aatgaagaga aagataagaa gtttgcagtc	1920
atagaagatg atagtgatga ggggtggtgat gatgagtatt gtgatggtga tgaagatgag	1980
gatgatttaa agaaaccttt gaaactggat gaaacagata gattttctcat gactttattt	2040
tttgaaaaca ataaaatgtt gaaaaggctg gctgaaaacc cagaatatga aaatgaaaag	2100
ctgaccaaatt taagaaatac cataatggag caatatacta ggactgagga atcagcacga	2160
ggaataatct ttacaaaaac acgacagagt gcatatgcgc tttcccagtg gattactgaa	2220
aatgaaaaat ttgctgaagt aggagtcaaa gcccaccatc tgattggagc tggacacagc	2280
agtgagttca aacctatgac acagaatgaa caaaaagaag tcattagtaa atttcgcact	2340
ggaaaaataa atctgcttat cgctaccaca gtggcagaag aaggctctgga tattaaagaa	2400
tgtaacattg ttatccgtta tggctctcgtc accaatgaaa tagccatggt ccaggcccg	2460
ggtcgcagcca gagctgatga gagcacctac gtcctggttg ctcacagtgg ttcaggagtt	2520
atcgaacatg agacagttaa tgatttccga gagaagatga tgtataaagc tatacattgt	2580
gttcaaaata tgaaaccaga ggagtatgct cataagattt tggaattaca gatgcaaagt	2640
ataatggaaa agaaaatgaa aaccaagaga aatattgccca agcattacaa gaataaccca	2700
tcactaataa ctttcctttg caaaaactgc agtgtgctag cctgttcttg ggaagatata	2760
catgtaattg agaaaatgca tcacgtcaat atgacccag aattcaagga actttacatt	2820
gtaagagaaa acaaagcact gcaaaagaag tgtgccgact atcaaataaa tgggtgaaatc	2880
atctgcaaatt gtggccaggc ttggggaaca atgatggtgc acaaaggctt agatttgcct	2940
tgtctcaaaa taaggaattt tgtagtgtt ttcaaaaata attcaacaaa gaaacaatac	3000
aaaaagtggg tagaattacc tatcacattt cccaatcttg actattcaga atgctgttta	3060
tttagtgatg aggattag	3078

<210> 130
 <211> 726
 <212> DNA
 <213> Homo sapiens

<400> 130	
atggggactg cgagcagaag caacatcgct cgccatctgc aaaccaatct cattctat	60
tgtgtcgggtg ctgtgggctc ctgtactctc tctgtcacac aaccgtggta cctagaagt	120
gactacactc atgaggccgt caccataaag tgtaccttct ccgcaaccgg atgcccttct	180
gagcaaccaa catgcctgtg gtttcgctac ggtgctcacc agcctgagaa cctgtgcttg	240
gacgggtgca aaagtgaggc agacaagttc acagtgaggg aggccctcaa agaaaaccaa	300
gtttccctca ctgtaaacag agtgacttca aatgacagtg caatttacat ctgtggaata	360
gcattcccca gtgtgccgga agcgagagct aaacagacag gaggaggagc cacactgggtg	420

PCTAU2016050927-seql-000001-EN-20161013

gtaagagaaa ttaagctgct cagcaaggaa ctgcgagact tcctgacagc tcttgtatca	480
ctgctctctg tctatgtgac cgggtgtgtgc gtggccttca tactcctctc caaatcaaaa	540
tccaaccctc taagaaacaa agaaataaaa gaagactcac aaaagaagaa gagtgtctcg	600
cgtatttttc aggaaattgc tcaagaacta taccataaga gacatgtgga aacaaatcag	660
caatctgaga aagataacaa cacttatgaa aacagaagag tactttccaa ctatgaaagg	720
ccatag	726

<210> 131
 <211> 2271
 <212> DNA
 <213> Homo sapiens

<400> 131 atgagctggt caccttcctt gacaacgcag acatgtgggg cctgggaaat gaaagagcgc	60
cttgggacag ggggatttgg aaatgtcatc cgatggcaca atcaggaaac aggtgagcag	120
attgccatca agcagtgccg gcaggagctc agccccgga accgagagcg gtggtgcctg	180
gagatccaga tcatgagaag gctgaccac ccgaatgtgg tggctgccc agatgtccct	240
gaggggatgc agaacttggc gcccaatgac ctgcccctgc tggccatgga gtactgcaa	300
ggaggagatc tccggaagta cctgaaccag tttgagaact gctgtggtct gcgggaaggt	360
gccatcctca ccttgctgag tgacattgcc tctgcgttta gatacttca tgaaaacaga	420
atcatccatc gggatctaaa gccagaaaac atcgtcctgc agcaaggaga acagaggtta	480
atacacaaaa ttattgacct aggatatgcc aaggagctgg atcagggcag tctttgcaca	540
tcattcgtgg ggacctgca gtacctggcc ccagagctac tggagcagca gaagtacaca	600
gtgaccgtcg actactggag cttcggcacc ctggcctttg agtgcatac gggcttccgg	660
cccttcctcc ccaactggca gcccgctgag tggcattcaa aagtgcggca gaagagttag	720
gtggacattg ttgttagcga agacttgaat ggaacggtga agttttcaag ctctttaccc	780
tacccaata atcttaacag tgtcctggct gagcgactgg agaagtggct gcaactgatg	840
ctgatgtggc acccccgaca gaggggcacg gatccacgt atgggcccac tggctgcttc	900
aaggccctgg atgacatctt aaacttaaag ctggttcata tcttgaacat ggtcacgggc	960
accatccaca cctaccctgt gacagaggat gagagtctgc agagcttgaa ggccagaatc	1020
caacaggaca cgggcatccc agaggaggac caggagctgc tgcaggaagc gggcctggcg	1080
ttgatccccg ataagcctgc cactcagtgt atttcagacg gcaagttaaa tgagggccac	1140
acattggaca tggatcttgt ttttctcttt gacaacagta aaatcaccta tgagactcag	1200
atctccccac ggcccaacc tgaaagtgtc agctgtatcc ttcaagagcc caagaggaat	1260
ctgccttct tccagctgag gaaggtgtgg ggccaggtct ggcacagcat ccagaccctg	1320
aaggaagatt gcaaccggct gcagcaggga cagcgagccg ccatgatgaa tctcctccga	1380
aacaacagct gcctctcaa aatgaagaat tccatggctt ccatgtctca gcagctcaag	1440

gccaagttgg	atttcttcaa	aaccagcatc	cagattgacc	tggagaagta	cagcgagcaa	1500
accgagtttg	ggatcacatc	agataaactg	ctgctggcct	ggagggaaat	ggagcaggct	1560
gtggagctct	gtgggcggga	gaacgaagtg	aaactcctgg	tagaacggat	gatggctctg	1620
cagaccgaca	ttgtggactt	acagaggagc	cccatgggcc	ggaagcaggg	gggaacgctg	1680
gacgacctag	aggagcaagc	aaggagagctg	tacaggagac	taagggaana	acctcgagac	1740
cagcgaactg	agggtgacag	tcaggaaatg	gtacggctgc	tgcttcaggc	aattcagagc	1800
ttcgagaaga	aagtgcgagt	gatctatacg	cagctcagta	aaactgtggt	ttgcaagcag	1860
aaggcgctgg	aactgttgcc	caagggtgaa	gaggtggtga	gcttaatgaa	tgaggatgag	1920
aagactgttg	tccggctgca	ggagaagcgg	cagaaggagc	tctggaatct	cctgaagatt	1980
gctttagca	aggtccgtgg	tcctgtcagt	ggaagcccg	atagcatgaa	tgctctcga	2040
cttagccagc	ctgggcagct	gatgtctcag	ccctccacgg	cctccaacag	cttacctgag	2100
ccagccaaga	agagtgaaga	actggtggct	gaagcacata	acctctgcac	cctgctagaa	2160
aatgccatac	aggacactgt	gaggaacaa	gaccagagtt	tcacggccct	agactggagc	2220
tggttacaga	cggaagaaga	agagcacagc	tgcttgagc	aggcctcatg	a	2271

<210> 132
 <211> 978
 <212> DNA
 <213> Homo sapiens

<400> 132	
atggcggtgga	gccttgggag
ctggctgggt	ggctgcctgc
tgggtgtcagc	attgggaatg
	60
gtaccacctc	ccgaaaatgt
cagaatgaat	tctgttaatt
tcaagaacat	tctacagtgg
	120
gagtcacctg	cttttgccaa
agggaaacctg	actttcacag
ctcagtacct	aagttatagg
	180
atattccaag	ataaatgcat
gaatactacc	ttgacggaat
gtgattttctc	aagtctttcc
	240
aagtatggtg	accacacctt
gagagtcagg	gctgaatttg
cagatgagca	ttcagactgg
	300
gtaaacatca	ccttctgtcc
tgtggatgac	accattattg
gacccctgg	aatgcaagta
	360
gaagtacttg	ctgattcttt
acatatgctg	ttcttagccc
ctaaaattga	gaatgaatac
	420
gaaacttgga	ctatgaagaa
tgtgtataac	tcattggactt
ataatgtgca	atactggaaa
	480
aacggtactg	atgaaaagtt
tcaaattact	ccccagtatg
actttgaggt	cctcagaaac
	540
ctggagccat	ggacaactta
ttgtgttcaa	gttcgagggg
ttcttcctga	tcggaacaaa
	600
gctggggaat	ggagttagcc
tgtctgtgag	caaacaacc
atgacgaaac	ggccccctcc
	660
tggatggtgg	ccgtcatcct
catggcctcg	gtcttcatgg
tctgcctggc	actcctcggc
	720
tgcttcgcct	tgctgtggtg
cgtttacaag	aagacaaagt
acgccttctc	ccctaggaat
	780
tctcttcac	agcacctgaa
agagtttttg	ggccatcctc
atcataacac	acttctgttt
	840
ttctcctttc	cattgtcgga
tgagaatgat	gtttttgaca
agctaagtgt	cattgcagaa
	900
gactctgaga	gcggcaagca
gaatcctggt	gacagctgca
gcctcgggac	cccgctggg
	960
caggggcccc	aaagctag
	978

<210> 133
 <211> 1284
 <212> DNA
 <213> Homo sapiens

<400> 133
 atggagtggc cggcgcggt ctgcgggctg tgggcgctgc tgctctgcgc cggcggcggg 60
 ggcgggggcg ggggcgccgc gcctacggaa actcagccac ctgtgacaaa tttgagtgtc 120
 tctgttgaaa acctctgcac agtaatatgg acatggaatc caccgaggg agccagctca 180
 aattgtagtc tatggtatgt tagtcatttt ggcgacaaac aagataagaa aatagctccg 240
 gaaactcgtc gttcaataga agtacccttg aatgagagga tttgtctgca agtgggggtcc 300
 cagtgtagca ccaatgagag tgagaagcct agcatttttg ttgaaaaatg catctcacc 360
 ccagaaggtg atcctgagtc tgctgtgact gagcttcaat gcatttggca caacctgagc 420
 tacatgaagt gttcttggct ccctggaagg aataccagtc ccgacactaa ctatactctc 480
 tactattggc acagaagcct ggaaaaaatt catcaatgtg aaaacatctt tagagaaggc 540
 caatactttg gttgttcctt tgatctgacc aaagtgaagg attccagttt tgaacaacac 600
 agtgtccaaa taatgggtcaa ggataatgca ggaaaaatta aaccatcctt caatatagtg 660
 cctttaactt cccgtgtgaa acctgacct ccacatatta aaaacctctc cttccacaat 720
 gatgacctat atgtgcaatg ggagaatcca cagaatttta ttagcagatg cctattttat 780
 gaagtagaag tcaataacag ccaaactgag acacataatg ttttctacgt ccaagaggct 840
 aaatgtgaga atccagaatt tgagagaaat gtggagaata catcttgttt catggtccct 900
 ggtgttcttc ctgatacttt gaacacagtc agaataagag tcaaaacaaa taagttatgc 960
 tatgaggatg acaaactctg gagtaattgg agccaagaaa tgagtatagg taagaagcgc 1020
 aattccacac tctacataac catgttactc attgttccag tcatcgtcgc aggtgcaatc 1080
 atagtactcc tgctttacct aaaaaggctc aagattatta tattccctcc aattcctgat 1140
 cctggcaaga tttttaaaga aatgtttgga gaccagaatg atgatactct gcactggaag 1200
 aagtacgaca tctatgagaa gcaaaccaag gaggaaccg actctgtagt gctgatagaa 1260
 aacctgaaga aagcctctca gtga 1284

<210> 134
 <211> 1896
 <212> DNA
 <213> Homo sapiens

<400> 134
 atggactata gctttgatac cacagccgaa gacccttggg ttaggatttc tgactgcatc 60
 aaaaacttat ttagcccat catgagttag aaccatggcc acatgcctct acagcccaat 120
 gccagcctga atgaagaaga agggacacag ggccaccag atgggacccc accaaagctg 180
 gacaccgcca atggcactcc caaagtttac aagtcagcag acagcagcac tgtgaagaaa 240
 ggtcctcctg tggctcccaa gccagcctgg tttcgccaaa gcttgaaagg tttgaggaat 300

cgtgcttcag	acccaagagg	gctccctgat	cctgccttgt	ccaccagcc	agcacctgct	360
tccagggagc	acctaggatc	acacatccgg	gcctcctcct	cctcctcctc	catcaggcag	420
agaatcagct	cctttgaaac	ccttggtctc	tctcaactgc	ctgacaaagg	agcccagaga	480
ctgagcctcc	agccctcctc	tggggaggca	gcaaaacctc	ttgggaagca	tgaggaagga	540
cggttttctg	gactcttggg	gcgaggggct	gcaccactc	ttgtgcccc	gcagcctgag	600
caagtactgt	cctcgggggtc	ccctgcagcc	tccgaggcca	gagaccagg	tgtgtctgag	660
tcccctcccc	cagggcgcca	gccaatcag	aaaactctcc	cccctggccc	ggaccgcctc	720
ctaaggctgc	tgtcaacaca	ggctgaggaa	tctcaaggcc	cagtgtctaa	gatgcctagc	780
cagcgagcac	ggagcttccc	cctgaccagg	tcccagtcct	gtgagacgaa	gctacttgac	840
gaaaagacca	gcaaactcta	ttctatcagc	agccaagtgt	catcggctgt	catgaaatcc	900
ttgctgtgcc	ttccatcttc	tatctcctgt	gccagactc	cctgcatccc	caaggaaggg	960
gcatctccaa	catcatcatc	caacgaagac	tcagctgcaa	atggttctgc	tgaacatct	1020
gccttggaca	cagggttctc	gctcaacctt	tcagagctga	gagaatatac	agagggctctc	1080
acggaagcca	aggaagacga	tgatggggac	cacagttccc	ttcagttctg	tcagtcctgt	1140
atctccctgc	tgagctcaga	agaattaaaa	aaactcatcg	aggaggtgaa	ggttctggat	1200
gaagcaacat	taaagcaatt	agacggcatc	catgtcacca	tcttacacaa	ggaggaaggt	1260
gctggctctt	ggttcagctt	ggcaggagga	gcagatctag	aaaacaaggt	gattacgggt	1320
cacagagtgt	ttccaaatgg	gctggcctcc	caggaaggga	ctattcagaa	gggcaatgag	1380
gttctttcca	tcaacggcaa	gtctctcaag	gggaccacgc	accatgatgc	cttggccatc	1440
ctccgccaag	ctcgagagcc	caggcaagct	gtgattgtca	caaggaagct	gactccagag	1500
gccatgccc	acctcaactc	ctccactgac	tctgcagcct	cagcctctgc	agccagtgat	1560
gtttctgtag	aatctacagc	agaggccaca	gtctgcacgg	tgacactgga	gaagatgtcg	1620
gcagggctgg	gcttcagcct	ggaaggagg	aagggtctcc	tacacggaga	caagcctctc	1680
accattaaca	ggattttcaa	aggagcagcc	tcagaacaaa	gtgagacagt	ccagcctgga	1740
gatgaaatct	tacagctggg	tggcactgcc	atgcagggcc	tcacacgggt	tgaagcctgg	1800
aacatcatca	aggcactgcc	tgatggacct	gtcacgattg	tcacagagg	aaaaagcctc	1860
cagtccaagg	aaaccacagc	tgctggagac	tcctag			1896

<210> 135
 <211> 1713
 <212> DNA
 <213> Homo sapiens

<400> 135	
atgacacttc	tgtggtgtgt agtgagtctc tacttttatg gaatcctgca aagtgatgcc 60
tcagaacgct	gcgatgactg gggactagac accatgaggc aaatccaagt gtttgaagat 120
gagccagctc	gcatcaagtg cccactcttt gaacacttct tgaaattcaa ctacagcaca 180

gcccattcag ctggccttac tctgatctgg tattggacta ggcaggaccg ggaccttgag	240
gagccaatta acttccgcct ccccgagaac cgcattagta aggagaaaga tgtgctgtgg	300
ttccggccca ctctcctcaa tgacactggc aactatacct gcatgttaag gaacactaca	360
tattgcagca aagttgcatt tcccttggaa gttgttcaaa aagacagctg tttcaattcc	420
cccatgaaac tcccagtga taaactgtat atagaatatg gcattcagag gatcacttgt	480
ccaaatgtag atggatattt tccttccagt gtcaaaccga ctatcacttg gtatatgggc	540
tgttataaaa tacagaattt taataatgta ataccgaag gtatgaactt gagtttcctc	600
attgccttaa tttcaaataa tggaaattac acatgtgttg ttacatatcc agaaaatgga	660
cgtacgtttc atctcaccag gactctgact gtaaaggtag taggctctcc aaaaaatgca	720
gtgccccctg tgatccattc acctaataatgat catgtggtct atgagaaaga accaggagag	780
gagctactca ttccctgtac ggtctatttt agttttctga tggattctcg caatgaggtt	840
tgggtggacca ttgatggaaa aaaacctgat gacatcacta ttgatgtcac cattaacgaa	900
agtataagtc atagtagaac agaagatgaa acaagaactc agattttgag catcaagaaa	960
gttacctctg aggatctcaa ggcagctat gtctgtcatg ctagaagtgc caaaggcgaa	1020
gttgccaaag cagccaaggt gaagcagaaa gtgccagctc caagatacac agtggaactg	1080
gcttgtggtt ttggagccac agtcctgcta gtggtgattc tcattgttgt ttaccatgtt	1140
tactggctag agatggctct attttaccgg gctcattttg gaacagatga aaccatttta	1200
gatggaaaag agtatgatat ttatgtatcc tatgcaagga atgcggaaga agaagaattt	1260
gtattactga ccctccgtgg agttttggag aatgaatttg gatacaagct gtgcatcttt	1320
gaccgagaca gtctgcctgg ggggaattgtc acagatgaga ctttgagctt cattcagaaa	1380
agcagacgcc tcctggttgt tctaagcccc aactacgtgc tccagggaac ccaagccctc	1440
ctggagctca aggctggcct agaaaatatg gcctctcggg gcaacatcaa cgtcatttta	1500
gtacagtaca aagctgtgaa ggaaacgaag gtgaaagagc tgaagagggc taagacgggtg	1560
ctcacggtca ttaaatggaa aggggaaaaa tccaagtatc cacagggcag gttctggaag	1620
cagctgcagg tggccatgcc agtgaagaaa agtcccaggc ggtctagcag tgatgagcag	1680
ggcctctcgt attcatcttt gaaaaatgta tga	1713

<210> 136

<211> 1911

<212> DNA

<213> Homo sapiens

<400> 136

atgcgggggag gcaggggagc ccctttctgg ctgtggccgc tgcccaagct ggcgctgctg	60

cctctgttgt ggggtgcttt ccagcggacg cgtccccagg gcagcgccgg gccactgcag	120

tgctacggag ttggaccctt gggcgacttg aactgctcgt gggagcctct tggggacctg	180

ggagccccct ccgagttaca cctccagagc caaaagtacc gttccaacaa aaccagact	240

gtggcagtg cagccggacg gagctgggtg gccattcctc gggaacagct caccatgtct	300

PCTAU2016050927-seql-000001-EN-20161013

gacaaactcc ttgtctgggg cactaaggca ggccagcctc tctggccccc cgtcttcgtg	360
aacctagaaa cccaaatgaa gccaaacgcc ccccggtgg gccctgacgt ggacttttcc	420
gaggatgacc ccctggaggc cactgtccat tgggccccac ctacatggcc atctcataaa	480
gttctgatct gccagttcca ctaccgaaga tgtcaggagg cggcctggac cctgctggaa	540
ccggagctga agaccatacc cctgaccctt gttgagatcc aagatttgga gctagccact	600
ggctacaaag tgtatggccg ctgccggatg gagaaagaag aggatttggt gggcgagtgg	660
agccccattt tgccttcca gacaccgctt tctgctccaa aagatgtgtg ggtatcaggg	720
aacctctgtg ggacgcctgg aggagaggaa cttttgcttc tatggaaggc cccagggccc	780
tgtgtgcagg tgagctacaa agtctggttc tgggttggag gtcgtgagct gagtccagaa	840
ggaattacct gctgctgctc cctaattccc agtggggcgg agtgggccag ggtgtccgct	900
gtcaacgcca caagctggga gcctctcacc aacctctctt tggctctgctt ggattcagcc	960
tctgcccccc gtagcgtggc agtcagcagc atcgttggga gcacggagct actggtgacc	1020
tggcaaccgg ggcttgggga accactggag catgtagtgg actgggctcg agatggggac	1080
cccctggaga aactcaactg ggtccggctt ccccttggga acctcagtgc tctgttacca	1140
gggaatttca ctgtcggggg cccctatcga atcactgtga ccgcagtctc tgcttcaggc	1200
ttggcctctg catcctccgt ctgggggttc agggaggaat tagcaccctt agtggggcca	1260
acgctttggc gactccaaga tgccctcca gggacccccg ccatagcgtg gggagaggtc	1320
ccaaggcacc agcttcgagg ccacctcacc cactacacct tgtgtgcaca gagtggaacc	1380
agcccctccg tctgcatgaa tgtgagtggc aacacacaga gtgtcacctt gcctgacctt	1440
ccttgggggtc cctgtgagct gtgggtgaca gcatctacca tcgctggaca gggccctctt	1500
ggtcccatcc tccggcttca tctaccagat aacacctga ggtggaaagt tctgccgggc	1560
atcctattct tgtggggctt gttcctgttg ggggtgtggc tgagcctggc cacctctgga	1620
agggtgtacc acctaaggca caaagtgtg ccccgctggg tctgggagaa agttcctgat	1680
cctgccaaca gcagttcagg ccagccccac atggagcaag tacctgaggc ccagcccctt	1740
ggggacttgc ccatcctgga agtggaggag atggagcccc cgccggttat ggagtcctcc	1800
cagcccgccc aggccaccgc cccgcttgac tctgggtatg agaagcactt cctgcccaca	1860
cctgaggagc tgggccttct ggggcccccc aggccacagg ttctggcctg a	1911

<210> 137
 <211> 2478
 <212> DNA
 <213> Homo sapiens

<400> 137	
atgggggtggc tttgctctgg gctcctgttc cctgtgagct gcctggctct gctgcagggtg	60
gcaagctctg ggaacatgaa ggtcttgag gagccacct gcgtctccga ctacatgagc	120
atctctactt gcgagtggaa gatgaatggt cccaccaatt gcagcaccga gctccgcctg	180

ttgtaccagc	tgggtttttct	gctctccgaa	gcccacacgt	gtatccctga	gaacaacgga	240
ggcgcgggggt	gcgtgtgcc	cctgctcatg	gatgacgtgg	tcagtgcgga	taactataca	300
ctggacctgt	gggctgggca	gcagctgctg	tggaagggct	ccttcaagcc	cagcgagcat	360
gtgaaaccca	gggccccagg	aaacctgaca	gttcacacca	atgtctccga	cactctgctg	420
ctgacctgga	gcaacccgta	tccccctgac	aattacctgt	ataatcatct	cacctatgca	480
gtcaacattt	ggagtgaana	cgacccggca	gatttcagaa	tctataacgt	gacctaccta	540
gaaccctccc	tccgcatcgc	agccagcacc	ctgaagtctg	ggatttccta	cagggcacgg	600
gtgagggcct	gggctcagtg	ctataacacc	acctggagtg	agtggagccc	cagcaccaag	660
tggcacaact	cctacagga	gcccttcgag	cagcacctcc	tgctgggcgt	cagcgtttcc	720
tgcattgtca	tcctggccgt	ctgcctgttg	tgctatgtca	gcatcaccaa	gattaagaaa	780
gaatggtggg	atcagattcc	caaccagcc	cgcagccgcc	tcgtggctat	aataatccag	840
gatgctcagg	ggcacagtg	ggagaagcgg	tcccgaggcc	aggaaccagc	caagtgccca	900
cactggaaga	attgtcttac	caagctcttg	ccctgttttc	tggagcacia	catgaaaagg	960
gatgaagatc	ctcacaaggc	tgccaaagag	atgccttttc	agggctctgg	aaaatcagca	1020
tggtgcccag	tggagatcag	caagacagtc	ctctggccag	agagcatcag	cgtggtgcga	1080
tgtgtggagt	tgtttgaggc	cccgggtggag	tgtgaggagg	aggaggagggt	agaggaagaa	1140
aaagggagct	tctgtgcatc	gcctgagagc	agcagggatg	acttccagga	gggaagggag	1200
ggcattgtgg	cccggctaac	agagagcctg	ttcctggacc	tgctcggaga	ggagaatggg	1260
ggcttttgcc	agcaggacat	gggggagtca	tgctttcttc	caccttcggg	aagtacgagt	1320
gctcacatgc	cctgggatga	gttcccaagt	gcagggccca	aggaggcacc	tccttggggc	1380
aaggagcagc	ctctccacct	ggagccaagt	cctcctgcc	gcccgaacca	gagtccagac	1440
aacctgactt	gcacagagac	gcccctcgtc	atcgcaggca	accctgctta	ccgcagcttc	1500
agcaactccc	tgagccagtc	accgtgtccc	agagagctgg	gtccagaccc	actgctggcc	1560
agacacctgg	aggaagtaga	acccgagatg	ccctgtgtcc	cccagctctc	tgagccaacc	1620
actgtgcccc	aacctgagcc	agaaacctgg	gagcagatcc	tccgccgaaa	tgtcctccag	1680
catggggcag	ctgcagcccc	cgtctcggcc	cccaccagtg	gctatcagga	gtttgtacat	1740
gcggtggagc	agggtggcac	ccaggccagt	gcggtgggtg	gcttgggtcc	cccaggagag	1800
gctggttaca	aggccttctc	aagcctgctt	gccagcagtg	ctgtgtcccc	agagaaatgt	1860
gggtttgggg	ctagcagtg	ggaagagggg	tataagcctt	tccaagacct	cattcctggc	1920
tgccctgggg	accctgcccc	agtccctgtc	cccttgttca	cctttggact	ggacagggag	1980
ccacctcgca	gtccgcagag	ctcacatctc	ccaagcagct	ccccagagca	cctgggtctg	2040
gagccggggg	aaaaggtaga	ggacatgcca	aagccccac	ttccccagga	gcaggccaca	2100
gacccccctt	tggacagcct	gggcagtggc	attgtctact	cagcccttac	ctgccacctg	2160
tgcggccacc	tgaacagtg	tcatggccag	gaggatgggt	gccagacccc	tgtcatggcc	2220

agtccttgct gtggctgctg ctgtggagac aggtcctcgc cccctacaac ccccctgagg	2280
gccccagacc cctctccagg tgggggttcca ctggaggcca gtctgtgtcc ggcctccctg	2340
gcaccctcgg gcatctcaga gaagagtaaa tcctcatcat ccttccatcc tgcccctggc	2400
aatgctcaga gctcaagcca gacccccaaa atcgtgaact ttgtctccgt gggaccacaca	2460
tacatgaggg tctcttag	2478

<210> 138
 <211> 1407
 <212> DNA
 <213> Homo sapiens

<400> 138	
atgctggccg tcggctgcgc gctgctggct gccctgctgg ccgcgccggg agcggcgctg	60
gccccagggc gctgccctgc gcaggaggtg gcgagaggcg tgctgaccag tctgccagga	120
gacagcgtga ctctgacctg cccgggggta gagccggaag acaatgccac tgttcactgg	180
gtgctcagga agccggctgc aggtccccc cccagcagat gggctggcat gggaaggagg	240
ctgctgctga ggtcgggtga gctccacgac tctggaaact attcatgcta ccgggcccggc	300
cgcccagctg ggactgtgca cttgctggtg gatgttcccc ccgaggagcc ccagctctcc	360
tgcttccgga agagccccct cagcaatgtt gtttgtgagt ggggtcctcg gagcacccca	420
tccctgacga caaaggctgt gctcttggtg aggaagtttc agaacagtcc ggccgaagac	480
ttccaggagc cgtgccagta ttcccaggag tcccagaagt tctcctgcca gttagcagtc	540
ccggaggggag acagctcttt ctacatagtg tccatgtgcg tcgccagtag tgtcgggagc	600
aagttcagca aaactcaaac ctttcagggt tgtggaatct tgcagcctga tccgcctgcc	660
aacatcacag tactgccgt ggccagaaac ccccgtggc tcagtgtcac ctggcaagac	720
ccccactcct ggaactcatc tttctacaga ctacggtttg agctcagata tcgggctgaa	780
cggtaaaga cattcacaac atggatggtc aaggacctcc agcatcactg tgtcatccac	840
gacgcctgga gcggcctgag gcacgtggtg cagcttcgtg cccaggagga gttcgggcaa	900
ggcgagtgga gcgagtggag cccggaggcc atgggcacgc cttggacaga atccaggagt	960
cctccagctg agaacgaggt gtccaccccc atgcaggcac ttactactaa taaagacgat	1020
gataatattc tcttcagaga ttctgcaaat gcgacaagcc tcccagtga agattcttct	1080
tcagtaccac tgcccacatt cctggttgct ggaggagacc tggccttcgg aacgctcctc	1140
tgcattgcca ttgttctgag gttcaagaag acgtggaagc tgcgggctct gaaggaaggc	1200
aagacaagca tgcatccgcc gtactctttg gggcagctgg tcccggagag gcctcgaccc	1260
acccagtgct ttgttctct catctcccca ccggtgtccc ccagcagcct ggggtctgac	1320
aatacctcga gccacaaccg accagatgcc agggaccac ggagccctta tgacatcagc	1380
aatacagact acttcttccc cagatag	1407

<210> 139
 <211> 2757

<212> DNA
 <213> Homo sapiens

<400> 139
 atgttgacgt tgcagacttg gctagtgcaa gccttgttta ttttcctcac cactgaatct 60
 acaggtgaac ttctagatcc atgtggttat atcagtcctg aatctccagt tgtacaactt 120
 cattctaatt tcaactgcagt ttgtgtgcta aaggaaaaat gtatggatta ttttcatgta 180
 aatgctaatt acattgtctg gaaaacaaac cattttacta ttcctaagga gcaatatact 240
 atcataaaca gaacagcatc cagtgtcacc ttacagata tagcttcatt aaatattcag 300
 ctcaacttgca acattcttac attcggacag cttgaacaga atgtttatgg aatcacaata 360
 atttcaggct tgcctccaga aaaacctaaa aatttgagtt gcattgtgaa cgaggggaag 420
 aaaatgaggt gtgagtggga tgggtgaagg gaaacacact tggagacaaa cttcacttta 480
 aaatctgaat gggcaacaca caagtttgct gattgcaaag caaaacgtga cacccccacc 540
 tcatgcaactg ttgattattc tactgtgtat ttgtcaaca ttgaagtctg ggtagaagca 600
 gagaatgcc ttgggaaggt tacatcagat catatcaatt ttgatcctgt atataaagtg 660
 aagcccaatc cgccacataa ttatcagtg atcaactcag aggaactgtc tagtatctta 720
 aaattgacat ggaccaacc aagtattaag agtggtataa tactaaaata taacattcaa 780
 tataggacca aagatgcctc aacttgagc cagattcctc ctgaagacac agcatccacc 840
 cgatcttcat tcaactgtcca agaccttaa ctttttacag aatatgtgtt taggattcgc 900
 tgtatgaagg aagatggtaa gggatactgg agtgactgga gtgaagaagc aagtgggac 960
 acctatgaag atagaccatc taaagcacca agtttctggt ataaaataga tccatcccat 1020
 actcaaggct acagaactgt acaactcgtg tggaagacat tgcctccttt tgaagccaat 1080
 ggaaaaatct tggattatga agtgactctc acaagatgga aatcacattt acaaaattac 1140
 acagttaatg ccacaaaact gacagtaa atcacaatg atcgctatct agcaacccta 1200
 acagtaagaa atcttgttgg caaatcagat gcagctgttt taactatccc tgctgtgac 1260
 tttcaagcta ctcaccctgt aatggatctt aaagcattcc ccaaagataa catgcttttg 1320
 gtggaatgga ctactccaag ggaatctgta aagaaatata tacttgagtg gtgtgtgtta 1380
 tcagataaag caccctgtat cacagactgg caacaagaag atggtaccgt gcatcgacac 1440
 tatttaagag ggaacttagc agagagcaaa tgctatttga taacagttac tccagtatat 1500
 gctgatggac caggaagccc tgaatccata aaggcatacc ttaaacaagc tccaccttcc 1560
 aaaggaccta ctgttcggac aaaaaaagta gggaaaaacg aagctgtctt agagtgggac 1620
 caacttcctg ttgatgttca gaatggattt atcagaaatt atactatatt ttatagaacc 1680
 atcattggaa atgaaactgc tgtgaatgtg gattcttccc acacagaata tacattgtcc 1740
 tctttgacta gtgacacatt gtacatggtg cgaatggcag catacacaga tgaagggtgg 1800
 aaggatggc cagaattcac ttttactacc ccaaagtttg ctcaaggaga aattgaagcc 1860
 atagtcgtgc ctgtttgctt agcattccta ttgacaactc ttctgggagt gctgttctgc 1920

tttaataagc	gagaccta	ataaaaaacac	atctggccta	atgttccaga	tccttcaaag	1980
agtcataattg	cccagtggtc	acctcacact	cctccaaggc	acaattttta	ttcaaaagat	2040
caaatgtatt	cagatggcaa	tttactgat	gtaagtgttg	tggaataga	agcaaagac	2100
aaaaagcctt	ttccagaaga	tctgaaatca	ttggacctgt	tcaaaaagga	aaaaattaat	2160
actgaaggac	acagcagtgg	tattgggggg	tcttcatgca	tgtcatcttc	taggccaagc	2220
atttctagca	gtgatgaaaa	tgaatcttca	caaaacactt	cgagcactgt	ccagtattct	2280
accgtggtac	acagtggcta	cagacaccaa	gttccgtcag	tccaagtctt	ctcaagatcc	2340
gagtctaccc	agcccttggt	agattcagag	gagcggccag	aagatctaca	attagtagat	2400
catgtagatg	gcggtgatgg	tattttgccc	aggcaacagt	acttcaaaca	gaactgcagt	2460
cagcatgaat	ccagtccaga	tatttcacat	tttgaaaggt	caaagcaagt	ttcatcagtc	2520
aatgaggaag	atgttggttag	acttaaacag	cagatttcag	atcatatttc	acaatcctgt	2580
ggatctgggc	aaatgaaaat	gtttcaggaa	gtttctgcag	cagatgcttt	tggtccaggt	2640
actgagggac	aagtagaaag	atttgaaaca	gttggcatgg	aggctgacgac	tgatgaaggc	2700
atgcctaaaa	gttacttacc	acagactgta	cggcaaggcg	gctacatgcc	tcagtga	2757

<210> 140
 <211> 3567
 <212> DNA
 <213> Homo sapiens

<400> 140	atgggtcccct	gctggaacca	tggcaacatc	acccgctcca	aggcggagga	gctgctttcc	60
	aggacaggca	aggacgggag	cttcctcgtg	cgtgccagcg	agtccatctc	ccgggcatac	120
	gcgctctgcg	tgctgtatcg	gaattgcgtt	tacacttaca	gaattctgcc	caatgaagat	180
	gataaattca	ctgttcaggc	atccgaaggc	gtctccatga	ggttcttcac	caagctggac	240
	cagctcatcg	agttttacaa	gaaggaaaac	atggggctgg	tgacctatct	gcaataccct	300
	gtgccgctgg	aggaagagga	cacaggcgac	gaccctgagg	aggacacaga	aagtgtcgtg	360
	tctccacccg	agctgcccc	aagaaacatc	ccgctgactg	ccagctcctg	tgaggccaag	420
	gaggttcctt	tttcaaacga	gaatccccga	gcgaccgaga	ccagccggcc	gagcctctcc	480
	gagacattgt	tccagcgact	gcaaagcatg	gacaccagtg	ggcttccaga	agagcatctt	540
	aaggccatcc	aagattatct	aagcactcag	ctcgcccagg	actctgaatt	tgtgaagaca	600
	gggtccagca	gtcttctca	cctgaagaaa	ctgaccacac	tgctctgcaa	ggagctctat	660
	ggagaagtca	tccggaccct	cccatccctg	gagtctctgc	agaggttatt	tgaccagcag	720
	ctctccccgg	gcctccgtcc	acgtcctcag	gttcttggtg	aggccaatcc	catcaacatg	780
	gtgtccaagc	tcagccaact	gacaagcctg	ttgtcgtcca	ttgaagacaa	ggtcaaggcc	840
	ttgctgcacg	agggtcctga	gtctccgcac	cggccctccc	ttatccctcc	agtcaccttt	900
	gagggtgaagg	cagagtctct	ggggattcct	cagaaaatgc	agctcaaagt	cgacgttgag	960
	tctgggaaac	tgatcattaa	gaagtccaag	gatggttctg	aggacaagtt	ctacagccac	1020

aagaaaatcc	tgcagctcat	taagtcacag	aaattttctga	ataagttggt	gatcttggtg	1080
gaaacagaga	aggagaagat	cctgcggaag	gaatatgttt	ttgctgactc	caaaaagaga	1140
gaaggcttct	gccagctcct	gcagcagatg	aagaacaagc	actcagagca	gccggagccc	1200
gacatgatca	ccatcttcat	cggcacctgg	aacatgggta	acgccccccc	tcccaagaag	1260
atcacgtcct	ggttttctctc	caaggggcag	ggaaagacgc	gggacgactc	tgcggactac	1320
atcccccattg	acatttacgt	gatcggcacc	caagaggacc	ccctgagtga	gaaggagtgg	1380
ctggagatcc	tcaaacactc	cctgcaagaa	atcaccagtg	tgacttttaa	aacagtcgcc	1440
atccacacgc	tctggaacat	ccgcatcgtg	gtgctggcca	agcctgagca	cgagaaccgg	1500
atcagccaca	tctgtactga	caacgtgaag	acaggcattg	caaacacact	ggggaacaag	1560
ggagccgtgg	gggtgtcgtt	catgttcaat	ggaacctcct	tagggttcgt	caacagccac	1620
ttgacttcag	gaagtgaaaa	gaaactcagg	cgaaaccaa	actatatgaa	cattctccgg	1680
ttcctggccc	tgggcgacaa	gaagctgagt	ccctttaaca	tcactcaccg	cttcacgcac	1740
ctcttctggt	ttggggatct	taactaccgt	gtggatctgc	ctacctggga	ggcagaaacc	1800
atcatccaga	aaatcaagca	gcagcagtac	gcagacctcc	tgtcccacga	ccagctgctc	1860
acagagagga	gggagcagaa	ggtcttccta	cacttcgagg	aggaagaaat	cacgtttgcc	1920
ccaacctacc	gttttgagag	actgactcgg	gacaaatacg	cctacaccaa	gcagaaagcg	1980
acagggatga	agtacaactt	gccttcctgg	tgtgaccgag	tcctctggaa	gtcttatccc	2040
ctggtgcacg	tgggtgtgtca	gtcttatggc	agtaccagcg	acatcatgac	gagtgaccac	2100
agccctgtct	ttgccacatt	tgaggcagga	gtcacttccc	agtttgtctc	caagaacggt	2160
cccgggactg	ttgacagcca	aggacagatt	gagttttctca	ggtgctatgc	cacattgaag	2220
accaagtccc	agaccaaatt	ctacctggag	ttccactcga	gctgcttgga	gagttttgtc	2280
aagagtcagg	aaggagaaaa	tgaagaagga	agtgaggggg	agctggtggt	gaagtttggt	2340
gagactcttc	caaagctgaa	gccattatc	tctgaccctg	agtacctgct	agaccagcac	2400
atcctcatca	gcatcaagtc	ctctgacagc	gacgaatcct	atggcgaggg	ctgcattgcc	2460
cttcggttag	aggccacaga	aacgcagctg	cccatctaca	cgcctctcac	ccaccatggg	2520
gagttgacag	gccacttcca	gggggagatc	aagctgcaga	cctctcaggg	caagacgagg	2580
gagaagctct	atgactttgt	gaagacggag	cgtgatgaat	ccagtggggc	aaagaccctg	2640
aagagcctca	ccagccacga	ccccatgaag	cagtgggaag	tcactagcag	ggcccctccg	2700
tgagtggtct	ccagcatcac	tgaaatcatc	aaccccaact	acatgggagt	ggggcccttt	2760
gggccaccaa	tgcccctgca	cgtgaagcag	accttgtccc	ctgaccagca	gccacagcc	2820
tggagctacg	accagccgcc	caaggactcc	ccgctggggc	cctgcagggg	agaaagtcct	2880
ccgacacctc	ccggccagcc	gcccatatca	cccaagaagt	ttttaccctc	aacagcaaac	2940
cggggtctcc	ctcccaggac	acaggagtca	aggcccagtg	acctggggaa	gaacgcaggg	3000
gacacgctgc	ctcaggagga	cctgccgctg	acgaagcccg	agatgtttga	gaacccctg	3060

PCTAU2016050927-seql-000001-EN-20161013

tatgggtccc	tgagttcctt	ccctaagcct	gctcccagga	aggaccagga	atcccccaaa	3120
atgccgcgga	aggaaccccc	gccctgcccc	gaaccgcgga	tcttgtcgcc	cagcatcgtg	3180
ctcaccaaag	cccaggaggc	tgatcgcggc	gaggggcccc	gcaagcaggt	gcccgcgccc	3240
cggctgcgct	ccttcacgtg	ctcatcctct	gccgagggca	gggcggccgg	cggggacaag	3300
agccaaggga	agcccaagac	cccggtcagc	tcccaggccc	cggtgccggc	caagaggccc	3360
atcaagcctt	ccagatcgga	aatcaaccag	cagaccccg	ccaccccgac	gccgcggccg	3420
ccgctgccag	tcaagagccc	ggcgggtgtg	cacctccagc	actccaagg	ccgcgactac	3480
cgcgacaaca	ccgagctccc	gcatcacggc	aagcaccggc	cggaggagg	gccaccagg	3540
cctctaggca	ggactgccat	gcagtga				3567

<210> 141
 <211> 2892
 <212> DNA
 <213> Homo sapiens

<400> 141	
atgtggtgcc	60
tgactgcaa	
ctcgagagg	
accagtccc	
ttctggagct	
agagcttgac	
agcggcgtcg	120
agggcgaggc	
ccccagcagt	
gagactggca	
catccctgga	
cagcccctca	
gcctaccccc	180
agggccctt	
ggtgcccgg	
tccagcctga	
gcccggatca	
ctacgagcac	
acgtcagtgg	240
gagcctatgg	
gctgtactcg	
gggccgcgg	
ggcaacagca	
gcgcacgcgg	
aggccaagc	300
tgacgactc	
gacctcatc	
ctgcgcaagc	
aggctgagga	
ggaggccatc	
aagcgctcac	360
gctcactctc	
cgagagctat	
gagctctcct	
cggacctgca	
ggacaagcag	
gtggagatgc	420
tagaacgaaa	
gtatgggggg	
cgctggttaa	
cccgccatgc	
ggccgcgacc	
atccagacgg	480
cgtttcgcca	
gtaccagatg	
aacaagaact	
tcgagcgctt	
gcgcagctcc	
atgtcagaga	540
accgcatgtc	
acgccggatt	
gtgctgtcca	
acatgaggat	
gcagttctcc	
tttgaggggc	600
ctgagaaagt	
gcacagctcc	
tacttcgagg	
ggaagcaggt	
ctcagtgact	
aacgacggct	660
cccagctggg	
agccctgggt	
tcccctgagt	
gtggtgacct	
cagcgagccc	
accacctca	720
agtctccggc	
cccctccagt	
gactttgcgg	
acgccatcac	
cgagctggag	
gacgccttct	780
ctaggcaagt	
gaaatcactg	
gccgagtcca	
tcgacgatgc	
cctcaactgc	
cgcagcctgc	840
acactgagga	
ggcaccggcc	
ctggatgcgg	
cgcgggcccc	
ggacaccgaa	
ccccagacag	900
ccctgcacgg	
catggaccac	
cgcaaactgg	
acgagatgac	
ggcctcgtac	
agtgatgtca	960
ccctgtacat	
cgatgaggag	
gagctgtcgc	
cccctctgcc	
cctctcgcag	
gcaggggacc	1020
ggccgtccag	
caccgagtcg	
gacctgcggc	
tacgggctgg	
gggcgcagcc	
ccagactact	1080
gggccctggc	
ccacaaagag	
gacaaggctg	
acacggacac	
gagctgccgg	
agcacgccgt	1140
cgctggagcg	
gcaggagcag	
cggctgcggg	
tggagcatct	
gccgctgctc	
accatcgagc	1200
caccagcgga	
cagctctgtg	
gaccttagtg	
accgctcgga	
gcgggggtca	
ctcaagaggc	1260
agagtgttta	
cgagcgcagc	
cttggcgggc	
agcagggcag	
tccaagcat	

ggtccccaca gcgggcgcccc caagagcctc ccccgaggagg agcctgagtt gcgggccccgg	1320
ccccccaggc ccctggacag ccacttggcc atcaatggct cagccaaccg gcagagcaag	1380
tctgagtcgg actactcaga cggtgacaat gacagcatca acagcacgtc caactccaac	1440
gataccatca actgcagctc cgagtcacgtc tcccgtgaca gcctgcgggga gcagacgctc	1500
agcaagcaga cctaccacaa ggaggccccg aacagctggg actcgctgc ctttagcaac	1560
gatgtcatcc gcaagaggca ctaccgcacg ggcctgaacc tcttcaacaa gaagcctgag	1620
aagggagtcc agtacctcat cgagcgtggc tttgtgcccg acacgcccgt cggggtggcc	1680
cacttcctgc tgcagcgcaa gggcctcagc cggcagatga tcggcgagtt cctgggcaac	1740
cggcagaagc agttcaaccg tgacgtgctc gactgcgtcg tggacgagat ggacttctct	1800
accatggagc tggatgaggc cctcaggaaa ttccaggcgc acatccgtgt ccaaggggag	1860
gctcagaaaag tggagcggct catagaggcg ttccagccagc gctactgcat ctgcaaccct	1920
ggggtggtgc ggcaattccg gaaccagac accattttca tcctggcctt cgccatcatc	1980
ctgctgaaca ccgacatgta cagccccaat gtcaagcccg agcggaaaat gaagctagag	2040
gacttcatca agaacctccg aggtgtggac gatggtgagg acattccccg tgagatgctg	2100
atggggatct atgaacggat ccgtaagcga gagctaaaga ccaatgagga ccatgtgtcc	2160
caggtgcaga aggtggagaa gctcattgtg gggaaaaagc cgatcggatc cctgcatccc	2220
gggctcggct gtgtgctctc tctgccccac cgtcggttgg tctgctactg ccggctcttt	2280
gaggttccag acccaaacaa gccccagaaa ctcgactac accagcgaga aatcttcctg	2340
ttcaacgacc tcctggtggt caccaagatc ttccagaaga agaagaactc ggtgacgtac	2400
agcttccgac agtccttctc cttgtacggc atgcagggtc tgctcttcga gaaccgtac	2460
taccccaatg gcatccggct cacctcgtct gtccccggag cagatatcaa agtggttaata	2520
aacttcaacg cccccaaccc tcaagaccgg aagaaattca ccgatgacct gcgggagtcc	2580
attgcggaag tccaagagat ggagaagcac aggatagagt cggagctcga gaagcagaaa	2640
ggcgtcgtgc ggcccagcat gtcccagtgc tctagcctca aaaaggagtc gggcaacgga	2700
acactgagcc gggcctgcct ggacgacagc tatgccagcg gtgagggcct caagcgcagc	2760
gccctcagca gtcacctgcg ggacctctcg gaagccggga agcagggcg tcgcagcagt	2820
gcgggatcgc tagagagcaa tgtggaattt cagcctttcg agccactgca gccgtcagtg	2880
ctgtgctcct aa	2892

<210> 142
 <211> 498
 <212> DNA
 <213> Homo sapiens

<400> 142	
atgggctggg acctgacggt gaagatgctg gcgggcaacg aattccaggt gtccctgagc	60
agctccatgt cgggtgcaga gctgaaggcg cagatcaccc agaagatcgg cgtgcacgcc	120
ttccagcagc gtctggctgt ccacccgagc ggtgtggcgc tgcaggacag ggtccccctt	180

PCTAU2016050927-seq1-000001-EN-20161013

gccagccagg gcctgggccc cggcagcacg gtcctgctgg tgggtggacaa atgcgacgaa	240
cctctgagca tcctgggtgag gaataacaag ggccgcagca gcacctacga ggtacggctg	300
acgcagaccg tggcccacct gaagcagcaa gtgagcgggc tggaggggtgt gcaggacgac	360
ctgttctggc tgaccttcga ggggaagccc ctggaggacc agtccccgct gggggagtac	420
ggcctcaagc ccctgagcac cgtgttcatg aatctgcgcc tgcggggagg cggcacagag	480
cctggcgggc ggagctaa	498

<210> 143
 <211> 3492
 <212> DNA
 <213> Homo sapiens

<400> 143	
atgaccagga ccagggcagc actcctcctg ttcacagcct tagcaacttc tctaggtttc	60
aacttgga cagaggagct gacagccttc cgtgtggaca gcgctgggtt tggagacagc	120
gtggtccagt atgccaaactc ctgggtggtg gttggagccc cccaaaagat aacagctgcc	180
aaccaaacgg gtggcctcta ccagtgtggc tacagcactg gtgcctgtga gcccatcggc	240
ctgcagggtc ccccgaggc cgtgaacatg tccctgggccc tgtccctggc gtctaccacc	300
agcccttccc agctgctggc ctgcggcccc accgtgcacc acgagtgcgg gaggaacatg	360
tacctaccg gactctgctt cctcctgggc cccaccagc tcaccagag gctcccggtg	420
tccaggcagg agtgcccaag acaggagcag gacatttgtt tcctgatcga tggctcaggc	480
agcatctcct cccgcaactt tgccacgatg atgaacttcg tgagagctgt gataagccag	540
ttccagagac ccagcaccca gttttccctg atgcagttct ccaacaaatt ccaaacacac	600
ttcactttcg aggaattcag gcgcagctca aacccccctc gcctgttggc ttctgttcac	660
cagctgcaag ggtttacata cacggccacc gccatccaaa atgtcgtgca ccgattgttc	720
catgcctcat atggggcccc tagggatgcc gccaaaattc tcattgtcat cactgatggg	780
aagaaagaag gcgacagcct ggattataag gatgtcatcc ccatggctga tgcagcaggc	840
atcatccgct atgcaattgg ggttgatta gcttttcaaa acagaaattc ttggaaagaa	900
ttaaagtaca ttgcatcga gccctcccag gaacacatat ttaaagtga ggactttgat	960
gctctgaaag atattcaaaa ccaactgaag gagaagatct ttgccattga gggtagcgag	1020
accacaagca gtagctcctt cgaattggag atggcacagg agggcttcag cgctgtgttc	1080
acacctgatg gccccgttct gggggctgtg gggagcttca cctgggtctg aggtgccttc	1140
ctgtaccccc caaatatgag ccctaccttc atcaacatgt ctcaggagaa tgtggacatg	1200
agggactctt acctgggtta ctccaccgag ctggccctct ggaaaggggt gcagagcctg	1260
gtcctggggg cccccgcta ccagcacacc gggaaggctg tcattcttcac ccagggtgtcc	1320
aggcaatgga ggatgaaggc cgaagtcacg gggactcaga tcggctccta cttcggggcc	1380
tccctctgct ccgtggacgt agacagcgac ggcagcaccg acctggctct catcggggcc	1440

ccccattact	acgagcagac	ccgagggggc	caggtgtctg	tgtgtccctt	gcccaggggg	1500
tggagaaggt	ggtggtgtga	tgctgtttct	tacggggagc	agggccaccc	ctggggtcgc	1560
tttggggcgg	ctctgacagt	gctgggggat	gtgaatgggg	acaagctgac	agacgtggtc	1620
atcggggccc	caggagagga	ggagaaccgg	ggtgctgtct	acctgtttca	cggagtcttg	1680
ggaccagca	tcagcccctc	ccacagccag	cggatcgcg	gctcccagct	ctcctccagg	1740
ctgcagtatt	ttgggcaggc	actgagcggg	ggtcaagacc	tcaccagga	tggactggtg	1800
gacctggctg	tgggggccc	gggccagggt	ctcctgtctc	ggaccagacc	tgtgctctgg	1860
gtgggggtga	gcatgcagtt	catacctgcc	gagatcccca	ggtctgcgtt	tgagtgtcgg	1920
gagcagggtg	tctctgagca	gacctggtg	cagtccaaca	tctgccttta	cattgacaaa	1980
cgttctaaga	acctgcttgg	gagccgtgac	ctccaaagct	ctgtgacctt	ggacctggcc	2040
ctcgaccctg	gccgcctgag	tccccgtgcc	accttccagg	aaacaaagaa	ccggagtctg	2100
agccgagtcc	gagtcctcgg	gctgaaggca	cactgtgaaa	acttcaacct	gctgctccc	2160
agctgcgtgg	aggactctgt	gacccccatt	accttgctgc	tgaacttcac	gctggtgggc	2220
aagccccctc	ttgccttcag	aaacctgcgg	cctatgctgg	ccgccgatgc	tcagagatac	2280
ttcacggcct	ccctaccctt	tgagaagaac	tgtggagccg	accatatctg	ccaggacaat	2340
ctcggcatct	ccttcagctt	cccaggcttg	aagtccctgc	tgggtggggag	taacctggag	2400
ctgaacgcag	aagtgatggt	gtggaatgac	ggggaagact	cctacggaac	caccatcacc	2460
ttctcccacc	ccgcaggact	gtcctaccgc	tacgtggcag	agggccagaa	acaagggcag	2520
ctgcgttccc	tgcacctgac	atgtgacagc	gccccagttg	ggagccaggg	cacctggagc	2580
accagctgca	gaatcaacca	cctcatcttc	cgtggcgggc	cccagatcac	cttcttggct	2640
acctttgacg	tctcccccaa	ggctgtcctg	ggagaccggc	tgcttctgac	agccaatgtg	2700
agcagtgaga	acaacactcc	caggaccagc	aagaccacct	tccagctgga	gctcccgggtg	2760
aagtatgctg	tctacactgt	ggttagcagc	cacgaacaat	tcaccaaata	cctcaacttc	2820
tcagagtctg	aggagaagga	aagccatgtg	gccatgcaca	gataccaggt	caataacctg	2880
ggacagaggg	acctgcctgt	cagcatcaac	ttctgggtgc	ctgtggagct	gaaccaggag	2940
gctgtgtgga	tggatgtgga	ggtctccac	ccccagaacc	catcccttcg	gtgctcctca	3000
gagaaaatcg	cacccccagc	atctgacttc	ctggcgcaca	ttcagaagaa	tcccgctgctg	3060
gactgtcca	ttgctggctg	cctgcggttc	cgctgtgacg	tcccctcctt	cagcgtccag	3120
gaggagctgg	atttcacctt	gaagggcaac	ctcagctttg	gctgggtccg	ccagatatgtg	3180
cagaagaagg	tgtcggtcgt	gagtgtggct	gaaattacgt	tcgacacatc	cgtgtactcc	3240
cagcttccag	gacaggaggc	atttatgaga	gctcagacga	caacggtgct	ggagaagtac	3300
aaggtccaca	accccccccc	cctcatcgta	ggcagctcca	ttgggggtct	gttgctgctg	3360
gcactcatca	cagcgggtact	gtacaaagtt	ggcttcttca	agcgtcagta	caaggaaatg	3420
atggaggagg	caaatggaca	aattgcccc	gaaaacggga	cacagacccc	cagcccggcc	3480

agtgagaaat ga

3492

<210> 144
 <211> 2310
 <212> DNA
 <213> Homo sapiens

<400> 144
 atgctggggc tgcgcccccc actgctcgcc ctgggtggggc tgctctccct cgggtgcgtc 60
 ctctctcagg agtgcacgaa gttcaaggct agcagctgcc gggaatgcat cgagtcgggg 120
 cccggctgca cctggtgcca gaagctgaac ttcacagggc cgggggatcc tgactccatt 180
 cgctgcgaca cccggccaca gctgctcatg aggggctgtg cggctgacga catcatggac 240
 cccacaagcc tcgctgaaac ccaggaagac cacaatgggg gccagaagca gctgtcccca 300
 caaaaagtga cgctttacct gcgaccaggc caggcagcag cgttcaacgt gaccttccgg 360
 cgggccaagg gctaccccat cgacctgtac tatctgatgg acctctccta ctccatgctt 420
 gatgacctca ggaatgtcaa gaagctaggt ggcgacctgc tccggggcct caacgagatc 480
 accgagtccg gccgcattgg cttcgggtcc ttcgtggaca agaccgtgct gccgttcgtg 540
 aacacgcacc ctgataagct gcgaaacca tgccccaaca aggagaaaga gtgccagccc 600
 ccgtttgcct tcaggcacgt gctgaagctg accaacaact ccaaccagtt tcagaccgag 660
 gtcgggaagc agctgatttc cggaaacctg gatgcacccg aggggtgggct ggacgccatg 720
 atgcaggctg ccgcctgccc ggaggaaatc ggctggcgca acgtcacgcg gctgctgggtg 780
 tttgccactg atgacggctt ccatttcgcg ggcgacggga agctgggcgc catcctgacc 840
 cccaacgacg gccgctgtca cctggaggac aacttgtaca agaggagcaa cgaattcgac 900
 taccatcgg tgggccagct ggcgcacaag ctgggtgaaa acaacatcca gcccatcttc 960
 gcggtgacca gtaggatggt gaagacctac gagaaactca ccgagatcat cccaagtca 1020
 gccgtggggg agctgtctga ggactccagc aatgtggtcc atctcattaa gaatgcttac 1080
 aataaactct cctccagggt cttcctggat cacaacgccc tccccgacac cctgaaagtc 1140
 acctacgact ctttctgcag caatggagtg acgcacagga accagcccag aggtgactgt 1200
 gatggcgtgc agatcaatgt cccgatcacc ttccagggtga aggtcacggc cacagagtgc 1260
 atccaggagc agtcgtttgt catccgggcg ctgggcttca cggacatagt gaccgtgcag 1320
 gttcttcccc agtgtgagtg ccggtgcccg gaccagagca gagaccgcag cctctgccat 1380
 ggcaagggct tcttgagtg cggcatctgc aggtgtgaca ctggctacat tgggaaaaaac 1440
 tgtgagtgcc agacacaggg ccggagcagc caggagctgg aaggaagctg ccggaaggac 1500
 aacaactcca tcatctgctc agggctgggg gactgtgtct gcgggcagtg cctgtgccac 1560
 accagcgacg tccccggcaa gctgatatac gggcagtact gcgagtgtga caccatcaac 1620
 tgtgagcgct acaacggcca ggtctgcggc ggcccgggga gggggctctg cttctgcggg 1680
 aagtgccgct gccaccggg ctttgagggc tcagcgtgcc agtgcgagag gaccactgag 1740
 ggctgcctga acccgcggcg tgttgagtgt agtggctcgt gccgggtgcc ctgcaacgta 1800

PCTAU2016050927-seql-000001-EN-20161013

tgcgagtgcc attcaggcta ccagctgcct ctgtgccagg agtgccccgg ctgcccctca	1860
ccctgtggga agtacatctc ctgcgccgag tgcctgaagt tcgaaaaggg cccctttggg	1920
aagaactgca gcgcggcgtg tccgggcctg cagctgtcga acaaccccgt gaagggcagg	1980
acctgcaagg agagggactc agagggctgc tgggtggcct acacgctgga gcagcaggac	2040
gggatggacc gctacctcat ctatgtggat gagagccgag agtgtgtggc agggcccaac	2100
atcgccgcca tcgtcggggg caccgtggca ggcacgtgc tgatcggcat tctcctgctg	2160
gtcatctgga aggctctgat ccacctgagc gacctccggg agtacaggcg ctttgagaag	2220
gagaagctca agtcccagtg gaacaatgat aatccccctt tcaagagcgc caccacgacg	2280
gtcatgaacc ccaagtttgc tgagagttag	2310

<210> 145
 <211> 2841
 <212> DNA
 <213> Homo sapiens

<400> 145	
atggctgtgt actgctatgc gctcaatagc ctggtgatca tgaatagcgc caacgagatg	60
aagagcggcg gcggccccgg gccagtgga agcgagacgc ccccgcccc gagggaggga	120
gtgctgagcc ccggcagcgt tttcagcccc gggagaggcg cctctttcct cttcccccca	180
gccgagtcgc tgtccccga ggagccccgg agccccgggg gctggcggag cggccggcgc	240
aggctgaata gtagcagcg cagtggcagc ggcagcagcg gcagtagcgt gagcagccca	300
agttgggctg gtcgcctgcg aggggaccgg cagcaggtgg tggcagccgg taccctctcc	360
ccgccagggc cggaggaggc caagaggaag ctgcggatct tgcagcgcga gttgcagaac	420
gtgcaggtga accagaaagt gggcatgttt gaggcgcaca tccaggcaca gagctccgcc	480
attcaagcgc cccgcagccc gcgtttgggc agggctcgtc cgccctcccc gtgccccttc	540
cgcagcagca gtcagcccc tggaagggtc ctggttcagg gcgcccggag cgaggaacgg	600
aggacaaagt cctgggggga gcaatgtcca gagacttcag gaaccgactc cgggaggaaa	660
ggagggccca gcctatgctc ctgcaggtg aagaaaggaa tgccacctct tcccggccgg	720
gctgccccta caggatcaga ggctcagggt ccatccgctt ttgtaaggat ggagaagggt	780
atccctgcca gtccccgctg tggctcacc acagctatgg aaattgacaa aaggggctct	840
cctaccccgg gaactcggag ctgcctagct ccctcattgg ggctgttcgg agctagctta	900
acgatggcca cggaagtggc agcgagagtt acatccactg ggccacaccg tccacaggat	960
cttgccctca ctgagccgtc tgggagagcc cgtgagcttg aggacctgca gccccagag	1020
gccctggtgg agaggcagg gcagtttctg ggcagtgaga caagcccagc cccagaaagg	1080
ggcggggccc gcgatggaga accccctggg aagatgggga aaggatatct gccctgtggc	1140
atgccgggct ctggggagcc tgaagtgggc aaaaggccag aggagacgac tgtgagcgtg	1200
caaagcgag agtcctctga ttccctgagc tgggtccaggc tgcccagggc cctggcctcc	1260

PCTAU2016050927-seq1-000001-EN-20161013

gtaggccctg	aggaggcccg	aagtggggcc	cccgtgggcg	gggggcgttg	gcagctctcc	1320
gacagagtgg	agggagggtc	cccaacgctg	ggcttgcttg	ggggcagccc	ctcagcacag	1380
ccggggaccg	ggaatgtgga	ggcgggaatt	ccttctggca	gaatgctgga	gcctttgccc	1440
tgttgggacg	ctgcgaaaga	tctgaaagaa	cctcagtgcc	ctcctgggga	caggggtgggt	1500
gtgcagcctg	ggaactccag	ggtttggcag	ggcaccatgg	agaaagccgg	tttggcttgg	1560
acgcgtggca	caggggtgca	atcagagggg	acttgggaaa	gccagcggca	ggacagtgat	1620
gccctcccaa	gtccggagct	gctaccccaa	gatccggaca	agcctttcct	gaggaaggcc	1680
tgcagcccca	gcaacatacc	tgctgtcatc	attacagaca	tgggcaccca	ggaggatggg	1740
gccttgagg	agacgcagg	aagccctcgg	ggcaacctgc	ccctgaggaa	actgtcctct	1800
tcctcggcct	cctccacggg	cttctcctca	tcctacgaag	actcagagga	ggacatctcc	1860
agtgaccctg	agcgcaccct	ggaccccaac	tcagccttcc	tgcataccct	ggaccagcag	1920
aaacctagag	tgagcaaata	atggaggaag	ataaaaaaca	tgggtgactg	gtctcccttc	1980
gtcatgtcct	tcaagaagaa	gtacccttgg	atccagctgg	caggacacgc	agggagtttc	2040
aaggcagctg	ccaatggcag	gacctgaag	aagcactgtg	agtcagagca	gcgctgcctg	2100
gaccggctga	tggtggatgt	gctgaggccc	ttcgtacctg	cctaccatgg	ggatgtgggtg	2160
aaggacgggg	agcgtacaa	ccagatggac	gacctgctgg	ccgacttcga	ctcgccctgt	2220
gtgatggact	gcaagatggg	aatcaggacc	tacctggagg	aggagctcac	gaaggcccgg	2280
aagaagccca	gcctgcggaa	ggacatgtac	cagaagatga	tcgaggtgga	ccccgaggcc	2340
cccaccgagg	aggaaaaagc	acagcgggct	gtgaccaagc	cacggtacat	gcagtggcgg	2400
gagaccatca	gctccacggc	caccctgggg	ttcaggatcg	agggaatcaa	gaaagaagac	2460
ggcaccgtga	accgggactt	caagaagacc	aaaacgaggg	agcaggtcac	cgaggccttc	2520
agagagtcca	ctaaaggaaa	ccataacatc	ctgatcgctt	atcgggaccg	gctgaaggcc	2580
attcgaacca	ctctagaagt	ttctcccttc	ttcaagtgcc	acgaggatcat	tggcagctcc	2640
ctcctcttca	tccacgacaa	gaaggaacag	gccaaagtgt	ggatgatcga	ctttgggaaa	2700
accacgcccc	tgctgaggg	ccagaccctg	cagcatgacg	tcccctggca	ggaggggaac	2760
cgggaggatg	gctacctctc	ggggctcaat	aacctcgtcg	acatcctgac	cgagatgtcc	2820
caggatgccc	cactcgctg	a				2841

<210> 146
 <211> 5094
 <212> DNA
 <213> Homo sapiens

<400> 146	
atgatggctc	agtttccac agctatgaat ggagggccaa acatgtgggc tattacctct 60
gaagaacgta	ctaagcatga caggcagttt gataacctca aaccttcagg aggttacata 120
acaggatgatc	aagcacgtaa ttttttcta caatcaggtc tgccggcccc tgtttttagct 180
gaaatatggg	ctttatcaga cctaaacaag gatgggaaga tggatcagca agagttctcc 240

atagctatga aactcatcaa actgaagctt caaggccaac agttgcctgt ggttctcctt	300
cctattatga agcaaccccc tatgttttct ccattaattt ctgctcgttt tggaatggga	360
agcatgcca atctgtccat tcctcagcca ttgcctccag ctgcacctat aacatcattg	420
tcttctgca cttcaggac caaccttcct cccttaatga tgcccactcc cctagtgcct	480
tctgttagca catcatcatt accaaatgga accgccagtc tcattcagcc tttaccatt	540
ccttattctt cttcaacatt gcctcatggg tcatcttata gtctgatgat gggaggattt	600
ggaggtgcta gtatacagaa agcgcagtct ctgattgatt taggatctag tagctcaact	660
tcctcgactg cttcactctc agggaactca cccaagactg ggacctcaga gtgggcagtt	720
cctcagccta caagattaaa atatcgga aaatttaata ctcttgacaa aagtatgagt	780
ggatatctct caggttttca agctagaaat gcccttcttc agtcaaactt ttctcaaact	840
cagctggcta ctatttgac tctggctgac gttgatggtg atggacagct aaaagcagaa	900
gagtttattc ttgcaatgca ccttactgac atggccaaag ctggacagcc attaccactg	960
actttacctc ctgagcttgt tcctccatct ttcagaggag gaaagcaaatt tgattccatt	1020
aatggaactc tgccttcata tcagaaaatg caagaagagg agcctcagaa gaaattacca	1080
gttacttttg aggacaaacg gaaagccaac tatgagcgag ggaacatgga gctggaaaag	1140
cgacgccaag ccttgatgga gcagcaacaa agggaggcag aacgtaaagc ccagaaagaa	1200
aaggaagagt gggaacgaaa acagagagaa ttacaagaac aagaatggaa gaaacaactt	1260
gaattagaaa aacgcttaga gaagcaacgg gaattggaga gacaacgaga ggaagaaagg	1320
agaaaagaca tagaaagacg agaggcagca aaacaggaac ttgaacgaca acgtcgctta	1380
gaatgggaga gaattcggcg acaggagctt ctcaatcaaa agaatagaga acaagaagaa	1440
attgtcaggt taaactctaa aaagaagaat cttcatcttg agttggaagc actgaatggc	1500
aaacatcagc agatctcagg cagacttcag gatgtccgac tcaaaaagca aactcaaaag	1560
actgagctgg aagttctgga taagcagtgt gacttggaat ttatggaaat caagcaactt	1620
caacaggaac ttcaggaata tcagaataag cttatctatc tggtagctga gaagcaatta	1680
ttaaataaaa gaattaaaaa catgcagttc agtaacacac ctgattcagg ggtcagttta	1740
cttcataaaa aatcattaga aaaggaagaa ttatgccaaa gacttaaaga acagttagat	1800
gctcttgaaa aagaaactgc atctaagctg tcagaaatgg attcttttaa caatcaacta	1860
aagtgtggga atatggatga ctctgttctt cagtgccttt tgtctctgct aagctgtctc	1920
aacaacctct tcctcttact taaggaactg agagaaacct acaacacaca gcagttagcc	1980
cttgaacagc ttataagat caaacgtgac aagttgaagg aaattgaaag gaaaagatta	2040
gaactaatgc agaaaaagaa actagaagat gaggctgcaa ggaaagcaaa gcaaggaaaa	2100
gaaaacttat ggaaagaaaa tcttagaaaag gaggaagaag aaaaacaaaa gcgactccag	2160
gaagaaaaaa cacaagaaaa aattcaagaa gaggaacgga aagctgagga gaaacaacgt	2220
aaggataagg atactttgaa agctgaggag aaaaaacgtg agacagctag tgttttggtg	2280

aattatagag	cattataccc	ctttgaagca	aggaaccatg	atgagatgag	ttttaattct	2340
ggagatataa	ttcaggttga	tgaaaaaacc	gtaggagaac	ctggttggct	ttatggtagt	2400
tttcaaggaa	attttggctg	gtttccatgc	aattatgtag	aaaaaatgcc	atcaagtgaa	2460
aatgaaaaag	ctgtatctcc	aaagaaggcc	ttacttcctc	ctacagtttc	tttatctgct	2520
acctcaactt	cctctgaacc	actttcttca	aatcaaccag	catcagtgac	tgattatcaa	2580
aatgtatctt	tttcaaacct	aactgtaa	acatcatggc	agaaaaatc	agccttcact	2640
cgaactgtgt	cccctggatc	tgtatcacct	attcatggac	agggacaagt	ggtagaaaaac	2700
ttaaaagcac	aggccctttg	ttcctggact	gcaaagaaag	ataaccactt	gaacttctca	2760
aaacatgaca	ttattactgt	cttgaggacg	caagaaaatt	ggtggtttgg	ggaggtgcat	2820
ggaggaagag	gatggtttcc	caaactttat	gtcaagatca	ttcctgggag	tgaagtaaaa	2880
cgggaagaac	cagaagcttt	gtatgcagct	gtaaataaga	aacctacctc	ggcagcctat	2940
tcagttggag	aagaatatat	tgcactttat	ccatattcaa	gtgtggaacc	tgagattttg	3000
actttcacag	aaggtgaaga	aatattgggtg	accagaaaag	atggagagtg	gtggacagga	3060
agtattggag	atagaagtgg	aatttttcca	tcaaactatg	tcaaaccaaa	ggatcaagag	3120
agttttggga	gtgctagcaa	gtctggagca	tcaaataaaa	aacctgagat	tgctcaggta	3180
acttcagcat	atgttgcttc	tggttctgaa	caacttagcc	ttgcaccagg	acagttaata	3240
ttaattctaa	agaaaaatac	aagtgggtgg	tggaaggag	agttacaggc	cagaggaaaa	3300
aagcgacaga	aaggatgggt	tcctgccagt	catgttaaac	ttttgggtcc	aagtagtgaa	3360
agagccacac	ctgcctttca	tcctgtatgt	caggtgattg	ctatgtatga	ctatgcagca	3420
aataatgaag	atgagctcag	tttctccaag	ggacaactca	ttaatgttat	gaacaaagat	3480
gatcctgatt	ggtggcaagg	agagatcaac	ggggtgactg	gtctctttcc	ttcaaactac	3540
gttaagatga	cgacagactc	agatccaagt	caacagtggg	gtgctgatct	gcaaaccctg	3600
gacacaatgc	agccaattga	gaggaaaaga	cagggctata	ttcatgagct	gattcagacc	3660
gaagagcggg	acatggctga	ccttcagctc	gtcgtcgagg	tttttcagaa	acgcatggca	3720
gagtcaggct	ttctcactga	aggggagatg	gccctgattt	ttgttaactg	gaaggagctc	3780
atcatgtcca	acacaaagct	gctgaaggct	ttgcgggtgc	ggaagaagac	cgggggagag	3840
aagatgccgg	tgcagatgat	tggggacatc	ctggccgctg	agctgtccca	catgcaggct	3900
tacatcaggt	tctgcagctg	ccagcttaat	ggagcagctc	tgttacagca	gaagacagat	3960
gaagacacag	atttcaaaga	atttttaaag	aagctggcat	ctgaccgcg	gtgtaaagga	4020
atgcccctct	ccagcttcct	gctgaaaccc	atgcagagga	tcaccgcgta	cccactgctc	4080
atcagaagta	ttctggagaa	caccccgag	agccatgcag	accattcctc	cctaaagctg	4140
gccctcgagc	gggagagga	gctgtgctct	caagtgaatg	agggagttcg	ggagaaggaa	4200
aactcggacc	gactggagtg	gatccaggcg	cacgtgcagt	gtgaaggcct	cgcgagcaa	4260
cttattttca	actctctcac	caactgcctg	gggccccgga	agctcttaca	cagtgggaaa	4320

ttatacaaga ccaagagcaa caaggaactg cacggattcc tcttcaatga cttcctgctt	4380
cttacctaca tgggtcaagca gtttgctgtt tcctctgggt ctgagaaact tttcagctcg	4440
aagtccaatg ctcaattcaa aatgtataaa acgcccattt tcctgaatga agtcttggtg	4500
aaactgcca cagacccttc cagcgatgag cctgtcttcc acatttcca cattgatcgg	4560
gtctacaccc tccgaacaga caacattaat gagaggaccg cctgggtgca gaagatcaag	4620
gcggcgtctg agcagtacat cgacaccgag aagaagaagc gtgagaaagc ttaccaagcc	4680
cgctcccaaa agacttcagg cattgggctg ctgatgggtg atgtcattga agctacagaa	4740
ttaaaagcct gcaaaccaa tggaaagagc aaccatact gtgaaatcag catgggctcc	4800
cagagctaca ccaccaggac catccaggac aactcaatc ccaagtggaa ttttaactgc	4860
cagttcttta ttaaggatct ctaccaagac gtgctgtgtc tcaccctgtt tgacagagac	4920
cagttttcac cagatgattt cctgggtcgt actgaaattc cagtggcaaa aattcgaaca	4980
gaacaggaaa gcaaaggccc tatgaccgc cgactgctgc tgcattgaggt cccaccggg	5040
gaggctctggg tccgttttga cctgcagctt tttgagcaaa aaactctcct gtag	5094

<210> 147
 <211> 3465
 <212> DNA
 <213> Homo sapiens

<400> 147	
atgcagtatc taaatataaa agaggactgc aatgccatgg ctttctgtgc taaaatgagg	60
agctccaaga agactgaggt gaacctggag gccctgagc caggggtgga agtgatcttc	120
tatctgtcgg acaggagacc cctccggctg ggcagtggag agtacacagc agaggaaactg	180
tgcattcagg ctgcacaggc atgccgtatc tctcctcttt gtcacaacct ctttgccttg	240
tatgacgaga acaccaagct ctggtatgct ccaaattcga ccatcaccgt tgatgacaag	300
atgtccctcc ggctccacta ccggatgagg ttctatttca ccaattggca tggaaccaac	360
gacaatgagc agtcagtgtg gcgtcattct ccaaagaagc agaaaaatgg ctacgagaaa	420
aaaaagattc cagatgcaac ccctctcctt gatgccagct cactggagta tctgtttgct	480
caggagacgt atgatttggg gaaatgcctg gctcctattc gagaccccaa gaccgagcag	540
gatggacatg atattgagaa cgagtgtcta gggatggctg tcctggccat ctcacactat	600
gccatgatga agaagatgca gttgccagaa ctgcccaagg acatcagcta caagcgatat	660
attccagaaa cattgaataa gtccatcaga cagaggaacc ttctcaccag gatgcggata	720
aataatgttt tcaaggattt cctaaaggaa tttacaaca agaccatttg tgacagcagc	780
gtgtccacgc atgacctgaa ggtgaaatac ttggctacct tggaacttt gacaaaacat	840
tacgggtgctg aaatatttga gacttccatg ttactgattt catcagaaaa tgagatgaat	900
tggtttcatt cgaatgacgg tggaaacgtt ctctactacg aagtgatggg gactgggaat	960
cttggaatcc agtggaggca taaaccaa atgtgtttctg ttgaaaagga aaaaaataaa	1020

ctgaagcggg	aaaaactgga	aaataaacac	aagaaggatg	aggagaaaaa	caagatccgg	1080
gaagagtgga	acaatttttc	ttacttccct	gaaatcactc	acattgtaat	aaaggagtct	1140
gtggtcagca	ttaacaagca	ggacaacaag	aaaatggaac	tgaagctctc	ttcccacgag	1200
gaggccttgt	cctttgtgtc	cctggtagat	ggctacttcc	ggctcacagc	agatgcccat	1260
cattacctct	gcaccgacgt	ggcccccccg	ttgatcgtcc	acaacataca	gaatggctgt	1320
catggtccaa	tctgtacaga	atacgccatc	aataaattgc	ggcaagaagg	aagcgaggag	1380
gggatgtacg	tgctgaggtg	gagctgcacc	gactttgaca	acatcctcat	gaccgtcacc	1440
tgctttgaga	agtctgagca	ggtgcagggg	gcccagaagc	agttcaagaa	ctttcagatc	1500
gaggtgcaga	agggccgcta	cagtctgcac	ggttcggacc	gcagcttccc	cagcttgga	1560
gacctcatga	gccacctcaa	gaagcagatc	ctgcgcacgg	ataacatcag	cttcatgcta	1620
aaacgctgct	gccagcccaa	gccccgagaa	atctccaacc	tgctgggtggc	tactaagaaa	1680
gcccaggagt	ggcagcccgt	ctaccccatg	agccagctga	gtttc gatcg	gatcctcaag	1740
aaggatctgg	tgcagggcga	gcaccttggg	agaggcacga	gaacacacat	ctattctggg	1800
accctgatgg	attacaagga	tgacgaagga	acttctgaag	agaagaagat	aaaagtgatc	1860
ctcaaagtct	tagacccag	ccacagggat	atttccttgg	ccttcttcga	ggcagccagc	1920
atgatgagac	aggtctccca	caaacacatc	gtgtacctct	atggcgtctg	tgtccgcgac	1980
gtggagaata	tcatgggtgga	agagtttgtg	gaaggggggtc	ctctggatct	cttcatgcac	2040
cggaaaagcg	atgtccttac	cacaccatgg	aaattcaaag	ttgccaaaca	gctggccagt	2100
gccctgagct	acttgaggga	taaagacctg	gtccatggaa	atgtgtgtac	taaaaacctc	2160
ctcctggccc	gtgagggcat	cgacagttag	tgtggcccat	tcatcaagct	cagtgacccc	2220
ggcatcccca	ttacgggtgct	gtctaggcaa	gaatgcattg	aacgaatccc	atggattgct	2280
cctgagtgtg	ttgaggactc	caagaacctg	agtgtggctg	ctgacaagtg	gagctttgga	2340
accacgctct	gggaaatctg	ctacaatggc	gagatccctt	tgaaagacaa	gacgctgatt	2400
gagaaagaga	gattctatga	aagccggtgc	aggccagtga	caccatcatg	taaggagctg	2460
gctgacctca	tgaccgctg	catgaactat	gaccccaatc	agaggccttt	cttccgagcc	2520
atcatgagag	acattaataa	gcttgaagag	cagaatccag	atattgtttc	agaaaaaaaa	2580
ccagcaactg	aagtggaccc	cacacatttt	gaaaagcgct	tcctaaagag	gatccgtgac	2640
ttgggagagg	gccactttgg	gaagggttag	ctctgcaggt	atgaccccg	aggggacaat	2700
acaggggagc	aggtggctgt	taaatctctg	aagcctgaga	gtggaggtaa	ccacatagct	2760
gatctgaaaa	aggaaatcga	gatcttaagg	aacctctatc	atgagaacat	tgtgaagtac	2820
aaaggaatct	gcacagaaga	cggaggaaat	ggtattaagc	tcatcatgga	atttctgcct	2880
tcgggaagcc	ttaaggaata	tcttccaaag	aataagaaca	aaataaacct	caaacagcag	2940
ctaaaatatg	ccgttcagat	ttgtaagggg	atggactatt	tgggttctcg	gcaatacgtt	3000
caccgggact	tggcagcaag	aaatgtcctt	gttgagagtg	aacaccaagt	gaaaattgga	3060

gacttcggtt taaccaaagc aattgaaacc gataaggagt attacaccgt caaggatgac	3120
cgggacagcc ctgtgttttg gtatgtctca gaatgtttta tgcaatctaa attttatatt	3180
gcctctgacg tctggctctt tggagtcact ctgcatgagc tgctgactta ctgtgattca	3240
gattctagtc ccatggcttt gttcctgaaa atgataggcc caacccatgg ccagatgaca	3300
gtcacaagac ttgtgaatac gttaaaagaa ggaaaacgcc tgccgtgccc acctaactgt	3360
ccagatgagg tttatcaact tatgaggaaa tgctgggaat tccaaccatc caatcggaca	3420
agctttcaga accttattga aggatttgaa gcacttttaa aataa	3465

<210> 148
 <211> 1872
 <212> DNA
 <213> Homo sapiens

<400> 148	
atgtccactc aagacgagag gcagatcaat actgaatatg ctgtgtcatt gttggaacag	60
ttgaaactgt tttatgaaca gcagttgttt actgacatag tgtaattgt tgagggcact	120
gaattccctt gtcataagat ggttcttgca acatgtagct cttatttcag ggccatgttt	180
atgagtggac taagtgaag caaacaacc catgtacacc tgaggaatgt cgatgctgcc	240
accttacaga taataataac ttatgcatac acgggtaact tggcaatgaa tgacagcact	300
gtagaacagc tttatgaaac agcttgcttc ctacaggtag aagatgtgtt acaacgttgt	360
cgagaatatt taattaaaaa aataaatgca gagaattgtg tacgattgtt gagttttgct	420
gatctcttca gttgtgagga attaaaacag agtgctaaaa gaatggtgga gcacaagttc	480
actgctgtgt atcatcagga cgcgttcacg cagctgtcac atgacctact gatagatatt	540
ctcagtagtg acaatttaaa tgtagaaaag gaagaaaccg ttcgagaagc tgctatgctg	600
tggctagagt ataacacaga atcacgatcc cagtatttgt cttctgttct tagccaaatc	660
agaattgatg cactttcaga agtaacacag agagcttggt ttcaaggctt gccaccaat	720
gataagttag tggtggttca aggtctgtat aagtccatgc ccaagttttt caaaccaaga	780
cttgggatga ctaaagagga aatgatgatt ttcatggaag catcttcaga aaatccttgt	840
agtctttact cttctgtctg ttacagcccc caagcagaaa aagttttaca gttatgtagc	900
ccaccagctg atttgcataa ggttgggacc gttgtaactc ctgataatga tatctacata	960
gcaggggggc aagttcctct gaaaaacaca aaaacaaatc acagtaaac aagcaaactt	1020
cagactgcct tcagaactgt gaattgcttt tattggtttg atgcacagca aaatacctgg	1080
tttccaaaga cccaatgct tttgtccgc ataaagccat ctttggttg ctgtgaaggc	1140
tatatctatg caattggagg agatagcgta ggtggagaac ttaatcggag gaccgtagaa	1200
agatacgaca ctgagaaaga tgagtggacg atggtaagcc ctttaccttg tgcttggaac	1260
tggagtgcag cagttgttgt tcatgactgc atttatgtga tgacactgaa cctcatgtac	1320
tgttatcttc caaggcttga ctcattggga gaaatggcca tgagacagac tagtaggtcc	1380
tttgcttcag ctgcagcttt tgggtgataa attttctata ttggagggtt gcatattgct	1440

accaattccg gcataagact cccctctggc actgtagatg ggtcttcagt aactgtggaa	1500
atttatgatg tgaataaaaa tgagtggaaa atggcagcca acatccctgc taagaggtac	1560
tctgaccctt gtgttagagc tgttgtgatc tcaaattctc tatgtgtgtt tatgcgagaa	1620
accacttaa atgagcgagc taaatacgtc acctaccaat atgacctgga acttgaccgg	1680
tggtctctgc ggcagcatat atctgaacgt gtactgtggg acttggggag agattttcga	1740
tgcactgtgg ggaaactcta tccatcctgc cttgaagagt ctccatggaa accaccaact	1800
tatctttttt caacggatgg gacagaagag tttgaactgg atggagaaat ggttgcacta	1860
ccacctgtat ag	1872

<210> 149
 <211> 4188
 <212> DNA
 <213> Homo sapiens

<400> 149	
atgtacccta tctgtacagt tgttgtggat ggtttgccat ctgaaagctc ctcaagttct	60
tatccaggcc ctgtgtctgt ttctgaaatg tctctgcttc atgctttggg tccagtgcag	120
acctggctgg gacaagagct cgagaaatgt ggcattgatg ccatgattta cactcggtat	180
gtcctcagtc ttctgctgca tgacagctat gactacgacc tgcaggaaca ggagaatgac	240
atcttcctgg gctgggaaaa aggagcttat aagaaatggg gaaagagtaa gaaaaaatgt	300
tcagatctaa ctctagaaga aatgaaaaaa caggctgctg tccagtgtct tcgatctgct	360
tctgatgaaa gctctggtat cgagacttta gtggaggagc tctgctccag actgaaagac	420
cttcagagta agcaagaaga gaagattcac aaaaagttag aggggtctcc ctctccagag	480
gcagaattat cccctccagc aaaggatcaa gtggaaatgt actatgaagc atttccacca	540
ctttctgaga aaccagtttg cctgcaagaa atcatgactg tgtggaacaa gtctaaagtc	600
tgttcttact ctagctcttc ttcattcatcc acagccccac cagctagcac agatacttcc	660
tctcctaagg actgcaacag tgaaagtga gtcaccaagg aaagaagcag tgaagtaccc	720
accactgtgc atgagaaaac ccagagcaaa agcaaaaacg agaaggaaaa caaathtagt	780
aatggcacia ttgaagaaaa gcctgctttg taaaaaagc aaatccgaca taaacctgaa	840
ggaaagattc gccctcgctc gtggtcttct ggctccagtg aagcaggctc aagttccagt	900
gggaatcagg gagaattaa agcatccatg aagtatgtta aagtaagaca caaggcacga	960
gagattcgaa acaaaaaagg gcggaatggg caaagcaggc tttctttgaa gcacggtgaa	1020
aaggctgaaa ggaacattca tactggaagt agtagcagta gcagcagtgg ttctgtcaaa	1080
cagctgtgca agcggggtaa gagaccttta aaagaaatag ggagaaaaga tcctgggagc	1140
actgaaggaa aagacctgta catggagaat agaaaggaca cagagtataa agaggagccc	1200
ttgtggtaca ccgagccaat tgctgaatat tttgttcctc tgagcagaaa aagtaacta	1260
gagaccacat accgaaacag acaggataca agtgatctga catcagaggc agtgaagaa	1320

ttgtctgaat cagtgcattg tctttgtatc agcaacaata atcttcataa aacatacctc	1380
gcagcaggta ctttcattga tgggtcatttt gtagaaatgc ctgcagttat aaatgaggat	1440
attgacctca ctgggacctc attatgttct ctaccagagg acaataaata cctggatgat	1500
attcatctat cagaattaac gcacttctat gaagtggata ttgatcaatc catgtttggat	1560
cctggtgcct cagaaacaat gcaaggagaa agtcggattt tgaatatgat tcgacagaaa	1620
agcaaagaga acacagattt tgaggcagaa tgttgcatag tgttagatgg tatggagttg	1680
caaggggaac gtgcaatatg gacagattct accagctccg taggtgctga gggcttattc	1740
ctgcaggacc ttggcaatct ggctcagttt tgggagtgtc gttcatccag ctccggtgat	1800
gctgatgggg agagttttgg aggagactct ccagttagac tctctcccat cttagacagc	1860
acagtgtcga attcacacct gcttgctggc aatcaagagc tcttttcaga tattaatgaa	1920
ggatctggta taaactcttg tttttcagtg tttgaagtgc aatgcagtaa ttctgtttta	1980
ccattttctt ttgaaacct caacttggga aatgaaaata cagattctag tgctaatatg	2040
cttgggaaaa cacagtctag attgctaata tggacaaaa atagtgcctt tgaagaaat	2100
gaacactgtt ctaatctttc aacaagaact tgtagtccat ggtcccattc agaagaaaca	2160
cgttcagaca atgaaacatt aaatattcag tttgaagaat ccacacagtt taatgccgaa	2220
gatattaatt atgtagttcc tagagtctcg tcaaattatg tagatgaaga acttctagat	2280
tttttgcaag atgaaacttg ccagcaaac agtagaactt taggtgagat tcctacatta	2340
gttttcaaaa aaacatctaa actagaatcc gtctgtggta ttcagctaga acaaaaaaca	2400
gaaaacaaaa attttgaaac tacacaagta tgtaatgaaa gtccacatgg agatggctac	2460
agctcagggg ttattaaaga cttttggaca aagatggcag acacaaattc tgtggctaca	2520
gtagaaatag aaagaactga tgctgagttg ttttcggcag atgtaaataa ctactgctgc	2580
tgtctagatg ctgaagctga actggagacc cttcaggagc ctgataaggc tgtgcggagg	2640
tcagagtacc atctgtggga gggacagaaa gagagcctgg agaaaagagc atttgcttct	2700
agtgagctat caaacgtgga tgggtggtgat tatacaacac cctctaaacc ctgggatgta	2760
gccaagata aagaaaacac attcattctt ggaggagttt atggagaact caaaccttc	2820
aatagtgatg gggagtgggc agtcgtacca cctagtcaca caaaaggaag tctgttacag	2880
tgtgcagctt ctgatgttgt gacgatagct ggtacagatg tctttatgac cccaggaaac	2940
agttttgctc ctgggcacag gcagttatgg aaacccttcg tgtcatttga acagaatgat	3000
cagccgaaga gtggggaaaa tgggttaaat aagggatttt cttttatctt ccatgaagac	3060
ttactaggag cttgtggcaa ctttcaagtc gaagatcctg gacttgaata ctcattttct	3120
tcctttgact taagcaatcc attttcacaa gttcttcatg tagaatgctc atttgaacct	3180
gaagggattg catctttcag cccagtttt aaaccgaaat caatcctctg ttctgattca	3240
gacagtgaag tgtttcaccc caggatatgt ggtgttgaca gaacacaata cagggctatt	3300
cggatctctc ctcggactca ctttcgcca atttctgcat ccgaactgtc cccaggagga	3360

ggaagcgagt cagaatttga atctgagaaa gatgaagcaa atattcccat tcctttctcaa	3420
gttgatatat ttgaagatcc gcaggcagat ctcaaacctt tggaagaaga tgcagagaaa	3480
gaaggccatt actatggaaa atcagagctt gagtctggaa aattccttcc cagggttaaaa	3540
aaatctggga tggaaaagag tgctcagaca tctactggatt cccaggagga atcaactggg	3600
attctttcag taggaaagca aaatcagtgt ttggaatgta gcatgaatga atccctggaa	3660
atagatttag aaagctcaga agcaaattgt aaaataatgg cacaatgcga ggaagaaatt	3720
aataattttt gtggttgcaa agcagggtgt cagtttcctg cttatgaaga taatccagtt	3780
tcttcgggac agctggaaga gttccctgta ttgaacactg atatacaagg aatgaataga	3840
agtcaagaaa aacagacctg gtgggaaaaa gccttggtact ctctctttt tcctgcatca	3900
gagtgtgaag aatgttacac aaatgccaag ggagagagtg gtttagaaga atatccagat	3960
gctaaagaga caccagtaa tgaagagcgc ctgttagatt ttaatagggt gtcttctgtt	4020
tatgaagcaa gatgtacagg agagagagat tctggagcaa agtcagatgg cttccgcgga	4080
aagatgtgct ccagcgccag ctccacctcg gaagagacag gctcagaagg cggaggcgag	4140
tgggtgggccc ctagtgaaga ggagctcttt tctcgaactc atctctaa	4188

<210> 150
 <211> 912
 <212> DNA
 <213> Homo sapiens

<400> 150	
atgtgccatg gcaggatagc accaaagagc acctcagtgt ttgccgtggc ctccgtggga	60
catggagtgt tccttccgct agtgatcctt tgcacctgc ttggagacgg acttgcttcc	120
gtgtgcccc taccaccgga gccagagaat ggtggctaca tctgccaccc ccggccctgc	180
agagaccccc tgacagcagg cagtgtcatc gaatacctgt gtgctgaagg ctacatgttg	240
aagggcgatt acaaatacct gacgtgtaag aatggcgagt ggaaaccagc catggagatt	300
agctgccgtc tcaacgagga taaagacacc cacacatcac ttgggggtccc cagctgtct	360
atagtggctt ctactgccag ctccgtggcg ctatttctcc tcctcgtggt gctgtttgtg	420
ctgctgcagc caaagctgaa gtctttccat catagcaggc gtgaccaggg ggtatctggg	480
gaccaggtct ccatcatggt ggatggagtc caggttgac taccatcata cgaggaggct	540
gtatatggca gttctggtca ctgtgtgcca cctgctgacc ccagagtaca gattgtgctg	600
tcagaagggt ctgggcccag tgggaggagc gtgccaaggg agcaacagct gccggaccaa	660
ggggcctgct cctctgcagg tggagaagat gaggccccag gccagtctgg actatgtgaa	720
gcctggggct ctcgggcctc agagactgtg atggtgcatc aggcaaccac ctcttcttg	780
gtggccggct cagggaaacc ccaactggca cacaagaaa ctgcagattc agagaacagt	840
gacatacaaa gccttttatc cctcacgtca gaggagtaca cagatgatat tccactgttg	900
aaagaagcat ga	912

<210> 151
 <211> 1236
 <212> DNA
 <213> Homo sapiens

<400> 151
 atggagaccc cagaggtccc cgtgggctcg ctaatcgact ttgggcctga ggcacccacc 60
 tcttctcccc tggaggcacc accccctgtg ctgcaggacg gcgatggctc cctgggggac 120
 ggtgcatcag agagttagac cactgagtct gcggacagtg agaatgacat gggcgagtcg 180
 ccctcgcacc cgtcctggga ccaagaccgc cgttcctcct ccaacgagtc cttctcctcc 240
 aaccagagca ccgagtctac ccaggatgaa gagaccctgg cactcaggga cttcatgcgt 300
 ggctacgtgg agaagatctt ctctggaggg gaggacttgg atcaggagga gaaagccaag 360
 tttggagagt actgcagcag tgaaaatgga aaaggccggg agtggtttgc tcgatacgtg 420
 agtgcccagc gctgcaactc caagtgtgtc tcagaggcaa ccttctaccg cctggtgcag 480
 tcttttgag tggtgctgtt cgagtgtcat cagatggatg actttgggcc tgccaagaac 540
 ctcatgacca tgtgcttcac ctactaccac atcggaaaac cacagctgct gccccggag 600
 tccccgggaga agcccgcggg cagcatcgac tcctacctga aatccgcaaa cagctggctg 660
 gccgaaaaga aggacatcgc cgagcggctg ctgaagaaca cctcggccag gactgagaat 720
 gtcaagggct tcttcggggg gctggagacc aagctgaagg ggcccctggc caggaggaac 780
 gaggaagacg agaacaaacc ccaggagaag cggcccaggg ctgtgaccgc gtacagcccc 840
 gaggacgaaa agaaggggga gaagatctac ctgtacacgc acctgaagca acagcccatc 900
 tggcacactc tgaggttctg gaatgcagcc ttttttgacg ctgtccattg tgagaggaca 960
 aagcgatctc ccactaccag aggggatgct ggagaggagg aggagaagag ggagaagtgg 1020
 tgccacatga cccaggagga gcgcgacgac agcctccggt tcaacgagaa catcaccttc 1080
 gggcagctgg gcacattcac gcacaacatg ctggcctttg gactgaacaa gaagctgtgc 1140
 aatgacttcc tgaagaagca ggctgtgatt ggcaacctgg atgaagagca atacaagctg 1200
 cttagtgacc acattgagca aatggccact gagtag 1236

<210> 152
 <211> 1038
 <212> DNA
 <213> Homo sapiens

<400> 152
 atgctcatgt ttgaccagc tcctgtcaag caagaggcca tggaccctgt ctcaagtgtca 60
 taccatcta attacatgga atccatgaag cctaacaagt atggggatcat ctactccaca 120
 ccattgcctg agaagttctt tcagaccca gaaggtctgt cgcacggaat acagatggag 180
 ccagtggacc tcacggtgaa caagcggagt tcaccccctt cggctgggaa ttgcacctcc 240
 tctctgaagt tcccgtcctc acaccggaga gcctcgcctg ggttgagcat gccttcttcc 300
 agcccaccga taaaaaata ctcaccccct tctccaggcg tgcagccctt cggcgtgccg 360
 ctgtccatgc caccagtgat ggcagctgcc ctctcgcggc atggaatacg gagccggggg 420

PCTAU2016050927-seq1-000001-EN-20161013

atcctgccccg	tcacccagcc	ggtggtggtg	cagccccgtcc	cctttatgta	cacaagtcac	480
ctccagcagc	ctctcatggt	ctccttatcg	gaggagatgg	aaaattccag	tagtagcatg	540
caagtacctg	taattgaatc	atatgagaag	cctatatcac	agaaaaaat	taaaatagaa	600
cctgggatcg	aaccacagag	gacagattat	tatcctgaag	aatgtcacc	ccccttaatg	660
aactcagtgt	cccccccga	agcattgttg	caagagaatc	acccttcggt	catcgtgcag	720
cctgggaaga	gacctttacc	tgtggaatcc	ccggatactc	aaaggaagcg	gaggatacac	780
agatgtgatt	atgatggatg	caacaaagtg	tactactaaa	gctcccactt	gaaagcacac	840
agaagaacac	acacaggaga	aaaaccctac	aatgtacat	gggaaggggtg	cacatggaag	900
tttgctcggg	ctgatgaact	aacaagacat	ttccgaaaac	atactggaat	caaacccttc	960
cagtgcccgg	actgtgaccg	cagcttctcc	cgttctgacc	atcttgccct	ccataggaaa	1020
cgccacatgc	tagtctga					1038

<210> 153
 <211> 852
 <212> DNA
 <213> Homo sapiens

<400> 153						
atggacgtgc	tccccatgtg	cagcatcttc	caggagctcc	agatcgtgca	cgagaccggc	60
tacttctcgg	cgctgccgtc	tctggaggag	tactggcaac	agacctgcct	agagctggaa	120
cgttacctcc	agagcgagcc	ctgctatggt	tcagcctcag	aatcaaat	tgacagccag	180
gaagatctgt	ggacaaaaat	cattctgggt	cgggagaaaa	aggaggaatc	cgaactgaag	240
atatcttcca	gtcctccaga	ggacactctc	atcagcccga	gcttttggtt	caacttagag	300
accaacagcc	tgaactcaga	tgtcagcagc	gaatcctctg	acagctccga	ggaactttct	360
cccacggcca	agtttacctc	cgacccatt	ggcgaagttt	tggtcagctc	gggaaaattg	420
agtcctctg	tcacctccac	gcctccatct	tctccggaac	tgagcaggga	accttctcaa	480
ctgtgggggt	gcgtgcccgg	ggagctgccc	tcgccaggga	aggtgcgag	cgggacttcg	540
gggaagccag	gtgacaagg	aatggcgat	gcctcccccg	acggcaggag	gaggggtgcac	600
cggtgccact	ttaacggctg	caggaaagtt	tacacaaaa	gctcccactt	gaaagcacac	660
cagcggacgc	acacaggaga	aaagccttac	agatgctcat	gggaaggggtg	tgagtggcgt	720
tttgcaagaa	gtgatgagtt	aaccaggcac	ttccgaaagc	acaccggggc	caagcctttt	780
aatgctccc	actgtgacag	gtgtttttcc	aggtctgacc	acctggccct	gcacatgaag	840
aggcacctct	ga					852

<210> 154
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 154						
atggacgtgt	tggttagtta	tagtatattc	caggagctac	aacttgcca	cgacaccggc	60

PCTAU2016050927-seq1-000001-EN-20161013

tacttctcag ctttaccatc cctggaggag acctggcagc agacatgcct tgaattggaa	120
cgctacctac agacggagcc ccggaggatc tcagagacct ttggtgagga cttggactgt	180
ttcctccacg cttccccctcc cccgtgcatt gaggaaagct tccgtcgctt agaccccctg	240
ctgctccccg tggaagcggc catctgtgag aagagctcgg cagtggacat cttgctctct	300
cgggacaagt tgctatctga gacctgcctc agcctccagc cggccagctc ttctctagac	360
agctacacag ccgtcaacca ggcccagctc aacgcagtga cctcattaac gccccatcg	420
tcccctgagc tcagccgcca tctggtcaaa acctcacaaa ctctctctgc cgtggatggc	480
acggtgacgt tgaaactggt ggccaagaag gctgctctca gctccgtaaa ggtgggaggg	540
gtcgcaacag ctgcagcagc cgtgacggct gcggggggccg ttaagagtgg acagagcgac	600
agtgaccaag gagggctggg ggctgaagca tgtcccgaaa acaagaagag ggttcaccgc	660
tgtcagttta acgggtgccg gaaagtttat acaaaaagct cccacttaaa ggcccaccag	720
aggactcaca caggtgagaa gccttataag tgctcatggg agggatgtga gtggcgtttt	780
gcacgaagcg atgagctcac gaggcactac aggaaacaca caggtgcaaa gcccttcaaa	840
tgcaaccact gcgacaggtg tttttccagg tctgaccatc ttgccctcca catgaagaga	900
catatctaa	909

<210> 155
 <211> 1782
 <212> DNA
 <213> Homo sapiens

<400> 155	
atggagacgc cgccgctgcc tcccgcctgc acaaacgagg gtcctcagaa gcctctcgat	60
tcaaaagatg ataataccga aaaacactgc ccagtgacag tgaatccttg gcatatgaag	120
aaagctttca aagtcataaa cgaattaaga agtcaaaatt tgctgtgcga tgtcacaatt	180
gtggcagaag acatggaaat ttctgctcat agagtgggtgc tggccgcctg tagtccttat	240
tttcatgcca tgtttacagg tgagatgagt gagagccgag caaagagagt tagaataaaa	300
gaggtagatg gctggaccct gaggatgcta attgattatg tttaactgc agaaattcag	360
gttacagaag aaaatgtaca ggtacttctc ccagcagctg gtctcttaca gttacaggat	420
gtgaagaaga cttgtttgtga attttttgaa tcccagcttc accctgtcaa ctgcttagga	480
atccgggctt ttgctgatat gcatgcatgt accgaccttc tgaacaaggc caacacctat	540
gcagagcaac attttgacga tgttgactct agtgaagaat ttctcaatct tggcatcgaa	600
caagtgtgca gcttaatctc aagtgaacaa cttaccatct cttcagaaga gaaggtatct	660
gaagcagtaa tagcatgggt gaacatgac aaggatgtga ggcaagagtt tatggcccga	720
ctgatggaac atgtacgggtt acctttgctt cctcggaagt atttagttca gaggggtgaa	780
gaggaagcat tgggtcaagaa tagcagtgtc tgcaaagatt acctcattga agcaatgaag	840
taccatttgc tgccaacaga gcagcgtata ttaatgaaga gtgtccggac ccggctgagg	900

acacccatga	accttcccaa	attgatggtg	gtggttgggg	gccaagcacc	aaaggctatc	960
cggagtgtgg	aatgctatga	ctttaaagaa	gaaaggtggc	accaagtagc	agagttgcct	1020
tccaggaggt	gcagggcagg	catggtctac	atggctggac	ttgtttttgc	tgttggtggc	1080
tttaatggct	cattaagagt	tcgcactgta	gattcctacg	accctgtgaa	ggaccagtgg	1140
accagcgttg	ctaacatgag	agaccggaga	agcacttttg	gagctgctgt	gttaaagtga	1200
ttattatacg	ctgtgggagg	ctttgatggg	agtacaggtt	tgtcatctgt	ggaagcatac	1260
aacataaagt	ctaattgagt	gtttcatgta	gctcccatga	atacaaggag	gagcagtgtt	1320
ggtgtgggtg	ttgttgagg	tttgctctat	gctgtaggag	gttatgatgg	agcatcacgt	1380
cagtgtctta	gcacagtaga	atgctataat	gctacaacaa	atgagtggac	ctatatagca	1440
gaaatgagca	ccaggcggag	tggagcaggt	gttgggtgtg	taaacaattt	attgtatgct	1500
gtaggaggtc	atgatggccc	tttagtacga	aaaagtgttg	aagtatatga	tcccaccact	1560
aacgcatgga	gacaggttgc	agatatgaac	atgtgcagaa	gaaatgcagg	agtttgtgca	1620
gttaatggtc	tgttatatgt	tgttggaggg	gatgatgggt	cctgtaactt	ggcgtcagta	1680
gaatattata	acccaacaac	cgataaatgg	acagtttgtg	catcgtgtat	gagcacaggg	1740
agaagttatg	caggggtcac	agttattgat	aaaccattat	ga		1782

<210> 156
 <211> 1560
 <212> DNA
 <213> Homo sapiens

<400> 156	
atgttcttgc	tgcctcttcc ggctgcgggg cgagtagtcg tccgacgtct ggccgtgaga 60
cgtttcggga	gccggagtct ctccaccgca gacatgacga agggccttgt tttaggaatc 120
tattccaaag	aaaaagaaga tgatgtgcca cagttcacaa gtgcaggaga gaattttgat 180
aaattgttag	ctggaaagct gagagagact ttgaacatat ctggaccacc tctgaaggca 240
gggaagactc	gaacctttta tggctctgcat caggacttcc ccagcgtggt gctagttggc 300
ctcggcaaaa	aggcagctgg aatcgacgaa caggaaaact ggcatgaagg caaagaaaac 360
atcagagctg	ctgttgacgc ggggtgcagg cagattcaag acctggagct ctctgtctgtg 420
gaggtggatc	cctgtggaga cgctcaggct gctgcggagg gagcgggtgct tggctctctat 480
gaatacgatg	acctaaagca aaaaaagaag atggctgtgt cggcaaagct ctatggaagt 540
ggggatcagg	aggcctggca gaaaggagtc ctgtttgctt ctgggcagaa cttggcacgc 600
caattgatgg	agacgccagc caatgagatg acgccaacca gatttgctga aattattgag 660
aagaatctca	aaagtgctag tagtaaaacc gaggtccata tcagacccaa gtcttggtatt 720
gaggaacagg	caatgggatc attcctcagt gtggccaaag gatctgacga gccccagtc 780
ttcttgaaaa	ttcactacaa aggcagcccc aatgcaaacg aaccaccctt ggtgtttgtt 840
gggaaaggaa	ttacctttga cagtgggtgg atctccatca aggcttctgc aaatatggac 900
ctcatgaggg	ctgacatggg aggagctgca actatatgct cagccatcgt gtctgctgca 960

aagcttaatt tgcccattaa tattataggt ctggcccctc tttgtgaaaa tatgcccagc	1020
ggcaaggcca acaagccggg ggatgttggt agagccaaaa acgggaagac catccagggt	1080
gataacactg atgctgaggg gaggtcata ctggctgatg cgctctgtta cgcacacacg	1140
tttaacccga aggtcatcct caatgccgcc accttaacag gtgccatgga ttagctttg	1200
ggatcagggt ccactgggggt ctttaccaat tcatcctggc tctggaacaa actcttcgag	1260
gccagcattg aaacagggga ccgtgtctgg aggatgcctc tcttcgaaca ttatacaaga	1320
caggttgtag attgccagct tgctgatgtt aacaacattg gaaaatacag atctgcagga	1380
gcatgtacag ctgcagcatt cctgaaagaa ttcgtaactc atcctaagtg ggcacattta	1440
gacatagcag gcgtgatgac caacaaagat gaagttccct atctacggaa aggcatgact	1500
gggaggccca caaggactct cattgagttc ttacttcgtt tcagtcaaga caatgcttag	1560

<210> 157
 <211> 789
 <212> DNA
 <213> Homo sapiens

<400> 157 atggaccccc gcttgtccac tgtccgccag acctgctgct gcttcaatgt ccgcatcgca	60
accaccgccc tggccatcta ccatgtgatc atgagcgtct tgttgttcat cgagcactca	120
gtagagggtg cccatggcaa ggcgtcctgc aagctctccc agatgggcta cctcaggatc	180
gctgacctga tctccagctt cctgctcatc accatgctct tcatcatcag cctgagccta	240
ctgatcggcg tagtcaagaa ccgggagaag tacctgctgc ccttcctgtc cctgcaaadc	300
atggactatc tcctgtgcct gctcacctg ctgggctcct acattgagct gccgcctac	360
ctcaagttgg cctcccggag ccgtgctagc tcctccaagt tcccctgat gacgtgcag	420
ctgctggact tctgcctgag catcctgacc ctctgcagct cctacatgga agtggccacc	480
tatctcaact tcaagtccat gaaccacatg aattacctcc ccagccagga ggatatgcct	540
cataaccagt tcatcaagat gatgatcatc ttttccatcg ccttcatcac tgtccttadc	600
ttcaaggctc acatgttcaa gtgcgtgtgg cggtgctaca gattgatcaa gtgcatgaac	660
tcggtggagg agaagagaaa ctccaagatg ctccagaagg tggctcctgcc gtcctacgag	720
gaagccctgt ctttgccatc gaagaccca gagggggggc cagcaccacc cccataactca	780
gaggtgtga	789

<210> 158
 <211> 732
 <212> DNA
 <213> Homo sapiens

<400> 158 atgagctcgg ggactgaact gctgtggccc ggagcagcgc tgctgggtgct gttgggggtg	60
gcagccagtc tgtgtgtgcg ctgctcacgc ccagggtgcaa agaggtcaga gaaaatctac	120
cagcagagaa gtctgcgtga ggaccaacag agctttacgg ggtcccggac ctactccttg	180

PCTAU2016050927-seql-000001-EN-20161013

gtcgggcagg catggccagg acccctggcg gacatggcac ccacaaggaa ggacaagctg	240
ttgcaattct accccagcct ggaggatcca gcatcttcca ggtaccagaa cttcagcaaa	300
ggaagcagac acgggtcggg ggaagcctac atagacccca ttgccatgga gtattacaac	360
tgggggcggt tctcgaagcc cccagaagat gatgatgcca attcctacga gaatgtgctc	420
atttgcaagc agaaaaccac agagacaggt gcccgagcagg agggcatagg tggcctctgc	480
agaggggacc tcagcctgtc actggccctg aagactggcc ccacttctgg tctctgtccc	540
tctgcctccc cggaagaaga tgaggaatct gaggattatc agaactcagc atccatccat	600
cagtggcgcg agtccaggaa ggtcatgggg caactccaga gagaagcatc ccctggccccg	660
gtgggaagcc cagacgagga ggacggggaa ccggattacg tgaatgggga ggtggcagcc	720
acagaagcct ag	732

<210> 159
 <211> 1602
 <212> DNA
 <213> Homo sapiens

<400> 159 atggcactga ggaatgtgcc ctttcgctca gaggtcctgg gctgggaccc cgacagcctt	60
gctgactatt tcaagaagct caactataag gactgtgaga aggcagtga gaagtaccac	120
atcgatgggg ctcgcttctt gaacctgaca gaaaatgaca tccagaagtt cccaagctc	180
cgggtgccga ttctcagtaa gttaagtcag gaaatcaaca agaacgaaga gaggaggagc	240
atcttcacac gcaaaccaca agtcccgcgg tttcctgaag agacagaaaag ccacgaagag	300
gacaatgggg gctggtcgtc ctttgaagaa gacgattatg aaagtcccaa tgatgaccag	360
gatggggagg atgatggaga ctatgagtcc cccaatgagg aggaagaggc acccgtggaa	420
gatgacgcgg attatgagcc gccaccctcc aatgacgagg aagctctgca gaactccatc	480
ctgcctgcca agcctttccc caactccaac tccatgtaca tcgaccggcc cccctctggg	540
aaaaccccc agcagcctcc tgtgcccccc cagagaccga tggccgcctt cccgccccca	600
ccagccggcc ggaatcactc gccactgccc ccaccccaga ccaaccacga agaaccacgc	660
agaagcagaa accacaaaac ggcaaagctc cctgctcctt caatagacag aagcacgaaa	720
cctcccctag atcgttcatt agtccgttt gatagagaac ctttcacact aggaaagaaa	780
ccaccatttt ctgacaagcc ctcgattcca gcgggaaggt cactcgggga gcatttacct	840
aagattcaaa agcctccttt accaccgacc acggaaagac atgaaaggag cagccccctg	900
ccaggggaaga agccacctgt gccaaagcat ggatggggac cagacagaag agagaatgat	960
gaagatgatg tgcatcagag acctttgccc cagccagcac tacttcctat gagctccaac	1020
actttccctt caagatctac taagccaagt cccatgaacc ctctcccatc ctctcacatg	1080
cctggagcat tctcagaaag taacagcagt tttccacaga gtgcctccct gccaccatac	1140
ttctctcaag gccctagcaa cagaccacct atcagagccg aaggcagaaa cttccccttg	1200

ccacttccaa	acaaacctcg	gcccccatcc	ccgcggagg	aagagaattc	attaaatgaa	1260
gagtggtag	tttcttatat	tacccgacca	gaggcagaag	ctgctcttag	aaagataaac	1320
caggatggca	catttctggt	cagagacagc	tctaaaaaaa	caacaaccaa	tccatatgtc	1380
ctcatggtgt	tgtacaaaga	taaagtttac	aacatccaga	tccgttatca	gaaggaaagt	1440
caagtttact	tgttggaac	tggactccga	gggaaagagg	actttctgtc	tgtgtcagat	1500
attattgact	acttcaggaa	aatgccactt	ctgctcattg	atgggaaaaa	ccgaggttcc	1560
agataccagt	gcacattaac	gcatgctgca	gggtacccat	ag		1602

<210> 160
 <211> 927
 <212> DNA
 <213> Homo sapiens

<400> 160	
atggacgcgc	tcaagtcggc
ggggcgggcg	ctgatccgga
gccccagctt	ggccaagcag
60	
agctgggggg	gcggtggccg
gcaccgcaag	ctgcctgaga
actggacaga	cacgcgggag
120	
acgctgctgg	aggggatgct
gttcagcctc	aagtacctgg
gcatgacgct	agtggagcag
180	
cccaaggggtg	aggagctgtc
ggccgccgcc	atcaagagga
tcgtggctac	agctaaggcc
240	
agtgggaaga	agctgcagaa
ggtgactctg	aagggtgtcg
cacggggaat	tatcctgaca
300	
gacaacctca	ccaaccagct
cattgagaac	gtgtccatat
acaggatctc	ctattgcaca
360	
gcagacaaga	tgcacgacaa
ggtgtttgca	tacatcgccc
agagccagca	caaccagagc
420	
ctcgagtgcc	acgccttcct
ctgcaccaag	cggaagatgg
cacaggctgt	taccctcacc
480	
gtagcccagg	ccttcaaagt
cgcctttgag	ttttggcagg
tgtccaagga	agagaaagag
540	
aagagggaca	aagccagcca
agagggaggg	gacgtcctgg
gggcccgcga	agactgcacc
600	
ccctccttga	agagcttggg
cgccactggg	aacctgctgg
acttagagga	gacagctaag
660	
gccccgctgt	ccacggctag
cgccaacacc	accaacatgg
acgaggtgcc	gcggccacaa
720	
gccttgagtg	gcagcagtgt
tgtctgggag	ctggatgatg
gcctggatga	agcgttttcg
780	
aggcttgccc	agtctcggac
aaaccctcag	gtcctggaca
ctggcctgac	agcccaggac
840	
atgcattacg	cccagtgcct
ctcgcctgtc	gactgggaca
agcctgacag	cagcggcaca
900	
gagcaggatg	acctcttcag
cttctga	
927	

<210> 161
 <211> 1200
 <212> DNA
 <213> Homo sapiens

<400> 161	
atgccccaac	tctccggagg
aggtggcggc	ggcggggggg
acccggaact	ctgcgccacg
60	
gacgagatga	tccccttcaa
ggacgagggc	gatcctcaga
aggaaaagat	cttcgccgag
120	
atcagtcatc	ccgaagagga
aggcgattta	gctgacatca
agtcttcctt	ggtgaacgag
180	
tctgaaatca	tcccggccag
caacggacac	gaggtggcca
gacaagcaca	aacctctcag
240	

gagccctacc	acgacaaggc	cagagaacac	cccgatgacg	gaaagcatcc	agatggagggc	300
ctctacaaca	agggaccctc	ctactcgagt	tattccgggt	acataatgat	gccaaatatg	360
aataacgacc	catacatgtc	aaatggatct	ctttctccac	ccatcccgag	aacatcaa	420
aaagtgtccc	tggtgcagcc	atcccatgcg	gtccatcctc	tcacccccct	catcacttac	480
agtgacgagc	acttttctcc	aggatcacac	ccgtcacaca	tcccatcaga	tgtcaactcc	540
aaacaaggca	tgtccagaca	tcctccagct	cctgatatcc	ctacttttta	tcccttgtct	600
ccgggtgggtg	ttggacagat	caccccacct	cttggctggc	aaggtcagcc	tgtatatccc	660
atcacgggtg	gattcaggca	accctaccca	tcctcactgt	cagtcgacac	ttccatgtcc	720
aggttttccc	atcatatgat	tcccggtcct	cctggtcccc	acacaactgg	catccctcat	780
ccagctattg	taacacctca	ggtcaaacag	gaacatcccc	acactgacag	tgacctaatg	840
cacgtgaagc	ctcagcatga	acagagaaag	gagcaggagc	caaaaagacc	tcacattaag	900
aagcctctga	atgcttttat	gttatacatg	aaagaaatga	gagcgaatgt	cgttgctgag	960
tgtactctaa	aagaaagtgc	agctatcaac	cagattcttg	gcagaagggtg	gcatgccctc	1020
tcccggtgaag	agcaggctaa	atattatgaa	ttagcacgga	aagaaagaca	gctacatatg	1080
cagctttatc	caggctggtc	tgcaagagac	aattatggta	agaaaaagaa	gaggaagaga	1140
gagaaactac	aggaatctgc	atcaggtaca	ggtccaagaa	tgacagctgc	ctacatctga	1200

<210> 162
 <211> 1401
 <212> DNA
 <213> Homo sapiens

<400> 162	
atgacccccca	tcctcacggt cctgatctgt ctcgggctga gtctgggccc caggaccac 60
gtgcaggcag	ggcacctccc caagcccacc ctctgggctg agccaggctc tgtgatcatc 120
caggggaagtc	ctgtgaccct caggtgtcag gggagccttc aggctgagga gtaccatcta 180
tatagggaaa	acaaatcagc atcctggggt agacggatac aagagcctgg gaagaatggc 240
cagttcccca	tcccatccat cacctgggaa cacgcagggc ggtatcactg tcagtactac 300
agccacaatc	actcatcaga gtacagtgc cccctggagc tgggtggtgac aggagcctac 360
agcaaaccac	ccctctcagc tctgcccagc cctgtggtga cctcaggagg gaacgtgacc 420
ctccagtgtg	tctcacaggt ggcatttgac ggcttcattc tgtgtaagga aggagaagat 480
gaacaccac	aacgcctgaa ctcccattcc catgcccggt ggtggtcctg ggccatcttc 540
tccgtgggccc	ccgtgagccc gagtcgagg tggtcgtaca ggtgctatgc ttatgactcg 600
aactctccct	atgtgtggtc tctaccaggt gatctcctgg agctcctggt cccagggtgtt 660
tctaagaagc	catcactctc agtcagcca ggtcctatgg tggcccctgg ggagagcctg 720
accctccagt	gtgtctctga tgtcggctac gacagatttg ttctgtataa ggaggagaa 780
cgtgacttcc	tccagcgccc tggttggcag cccaggtgt ggctctccca ggccaacttc 840
accctgggccc	ctgtgagccc ctcccacggg ggccagtaca gatgctacag tgcacacaac 900

PCTAU2016050927-seql-000001-EN-20161013

ctctcctccg agtggtcggc cccagtgac cccctggaca tcctgatcac aggacagttc	960
tatgacagac cctctctctc ggtgcagccg gtccccacag tagccccagg aaagaacgtg	1020
accctgctgt gtcagtcacg ggggcagttc cacactttcc ttctgaccaa ggagggggca	1080
ggccatcccc cactgcatct gagatcagag caccaagctc agcagaacca ggctgaattc	1140
cgcattgggtc ctgtgacctc agcccacgtg gggacctaca gatgctacag ctactcagc	1200
tccaacccct acctgctgtc tctccccagt gacccctgg agctcgtggt ctcagcatcc	1260
ctaggccaac acccccagga ttacacagtg gagaatctca tccgcatggg tgtggctggc	1320
ttggtcctgg tggctcctcg gattctgcta tttgaggctc agcacagcca gagaagccta	1380
caagatgcag ccgggagggtg a	1401

<210> 163
 <211> 1899
 <212> DNA
 <213> Homo sapiens

<400> 163 atgacgcccg ccctcacagc cctgctctgc cttgggctga gtctggggccc caggaccgcg	60
gtgcaggcag ggcccttccc caaaccacc ctctgggctg agccaggctc tgtgatcagc	120
tgggggagcc ccgtgaccat ctggtgtcag gggagcctgg agggccagga gtaccaactg	180
gataaagagg gaagcccaga gcccttggac agaaataacc cactggaacc caagaacaag	240
gccagattct ccatcccatc catgacacag caccatgcag ggagataccg ctgccactat	300
tacagctctg caggctggtc agagcccagc gacccctgg agctggtgat gacaggattc	360
tacaacaaac ccacctctc agccctgccc agccctgtgg tggcctcagg ggggaatatg	420
accctccgat gtggctcaca gaagggatat caccattttg ttctgatgaa ggaaggagaa	480
caccagctcc cccggaccct ggactcacag cagctccaca gtgggggggtt ccaggccctg	540
ttccctgtgg gcccgtgac cccagccac aggtggaggt tcacatgcta ttactattat	600
acaaacaccc cccgggtgtg gtcccacccc agtgaccccc tggagattct gccctcaggc	660
gtgtctagga agccctccct cctgaccctg cagggccctg tcctggcccc tgggcagagc	720
ctgaccctcc agtgtggctc tgatgtcggc tacgacagat ttgttctgta taaggagggg	780
gaacgtgact tcctccagcg ccctggccag cagccccagg ctgggctctc ccaggccaac	840
ttcacctgg gccctgtgag cccctccac gggggccagt acagggtgcta tgggtgcacac	900
aacctctcct ccgagtggtc ggccccagc gacccctga acatcctgat ggcaggacag	960
atctatgaca ccgtctccct gtcagcacag ccgggccccca cagtggcctc aggagagaac	1020
gtgaccctgc tgtgtcagtc acgggggttat tttgacactt tccttctgac caaagaaggg	1080
gcagcccatc cccactgcg tctgagatca atgtacggag ctcataagta ccaggctgaa	1140
ttcccatga gtctgtgac ctcagccac gcggggacct acagggtgcta cggctcatac	1200
agctccaacc cccacctgct gtctttcccc agtgagcccc tggaactcat ggtctcagga	1260

cactctggag gctccagcct cccacccaca gggccgccct ccacacctgg tctgggaaga	1320
tacctggagg ttttgattgg ggtctcgggtg gccttcgtcc tgctgctctt cctcctcctc	1380
ttcctcctcc tccgacgtca gcgtcacagc aaacacagga catctgacca gagaaagact	1440
gatttccagc gtcttgacag ggctgcggag acagagccca aggacagggg cctgctgagg	1500
aggtccagcc cagctgctga cgtccaggaa gaaaacctct atgctgccgt gaaggacaca	1560
cagtctgagg acaggggtga gctggacagt cagcagagcc cacacgatga agacccccag	1620
gcagtgcagt atgccccggt gaaacactcc agtcctagga gagaaatggc ctctcctccc	1680
tcctcactgt ctggggaatt cctggacaca aaggacagac aggtggaaga ggacaggcag	1740
atggacactg aggtgctgc atctgaagcc tcccaggatg tgacctacgc ccagctgcac	1800
agcttgaccc ttagacggaa ggcaactgag cctcctccat cccaggaagg ggaacctcca	1860
gctgagccca gcatctacgc cactctggcc atccactag	1899

<210> 164
 <211> 1917
 <212> DNA
 <213> Homo sapiens

<400> 164	
atgtccgcgc tggcgggtga agatgtctgg aggtgtccag gctgtgggga ccacattgct	60
ccaagccaga tatggtacag gactgtcaac gaaacctggc acggctcttg cttccggtgt	120
tcagaatgcc aggattccct caccaactgg tactatgaga aggatgggaa gctctactgc	180
cccaaggact actgggggaa gtttggggag ttctgtcatg ggtgctccct gctgatgaca	240
gggcctttta tgggtggctgg ggagttcaag taccaccag agtgctttgc ctgtatgagc	300
tgcaaggatga tcattgagga tggggatgca tatgactgg tgcagcatgc caccctctac	360
tgtgggaagt gccacaatga ggtggtgctg gcacccatgt ttgagagact ctccacagag	420
tctgttcagg agcagctgcc ctactctgtc acgctcatct ccatgccggc caccactgaa	480
ggcaggcggg gcttctccgt gtccgtggag agtgccctgt ccaactacgc caccactgtg	540
caagtgaaag aggtcaaccg gatgcacatc agtcccaaca atcgaaacgc catccaccct	600
ggggaccgca tcctggagat caatgggacc cccgtccgca cacttcgagt ggaggagggtg	660
gaggatgcaa ttagccagac gagccagaca cttcagctgt tgattgaaca tgaccccgctc	720
tccaacgcc tggaccagct gcggctggag gcccggtcg ctctcacat gcagaatgcc	780
ggacaccccc acgccctcag caccctggac accaaggaga atctggaggg gacactgagg	840
agacgttccc taaggcgcag taacagtatc tccaagtccc ctggccccag ctccccaag	900
gagcccctgc tgttcagccg tgacatcagc cgctcagaat cccttcgttg ttccagcagc	960
tattcacagc agatcttccg gccctgtgac ctaatccatg gggagggtcct ggggaagggc	1020
ttctttgggc aggctatcaa ggtgacacac aaagccacgg gcaaagtgat ggtcatgaaa	1080
gagttaattc gatgtgatga ggagaccag aaaacttttc tgactgaggt gaaagtgatg	1140
cgcagcctgg accaccccaa tgtgctcaag ttcatgtgtg tgctgtacaa ggataagaag	1200

PCTAU2016050927-seq1-000001-EN-20161013

ctgaacctcc	tgacagagta	cattgagggg	ggcacactga	aggactttct	gcgcagtatg	1260
gatccgttcc	cctggcagca	gaaggtcagg	tttgccaaag	gaatcgctc	cggaatggcc	1320
tatttgcaact	ctatgtgcat	catccaccgg	gatctgaact	cgcacaaactg	cctcatcaag	1380
ttggacaaga	ctgtggtggt	ggcagacttt	gggctgtcac	ggctcatagt	ggaagagagg	1440
aaaagggccc	ccatggagaa	ggccaccacc	aagaaacgca	ccttgcgcaa	gaacgaccgc	1500
aagaagcgct	acacggtggt	gggaaacccc	tactggatgg	cccctgagat	gctgaacgga	1560
aagagctatg	atgagacggt	ggatatcttc	tcctttggga	tcgttctctg	tgagatcatt	1620
gggcaggtgt	atgcagatcc	tgactgcctt	ccccgaacac	tggacttttg	cctcaacgtg	1680
aagcttttct	gggagaagtt	tgttcccaca	gattgtcccc	cggccttctt	cccgttggcc	1740
gccatctgct	gcagactgga	gcctgagagc	agaccagcat	tctcgaaatt	ggaggactcc	1800
tttgaggccc	tctccctgta	cctgggggag	ctgggcatcc	cgctgcctgc	agagctggag	1860
gagttggacc	acactgtgag	catgcagtac	ggcctgaccc	gggactcacc	tccttag	1917

<210> 165
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<400> 165	
atggtcatca	tgggccagtg ctactacaac gagaccatcg gcttcttcta taacaacagt 60
ggcaaagagc	tcagctccca ctggcgcccc aaggatgtgg tcgtggtggc actggggctg 120
accgtcagcg	tgctggtgct gctgaccaat ctgctggtca tagcagccat cgcctccaac 180
cgccgcttcc	accagcccat ctactacctg ctcggaatc tggccgcggc tgacctcttc 240
gcgggctggt	cctacctctt cctcatgttc cacactggtc cccgcacagc cgcactttca 300
cttgagggct	ggttcctgcg gcagggcttg ctggacacaa gcctcactgc gtcggtggcc 360
acactgctgg	ccatcgccgt ggagcggcac cgcagtgtga tggccgtgca gctgcacagc 420
cgcctgcccc	gtggccgctg ggtcatgctc attgtgggcg tgtgggtggc tgccctgggc 480
ctggggctgc	tgctgcccc ctccctggcac tgctctgtg ccctggaccg ctgctcacgc 540
atggcacc	tgctcagccg ctctatcttg gccgtctggg ctctgtcgag cctgcttgtc 600
ttcctgctca	tgggtggtgt gtacaccgc attttcttct acgtgcggcg gcgagtgcag 660
cgcatggcag	agcatgtcag ctgccacccc cgctaccgag agaccacgct cagcctggtc 720
aagactgttg	tcatcatcct gggggcgctt gtggtctgct ggacaccagg ccagggtggt 780
ctgctcctgg	atggttttag ctgtgagtc tgcaatgtcc tggctgtaga aaagtacttc 840
ctactgttgg	ccgaggccaa ctccctggtc aatgctgctg tgtactcttg ccgagatgct 900
gagatgcgcc	gcaccttccg ccgccttctc tgctgcgcgt gcctccgcca gtccaccgc 960
gagtctgtcc	actatacatc ctctgcccag ggaggtgcca gcactcgcat catgcttccc 1020
gagaacggcc	accactgat ggactccacc ctttag 1056

<210> 166
 <211> 2691
 <212> DNA
 <213> Homo sapiens

<400> 166
 atgaattatg tgggacagct ggctgggcag gtgattgtca ctgtgaagga actctacaag 60
 ggcattaacc aggccaccct ctctgggtgc attgatgtca tcgtggtaca gcagcaggat 120
 ggcagctatc agtgttcacc ttttcacgtt cggtttggaa agctgggagt cctgagatcc 180
 aaagagaaaag tgattgatat agaaatcaac ggcagtgcag tggatcttca catgaagttg 240
 ggtgataacg gagaagcttt ctttggtgag gagactgaag aagaatatga aaagcttcct 300
 gcttaccttg ccacctcacc aattcctact gaagatcagt tctttaaaga tattgacacc 360
 cctttggtga aatcgggtgg agatgaaaca ccatctcaga gttcagacat ctcacacgtc 420
 ttggaacag agacaatttt tactccaagt tctgtgaaaa agaaaaaacg aaggagaaaag 480
 aaatacaaac aggacagtaa gaaggaagag caggccgcat ctgctgctgc agaagacaca 540
 tgtgatgtag gcgtgagctc cgatgatgac aagggggccc aggcagcacg aggatcttca 600
 aatgcttcct tgaaagaaga agaatgtaaa gagcctttgc tcttccattc tggggatcat 660
 tacccttat ctgatggaga ttggtcccct ttagagacca cctatcccca gacagcgtgt 720
 cctaagagtg attcagagct ggaggtgaaa cctgcggaga gcctgctcag atcagagtct 780
 cacatggagt ggacgtgggg cggattccca gagtccacca aggtcagcaa aagagaacga 840
 tctgaccatc atcctaggac agctacaatt acaccatcag aaaatactca ttttcgggta 900
 attcccagtg aggacaacct catcagtga gttgagaagg atgcttccat ggaagacact 960
 gtctgtacca tagtgaagcc caaaccaga gccctgggta cacagatgag cgaccaaca 1020
 tctgtggcag agcttctcga acctcctctt gagagtactc agatttcac tctgttagat 1080
 gctgaccacc ttcccaacgc agccttagcg gaggcgcct cagaatcaa accggcagct 1140
 aaagtagact cgccgtcaaa gaagaaaggt gttcacaaaa gaagccaaca ccagggacct 1200
 gatgatattt accttgatga cttaaagggt ctagaacctg aagttgcagc tctttatttc 1260
 cctaaaagtg aatcggagcc cggttccagg cagtggcccg agtctgacac actctctggc 1320
 tccagtgccc cacagtccgt ggaagcgca gctgcagata gcggcaccga gtgcctctca 1380
 gattctgcca tggacttgcc tgacgttacc ctctcccttt gcgggggcct cagtgaaaat 1440
 ggagaaaattt caaaagaaaa attcatggag catatcatta cttatcacga atttgcagaa 1500
 aacctggac ttatagacaa tcctaacctt gtaataagga tatataatcg ttactataac 1560
 tgggctttgg cagctcccat gatccttagc ttgcaagtat tccagaagag cttgcctaag 1620
 gccacagttg agtctgggt gaaagacaag atgccaaaga aatctgggtc ctggtggttt 1680
 tggcgaaaga gagaaagcat gaccaaacag ctgccagaat ccaaggaggg aaaatctgag 1740
 gcaccgccag ccagtgcct gccatccagc tccaaggagc cggccggtgc caggccggcc 1800
 gagaatgact cctcgagtga cgagggatca caggagctcg aagaatccat cacagtggac 1860

cccatcccca	cagagcccct	gagccacggc	agcacaactt	catataagaa	gtctctccgc	1920
ctctcctcag	accagatcgc	aaaactgaag	ctccacgatg	gcccaaata	tggtgtgttt	1980
agtattacaa	cccagtatca	aggcacctgt	cgctgtgcag	ggaccattta	cctgtggaac	2040
tggaatgaca	agatcatcat	ttctgatatt	gatgggacaa	taaccaagtc	ggatgctttg	2100
ggacagattc	tcccacagct	gggcaaagac	tggaccaccc	agggtatagc	aaagctctac	2160
cattccatca	atgagaatgg	ctacaagttt	ctgtactgct	cggctcgtgc	catcggcgatg	2220
gccgacatga	cccgtggcta	cctgcactgg	gtcaatgaca	agggcacaat	cttgccccgg	2280
ggccccctga	tgctgtcccc	cagcagcttg	ttctccgcct	tccacagaga	agtgatagaa	2340
aagaaaccag	agaagttcaa	aattgagtgt	ctaaatgata	tcaagaatct	gtttgccccg	2400
tctaagcagc	ccttctatgc	tgccitttga	aaccgtccaa	atgatgtcta	tgccctacaca	2460
caagttggag	ttccagactg	tagaatattc	accgtgaacc	ccaaggggtga	attaatacaa	2520
gaaagaacca	aaggaaacaa	gtcatcgtat	cacaggctga	gtgagctcgt	ggagcatgtg	2580
ttcccccttc	tcagtaagga	gcagaattcc	gcttttcctt	gcccggagtt	cagctccttc	2640
tgctactggc	gagacccgat	ccctgaagtg	gacctgggatg	acctgtcttg	a	2691

<210> 167
 <211> 1500
 <212> DNA
 <213> Homo sapiens

<400> 167	
atgaatgatg	acccaagtat ggaagagaat ggtgttgaac gcgtgtgtcc tgagagcctg 60
ctgcagtcca	gggaatatct ctcactacca ttaccagac acacttcac gacagacggt 120
actataactt	caagtgatcc tggattagaa attctgaata tggcttcttg tgaccttgac 180
agaaactcgc	tctgtaagaa agaggaggat acaagatcag cttctccac gatagaggcc 240
caaggcacaa	gtccagctca tgataatatt gcattccaag actctacgag taaggataaa 300
accatattaa	atctggaagc caaagaggaa ccagaaacaa tagaagaaca taaaaagaa 360
catgcttcag	gagactctgt ggtttcccct cttcctgtaa cactgtgaa atcggttaac 420
cttagacaaa	gtgagaacac ttctgctaata gagaaggagg tggaggcaga atttctcaga 480
ttatcttttg	gatttaagtg tgactggttt accttgagaa agagagtga gcttgaagag 540
aggtcccgtg	acttggcaga agaaaatttg aagaaagaaa tcactaactg tttaaaacta 600
ttagagtctt	taacacctct gtgtgaagat gacaaccagg cacaggaaat cattaagaag 660
ctggagaaga	gtataaagtt tcttagccag tgtgcagcac gagtggccag tagggctgag 720
atgttgggag	ccatcaatca ggaaagccgg gttagtaaag cagttgaagt gatgattcag 780
cacgtagaaa	acttgaagag gatgtatgcc aaagagcacg ctgaattaga agaactgaaa 840
caggttcttc	tgacagaatga aaggtctttc aatcctcttg aagatgatga tgactgcaa 900
attaaaaaac	gttcagcttc tctaaactcc aagccatctt ctctacgaag agtgactatt 960

gcctctttac ccagaaatat tggaaatgca ggaatggtgg ctgggatgga aaataatgat	1020
cgattcagta gaaggtcaag cagttggcgt attttgggggt caaagcagag tgaacaccgt	1080
ccctcattac ctcgatttat tagcacctat tcctgggcag atgctgaaga agaaaaatgt	1140
gaactaaaaa ctaaagatga ctcagagcca tctggagaag aaacagtaga aaggacaagg	1200
aagccaagtc tttctgaaaa gaaaaataat ccatcaaagt gggatgtctc ttcagtttat	1260
gacacaatag cttcctgggc aacaaatctc aagtcctcca tcagaaaggc taataaggcc	1320
ctctggctct ctattgcatt cattgtactg tttgcagctt tgatgagctt cctcacaggc	1380
caattattcc agaagtctgt ggatgccgct cccacacagc aagaggactc atggacgtct	1440
ctagaacata tcttgtggcc atttaccaga ctccgacaca atggggccacc accagtgtga	1500

<210> 168
 <211> 2142
 <212> DNA
 <213> Homo sapiens

<400> 168	
atgctgttgg ccaccctcct cctcctcctc cttggaggcg ctctggccca tccagaccgg	60
attatttttc caaatcatgc ttgtgaggac cccccagcag tgctcttaga agtgcagggc	120
accttacaga ggcccctggg ccgggacagc cgcacctccc ctgccaactg cacctggctc	180
atcctgggca gcaaggaaca gactgtcacc atcaggttcc agaagctaca cctggcctgt	240
ggctcagagc gcttaaccct acgctcccct ctccagccac tgatctccct gtgtgaggca	300
cctcccagcc ctctgcagct gcccgggggc aacgtcacca tcacttacag ctatgctggg	360
gccagagcac ccatgggcca gggcttcctg ctctcctaca gccaagattg gctgatgtgc	420
ctgcaggaag agtttcagtg cctgaaccac cgctgtgtat ctgctgtcca gcgctgtgat	480
ggggttgatg cctgtggcga tggctctgat gaagcaggtt gcagctcaga ccccttcctt	540
ggcctgacct caagaccctg cccctccctg ccttgcaatg tcaccttgga ggacttctat	600
ggggtcttct cctctcctgg atatacacac ctacgctcag tctcccaccc ccagtcctgc	660
cattggctgc tggaccccc a tgatggccg cggtggccg tgcgcttcac agccctggac	720
ttgggctttg gagatgcagt gcatgtgtat gacggccctg ggccccctga gagctcccga	780
ctactgcgta gtctaccca cttcagcaat ggcaaggctg tcaactgtga gacactgtct	840
ggccaggctg ttgtgtccta ccacacagtt gcttgagca atggctcgtg cttcaatgcc	900
acctaccatg tgcggggcta ttgcttgctt tgggacagac cctgtggctt aggctctggc	960
ctgggagctg gcgaaggcct aggtgagcgc tgctacagtg aggcacagcg ctgtgacggc	1020
tcatgggact gtgctgacgg cacagatgag gaggactgcc caggctgccc acctggacac	1080
ttcccctgtg gggctgctgg cacctctggg gccacagcct gctacctgcc tgctgaccgc	1140
tgcaactacc agactttctg tgctgatgga gcagatgaga gacgctgtcg gcattgccag	1200
cctggcaatt tccgatgccg ggacgagaag tgcgtgtatg agacgtgggt gtgcgatggg	1260
cagccagact gtgcggacgg cagtgatgag tgggactgct cctatgttct gccccgaag	1320

gtcattacag	ctgcagtc	at	tggcagccta	gtgtgcggcc	tgctcctggt	catcgccctg	1380
ggctgcacct	gcaagctcta	tgccattcgc	accaggaggt	acagcatctt	tgccccctc		1440
tcccggatgg	aggctgagat	tgtgcagcag	caggcacccc	cttcctacgg	gcagctcatt		1500
gccaggggtg	ccatcccacc	tgtagaagac	tttcctacag	agaatcctaa	tgataactca		1560
gtgctgggca	acctgcgttc	tctgctacag	atcttacgcc	aggatatgac	tccaggaggt		1620
ggcccaggtg	cccgccgtcg	tcagcggggc	cgcttgatgc	gacgcctggt	acgccgtctc		1680
cgccgctggg	gcttgctccc	tcgaaccaac	accccggtc	gggcctctga	ggccagatcc		1740
caggtcacac	cttctgctgc	tccccttgag	gccctagatg	gtggcacagg	tccagcccgt		1800
gagggcgggg	cagtgggtgg	gcaagatggg	gagcaggcac	ccccactgcc	catcaaggct		1860
cccctcccat	ctgctagcac	gtctccagcc	cccactactg	tccctgaagc	cccagggcca		1920
ctgccctcac	tgcccctaga	gccatcacta	ttgtctggag	tggtgcaggc	cctgcgaggc		1980
cgctgttgc	ccagcctggg	gccccagga	ccaaccgga	gccccctgg	acccacaca		2040
gcagtcctgg	ccctggaaga	tgaggacgat	gtgctactgg	tgccactggc	tgagccgggg		2100
gtgtgggtag	ctgaggcaga	ggatgagcca	ctgcttacct	ga			2142

<210> 169
 <211> 315
 <212> DNA
 <213> Homo sapiens

<400> 169	
atgttatcgc	ggaatgatga
tatatgtatc	tacggggggc
tggggctggg	cgggctcctg
cttctggcag	tggtccttct
gtccgcctgc	ctgtgttggc
tgcacgaag	agtaaagagg
ctggagagga	gctggcacct
tctgtcctgg	tcccaggccc
agggctcctc	agagcaggaa
ctccactatg	catctctgca
gaggctgcca	gtgcccagca
gtgagggacc	tgacctcagg
ggcagagaca	agagaggcac
caaggaggat	ccaagagctg
actatgcctg	catttctgag
aacaaacca	cctga
	315

<210> 170
 <211> 735
 <212> DNA
 <213> Homo sapiens

<400> 170	
atggggggcac	tggggctgga
gggcaggggt	gggaggctcc
aggggagggg	ttccctcctg
ctagctgtgg	caggagccac
ttctctggtg	accttgttgc
tggcggtgcc	tatcactgtc
ctggctgtgc	tggccttagt
gccccaggat	cagggaggac
tggtaacgga	gacggccgac
cccggggcac	aggcccagca
aggactgggg	tttcagaagc
tgccagagga	ggagccagaa
acagatctca	gccccgggct
cccagctgcc	cacctcatag
gcgctccgct	gaaggggcag
gggctaggct	gggagacgac
gaaggaacag	gcgtttctga
cgagcgggac	gcagttctcg
gacgccgagg	ggctggcgct
cccgcaggac	ggcctctatt
acctctactg	tctcgtcggc
	420

PCTAU2016050927-seql-000001-EN-20161013

taccggggcc	gggcgcccc	tggcggcggg	gacccccagg	gccgctcggg	cacgctgcgc	480
agctctctgt	accgggcggg	gggcgcctac	gggccgggca	ctcccagagc	gctgctcgag	540
ggcgccgaga	cggtgactcc	agtgtctggac	ccggccagga	gacaagggtg	cgggcctctc	600
tggtacacga	gcgtgggggt	cggcggcctg	gtgcagctcc	ggaggggcca	gaggggtgtac	660
gtcaacatca	gtcaccgccg	tatggtggac	ttcgcgagag	ggaagacctt	ctttggggcc	720
gtgatggtgg	ggtga					735

<210> 171
 <211> 843
 <212> DNA
 <213> Homo sapiens

<400> 171						
atgtgcccgc	ctcaggcaca	ggcagagggtg	ggccccacca	tgactgagaa	ggcagagatg	60
gtgtgtgtccc	ccagcccagc	gcctgcccc	ccccctaagc	ctgcctcgcc	tgggcccccg	120
caggtggagg	aggtgggcca	ccgaggaggc	tcctcgcccc	ccaggctgcc	acctggtgta	180
ccagtgatca	gcctgggcca	cagcaggccc	ccaggggtag	ccatgcccac	cacagagctg	240
ggcactctgc	ggcccccgct	gctgcaactc	tccaccctgg	gaactgcccc	gccacttttg	300
gccctgcact	accaccctca	ccccttcctc	aacagtgtct	acattgggcc	agcaggacct	360
tttagcatct	tccttagcag	ccggttgaag	cggagaccaa	gccactgtga	gctggacctg	420
gctgaggggc	accagcccca	gaaggtggcc	cggcgcgtgt	tcaccaacag	ccgggagcgc	480
tggcggcagc	agaacgttaa	cggcgccttc	gccgagctga	ggaagctgct	gccgacgcac	540
ccgcccgacc	ggaagctgag	caagaacgag	gtgctccgcc	tagccatgaa	gtacatcggc	600
ttcctggtgc	ggctgctgcg	cgaccaagcc	gcagctctgg	ccgcaggccc	caccctccc	660
gggcctcgca	aacggccggt	gcaccgggtc	ccagacgacg	gcgcccgcgc	gggatccgga	720
cgcagggccg	aggcggcagc	gcgctcgag	cccgcgcccc	cggccgaccc	cgacggcagc	780
cccgtggtgag	cggcccggcc	catcaagatg	gagcaaaccg	ctttgagccc	agaggtgcgg	840
tga						843

<210> 172
 <211> 1539
 <212> DNA
 <213> Homo sapiens

<400> 172						
atgggatgta	taaaatcaaa	agggaaagac	agcttgagt	acgatggagt	agatttgaag	60
actcaaccag	tacgtaatac	tgaaagaact	atttatgtga	gagatccaac	gtccaataaa	120
cagcaaaggc	cagttccaga	atctcagctt	ttacctggac	agaggtttca	aactaaagat	180
ccagaggaac	aaggagacat	tgtggttagc	ttgtaccctt	atgatggcat	ccaccggac	240
gacttgtctt	tcaagaaagg	agagaagatg	aaagtcctgg	aggagcatgg	agaatggtgg	300
aaagcaaagt	cccttttaac	aaaaaaagaa	ggcttcatcc	ccagcaacta	tgtggccaaa	360

ctcaacacct	tagaaacaga	agagtggttt	ttcaaggata	taaccaggaa	ggacgcagaa	420
aggcagcttt	tgccaccagg	aatagcgct	ggagctttcc	ttattagaga	aagtgaacaa	480
ttaaaaggaa	gcttctctct	gtctgtcaga	gactttgacc	ctgtgcatgg	tgatgttatt	540
aagcactaca	aaattagaag	tctggataat	gggggctatt	acatctctcc	acgaatcact	600
tttccttgta	tcagcgacat	gattaaacat	taccaaagc	aggcagatgg	cttgtgcaga	660
agattggaga	aggcttgtat	tagtcccaag	ccacagaagc	catgggataa	agatgcctgg	720
gagatcccc	gggagtccat	caagttggtg	aaaaggcttg	gcgctgggca	gtttggggaa	780
gtctggatgg	gttactataa	caacagtacc	aaggtggctg	tgaaaaccct	gaagccagga	840
actatgtctg	tgcaagcctt	cctggaagaa	gccaacctca	tgaagaccct	gcagcatgac	900
aagctcgtga	ggctctacgc	tgtggtcacc	agggaggagc	ccatttacat	catcaccgag	960
tacatggcca	agggcagttt	gctggatttc	ctgaagagcg	atgaagggtg	caaagtgtctg	1020
cttccaaagc	tcattgactt	ttctgctcag	attgcagagg	gaatggcata	catcgagcgg	1080
aagaactaca	ttcaccggga	cctgcgagca	gctaattgtc	tggctctccga	gtcactcatg	1140
tgcaaaattg	cagatttttg	ccttgctaga	gtaattgaag	ataatgagta	cacagcaagg	1200
gaaggtgcta	agttccctat	taagtggacg	gctccagaag	caatcaactt	tggatgtttc	1260
actattaagt	ctgatgtgtg	gtcctttgga	atcctcctat	acgaaattgt	cacctatggg	1320
aaaattccct	accaggagg	aactaatgcc	gacgtgatga	ccgccctgtc	ccagggttac	1380
aggatgcccc	gtgtggagaa	ctgccagat	gagctctatg	acattatgaa	aatgtgtctg	1440
aaagaaaagg	cagaagagag	accaacgttt	gactacttac	agagcgtcct	ggatgatttc	1500
tacacagcca	cggaagggca	ataccagcag	cagccttag			1539

<210> 173
 <211> 11406
 <212> DNA
 <213> Homo sapiens

<400> 173						
atgagaccg	acagtaactc	actggcacgt	gaattttctga	ccgatgtcaa	ccggctttgc	60
aatgcagtgg	tccagagggg	ggaggccagg	gaggaagaag	aggaggagac	gcacatggca	120
acccttggac	agtaccttgt	ccatgggtcga	ggattttctat	tacttaccaa	gctaaattct	180
ataattgatc	aggcattgac	atgtagagaa	gaactcctga	ctcttcttct	gtctctcctt	240
ccactggtat	ggaagatacc	tgtccaagaa	gaaaaggcaa	cagattttta	cctaccgctc	300
tcagcagata	taatcctgac	caaagaaaag	aactcaagtt	cacaaagatc	cactcaggaa	360
aaattacatt	tagaaggaag	tgccctgtct	agtcaggttt	ctgcaaaagt	aaatgttttt	420
cgaaaaagca	gacgacagcg	taaaattacc	catcgctatt	ctgtaagaga	tgcaagaaag	480
acacagctct	ccacctcaga	ttcagaagcc	aattcagatg	aaaaaggcat	agcaatgaat	540
aagcatagaa	ggccccatct	gctgcatcat	tttttaacat	cgtttcctaa	acaagaccac	600

cccaaagcta aacttgaccg cttagcaacc aaagaacaga ctcctccaga tgctatggct	660
ttggaaaatt ccagagagat tattccaaga caggggtcaa aactgacat ttttaagtga	720
ccagctgcct tgtctgttat cagtaacatg aacaattctc catttgactt atgtcatgtt	780
ttgttatctt tattagaaaa agtttgtaag tttagcgtta ccttgaatca taattctcct	840
ttagcagcca gtgtagtgcc cacactaact gaattcctag caggctttgg ggactgctgc	900
agtctgagcg acaacttgga gagtcgagta gtttctgcag gttggaccga agaaccggtg	960
gctttgattc aaaggatgct ctttcgaaca gtgttgcatc ttctgtcagt agatgttagt	1020
actgcagaga tgatgccaga aaatcctagg aaaaatttaa ctgaattgct tagagcagct	1080
ttaaaaaatta gaatatgcct agaaaagcag cctgaccctt ttgcaccaag acaaaaagaaa	1140
acactgcagg aggttcagga agattttgtg ttttcaaagt atcgtcatag agcccttctt	1200
ttacctgagc ttttggaagg agttcttcag attctgatct gttgtcttca aagtgcagct	1260
tcaaaccct tctacttcag tcaagccatg gatttggttc aagaattcat tcagcatcat	1320
ggatttaatt tatttgaaac agcagttctt caaatggaat ggctggtttt aagagatgga	1380
gttcctcccg aggcctcaga gcatttgaaa gccctaataa atagtgtgat gaaaataatg	1440
agcactgtca aaaaagtga atcagagcaa cttcatcatt cgatgtgtac aagaaaaagg	1500
cacagacgat gtgaatatc tcattttatg catcatcacc gagatctctc aggtcttctg	1560
gtttcggctt ttaaaaacca ggtttccaaa aaccatttg aagagactgc agatggagat	1620
gtttattatc ctgagcgggtg ctgttgcatc gcagtgtgtg cccatcagtg cttgcgctta	1680
ctacagcagg cttccttgag cagcacttgt gtccagatcc tatcgggtgt tcataacatt	1740
ggaatatgct gttgtatgga tcccaaactc gtaatcattc ctttgctcca tgcttttaaa	1800
ttgccagcac tgaaaaattt tcagcagcat atattgaata tccttaacaa acttattttg	1860
gatcagttag gaggagcaga gatatcacca aaaattaaaa aagcagcttg taatatttgt	1920
actgttgact ctgaccaact agcccaatta gaagagacac tgcagggaaa cttatgtgat	1980
gctgaactct cctcaagttt atccagtcct tcttacagat ttcaagggat cctgcccagc	2040
agtggatctg aagatttgtt gtggaaatgg gatgctttta aggcttatca gaactttgtt	2100
tttgaagaag acagattaca tagtatacag attgcaaadc acatttgcaa tttaatccag	2160
aaaggcaata tagttgttca gtggaaatta tataattaca tatttaatcc tgtgctccaa	2220
agaggagttg aattagcaca tcattgtcaa cacctaagcg ttacttcagc tcaaagtcac	2280
gtatgtagcc atcataacca gtgcttgccct caggacgtgc ttcagattta tgtaaaaact	2340
ctgcctatcc tgcttaaatc cagggttaata agagatttgt ttttgagttg taatggagta	2400
agtcaaataa tcgaattaaa ttgcttaaat ggtattcgaa gtcattctct aaaagcattt	2460
gaaactctga taatcagcct aggggagcaa cagaaagatg cctcagttcc agatattgat	2520
gggatagaca ttgaacagaa ggagttgtcc tctgtacatg tgggtacttc ttttcatcat	2580
cagcaagctt attcagattc tcctcagagt ctcagcaaat tttatgctgg cctcaaagaa	2640

gcttatccaa	agagacggaa	gactgttaac	caagatgttc	atatcaacac	aataaaccta	2700
ttcctctgtg	tggctttttt	atgcgtaagt	aaagaagcag	agtctgacag	ggagtcggcc	2760
aatgactcag	aagatacttc	tggctatgac	agcacagcca	gcgagccttt	aagtcatatg	2820
ctgccatgta	tatctctcga	gagccttgtc	ttgccttctc	ctgaacatat	gcaccaagca	2880
gcagacattt	ggtctatgtg	tcgttggatc	tacatgttga	gttcagtgtt	ccagaaacag	2940
ttttataggc	ttgggtgggtt	ccgagtatgc	cataagttaa	tatttatgat	aatacagaaa	3000
ctgttcagaa	gtcacaaaga	ggagcaagga	aaaaaggagg	gagatacaag	tgtaaataag	3060
aaccaggatt	taaacagaat	ttctcaacct	aagagaacta	tgaaggaaga	tttattatct	3120
ttggctataa	aaagtgacct	catacatca	gaactaggtg	gtctaaaaaa	gagtgtctgac	3180
agtttaggta	aattagagtt	acagcatatt	tcttccataa	atgtggaaga	agtttcagct	3240
actgaagccg	ctcccaggga	agcaaagcta	tttacaagtc	aagaaagtga	gacctcactt	3300
caaagtatac	gacttttggg	agcccttctg	gccatttgct	ttcatggtgc	cagaactagt	3360
caacagaaga	tgggaattgga	gttaccta	cagaacttgt	ctgtggaaag	tatattttt	3420
gaaatgaggg	accatctttc	ccagtcaaag	gtgattgaaa	cacaactagc	aaagccttta	3480
tttgatggcc	tgcttcgagt	tgccctcggg	aattattcag	cagattttga	acataatgat	3540
gctatgactg	agaagagtca	tcaatctgca	gaagaattgt	catcccagcc	tggtgatttt	3600
tcagaagaag	ctgaggattc	tcagtgttgt	agtttttaac	ttttagtgtg	agaagaaggt	3660
tacgaagcag	atagtgaag	caatcctgaa	gatggcgaaa	cccaggatga	tggggtagac	3720
ttaaagtctg	aaacagaagg	tttcagtgc	tcaagcagtc	caaatgactt	actcgaaaac	3780
ctcactcaag	gggaaataat	ttatcctgag	atttgatg	tggaattaaa	tttgctttct	3840
gctagtaaag	ccaaacttga	tgtgcttgcc	catgtatttg	agagtttttt	gaaaattatt	3900
aggcagaaag	aaaagaatgt	ttttctgctc	atgcaacagg	gaactgtgaa	aaatctttta	3960
ggaggggttct	tgagtatttt	aacacaggat	gattctgatt	ttcaagcatg	ccagagagta	4020
ttggtggatc	ttttggtatc	tttgatgagt	tcaagaacat	gttcagaaga	gctaaccctt	4080
cttttgagaa	tatttctgga	gaaatctcct	tgtacaaaaa	ttcttcttct	gggtattctg	4140
aaaattattg	aaagtgatac	tactatgagc	ccttcacagt	atctaaccct	ccctttactg	4200
cacgctccaa	atttaagcaa	cgggtgtttca	tcacaaaagt	atcctgggat	tttaaacagt	4260
aaggccatgg	gtttattgag	aagagcacga	gtttcacgga	gcaagaaaga	ggctgataga	4320
gagagttttc	cccatcggtc	gctttcatct	tggcacatag	ccccagtcca	cctgccgttg	4380
ctggggcaaa	actgctggcc	acacctatca	gaaggtttca	gtgtttccct	gtggttta	4440
gtggagtgtg	tccatgaagc	tgagagtact	acagaaaaag	gaaagaagat	aaagaaaaga	4500
aacaaatcat	taattttacc	agatagcagt	tttgatggta	cagagagcga	cagaccagaa	4560
ggtgcagagt	acataaatcc	tgggtgaaaga	ctcatagaag	aaggatgtat	tcatataatt	4620
tcactgggat	ccaaagcggt	gatgatccaa	gtgtgggctg	atccccacaa	tgccactctt	4680

atctttcgtg	tgtgcatgga	ttcaaatgat	gacatgaaag	ctgttttact	agcacaggtt	4740
gaatcacagg	agaatatattt	cctcccaagc	aaatggcaac	atttagtact	cacctactta	4800
cagcagcccc	aagggaaaag	gaggattcat	gggaaaatct	ccatatgggt	ctctggacag	4860
aggaagcctg	atgttacttt	ggattttatg	cttccaagaa	aaacaagttt	gtcatctgat	4920
agcaataaaa	cattttgcat	gattggccat	tgtttatcat	ccaagaaga	gtttttgcag	4980
ttggctggaa	aatgggacct	gggaaatttg	cttctcttca	acggagctaa	ggttggttca	5040
caagaggcct	tttatctgta	tgcttgtgga	ccaaccata	catctgtaat	gccatgtaag	5100
tatggcaagc	cagtcaatga	ctactccaaa	tatattaata	aagaaatttt	gcgatgtgaa	5160
caaatacagag	aactttttat	gaccaagaaa	gatgtggata	ttggtctctt	aattgaaagt	5220
ctttcagttg	tttatacaac	ttactgtcct	gctcagtata	ccatctatga	accagtgatt	5280
agacttaaaag	gtcaaatgaa	aaccaactc	tctcaaagac	ccttcagctc	aaaagaagtt	5340
cagagcatct	tattagaacc	tcatcatcta	aagaatctcc	aacctactga	atataaaaact	5400
attcaaggca	ttctgcacga	aattggtgga	actggcatat	ttgtttttct	ctttgccagg	5460
gttggtgaac	tcagtagctg	tgaagaaact	caagcattag	cactgcgagt	tatactctca	5520
ttaattaaat	acaaccaaca	aagagtacat	gaattagaaa	attgtaatgg	actttctatg	5580
attcatcagg	tgttgatcaa	acaaaaatgc	attgttgggt	tttacatttt	gaagaccctt	5640
cttgaaggat	gctgtggtga	agatattatt	tatatgaatg	agaatggaga	gtttaagttg	5700
gatgtagact	ctaagtctat	aatccaagat	gttaagctgt	tagaggaact	attgcttgac	5760
tggaagatat	ggagtaaagc	agagcaaggt	gtttgggaaa	ctttgctagc	agctctagaa	5820
gtcctcatca	gagcagatca	ccaccagcag	atgtttaata	ttaagcagtt	attgaaagct	5880
caagtgggtc	atcactttct	actgacttgt	caggttttgc	aggaatacaa	agaggggcaa	5940
ctcacacca	tgccccgaga	ggtttgtaga	tcatttgtga	aaattatagc	agaagtcctt	6000
ggatctcctc	cagatttgga	attattgaca	attatcttca	atttcctttt	agcagttcac	6060
cctcctacta	atacttacgt	ttgtcacaat	cccacgaact	tctacttttc	tttgcacata	6120
gatggcaaga	tctttcagga	gaaagtgcgg	tcaatcatgt	acctgaggca	ttccagcagt	6180
ggaggaaggt	cccttatgag	ccctggattt	atggtaataa	gcccatctgg	ttttactgct	6240
tcaccatatg	aaggagagaa	ttcctcta	attattccac	aacagatggc	cgcccatatg	6300
ctgcgttcta	gaagcctacc	agcattccct	acttcttcac	tactaacgca	atcacaaaaa	6360
ctgactggaa	gtttgggttg	tagtatcgac	aggttacaaa	atattgcaga	tacttatggt	6420
gccaccaat	caaagaaaca	aaattctttg	gggagttccg	acacactgaa	aaaaggcaaa	6480
gaggacgcat	tcatcagtag	ctgtgagtct	gcaaaaactg	tttgtgaaat	ggaagctgtc	6540
ctctcagccc	aggtctctgt	cagtgatgtc	caaaggggag	tgctgggatt	tccagtggtc	6600
aaagcagatc	ataaacagtt	gggagcagaa	cccaggtcag	aagatgacag	tcctggggat	6660
gagtcctgcc	cacgccgacc	tgattaccta	aagggattgg	cctccttcca	gcgaagccac	6720

agcactattg	caagccttgg	gctagctttt	ccttcacaga	acggatctgc	agctgttggc	6780
cgttggccaa	gtcttgttga	tagaaacact	gatgattggg	aaaactttgc	ctattctctt	6840
ggttatgagc	caaattacaa	ccgaactgca	agtgtcaca	gtgtaactga	agactgtttg	6900
gtacctatat	gctgtggatt	atatgaactc	ctaagtgggg	ttcttcttat	cctgcctgat	6960
gttttgcttg	aagatgtgat	ggacaagctt	attcaagcag	atacactttt	ggtcctcgtt	7020
aaccacccat	caccagctat	acaacaaggt	gttattaaac	tattagatgc	atattttgct	7080
agagcatcta	aggaacaaaa	agataaattt	ctgaagaatc	gtggattttc	cttgctagcc	7140
aaccagttgt	atcttcatcg	aggaactcaa	gaattgttag	aatgcttcat	cgaaatgttc	7200
tttggtcgac	atattggcct	tgatgaagaa	tttgatctgg	aagatgtgag	aaacatggga	7260
ttgtttcaga	agtggctctgt	cattcctatt	ctgggactaa	tagagacctc	tctatatgac	7320
aacatactct	tgcataatgc	tcttttactt	cttctccaaa	ttttaaattc	ttgttctaag	7380
gtagcagata	tgttgctgga	taatggctta	ctctatgtgt	tatgtaatac	agtagcagcc	7440
ctgaatggat	tagaaaagaa	cattcccatg	agtgaatata	aattgcttgc	ttgtgatata	7500
cagcaacttt	tcatagcagt	tacaattcat	gcttgcagtt	cctcaggctc	acaatatattt	7560
agggttattg	aagaccttat	tgtaatgctt	ggatatcttc	aaaatagcaa	aaacaagagg	7620
acacaaaata	tggctgttgc	actacagctt	agagttctcc	aggctgctat	ggaatttata	7680
aggaccaccg	caaatcatga	ctctgaaaac	ctcacagatt	cactccagtc	accttctgct	7740
cccatcatg	cagtagttca	aaagcggaaa	agcattgctg	gtcctcgaaa	atttcccctt	7800
gctcaaactg	aatcgcttct	gatgaaaatg	cgttcagtg	caaatgatga	gcttcatgtg	7860
atgatgcaac	ggagaatgag	ccaagagaac	cctagccaag	caactgaaac	ggaacttgcg	7920
cagagactac	agaggctcac	tgtttttagca	gtcaacagga	ttatttatca	agaatttaat	7980
tcagacatta	ttgacatttt	gagaactcca	gaaaatgtaa	ctcaaagcaa	gacctcagtt	8040
ttccagaccg	aaattttctga	ggaaaatatt	catcatgaac	agtcttctgt	tttcaatcca	8100
tttcagaaaag	aaatttttac	atatctggta	gaaggattca	aagtatctat	tggttcaagt	8160
aaagccagt	gtccaagca	gcaatggact	aaaattctgt	ggctttgtaa	ggagaccttc	8220
cgaatgcagc	ttgggagact	actagtgc	atgttgcgc	cagcccacgc	tgcacaagag	8280
agaaagcaaa	tttttgaaat	agttcatgaa	ccaaatcatc	aggaaatact	acgagactgt	8340
ctcagcccat	ccctacaaca	tggagccaag	ttagttttgt	atgtgtcaga	gttgatacat	8400
aatcaccaag	gtgaattgac	tgaagaagag	ctaggcacag	cagaactgct	tatgaatgct	8460
ttgaagtatt	gtggtcacaa	gtgcatccct	cccagtgc	caacaaaagc	agaccttatt	8520
aaaatgatca	aagaggaaca	aaagaaatat	gaaactgaag	aaggagtga	taaagctgct	8580
tggcagaaaa	cagttaacaa	taatcaacaa	agtctctttc	agcgtctgga	ttcaaaatca	8640
aaggatatat	ctaaaatagc	tgcagatatc	accaggcag	tgtctctctc	ccaaggaaat	8700
gagagaaaaa	aggtgatcca	gcatattaga	ggaatgtata	aagtagattt	gagtgccagc	8760

agacattggc	aggaacttat	tcagcagctg	acacatgata	gagcagtatg	gtatgacccc	8820
atctactatc	caacctcatg	gcagttggat	ccaacagaag	ggccaaatcg	agagaggaga	8880
cgtttacaga	gatgttattt	aactattcca	aataagtatc	tccttaggga	tagacagaaa	8940
tcagaagatg	ttgtcaaacc	accactctct	tacctgtttg	aagacaaaac	tcattcttct	9000
ttctcttcta	ctgtcaaaga	caaagctgca	agtgaatcta	taagagtga	tcgaagatgc	9060
atcagtgttg	caccatctag	agagacagct	ggtgaattgt	tactaggtaa	atgtggaatg	9120
tattttgtgg	aagataatgc	ttctgataca	gttgaaagtt	cgagccttca	gggagagttg	9180
gaaccagcat	cattttcctg	gacatatgaa	gaaattaaag	aagttcacaa	gcgttggtgg	9240
caattgagag	ataatgctgt	agaaatcttt	ctaacaaatg	gcagaacact	cctgttgga	9300
tttgataaca	ccaaggttcg	tgatgatgta	taccacaata	tactcacaaa	taacctccct	9360
aatcttctgg	aatatggtaa	catcaccgct	ctgacaaatt	tatggtatac	tgggcaaatt	9420
actaattttg	aatatttgac	tcacttaaac	aaacatgctg	gccgatcctt	caatgatctc	9480
atgcagtatc	ctgtgttccc	atttatactt	gctgactacg	ttagtgagac	acttgacctc	9540
aatgatctgt	tgatatacag	aaatctctct	aaacctatag	ctgttcagta	taaagaaaaa	9600
gaagatcggt	atgtggacac	atacaagtac	ttggaggaag	agtaccgcaa	aggagccaga	9660
gaagatgacc	ccatgcctcc	cgtgcagccc	tatcactatg	gctcccacta	ttccaatagc	9720
ggcactgtgc	ttcacttcc	ggtcaggatg	cctcctttca	ctaaaatgtt	tttagcctat	9780
caagatcaaa	gttttgacat	tccagacaga	acttttcatt	ctacaaatac	aacttggcga	9840
ctctcatctt	ttgaatctat	gactgatgtg	aaagaactta	tcccagagtt	tttctatctt	9900
ccagagttcc	tagttaaccg	tgaaggtttt	gattttgggtg	tgcgtcagaa	tgggtgaacgg	9960
gttaatcacg	tcaaccttcc	cccttgggcg	cgtaatgata	ctcgtctttt	tatcctcatc	10020
catcggcagg	ctctagagtc	tgactacgtg	tcgcagaaca	tctgtcagtg	gattgacttg	10080
gtgtttgggt	ataagcaaaa	ggggaaggct	tctgttcaag	cgatcaatgt	ttttcatcct	10140
gctacatatt	ttggaatgga	tgtctctgca	gttgaagatc	cagttcagag	acgagcgcta	10200
gaaaccatga	taaaaaccta	cgggcagact	ccccgtcagc	tgttccacat	ggcccatgtg	10260
agcagacctg	gagccaagct	caatattgaa	ggagagcttc	cagctgctgt	ggggttgcta	10320
gtgcagtttg	ctttcagga	gacccgagaa	cagggtcaaag	aaatcaccta	tccgagtcct	10380
ttgtcatgga	taaaaggctt	gaaatggggg	gaatacgtgg	gttccccag	tgctccagta	10440
cctgtggtct	gcttcagcca	gccccacgga	gaaagatttg	gctctctcca	ggctctgccc	10500
accagagcaa	tctgtggttt	gtcacggaat	ttctgtcttc	tgatgacata	tagcaaggaa	10560
caagggtgtga	gaagcatgaa	cagtacggac	attcagtggg	cagccatcct	gagctgggga	10620
tatgctgata	atattttaag	gttgaagagt	aaacaaagtg	agcctccagt	aaactttatt	10680
caaagttcac	aacagtacca	ggtgactagt	tgtgcttggg	tgctgacag	ttgccagctg	10740
tttactggaa	gcaaatgcgg	tgtcatcaca	gcctacacaa	acagatttac	aagcagcacg	10800

ccatcagaaa tagaaatgga gactcaaata catctctatg gtcacacaga agagataacc	10860
agcttattttg tttgcaaacc atacagtata ctgataagtg tgagcagaga cggaacctgc	10920
atcatatggg atttaaacag gttatgctat gtacaaagtc tggcgggaca caaaagccct	10980
gtcacagctg tctctgccag tgaaacctca ggtgatattg ctactgtgtg tgattcagct	11040
ggcggaggca gtgacctcag actctggacg gtgaacgggg atctcgttgg acatgtccac	11100
tgcagggaga tcatctgttc cgtggctttc tccaaccagc ctgagggagt atctatcaat	11160
gtaatcgctg ggggattaga aaatggaatt gtaaggttat ggagcacatg ggacttaaag	11220
cctgtgagag aaattacatt tcccaaataca aataagccca tcatcagcct tacattttct	11280
tgtgatggcc accatttgta cacagcaaac agtgatggga ccgtgattgc ctggtgtcgg	11340
aaggaccagc agcgcttgaa acagccaatg ttctattcct tccttagcag ctatgcagcc	11400
gggtga	11406

<210> 174
 <211> 3051
 <212> DNA
 <213> Homo sapiens

<400> 174	
atggtgctgc ccacctgccc catggcggag ttgcgctgc cgcggcacag cgcggtcatg	60
gagcgccttc gccggcgcac cgagctgtgc cggcgccacc acagcacctg cgaggcccgc	120
tacgaggccg tgtcgcccga ggcctggag ctggagcgcc aacacacctt cgccctgcac	180
cagcgtgca tccaggccaa ggccaagcgc gccgggaagc acaggcagcc gcccgccgcc	240
acggccccgg cgcccgccgc cccggccccg cgcttgacg ccgctgacgg ccccgagcac	300
ggccgccccg ccacgcatct tcatgataca gttaagagga atcttgacag cgccacttcc	360
cctcagaatg gcgatcaaca gaatggctac ggggacctct ttctgggca taagaagact	420
cgccgggagg cccctctggg agttgccatc tcttccaatg gactgcctcc agcctcccc	480
ctcggtcagt ctgacaagcc ttctggagcc gacgcctgc agtccagtgg gaagcactct	540
ctggggctag actctctcaa caaaaagcgt ctggctgact ccagccttca cttgaatgga	600
ggcagtaacc ccagtgagtc atttctctg agcctgaata aagaactgaa gcaggagcct	660
gtcgaagacc tgccttgcac gatcactggg actgtcggct ccatatcgca aagcaacctc	720
atgccagacc tcaaccttaa cgagcaggag tggaaggagc tcatcgagga gctgaacagg	780
tcggtgcccc atgaagacat gaaggacctg tttaatgagg acttcgagga gaagaaggac	840
ccagagtctt ctggctctgc cacacaaacc cccttggcac aggacattaa tattaagacg	900
gaattctctc cagcagcctt tgagcaagaa cagttaggct ctccacaagt gagggccggg	960
tctgcagggc agacctttct ggggccttcc tctgcccctg tgagtacaga ttccccagc	1020
ctagggggct cccaaacctt attccacacc tctggtcagc cccgggcgga caatcccagt	1080
ccaaacctga tgccggcatc agcccaggcc cagaacgcac aaagagccct tgcagggtgtg	1140
gtattgcccc gtcaggggcc aggagggggc tcagagctgt cctctgcccc ccagctccag	1200

cagatcgctg	ccaagcagaa	gcgcgagcag	atgctccaga	acccacagca	ggccaccccg	1260
gcaccagccc	cgggccagat	gtccacatgg	cagcagacgg	ggccctccca	cagttcctta	1320
gatgtccctt	accccatgga	gaagcctgcc	agcccttcca	gctacaagca	agacttcact	1380
aactccaaac	tgctcatgat	gcctagtgtg	aataagagtt	cccctcggcc	cggaggcccc	1440
tacctccagc	ccagccatgt	gaacctgctg	agtcaccagc	caccgagtaa	cttgaatcag	1500
aactccgcga	ataaccaggg	gtctgtgctg	gactacggca	atacaaaacc	ccttttctcat	1560
tacaaagcgg	actgtgggca	aggcagcccc	gggtctggcc	agagcaagcc	agccctgatg	1620
gcttatcttc	cccagcagct	gtcccatata	agtcacgagc	agaactccct	gtttctgatg	1680
aagccaaagc	caggaaatat	gcctttccga	tacttggttc	cacctggcca	ggagcagaac	1740
ccttccagtg	tccctgtgca	agcccaggct	accagtgttg	ggaccagcc	gcctgccgtg	1800
tccgtggcca	gtccccacaa	cagctcccc	tatctcagca	gccagcaaca	ggccgctgta	1860
atgaagcagc	atcagttgct	tttgaccaa	cagaaacaaa	gggagcagca	gcaaaagcat	1920
ttacagcaac	agcagttcct	tcagaggcaa	cagcaccttc	tcgcggaaca	ggagaagcaa	1980
cagtttcagc	gccatctgac	ccgcccacca	ccccagtacc	aagacccgac	acaaggcagc	2040
ttcccacagc	aggttggaca	gttcacaggg	tcctctgctg	ccgtgcccgg	catgaacacc	2100
ttgggtccat	ccaactccag	ctgtcctcga	gtgttccttc	aggctgggaa	tctgatgcca	2160
atggggccctg	gacatgcttc	agtttcctct	ctccccacaa	actcaggcca	acaggaccgg	2220
ggtgtggctc	agttccctgg	ctcccaaaac	atgcctcaga	gcagcctcta	tggcatggct	2280
tctggcataa	cccagatagt	tgcccagccc	ccgccacagg	ccaccaatgg	acatgcccac	2340
attccacggc	agaccaacgt	gggccagaac	acctccgtct	cagctgccta	tgggcagaac	2400
tctctgggaa	gctctggcct	ctcccagcag	cacaataagg	ggaccctgaa	ccctggttta	2460
acaaagccac	cgggtcccaag	ggtgtcacca	gccatgggag	gccagaattc	ctcctggcag	2520
catcagggaa	tgccgaacct	cagtggccag	accccaggga	acagcaacgt	gagtcccttc	2580
actgcagcct	ccagtttcca	catgcagcag	caggcccacc	tgaaaatgtc	tagcccgcaa	2640
ttctcccagg	cagtgcccaa	caggcccatg	gctcccatga	gctcagcagc	tgccgtgggg	2700
tccttgctac	ccccagttag	tgcacagcag	aggaccagcg	cccctgcccc	agcaccaccc	2760
ccaacagccc	ctcagcaggg	cttgccctggc	ctgagcccag	cagggcctga	gctggggggcc	2820
ttcagccaga	gccctgcctc	acagatgggc	ggtcgggagg	ggctgcactg	caccagggcc	2880
taccctgtgc	ggaccgcggg	ccaggagctg	ccttttgctt	atagcgggca	gccaggtggc	2940
agtgggctct	ctagtgtggc	tggacacacc	gatctgatcg	actccctgct	gaagaacagg	3000
acttcagagg	agtggatgag	tgatttggac	gacctgttag	ggtctcagta	a	3051

<210> 175
 <211> 1296
 <212> DNA
 <213> Homo sapiens

<400> 175
 atgttcttcg ggggagaagg gagcttgact tacacttttg taataatttg cttcctgaca 60
 ctaaggctgt ctgctagtca gaattgcctc aaaaagagtc tagaagatgt tgtcattgac 120
 atccagtcac ctctttctaa gggaatcaga ggcaatgagc ccgtatatac ttcaactcaa 180
 gaagactgca ttaattcttg ctgttcaaca aaaaacatat caggggacaa agcatgtaac 240
 ttgatgatct tcgacactcg aaaaacagct agacaacca actgctacct atttttctgt 300
 cccaacgagg aagcctgtcc attgaaacca gcaaaaggac ttatgagtta caggataatt 360
 acagattttc catctttgac cagaaatttg ccaagccaag agttaccca ggaagattct 420
 ctcttacatg gccaattttc acaagcagtc actcccctag cccatcatca cacagattat 480
 tcaaagccca ccgatatctc atggagagac acactttctc agaagtttg atcctcagat 540
 cacttggaaga aactatttta gatggatgaa gcaagtgcc agctccttg ttataaggaa 600
 aaaggccatt ctgagagttc acaattttcc tctgatcaag aaatagctca tctgctgcct 660
 gaaaatgtga gtgcgctccc agctacggtg gcagttgctt ctccacatac cacctcggct 720
 actccaaagc ccgccaccct tctaccacc aatgcttcag tgacaccttc tgggacttcc 780
 cagccacagc tggccaccac agctccacct gtaaccactg tcactttctca gcctcccacg 840
 accctcattt ctacagtttt tacacgggct gcggctacac tccaagcaat ggctacaaca 900
 gcagttctga ctaccacctt tcaggcacct acggactcga aaggcagctt agaaaccata 960
 ccgtttacag aaatctccaa cctaactttg aacacagga atgtgtataa ccctactgca 1020
 ctttctatgt caaatgtgga gtcttcact atgaataaaa ctgcttcctg ggaaggtagg 1080
 gaggccagtc caggcagttc ctcccagggc agtggtccag aaaatcagta cggccttcca 1140
 tttgaaaaat ggcttcttat cgggtccctg ctctttggtg tcctgttcct ggtgataggc 1200
 ctgctcctcc tgggtagaat cctctcgga tcaactcgca ggaaacgtta ctcaagactg 1260
 gattatttga tcaatgggat ctatgtggac atctaa 1296

<210> 176
 <211> 378
 <212> DNA
 <213> Homo sapiens

<400> 176
 atgccgtcgg agaagacctt caagcagcgc cgcaccttcg acaaagagt agaagatgtc 60
 cgacttattc gagagcagca tccaaccaa atcccgggtga taatagaacg atacaaggtt 120
 gagaagcagc ttcctgttct ggataaaaca aagttccttg tacctgacca tgtcaacatg 180
 agtgagctca tcaagataat tagaaggcgc ttacagctca atgctaata ggccttcttc 240
 ctgttggtga acggacacag catggctcagc gtctccacac caatctcaga ggtgtatgag 300
 agtgagaaa atgaagatgg attcctgtac atgggtctatg cctcccagga gacgttcggg 360
 atgaaattgt cagtgtaa 378

<210> 177
 <211> 2544
 <212> DNA
 <213> Homo sapiens

<400> 177
 atggagccct tgaagagcct cttcctcaag agccctctag ggtcatggaa tggcagtggc 60
 agcgggggtg gtgggggcggt tggaggaggc cggcctgagg ggtctccaaa ggcagcgggt 120
 tatgccaacc cgggtgtggac agccctgttc gactacgagc ccagtgggca ggatgagctg 180
 gccctgagga aggggtgaccg tgtggagggtg ctgtcccggg acgcagccat ctcaggagac 240
 gagggtgtgtt gggcggggcca ggtgggtggc cagggtgggca tcttcccgtc caactatgtg 300
 tctcgggggtg gcggcccgcg cccctgcgag gtggccagct tccaggagct gcggctggag 360
 gaggtgatcg gcattggagg ctttggcaag gtgtacaggg gcagctggcg aggtgagctg 420
 gtggctgtga aggcagctcg ccaggacccc gatgaggaca tcagtgtgac agccgagagc 480
 gttcgccagg agggccggct cttcgccatg ctggcacacc ccaacatcat tgccctcaag 540
 gctgtgtgcc tggaggagcc caacctgtgc ctggtgatgg agtatgcagc cgggtggggcc 600
 ctgagccgag ctctggccgg gcggcgcggt cctcccatg tgctggtcaa ctgggctgtg 660
 cagattgccc gtgggatgca ctacctgcac tgcgaggccc tgggtgccgt catccaccgt 720
 gatctcaagt ccaacaacat tttgctgctg cagcccattg agagtgcaga catggagcac 780
 aagaccctga agatcaccga ctttggcctg gcccgagagt ggcacaaaac cacacaaatg 840
 agtgccgcgg gcacctacgc ctggatggct cctgaggtta tcaaggcctc caccttctct 900
 aagggcagtg acgtctggag ttttgggggtg ctgctgtggg aactgctgac cggggagggtg 960
 ccataccgtg gcattgactg ccttgtctgt gcctatggcg tagctgttaa caagctcaca 1020
 ctgcccattc catccacctg ccccagagccc ttgcacagc ttatggccga ctgctgggcg 1080
 caggaccccc accgcaggcc cgacttcgcc tccatcctgc agcagttgga ggcgctggag 1140
 gcacaggtcc tacgggaaat gccgcgggac tccttccatt ccatgcagga aggttggaag 1200
 cgcgagatcc agggctctct cgacgagctg cgagccaagg aaaaggaact actgagccgc 1260
 gaggaggagc tgacgcgagc ggcgcgcgag cagcggtcac aggcggagca gctgcggcgg 1320
 cgcgagcacc tgctggccca gtgggagcta gaggtgttcg agcgcgagct gacgctgctg 1380
 ctgcagcagg tggaccgcga gcgaccgcac gtgcgccgcc gccgcgggac attcaagcgc 1440
 agcaagctcc gggcgcgca cggcggcgag cgtatcagca tgccactcga cttcaagcac 1500
 cgcacaccg tgcaggcctc accgggcctt gaccggagga gaaacgtctt cgaggctcggg 1560
 cctggggatt cgcccacctt tccccgggtc cgagccatcc agttggagcc tgcagagcca 1620
 ggccaggcat ggggccgcca gtccccccga cgtctggagg actcaagcaa tggagagcgg 1680
 cgagcatgct gggcttgggg tcccagttcc cccaagcctg gggaagccca gaatgggagg 1740
 agaaggtccc gcatggacga agccacatgg tacctggatt cagatgactc atccccctta 1800
 ggatctcctt ccacaccccc agcactcaat ggtaaccccc cgcggcctag cctggagccc 1860

gaggagccca	agaggcctgt	ccccgcagag	cgcggttagca	gctctgggac	gccaagctg	1920
atccagcggg	cgctgctgcg	cggcaccgcc	ctgctcgcct	cgctgggcct	tggccgcgac	1980
ctgcagccgc	cgggaggccc	aggacgcgag	cgcggggagt	ccccgacaac	accccccacg	2040
ccaacgcccc	cgccctgccc	gaccgagccg	cccccttccc	cgctcatctg	cttctcgctc	2100
aagacgcccc	actccccgcc	cactcctgca	cccctgttgc	tggacctggg	tatccctgtg	2160
ggccagcggg	cagccaagag	cccccgacgt	gaggaggagc	cccgcgagg	cactgtctca	2220
ccccaccgg	ggacatcacg	ctctgctcct	ggcaccacag	gcaccacacg	ttcaccaccc	2280
ctgggcctca	tcagccgacc	tcggccctcg	ccccttcgca	gccgcattga	tccctggagc	2340
tttgtgtcag	ctgggccacg	gccttctccc	ctgccatcac	cacagcctgc	accccgccga	2400
gcaccctgga	ccttgttccc	ggactcagac	cccttctggg	actccccacc	tgccaacccc	2460
ttccaggggg	gccccagga	ctgcagggca	cagaccaaag	acatgggtgc	ccaggccccc	2520
tgggtgccgg	aagcggggcc	ttga				2544

<210> 178
 <211> 1881
 <212> DNA
 <213> Homo sapiens

<400> 178	
atggacgaac	aggaggcatt gaactcaatc atgaacgatc tgggtggccct ccagatgaac 60
cgacgtcacc	ggatgcctgg atatgagacc atgaagaaca aagacacagg tcaactcaat 120
aggcagagtg	acgtcagaat caagtctgag cacaacgggg agaggcgaat tatagcgttc 180
agccggcctg	tgaatatatga agatgtggag cacaaggatga caacagtatt tggacaacct 240
cttgatctac	attacatgaa caatgagctc tccatcctgc tgaaaaacca agatgatctt 300
gataaagcaa	ttgacatttt agatagaagc tcaagcatga aaagccttag gatattgctg 360
ttgtcccagg	acagaaacca taacagttcc tctccccact ctgggggtgtc cagacagggtg 420
cggatcaagg	cttcccagtc cgcaggggat ataaatacta tctaccagcc ccccgagccc 480
agaagcaggc	acctctctgt cagctcccag aaccctggcc gaagctcacc tccccctggc 540
tatgttcctg	agcggcagca gcacattgcc cggcaggggt cctacaccag catcaacagt 600
gagggggagt	tcatcccaga gaccagcgag cagtgcattgc tggatcccct gagcagtga 660
gaaaattcct	tgtctggaag ctgccaatcc ttggacaggt cagcagacag cccatccttc 720
cggaaatcac	gaatgtcccg tgcccagagc ttccctgaca acagacagga atactcagat 780
cgggaaactc	agctttatga caaaggggtc aaaggtggaa cctacccccg gcgctaccac 840
gtgtctgtgc	accacaagga ctacagtgat ggcagaagaa catttccccg aatacggcgt 900
catcaaggca	acttggtcac cctgggtgcc tccagccgct ccctgagcac aaatggcgag 960
aacatgggtc	tggctgtgca atacctggac ccccggtgggc gcctgcggag tgcggacagc 1020
gagaatgccc	tctctgtgca ggagaggaat gtgccaacca agtctcccag tgccccatc 1080
aactggcgcc	ggggaaagct cctggggccag ggtgccttcg gcaggggtcta tttgtgctat 1140

PCTAU2016050927-seq1-000001-EN-20161013

gacgtggaca cgggacgtga acttgcttcc aagcaggtcc aatttgatcc agacagtcct	1200
gagacaagca aggaggtgag tgctctggag tgcgagatcc agttgctaaa gaacttgcat	1260
catgagcgca tcgtgcagta ctatggctgt ctgcgggacc gcgctgagaa gaccctgacc	1320
atcttcatgg agtacatgcc agggggctcg gtgaaagacc agttgaaggc ttacggtgct	1380
ctgacagaga gcgtgacccg aaagtacacg cggcagatcc tggagggcat gtcctacctg	1440
cacagcaaca tgattgttca ccgggacatt aaggagacca acatcctccg agactctgct	1500
gggaatgtaa agctggggga ctttggggcc agcaaagcc tgcagacgat ctgtatgtcg	1560
gggacgggca tgcgtccgt cactggcaca ccctactgga tgagccctga ggtgatcagc	1620
ggcgagggct atggaaggaa agcagacgtg tggagcctgg gctgcactgt ggtggagatg	1680
ctgacagaga aaccaccgtg ggcagagtat gaagctatgg ccgccatctt caagattgcc	1740
accagccca ccaatcctca gctgccctcc cacatctctg aacatggccg ggacttcctg	1800
aggcgcattt ttgtggaggc tcgccagaga cttcagctg aggagctgct cacacaccac	1860
tttgacagc tcatgtactg a	1881

<210> 179
 <211> 4125
 <212> DNA
 <213> Homo sapiens

<400> 179	
atgagcacgg aggcggacga gggcatcact ttctctgtgc cacccttcgc cccctcgggc	60
ttctgcacca tccccgaggg cggcatctgc aggaggggag gagcggcggc ggtgggcgag	120
ggcgaggagc accagctgcc accgccgccg ccgggcagct tctggaacgt ggagagcgcc	180
gctgcccctg gcatcggttg tccggcggcc acctcctcga gcagtgccac ccgaggccgg	240
ggcagctctg ttggcggggg cagccgacgg accacggtgg catatgtgat caacgaagcg	300
agccaagggc aactggtggt ggccgagagc gaggccctgc agagcttgcg ggaggcgtgc	360
gagacagtgg gcgccaccct ggaaaccctg ctttttggga aactcgactt tggagaaacc	420
accgtgctgg accgctttta caatgcagat attgcggtgg tggagatgag cgatgccttc	480
cggcagccgt ccttgtttta ccacctggg gtgagagaaa gtttcagcat ggccaacaac	540
atcatcctct actgtgatac taactcggac tctctgcagt cactgaagga aataatttgc	600
cagaagaata ctatgtgcac tgggaactac accttgttc cttacatgat aactccacat	660
aacaaagtct actgctgtga cagcagcttc atgaaggggt tgacagagct catgcaaccg	720
aacttcgagc tgcttcttgg acccatctgc ttacctcttg tggatcgttt tattcaactt	780
ttgaagggtg cacaagcaag ttctagccag tacttccggg aatctatact caatgacatc	840
aggaaagctc gtaatttata cactggtaaa gaattggcag ctgagttggc aagaattcgg	900
cagcgagtag ataatatcga agtcttgaca gcagatattg tcataaatct gttactttcc	960
tacagagata tccaggacta tgattctatt gtgaagctgg tagagacttt agaaaaactg	1020

ccaacctttg	atttggcctc	ccatcaccat	gtgaagtttc	attatgcatt	tgcactgaat	1080
aggagaaatc	tccctggtga	cagagcaaaa	gctcttgata	ttatgattcc	catggtgcaa	1140
agcgaaggac	aagttgcttc	agatatgtat	tgcctagttg	gtcgaatcta	caaagatatg	1200
tttttggact	ctaatttcac	ggacactgaa	agcagagacc	atggagcttc	ttggttcaaa	1260
aaggcatttg	aatctgagcc	aacactacag	tcaggaatta	attatgcggt	cctcctcctg	1320
gcagctggac	accagtttga	atcttccttt	gagctccgga	aagttggggg	gaagctaagt	1380
agtcttcttg	gtaaaaaggg	aaacttggaa	aaactccaga	gctactggga	agttggattt	1440
tttctggggg	ccagcgtcct	agccaatgac	cacatgagag	tcattcaagc	atctgaaaag	1500
ctttttaaac	tgaagacacc	agcatggtac	ctcaagtcta	ttgtagagac	aattttaata	1560
tataagcatt	ttgtgaaact	gaccacagaa	cagcctgtgg	ccaagcaaga	acttgtggac	1620
ttttggatgg	atttcctggt	cgaggccaca	aagacagatg	ttactgtggt	taggtttcca	1680
gtattaatat	tagaaccaac	caaaatctat	caaccttctt	atttgtctat	caacaatgaa	1740
gttgaggaaa	agacaatctc	tatttggcac	gtgcttcctg	atgacaagaa	aggtatacat	1800
gagtggaatt	ttagtgcctc	ttctgtcagg	ggagttagta	tttctaaatt	tgaagaaaga	1860
tgctgctttc	tttatgtgct	tcacaattct	gatgatttcc	aaatctattt	ctgtacagaa	1920
cttcattgta	aaaagttttt	tgagatggtg	aacaccatta	ccgaagagaa	ggggagaagc	1980
acagaggaag	gagactgtga	aagtgacttg	ctggagtatg	actatgaata	tgatgaaaat	2040
ggtgacagag	tcgttttagg	aaaaggcact	tatgggatag	tctacgcagg	tcgggacttg	2100
agcaaccaag	tcagaattgc	tattaaggaa	atcccagaga	gagacagcag	atactctcag	2160
cccctgcatg	aagaaatagc	attgcataaa	cacctgaagc	acaaaaatat	tgtccagtat	2220
ctgggctctt	tcagtgagaa	tggtttcatt	aaaatcttca	tggagcaggt	ccctggagga	2280
agtctttctg	ctctccttcg	ttccaaatgg	ggtccattaa	aagacaatga	gcaaacaatt	2340
ggcttttata	caaagcaaat	actggaagga	ttaaaatata	tccatgacaa	tcagatagtt	2400
caccgggaca	taaaggggtga	caatgtgttg	attaatacct	acagtgggtg	tctcaagatc	2460
tctgacttcg	gaacatcaaa	gaggcttgct	ggcataaacc	cctgtactga	aacttttact	2520
ggtaccctcc	agtatatggc	accagaaata	atagataaag	gaccaagagg	ctacggaaaa	2580
gcagcagaca	tctggtctct	gggctgtaca	atcattgaaa	tggccacagg	aaaaccccca	2640
ttttatgaac	tgggagaacc	acaagcagct	atgttcaagg	tgggaatggt	taaagtccac	2700
cctgagatcc	cagagtccat	gtctgcagag	gccaaaggcat	tcatactgaa	atgttttgaa	2760
ccagatcctg	acaagagagc	ctgtgctaac	gacttgcttg	ttgatgagtt	tttaaaagtt	2820
tcaagcaaaa	agaaaaagac	acaacctaag	ctttcagctc	tttcagctgg	atcaaatgaa	2880
tatctcagga	gtatatcctt	gccggtacct	gtgctggtgg	aggacaccag	cagcagcagt	2940
gagtacggct	cagtttcacc	cgacacggag	ttgaaagtgg	accccttctc	tttcaaaaca	3000
agagccaagt	cctgcggaga	aagagatgtc	aagggaattc	ggacactctt	tttgggcatt	3060

ccagatgaga	attttgaaga	tcacagtgtc	cctccttccc	ctgaagaaaa	agattctgga	3120
ttcttcatgc	tgaggaagga	cagtgtgagg	cgagctaccc	ttcacaggat	cctgacggaa	3180
gaccaagaca	aaattgtgag	aaacctaata	gaatcttttag	ctcagggggc	tgaagaaccg	3240
aaactaaaat	gggaacacat	cacaaccctc	attgcaagcc	tcagagaatt	tgtgagatcc	3300
actgaccgaa	aatcatagc	caccacactg	tcaaagctga	aactggagct	ggacttcgac	3360
agccatggca	ttagccaagt	ccaggtggta	ctcttttggtt	ttcaagatgc	tgtcaataaa	3420
gttcttcgga	atcataacat	caagccgcac	tggatgtttg	ccttagacag	tatcattcgg	3480
aaggcggtag	agacagccat	taccatcctg	gttccagaac	taaggccaca	tttcagcctt	3540
gcatctgaga	gtgatactgc	tgatcaagaa	gacttggatg	tagaagatga	ccatgaggaa	3600
cagccttcaa	atcaaactgt	ccgaagacct	caggctgtca	ttgaagatgc	tgtggctacc	3660
tcaggcgtga	gcacgctcag	ttctactgtg	tctcatgatt	cccagagtgc	tcaccggtca	3720
ctgaatgtac	agcttggag	gatgaaaata	gaaaccaata	gattactgga	agaatttggtt	3780
cggaaagaga	aagaattaca	agcactcctt	catcgagcta	ttgaagaaaa	agaccaagaa	3840
attaaacacc	tgaagcttaa	gtcccaaccc	atagaaattc	ctgaattgcc	tgtatttcat	3900
ctaaattctt	ctggcacaaa	tactgaagat	tctgaactta	ccgactggct	gagagtgaat	3960
ggagctgatg	aagacactat	aagccggttt	ttggctgaag	attatacact	attggatgtt	4020
ctctactatg	ttacacgtga	tgacttaaaa	tgcttgagac	taaggggagg	gatgctgtgc	4080
acactgtgga	aggctatcat	tgactttcga	aacaaacaga	cttga		4125

<210> 180
 <211> 3498
 <212> DNA
 <213> Homo sapiens

<400> 180	
atggcgaacg	actcccctgc
aaaaagtctg	gtggacatcg
acctctcctc	cctgcgggat
60	
cctgctggga	tttttgagct
ggtggaagtg	gttggaatg
gcacctatgg	acaagtctat
120	
aagggtcgac	atgttaaaac
gggtcagttg	gcagccatca
aagttatgga	tgtcactgag
180	
gatgaagagg	aagaaatcaa
actggagata	aatatgctaa
agaaatactc	tcatcacaga
240	
aacattgcaa	catattatgg
tgctttcatc	aaaaagagcc
ctccaggaca	tgatgaccaa
300	
ctctggcttg	ttatggagtt
ctgtggggct	gggtccatta
cagaccttgt	gaagaacacc
360	
aaaggaaca	cactcaaaga
agactggatc	gcttacatct
ccagagaaat	cctgagggga
420	
ctggcacatc	ttcacattca
tcatgtgatt	caccgggata
tcaagggcca	gaatgtgttg
480	
ctgactgaga	atgcagaggt
gaaacttggt	gacttttggtg
tgagtgtctca	gctggacagg
540	
actgtggggc	ggagaaatac
gttcataggc	actccctact
ggatggctcc	tgaggctcatc
600	
gcctgtgatg	agaaccacga
tgccacctat	gattacagaa
gtgatctttg	gtcttgtggc
660	
attacagcca	ttgagatggc
agaaggtgct	ccccctctct
gtgacatgca	tccaatgaga
720	
gcactgtttc	tcattcccag
aaaccctcct	ccccggctga
agtcaaaaaa	atgggtcgaag
780	

aagtttttta	gttttataga	aggggtgcctg	gtgaagaatt	acatgcagcg	gccctctaca	840
gagcagcttt	tgaacatcc	ttttataagg	gatcagccaa	atgaaaggca	agttagaatc	900
cagcttaagg	atcatataga	tcgtaccagg	aagaagagag	gcgagaaaga	tgaaactgag	960
tatgagtaca	gtgggagtga	ggaagaagag	gaggaagtgc	ctgaacagga	aggagagcca	1020
agttccattg	tgaacgtgcc	tgggtgagtct	actcttcgcc	gagatttcct	gagactgcag	1080
caggagaaca	aggaacgttc	cgaggctctt	cggagacaac	agttactaca	ggagcaacag	1140
ctccgggagc	aggaagaata	taaaaggcaa	ctgctggcag	agagacagaa	gcggattgag	1200
cagcagaaaag	aacagaggcg	acggctagaa	gagcaacaaa	ggagagagcg	ggaagctaga	1260
aggcagcagg	aacgtgaaca	gcgaaggaga	gaacaagaag	aaaagaggcg	tctagaggag	1320
ttggagagaa	ggcgcaaaga	agaagaggag	aggagacggg	cagaagaaga	aaagaggaga	1380
gttgaaagag	aacaggagta	tatcaggcga	cagctagaag	aggagcagcg	gcacttggaa	1440
gtccttcagc	agcagctgct	ccaggagcag	gccatgttac	tgcattgacca	taggaggccg	1500
cacccgcagc	actcgagca	gccgccacca	ccgcagcagg	aaaggagcaa	gccaagcttc	1560
catgctcccg	agcccaaagc	ccactacgag	cctgctgacc	gagcgcgaga	ggttcctgtg	1620
agaacaacat	ctcgctcccc	tgttctgtcc	cgtcgagatt	ccccactgca	gggcagtggg	1680
cagcagaata	gccaggcagg	acagagaaac	tccaccagta	ttgagcccag	gcttctgtgg	1740
gagagagtgg	agaagctggt	gcccagacct	ggcagtggca	gctcctcagg	gtccagcaac	1800
tcaggatccc	agcccgggtc	tcaccctggg	tctcagagtg	gctccgggga	acgcttcaga	1860
gtgagatcat	catccaagtc	tgaaggctct	ccatctcagc	gcctggaaaa	tgcagtgaaa	1920
aaacctgaag	ataaaaagga	agttttcaga	cccctcaagc	ctgctgtaag	gattgatctg	1980
accgcactgg	caaagagct	tcgagcagtg	gaagatgtac	ggccacctca	caaagtaacg	2040
gactactcct	catccagtga	ggagtccggg	acgacggatg	aggaggacga	cgatgtggag	2100
caggaagggg	ctgacgagtc	cacctcagga	ccagaggaca	ccagagcagc	gtcatctctg	2160
aatttgagca	atggtgaaac	ggaatctgtg	aaaaccatga	ttgtccatga	tgatgtagaa	2220
agtgagccgg	ccatgacccc	atccaaggag	ggcactctaa	tcgtccgcca	gactcagtcc	2280
gctagtagca	cactccagaa	acacaaatct	tcctcctcct	ttacaccttt	tatagacccc	2340
agattactac	agatttctcc	atctagcggg	acaacagtga	catctgtggt	gggattttcc	2400
tgtgatggga	tgagaccaga	agccataagg	caagatccta	cccggaaagg	ctcagtggtc	2460
aatgtgaatc	ctaccaacac	taggccacag	agtgcacccc	cggagattcg	taaatacaag	2520
aagaggttta	actctgagat	tctgtgtgct	gccttatggg	gagtgaattt	gctagtgggt	2580
acagagagtg	gcctgatgct	gctggacaga	agtggccaag	ggaagggtcta	tcctcttatc	2640
aaccgaagac	gatttcaaca	aatggacgta	cttgagggct	tgaatgtctt	ggtgacaata	2700
tctggcaaaa	aggataagtt	acgtgtctac	tatttgtcct	ggttaagaaa	taaaatactt	2760
cacaatgatc	cagaagttga	gaagaagcag	ggatggacaa	ccgtagggga	tttggaaagga	2820

tgtgtacatt ataaagttgt aaaatatgaa agaatcaa	ttctggtgat tgctttgaag	2880
agttctgtgg aagtctatgc gtgggcacca aagccat	atc acaaatttat ggcctttaag	2940
tcatttggag aattggtaca taagccatta ctggtggatc	tcactgttga ggaaggccag	3000
aggttgaaag tgatctatgg atcctgtgct ggattccatg	ctgttgatgt ggattcagga	3060
tcagtctatg acatttatct accaacacat gtaagaa	aga acccacactc tatgatccag	3120
tgtagcatca aaccccatgc aatcatcatc ctcccca	ata cagatggaat ggagcttctg	3180
gtgtgctatg aagatgaggg ggtttatgta aacaca	tatg gaaggatcac caaggatgta	3240
gttctacagt ggggagagat gcctacatca gtagcat	ata ttcgatccaa tcagacaatg	3300
ggctggggag agaaggccat agagatccga tctgtgg	aaa ctggtcactt ggatggtgtg	3360
ttcatgcaca aaagggtca aagactaaaa ttcttgt	gtg aacgcaatga caaggtgttc	3420
tttgcctctg ttcggtctgg tggcagcagt caggttt	att tcatgacctt aggcaggact	3480
tctcttctga gctggtag		3498

<210> 181
 <211> 1083
 <212> DNA
 <213> Homo sapiens

<400> 181		
atggcgggcgg cggcgggcggc gggcgcgggc	cgggagatgg tccgcgggca ggtgttcgac	60
gtggggccgc gctacaccaa cctctcgtac atcggcg	agg ggcgctacgg catggtgtgc	120
tctgcttatg ataatgtcaa caaagttcga gtagct	atca agaaaatcag cccctttgag	180
caccagacct actgccagag aaccctgagg gagata	aaaaa tcttactgcg cttcagacat	240
gagaacatca ttggaatcaa tgacattatt cgagca	ccaa ccatcgagca aatgaaagat	300
gtatatatag tacaggacct catggaaaca gatctt	taca agctcttgaa gacacaacac	360
ctcagcaatg accatatctg ctattttctc taccag	atcc tcagaggggtt aaaatatatc	420
cattcagcta acgttctgca ccgtgacctc aagcct	tcca acctgctgct caacaccacc	480
tgtgatctca agatctgtga ctttggcctg gcccg	tgttg cagatccaga ccatgatcac	540
acagggttcc tgacagaata tgtggccaca cgttg	gttaca gggctccaga aattatgttg	600
aattccaagg gctacaccaa gtccattgat atttg	gtctg taggctgcat tctggcagaa	660
atgctttcta acaggcccat ctttccaggg aagcat	tatc ttgaccagct gaaccacatt	720
ttgggtattc ttggatcccc atcacaagaa gacct	gaatt gtataataaa tttaaaagct	780
aggaactatt tgctttctct tccacacaaa aata	aggtgc catggaacag gctgttccca	840
aatgctgact ccaaagctct ggacttattg gacaa	aatgt tgacattcaa cccacacaag	900
aggattgaag tagaacaggc tctggcccac ccat	atcttg agcagtatta cgacccgagt	960
gacgagccca tcgccgaagc accattcaag ttcga	catgg aattggatga cttgcctaag	1020
gaaaagctca aagaactaat ttttgaagag actg	ctagat tccagccagg atacagatct	1080

taa

1083

<210> 182
 <211> 1083
 <212> DNA
 <213> Homo sapiens

<400> 182
 atgtctcagg agaggccac gttctaccgg caggagctga acaagacaat ctgggaggtg 60
 cccgagcgtt accagaacct gtctccagtg ggctctggcg cctatggctc tgtgtgtgct 120
 gcttttgaca caaaaacggg gttacgtgtg gcagtgaaga agctctccag accatttcag 180
 tccatcattc atgcgaaaag aacctacaga gaactgcggt tacttaaaca tatgaaacat 240
 gaaaatgtga ttggtctgtt ggacgttttt acacctgcaa ggtctctgga ggaattcaat 300
 gatgtgtatc tggtgacca tctcatgggg gcagatctga acaacattgt gaaatgtcag 360
 aagcttacag atgaccatgt tcagttcctt atctaccaa ttctccgagg tctaaagtat 420
 atacattcag ctgacataat tcacagggac ctaaaccta gtaatctagc tgtgaatgaa 480
 gactgtgagc tgaagattct ggattttgga ctggctcggc acacagatga tgaaatgaca 540
 ggctacgtgg ccactaggtg gtacagggct cctgagatca tgctgaactg gatgcattac 600
 aaccagacag ttgatatttg gtcagtggga tgcataatgg ccgagctgtt gactggaaga 660
 acattgtttc ctggtacaga ccatattaac cagcttcagc agattatgcg tctgacagga 720
 acaccccccg cttatctcat taacaggatg ccaagccatg aggcaagaaa ctatattcag 780
 tctttgactc agatgccgaa gatgaacttt gcgaatgtat ttattggtgc caatcccctg 840
 gctgtcgact tgctggagaa gatgcttgta ttggactcag ataagagaat tacagcggcc 900
 caagcccttg cacatgccta ctttgctcag taccacgatc ctgatgatga accagtggcc 960
 gatccttatg atcagtcctt tgaaagcagg gacctcctta tagatgagtg gaaaagcctg 1020
 acctatgatg aagtcacag ctttgtgcca ccacccttg accaagaaga gatggagtcc 1080
 tga 1083

<210> 183
 <211> 984
 <212> DNA
 <213> Homo sapiens

<400> 183
 atgcctgggc cgacccaaac cctgtcccca aatggcgaga acaacaacga catcatccag 60
 gataataacg ggaccatcat tcctttccgg aagcacacag tgcgcgggga gcgttcctac 120
 agttggggaa tggcgggtcaa tgtgtattct acctcgataa cccaagagac tatgagcaga 180
 catgacatca ttgcatgggt taatgacata gtatctttaa actacacaaa agtggaacag 240
 ctttgttcag gagcggccta ttgccaattc atggacatgc tcttccttg ctgcattagt 300
 ttgaagaaag taaaatttca agcaaagctg gaacatgaat atattcaciaa ttttaactt 360
 ctgcaagcat catttaagcg aatgaacgtt gataaggtaa ttccagtgga gaagctagtg 420

PCTAU2016050927-seql-000001-EN-20161013

aaaggacgtt tccaggacaa cctggatttt attcaatggg ttaagaaatt ctatgatgct	480
aactacgatg ggaaggagta tgatcctgta gaggcacgac aagggaaga tgcaattcct	540
cctcctgacc ctggtgaaca gatcttcaac ctgcaaaaa agtctcacca tgcaaactcc	600
cccacagcag gtgcagctaa atcaagtcca gcagctaaac caggatccac accttctcga	660
ccctcatcag ccaaaagggc ttcttccagt ggctcagcat ccaaatccga taaagattta	720
gaaacgcagg tcatcacgct taatgaacag gtacattcat taaaacttgc ccttgaaggc	780
gtggaaaagg aaagggattt ctactttggg aagttgagag agatcgagct actctgccaa	840
gaacacgggc aggaaaatga tgacctcgtg cagagactaa tggacatcct gtatgcttca	900
gaagaacacg agggccacac agaagagccg gaagcagagg agcaagccca cgaacagcag	960
ccccgcgagc aggaagagta ctga	984

<210> 184
 <211> 2115
 <212> DNA
 <213> Homo sapiens

<400> 184	
atggagtcta aaccttcaag gattccaaga agaatttctg ttcaaccttc cagctcctta	60
agtgctagga tgatgtctgg aagcagagga agtagtttaa atgataccta tcaactcaaga	120
gactcttcat ttagattgga ttctgaatat cagtctacat cagcatcagc atctgcgtca	180
ccatttcaat ctgcatggta tagtgaatct gagataactc agggagcacg ctcaagatcg	240
cagaaccagc aacgggatca tgattcaaaa agacctaaac tttcctgtac aaactgtact	300
acctcagctg ggagaaatgt tggaaatggg ttaaacacat tatcagattc atcttgaggg	360
catagtcaag ttcctagatc ttcattcaatg gtacttggat catttggaac agacttaatg	420
agagagagga gagatttgga gagaagaaca gattcctcta ttagtaatct tatggattat	480
agtcaccgaa gtggtgattt cacaacttca tcatatgttc aagacagagt tccttcatat	540
tcacaaggag caagaccaa agaaaactca atgagcactt tacagttgaa tacatcatcc	600
acaaaccacc aattgccttc tgaacatcag accatactaa gttctaggga ctccagaaat	660
tctttaagat caaatttttc ttcaagagaa tcagaatctt cccgaagcaa tacgcagcct	720
ggattttctt acagttcaag tagagatgaa gccccaatca taagcaattc agaaagggtt	780
gtttcatctc aaagaccatt tcaagaatct tctgacaatg aaggtaggcg gacaacgagg	840
agattgctgt cacgcatagc ttctagcatg tcatctactt ttttttcacg aagatctagt	900
caggattcct tgaatacaag atcattgaat tctgaaaatt cttacgtttc tccaagaatc	960
ttgacagctt cacagtcccg tagtaatgta ccatcagctt ctgaagttcc cgataatagg	1020
gcacttgaag cttctcaggg atttcgattt cttaggcgaa gatgggggtt gtcactctct	1080
agccacaatc atagctctga gtcagattca gaaaatttta accaagaatc tgaaggtaga	1140
aatacaggac catggttatc ttcctcactt agaaatagat gcacacctt gttctctaga	1200
aggaggcgag aggggaagaga tgaatcttca aggataccta cctctgatac atcatctaga	1260

PCTAU2016050927-seq1-000001-EN-20161013

tctcatat	ttagaaga	atcaaatgaa	gtggttcacc	ttgaagcaca	gaatgatcct	1320
cttgagctg	ctgccaacag	accacaagca	tctgcagcat	caagcagtgc	cacaacaggt	1380
ggctctacat	cagattcggc	tcaaggtgga	agaaatacag	gaatatcagg	gattcttcct	1440
ggttccttat	tccggtttgc	agtccctcca	gcacttggga	gtaatttgac	cgacaatgtc	1500
atgatcacag	tagatattat	tccttcaggt	tggaattcag	ctgatggtaa	aagtgataaa	1560
actaaaagt	cgccctcaag	agatccagaa	agattgcaga	aaataaaaga	gagcctcctt	1620
ttagaggact	cagaagaaga	agaaggtgac	ttatgtagaa	tttgtcaa	at ggcagctgca	1680
tcacatctta	atttgctgat	agagccatgc	aagtgcacag	gaagtttgca	gtatgtccac	1740
caagactgta	tgaaaaagt	gttacaggcc	aaaattaact	ctggttcttc	attagaagct	1800
gtaaccacct	gtgaactatg	taaagagaag	ttggagctta	acctggagga	ttttgatatt	1860
catgaactac	atagagctca	tgcaaatgaa	caagctgagt	atgagtttat	cagctctggt	1920
ctctacctag	tggtgttatt	gcacttgtgc	gaacaaagct	tttctgat	at gatgggaaat	1980
acaaatgaac	caagcacacg	tgtccgattt	attaaccttg	caagaactct	tcaggcacat	2040
atggaagatc	tcgaaacttc	agaggatgat	tccgaagaag	acggagacca	taacaggaca	2100
tttgatattg	cctaa					2115

<210> 185
 <211> 876
 <212> DNA
 <213> Homo sapiens

<400> 185	
atgagcatgc	cactgcatca gatctctgcc attccatccc aggatgccat ctctgctaga 60
gtctacagaa	gtaagaccaa agaaaaggag agggagaagac agaataagagaa gactttggga 120
catttcatga	gtcattcaag caacatttct aaggctggga gtcctccgtc agcatcagct 180
ccgggtccgg	tgtcctcctt ctctcgact tctatcacgc catccagcca ggacatctgc 240
aggatctgcc	actgtgaagg agatgatgag agccccctga tcacccccctg ccaactgcaca 300
ggaagcctcc	acttcgtgca ccaggcctgc ctgcagcagt ggatcaagag ctccgacacg 360
cgctgctg	agctctgcaa gtatgagttc atcatggaga ccaagctgaa gccactgaga 420
aaatgggaga	agttgcagat gacgtccagc gagcgcagga agatcatgtg ctgactgaca 480
ttccacgtca	ttgccatcac atgtgtggtc tggtccttgt atgtgctcat tgaccgtact 540
gctgaggaga	tcaagcaggg gcaggcaaca ggaatcctag aatggccctt ttggactaaa 600
ttggtgggtg	tggccatcgg cttcaccgga ggacttcttt ttatgtatgt tcagtgtaaa 660
gtgtatgtgc	aattgtggaa gagactcaag gcctataata gagtgatcta tgttcaaaac 720
tgtccagaaa	caagcaaaaa gaataattttt gaaaaatctc cactaacaga gcccaacttt 780
gaaaataaac	atggatatgg aatctgtcat tccgacacaa actcttcttg ttgcacagag 840
cctgaagaca	ctggagcaga aatcattcac gtctga 876

<210> 186
 <211> 2190
 <212> DNA
 <213> Homo sapiens

<400> 186
 atgtccacta ggacccatt gccaacggtg aatgaacgag acactgaaaa ccacacgtca 60
 catggagatg ggcgtcaaga agttacctct cgtaccagcc gctcaggagc tcggtgtaga 120
 aactctatag cctcctgtgc agatgaacaa cctcacatcg gaaactacag actgttgaaa 180
 acaatcggca aggggaattt tgcaaaagta aaattggcaa gacatatcct tacaggcaga 240
 gaggttgcaa taaaaataat tgacaaaact cagttgaatc caacaagtct acaaaagctc 300
 ttcagagaag taagaataat gaagatttta aatcatccca atatagtga gttattcgaa 360
 gtcattgaaa ctgaaaaaac actctaccta atcatggaat atgcaagtgg aggtgaagta 420
 tttgactatt tggttgcaca tggcaggatg aaggaaaaag aagcaagatc taaatttaga 480
 cagatttgtt ctgcagttca atactgccat cagaaacgga tcgtacatcg agacctcaag 540
 gctgaaaatc tattgttaga tgccgatatg aacattaata tagcagattt cggttttagc 600
 aatgaattta ctgttggcgg taaactcgac acgttttgtg gcagtcctcc atacgcagca 660
 cctgagctct tccagggcaa gaaatatgac gggccagaag tggatgtgtg gagtctgggg 720
 gtcattttat acacactagt cagtggctca cttccctttg atgggcaaaa cctaaaggaa 780
 ctgagagaga gagtattaag agggaaatac agaattccct tctacatgtc tacagactgt 840
 gaaaaccttc tcaaacgttt cctggtgcta aatccaatta aacgcggcac tctagagcaa 900
 atcatgaagg acaggtggat caatgcaggg catgaagaag atgaactcaa accatttggt 960
 gaaccagagc tagacatctc agacaaaaa agaatagata ttatggtggg aatgggatat 1020
 tcacaagaag aaattcaaga atctcttagt aagatgaaat acgatgaaat cacagctaca 1080
 tatttgttat tggggagaaa atcttcagag ctggatgcta gtgattccag ttctagcagc 1140
 aatctttcac ttgctaaggt taggccgagc agtgatctca acaacagtac tggccagtct 1200
 cctcaccaca aagtgcagag aagtgtttct tcaagccaaa agcaaagacg ctacagtgc 1260
 catgctggac cagctattcc ttctgtttgt gcgtatccga aaaggagtca gaccagcact 1320
 gcagatagt acctcaaaga agatggaatt tcctcccga aatcaagtgg cagtgtgttt 1380
 ggaggaaagg gaattgctcc agccagtccc atgcttggga atgcaagtaa tcctaataag 1440
 gcggatattc ctgaacgcaa gaaaagctcc actgtcccta gtagtaacac agcatctggt 1500
 ggaatgacac gacgaaatac ttatgtttgc agtgagagaa ctacagctga tagacactca 1560
 gtgattcaga atggcaaaga aaacagcact attcctgatc agagaactcc agttgcttca 1620
 acacacagta tcagtagtgc agccaccca gatcgaatcc gcttcccaag aggcactgcc 1680
 agtcgtagca ctttcacgg ccagccccgg gaacggcgaa ccgcaacata taatggccct 1740
 cctgcctctc ccagcctgtc ccatgaagcc acaccattgt ccagactcg aagccgaggc 1800
 tccactaatc tctttagtaa attaaactca aaactcaca ggagtcgcaa tgtatctgct 1860

PCTAU2016050927-seq1-000001-EN-20161013

gagcaaaaag atgaaaacaa agaagcaaag cctcgatccc tacgcttcac ctggagcatg	1920
aaaaccacta gttcaatgga tcccggggac atgatgcggg aaatccgcaa agtggtggac	1980
gccaataact gcgactatga gcagagggag cgcttcttgc tcttctgcgt ccacggagat	2040
gggcacgcgg agaacctcgt gcagtgggaa atggaagtgt gcaagctgcc aagactgtct	2100
ctgaacgggg tccggtttaa gcggatatcg gggacatcca tagccttcaa aaatattgct	2160
tccaaaattg ccaatgagct aaagctgtaa	2190

<210> 187
 <211> 3930
 <212> DNA
 <213> Homo sapiens

<400> 187	
atggacgagt cgagcctcct gcggcgccgc gggctccaga aggagctgag cctgccacgc	60
cgaggacgtg gctgccgcag cggaaccgc aagagcttgg tggtaggaac gccctccccg	120
accctctccc ggcccctgtc gccattgtcg gtcccaacgg caggcagcag ccccttggat	180
agtcctcggg atttctcggc tgcctctgcc ctaaatttcc cctttgcccg gagggcagac	240
ggcagaagat ggtccctcgc gtctctccca tcttccggct atggaaccaa cacaccagc	300
tccaccctct cgtcaagctc atcctcccgg gaacgtctcc accagcttcc cttccagccg	360
acgccggacg agctgcactt cctgtccaag cacttccgca gctcagagaa tgtgtttgat	420
gaggaaggcg gccggtcacc ccgcctccga ccccgctctc gcagtctcag cccgggccgt	480
gcaacgggga ccttcgacaa tgagattgtc atgatgaatc acgtgtaccg ggagaggttc	540
cccaaggcca cagcacagat ggagggccgt ctgcaggagt tcctgacggc ctacgcgccc	600
ggcgcccggc tggcgctggc tgatggcgtc ttgggcttca tccaccacca gatcgtcgag	660
ctggcccag actgcttggc caagtctggc gagaacctcg tcacctcccg ctacttccta	720
gagatgcagg agaagctgga gcggcttctg caggatgccc atgagcgttc ggacagtgag	780
gaggtcagct tcatcgtcca gcttgtccgg aaactgctga tcatcatctc acggccagct	840
cggctgctgg agtgtctgga gtttgaccct gaggaatttt accacctgct ggaggcggct	900
gagggccatg cgcgggaggg ccaaggcatt aagactgacc ttccacagta catcattggg	960
cagctgggcc tggccaagga ccccctggag gagatggtgc cactgagtca cctcgaagaa	1020
gaacagcccc cagcacctga gtccccagag agccgcgccc tggtcggcca gtcacggagg	1080
aagccatgcg aaagcgactt tgagaccatc aaactcatta gcaacggagc ctatggggcc	1140
gtctacctgg tgcggcaccg tgacacacgg cagcgctttg ccatcaagaa gatcaacaaa	1200
cagaacttga tcctgcgtaa ccagatccag caggtctttg tggagcgtga cattctcacc	1260
tttgccgaga acccctttgt ggtcagcatg ttctgtctct ttgagaccg gcgccacct	1320
tgtatggtca tggaaatcgt ggaaggcggc gactgcgcca cgctcctgaa gaacatgggc	1380
ccgctgcccg tggacatggc ccgcctgtac ttcgccgaga cgggtgttggc gctggagtac	1440

ctgcataact	atggcatcgt	gcaccgtgac	ctcaaaccag	acaatctgct	catcacctcg	1500
cttggccaca	tcaagctcac	ggacttcggc	ctgtccaaga	tcggcctcat	gagcatggcc	1560
accaacctct	atgagggcca	catcgagaag	gacgcccag	agttcatcga	caagcaggtg	1620
tgtgggacgc	cggagtacat	agccccgag	gtgatcttcc	gccagggcta	tgggaagcca	1680
gtggactggt	gggccatggg	cgtcgtcctc	tatgagtttc	tgggtgggctg	cgtgcctttc	1740
tttggagata	cccccgagga	actcttcggt	caggtggtca	gcatgagat	catgtggcca	1800
gagggagatg	aggcccttcc	agcagacgcc	caggacctca	tcaccagggt	gctccggcag	1860
agcccgtg	accgtctggg	cactggtggc	accacgaag	tgaagcagca	cccctttttc	1920
ctggccctg	actgggcagg	gcttctccga	cacaaagccg	agttcgtgcc	ccagctcgaa	1980
gctgaggatg	ataccagcta	ctttgacaca	cgttcggaac	gttaccgcca	tctgggctcc	2040
gaggacgacg	agaccaatga	tgaagaatcg	tccacagaga	tccccagtt	ctcctcctgc	2100
tcccaccggt	tcagcaaggt	ctacagcagc	tctgagttcc	tggccgtcca	gccactcct	2160
accttcgctg	aaaggagctt	cagtgaagac	cgggaggagg	ggtgggagcg	cagcgaagtg	2220
gactatggcc	gccggctgag	tgctgacatc	cggctgaggt	cctggacatc	ctctggatcc	2280
tcctgtcagt	catcttcgtc	ccagccccgag	cggggtccca	gccatctct	cctgaatacc	2340
atcagcctgg	acacaatgcc	caagtttgcc	ttctcatcag	aggatgaggg	ggtaggccca	2400
ggccctgcag	gccccaaag	gcccgtcttc	attctagggg	agcctgacct	cccaccagcg	2460
gccaccccag	tgatgcccga	gccctcgagc	ctttctgccg	acacagctgc	tctcagccac	2520
gcccgcctac	ggagcaatag	catcggcgcc	cgacactcca	caccaaggcc	tctggatgcc	2580
ggccggggcc	gccgccttgg	gggcccaga	gaccagccc	ctgagaagtc	cagagcctcc	2640
tccagcgggtg	gcagtgggtg	cggcagtggg	ggccgcgtgc	ccaagtcagc	ctctgtctct	2700
gccctgtccc	tcatcatcac	ggcagatgat	ggcagcggcg	gccccctcat	gagccccctt	2760
tccccgcgct	ctctgtcctc	gaaccgctcg	tcccgtagct	cttcgcccag	ccgagacctg	2820
tccccgtgt	gtggcagcct	gcggccccc	atcgttatcc	acagctctgg	caagaagtac	2880
ggcttcagcc	tgcgggcgat	ccgcgtctac	atgggtgata	gcgacgtcta	cactgtgcac	2940
cacgtcgtct	ggagtgtgga	ggacggaagc	cccgccagag	aggcgggcct	gcgggctggg	3000
gacctcatca	cccacatcaa	cggggagtca	gtgctggggc	tgggtgcacat	ggacgtcgtg	3060
gagctgctgc	tgaagagcgg	caacaagata	tccctgcgga	ccacagccct	ggagaacacc	3120
tccatcaagg	tgggccccgc	ccggaagaat	gtggccaagg	gccgcatggc	acgcaggagc	3180
aagaggagcc	gtcggcgggg	gaccaggat	cggcggaagt	cacttttcaa	gaagatctcc	3240
aagcagacct	ccgtgctgca	caccagccgc	agcttctcct	ccggactcca	ccactcactg	3300
tcatccagtg	agagcctccc	cggctcgccc	accacagcc	tctccccag	ccccaccact	3360
ccctgccgaa	gccagcccc	tgatgtccca	gcagatacca	ctgcatcccc	accagcgca	3420
tccccgagct	ccagcagccc	cgcctcccca	gctgctgctg	gccacacccg	ccccagctcc	3480

PCTAU2016050927-seql-000001-EN-20161013

ctgcacggcc	tggtctgcaa	gcttgggcca	ccccgcccc	agactggccg	ccgcaagtcc	3540
accagcagca	tcccgccctc	cccgtggcc	tgcccgccca	tctccgcgcc	cccaccccgc	3600
tcgccctcgc	ccctgcccgg	gcacccgccc	gcacctgccc	gatccccgcg	gctgcgccgg	3660
ggccagtcag	ctgacaagct	gggcacaggg	gagcggctgg	atggggaggc	ggggcggcgc	3720
actcgtgggc	cagaggccga	gctcgtggtc	atgcggcgcc	tgacactgtc	cgagcgccga	3780
gactccttca	agaagcagga	ggccgtgcag	gaggttagct	tcgatgagcc	gcaggaggag	3840
gccactgggc	tgcccacctc	agtgccacag	atcgccgtgg	agggcgagga	agccgtgcca	3900
gtagctctcg	ggcccaccgg	aagagactga				3930

<210> 188
 <211> 483
 <212> DNA
 <213> Homo sapiens

<400> 188	
atgagcgata	acgatgacat cgaggtggag agcgacgaag agcaaccgag gtttcaatct 60
gcggctgaca	aacgggctca tcataatgca ctggaacgaa aacgtaggga ccacatcaaa 120
gacagctttc	acagtttgcg ggactcagtc ccatcactcc aaggagagaa ggcattcccgg 180
gccc aaatcc	tagacaaagc cacagaatat atccagtata tgcaaggaa aaaccacaca 240
caccagcaag	atattgacga cctcaagcgg cagaatgctc ttctggagca gcaagtccgt 300
gactggaga	aggcgaggtc aagtgcccaa ctgcagacca actaccctc ctcagacaac 360
agcctctaca	ccaacgcaa gggcagcacc atctctgcct tcgatggggg ctcggactcc 420
agctcggagt	ctgagcctga agagcccaa agcaggaaga agctccggat ggaggccagc 480
taa	483

<210> 189
 <211> 561
 <212> DNA
 <213> Homo sapiens

<400> 189	
atggcgtcac	agaagagacc ctcccagagg cacggatcca agtacctggc cacagcaagt 60
accatggacc	atgccaggca tggttcctc ccaaggcaca gagacacggg catccttgac 120
tccatcgggc	gcttcttttg cggtgacagg ggtgcgcccc agcggggctc tggcaaggta 180
ccctggctaa	agccgggccc gagccctctg ccctctcatg cccgcagcca gcctgggctg 240
tgcaacatgt	acaaggactc acaccacccg gcaagaactg ctactacgg ctccctgccc 300
cagaagtcac	acggccggac ccaagatgaa aaccccgtag tccacttctt caagaacatt 360
gtgacgcctc	gcacaccacc cccgtcgcag ggaaaggggg ccgaaggcca gagaccagga 420
tttggtacg	gaggcagagc gtccgactat aaatcggctc acaagggatt caagggagtc 480
gatgcccagg	gcacgctttc caaaatTTTT aagctgggag gaagagatag tcgctctgga 540
tcacccatgg	ctagacgctg a 561

<210> 190
 <211> 2637
 <212> DNA
 <213> Homo sapiens

<400> 190
 atggatctgg ataaaccatc tgtttggggc tcattaaaac agcggaccag gccattgttg 60
 atcaacttga gcaagaagaa ggtgaaaaag aacccaagta agccccaga tctacgggca 120
 aggcatact tggaccgccg tctcagcctc tctgtgcctg atctcctgga ggctgaggcc 180
 ttggccccag agggccggcc ttactccggg ccacagtctt cctacacctc ggtgcccagc 240
 agtctgtcca ctgcagggat ctttcccaag agcagcagta gctccttgaa acagtctgaa 300
 gaagaattgg attggagcca ggaagaagcc agtcacctcc atgtggtgga aacagactca 360
 gaggaggcct atgcctctcc tgctgagcgg agacgggtgt ccagcaacgg catctttgat 420
 cttcagaaaa cttcccttgg aggggatgca ccagaagagc cagagaagct atgtggaagc 480
 agtgacctga atgcttctat gacatctcaa ctttttgaag aacaatctgt accgggggaa 540
 gccagtgatg gcttgagtaa cctccccagc ctttttgcgt acctcctcac catacacctg 600
 aaggaaggcc ggaacctggt tgtccgagat cgctgtggca caagtgatcc ttatgtgaaa 660
 ttttaagctga atgggaagac gctgtacaaa agtaaagtca tatataagaa cttgaaccca 720
 gtatgggatg agatagtgtt attgccaatc caaagccttg atcaaaagct acgtgtgaag 780
 gtatatgatc gagatttaac cacatctgat ttcattgggt ctgcatttgt cattctcagt 840
 gatcttgagc ttaacagaac aactgaacat attttaaaac tggaagatcc aaacagttta 900
 gaagatgaca tgggagtgat cgtgttaaatt ttgaacctag tggtaaaaca gggtgatttc 960
 aagagacacc gttggtcaaa tcggaagcga ttaagtgcc acaagtcctc tttgatacgc 1020
 aacctacggc tctctgagtc cttgaaaaag aaccaactct ggaacgggat tataagtata 1080
 actttgttgg aagggaagaa tgtctcagga ggaagcatga cagagatgtt tgtccagtta 1140
 aaactgggag atcagaggta taaaagtaag acactgtgta agagtgcaaa tccgcagtgg 1200
 caggaacagt ttgactttca ctacttctct gacaggatgg gcatttttga cattgaagtg 1260
 tggggaaaag acaacaaaaa gcatgaggaa cgtctgggca cgtgtaaagt ggatatctcg 1320
 gcactccctc tgaagcaagc caactgcctg gagctgccac tggacagctg tctgggggct 1380
 ctcttatgtt tggtcacact tacacctgt gcgggggtct ccgtctctga tctgtgtgtc 1440
 tgccccttag cagacctcag cgaaagaaag cagattaccc agcgatattg cttacagaac 1500
 tccctgaaag atgtgaaaga cgtcggcatt ctacaagtga aggtttttaa ggcagcagat 1560
 ctcttagcgg cagatttctc aggaagagt gaccattttt gcttggttga gttaggcaat 1620
 gaccgacttc agacgcatac cgtctacaaa aacctcaacc ctgaatggaa caaagttttt 1680
 acatttccca ttaaagatat ccatgatgtt ttggaagtga cagtgtttga tgaagatgga 1740
 gataaaccct cagattttct tggaaaagtt gccattccct tgctgtccat tagagatgga 1800
 caaccgaatt gttatgtact aaagaataaa gatttagaac aagcttttaa aggagttatt 1860

tacttagaga	tggaccttat	atataatccg	gtgaaagcaa	gtattaggac	ttttactccc	1920
cgggaaaagc	gctttgttga	agacagccgc	aagctgtcca	aaaagatctt	atcaagagat	1980
gtggaccgtg	tgaaaagaat	cactatggca	atatggaata	caatgcagtt	ccttaaaagc	2040
tgcttccagt	gggaatccac	attaagaagt	acaatagcat	tcgcggtatt	tttgatcact	2100
gtctggaatt	ttgaactata	tatgatcccc	ttggcattgt	tgctgatctt	tgtctacaat	2160
ttcatcagac	ctgtgaaagg	caaggtcagc	agcatccagg	acagccagga	gagcacagac	2220
atagatgacg	aggaggatga	agatgacaag	gaatctgaga	aaaaggggtt	gattgaaaga	2280
atctatatgg	tacaggatat	tgtttcaact	gttcaaaacg	tcttggagga	aatagcttct	2340
tttggagaaa	ggattaagaa	cacatttaac	tggacggtcc	ccttcctttc	atctctggcc	2400
tgtttgattc	tggcagcagc	caccatcatt	ttgtatttca	ttccactgcg	gtacatcatt	2460
ttaatctggg	gcataaataa	atttactaag	aagcttcgaa	atccctattc	catcgacaat	2520
aatgagctac	tagacttcct	ctctagggta	ccgtctgatg	ttcaaaaggt	gcagtatgca	2580
gaattgaaac	tctgcagcag	ccacagcccc	ctgcggaaga	agcgcagcgc	tctctag	2637

<210> 191
 <211> 6525
 <212> DNA
 <213> Homo sapiens

<400> 191						
atgagtgcct	ccttcgtgcc	gaacggggcc	agcctggaag	attgtcactg	taacctcttc	60
tgcttggtg	acttgacagg	aattaagtgg	aaaaaatatg	tatggcaagg	cccaacttct	120
gccctattc	tgtttcctgt	gacagaagaa	gaccccat	tgagcagttt	tagtcgctgc	180
cttaaggcag	atgtacttgg	tgtttggtgg	cgagatcaaa	gacctggaag	aagagaattg	240
tggatatttt	ggtgggttga	agacccag	tttgctgacc	ttattcacca	tgacttatca	300
gaagaagaag	atggagtgtg	ggagaatgga	ctttcctatg	aatgccgtac	tctgcttttc	360
aaagcagttc	acaatctatt	ggaacggtgt	ttaatgaaca	ggaattttgt	acgtattggc	420
aagtggtttg	taaagcctta	tgaaaaagat	gaaaaaccta	taaataaaaag	tgaacacttg	480
tcctgctcct	tcaccttttt	cttgcattga	gacagcaatg	tttgtaccag	tgtggaaatt	540
aaccaacatc	aacctgtata	ccttctcagt	gaagagcata	tcacccttgc	tcaacagtct	600
aatagcccat	ttcaagttat	cttatgccca	tttgactaa	atggcactct	cacaggacag	660
gcattcaaga	tgtctgattc	agctacaaaa	aaattaattg	gtgaatggaa	acagttctat	720
cctatctcat	gttgcttgaa	ggagatgtct	gaagaaaaac	aggaagatat	ggattgggaa	780
gatgattctt	tagctgcagt	agaagttctt	gttgctgggtg	tccgaatgat	ctaccagca	840
tgctttgttc	tagtcctca	gtcagacatt	cctactccta	gccctgtggg	atccactcac	900
tgttcatctt	cttgcttggg	tgtccaccaa	gtgcctgctt	ccacaagaga	tcctgctatg	960
tcttcggtta	cgcttacacc	acctacgtct	cctgaggaag	tccaaacagt	tgatcctcag	1020

tctgtccaga agtgggtcaa attttcttca gtatctgatg gcttcaactc cgatagtact	1080
agccaccatg gtgggaaaat acccagaaaa ttagcaaatc atgtggtgga tagagtttgg	1140
caagaatgca atatgaacag agcacagaac aagaggaagt attctgcttc atcaggtggt	1200
ctatgcgaag aagcgacagc tgctaaagtg gcctcctggg attttggtga agccacacaa	1260
agaacaaatt gcagttgttt gaggcacaaa aatctcaagt caagaaatgc tggacaacaa	1320
ggacaggcac catcttttagg tcagcaacaa caaatacttc ctaagcacia gaccaatgag	1380
aagcaagaaa agagtgaaaa gccacagaaa cgccccttga ctcccttttca ccatcgtgtg	1440
tctgttagtg atgatgttgg catggacgca gattcagcca gccaaagact tgtgatctct	1500
gctccagaca gtcaagttag attttcaa atccgaacta atgatgtagc aaagactcct	1560
cagatgcatg gcaccgaaat ggcaaattca cctcaaccac cccacttag tcctcaccct	1620
tgtgatgtgg ttgatgaagg agtgactaaa acaccttcaa ctccctcagag tcaacatttt	1680
tatcaaattg caacaccaga tcccttggtt ctttctaaac caatggaaga taggatagac	1740
agtttgtccc agtctttccc acctcaatat caggaagctg tagaacctac agtatatgtt	1800
ggtacagcag taaacttgga agaagatgaa gccaatatag cctggaagta ttacaagttc	1860
ccaaagaaaa aagatgtaga gtttttacca cctcaacttc caagtgataa attcaaggat	1920
gatccagttg gaccttttgg acaggaaagt gtaacatcag ttacagagtt aatggtgcaa	1980
tgtgaagaaac ctttaaaagt ttctgatgaa ttagtgcagc aatatcaa ataaaaaccag	2040
tgtctttcag caatagcatc tgatgcagaa caagaaccta aaattgatcc atatgcattt	2100
gttgaaggag atgaggaatt cttttttcct gataaaaaag atagacaaaa tagtgagaga	2160
gaagctggaa aaaaacacaa ggtagaagat gggacatcta gtgtaacagt gttatcacat	2220
gaagaagatg ctatgtcatt atttagtccc tctatcaagc aagatgctcc acgcccact	2280
agtcattgccc gtcctccatc aacaagtttg atttatgact cagacctggc tgtctcttat	2340
actgaccttg ataattctct caattctgat gaagatgaac taacacctgg atctaaaaaa	2400
tcagcaaatg gatcagatga taaagccagc tgcaaggaat caaagacagg aaatctggac	2460
ccgttatctt gcataagcac tgcagatctt cataaaatgt atcctacacc accatcattg	2520
gaacaacata ttatgggatt ttccccaatg aatatgaata ataaagaata tggtagtatg	2580
gatacaacac ctggaggaac tgttctagaa ggaaatagtt ctagtatagg agcgcagttc	2640
aaaattgagg ttgatgaggg attctgtagc cccaaacctt ctgaaattaa agatttttct	2700
tatgtctata agcctgaaaa ttgtcaaatt ctagtgggat gttccatgtt tgcacctcta	2760
aaaactctac caagccaata tctgccccct atcaaattgc cagaagagtg tatttaccgt	2820
cagagttgga ctgttggaat attggaattg ctttcttcag ggccttcaat gccattcatc	2880
aaagagggtg atggaagtaa tatggatcaa gaatatggca ctgcttatac acctcaaact	2940
catacttctt ttgggatgcc tcctagcagt gcacctccta gtaacagcgg agcaggaatt	3000
cttccttctc catccacccc tcggtttcca actccaagga ctccaaggac tcctcggact	3060

cctcgtggag	ctgggtggacc	tgctagtgt	caaggttcag	tcaaataatga	aaatttcagac	3120
ttgtattcac	cagctttctac	cccatctaca	tgcagacccc	ttaattctgt	tgaacctgca	3180
actgtccctt	ccatcccctga	agcacacagt	ctttatgtaa	acctcatcct	ttcagaatca	3240
gttatgaatt	tgttttaaaga	ctgtaacttt	gatagtgtgt	gcatctgtgt	ttgcaacatg	3300
aacatcaagg	gtgccgatgt	tggagttttac	attccagatc	caacgcagga	agcacaatat	3360
aggtgtacct	gtggcttcag	tgctgtcatg	aacagaaaat	ttggaaacaa	ttcaggatta	3420
tttcttgaag	atgaactaga	tatcatagga	cgcaatacag	actgtggcaa	agaagcagaa	3480
aaacgttttg	aagctctcag	ggctacctct	gctgaacatg	ttaatggagg	actaaaggaa	3540
tctgaaaaat	tatctgatga	tttgatatta	ttgctacaag	atcagtgcac	taattttattt	3600
tcaccctttg	gagcagcaga	ccaagatcct	tttccataaaa	gtggtgtaat	tagcaattgg	3660
gtacgtgttg	aagagcgtga	ctggtgcaat	gactgtctacc	ttgcattaga	acatgggcgt	3720
cagttcatgg	ataacatgtc	aggaggaaaa	gttgatgaag	cacttgtgaa	aagttcatgc	3780
ttacaccctt	ggtcctaaaag	aaacgatgtg	agtatgcagt	gctcacagga	tatacttcga	3840
atgctcctct	ctcttcagcc	agttcttcag	gatgccattc	agaaaaaaaag	aacagtaaga	3900
ccttgggggtg	ttcagggtcc	tctcacttgg	caacaatttc	ataaaatggc	tggccgaggc	3960
tcttatggaa	ctgatgaatc	cccagaacca	ctgccaatcc	ccacattttt	gttgggttat	4020
gattatgatt	atctgggtgt	ttctccattt	gctcttcctt	attgggagag	acttatgctg	4080
gaaccctatg	gatctcaaag	agatatagcc	tatgttgtac	tgtgtccaga	aaatgaagcc	4140
ttgttaaatg	gagcaaaaag	ctttttttaga	gatcttactg	caatatatga	gtcctgtcga	4200
ttaggtcaac	atagacctgt	ttctcgactg	ttaacagatg	ggatcatgag	agttggatct	4260
actgcatcaa	agaaactatc	agaaaagttg	gtagcagaat	ggttttctca	ggcagctgac	4320
ggtaacaatg	aagcattttc	taaactcaag	ctttatgcac	aagtctgcag	atatgacctt	4380
ggctccttatc	ttgtctccct	gccattggac	agctctctac	tttcccagcc	aaatttagtt	4440
gcccctacaa	gtcagtcttt	gattactcca	cctcagatga	caaatactgg	aaatgctaata	4500
actccatctg	ccaccttagc	atctgcagcg	agcagcacta	tgacagtgcac	ttcagggtgtt	4560
gccatatcta	cttcagttgc	cacagctaata	tcaactttga	ccacagcttc	aacttcattct	4620
tcattcatcct	ccaacttgaa	tagtggagta	tcatacaata	aactaccttc	gtttccaccc	4680
tttggcagta	tgaacagtaa	tgctgcagga	tccatgtcta	cacaagcaaa	tacagttcag	4740
agtggtcagc	taggaggggca	acagacatca	gctctacaga	cagctgggat	ttctggagaa	4800
tcattcttcac	ttcccactca	gccgcattcct	gatgtgtctg	aaagcacgat	ggatcgggat	4860
aaagtgggaa	tccccacaga	tggtgattca	catgcagtca	cgtatccacc	tgcaattgtt	4920
gtttatataa	ttgatccctt	tacatacgaa	aatacagacg	agagcactaa	ctcttctagt	4980
gtgtggacat	tggggctact	tcgatgcttt	ctagaaatgg	tccagactct	tcctcctcat	5040
atcaagagta	ctgtttctgt	acagattatt	ccttgtcagt	acctgttgca	acctgtgaag	5100

catgaagata	gagaaatcta	tccccagcat	ttaaaatccc	tggctttttc	ggcctttacc	5160
cagtgtcggg	ggccacttcc	aacatcaacc	aatgtgaaaa	cattgactgg	ctttggtcca	5220
ggtttagcca	tggaaactgc	ccttagaagt	cctgatagac	cagagtgtat	tcgactttat	5280
gcacctcctt	ttattctggc	tccagtgaag	gacaaacaga	cagagctagg	agaaacatct	5340
ggagaagctg	gacagaaata	taatgttctt	tttgtgggat	actgtttatc	acatgatcaa	5400
aggtggattc	ttgcatcttg	cacagatcta	tatggagaac	ttttagaaac	ttgtatcatt	5460
aacatcgatg	ttccaaatag	ggctcgtcgg	aaaaaaagtt	ctgctagaaa	atttgggtcta	5520
cagaaacttt	gggagtgggt	ccttaggactt	gtacaaatga	gttcattgcc	atggagagtt	5580
gtaattggtc	gtctaggaag	gattgggtcat	ggagaattga	aagattggag	ctgtttgctg	5640
agtcgtcgaa	acttgcagtc	tctaagtaaa	aggctcaaag	acatgtgtag	aatgtgtggt	5700
atatctgctg	cagactcccc	tagcattctc	agtgttggct	tgggtggcaat	ggagccgcaa	5760
ggctcttttg	ttattatgcc	agattctgtg	tcaactgggt	ctgtatttgg	aagaagcacg	5820
actctaaata	tgcagacatc	tcagctaaat	acccacaggg	atacatcatg	tactcatata	5880
cttgtgtttc	ctacttctgc	ttctgtgcaa	gtagcttcag	ctacttatac	cactgaaaat	5940
ttggatttag	ctttcaatcc	caacaatgat	ggagcagatg	gaatgggtat	ctttgatttg	6000
ttagacacag	gagatgatct	tgaccctgat	atcattaata	tccttcctgc	ttctccaact	6060
ggttctcctg	tacattctcc	aggatctcat	tacccccatg	gaggtgatgc	gggcaagggg	6120
cagagtactg	atcgggtact	atcaacagaa	cctcatgagg	aagtacctaa	tattcttcag	6180
caaccattgg	cccttgggta	ctttgtatca	actgccaaag	caggtccatt	acctgactgg	6240
ttctgggtcag	catgtcctca	agcacaatat	cagtgtcccc	tttttcttaa	ggcctctttg	6300
cacctccacg	tgccttcagt	gcaatctgac	gagctgcttc	acagtaaaca	ctcccaccca	6360
cttgactcaa	atcagacttc	agatgtcctc	aggtttgttt	tggaacagta	caatgcactc	6420
tcctgggctaa	cctgtgacct	tgcaaccag	gacagacgct	catgtctccc	aattcatttt	6480
gtggtgctga	atcagttata	taactttatt	atgaatatgc	tgtga		6525

<210> 192
 <211> 1500
 <212> DNA
 <213> Homo sapiens

<400> 192		
atggggcgga	agaaaataca	aatcacacgc
atgaatggatg	aaaggaaccg	acaggtcact
60		
tttaciaaaga	gaaagtgttg	attaatgaag
aaagcctatg	aacttagtgt	gctctgtgac
120		
tgtgaaatag	cactcatcat	tttcaacagc
tctaacaac	tgtttcaata	tgctagcact
180		
gatatggaca	aagttcttct	caagtataca
gaatataatg	aacctcatga	aagcagaacc
240		
aactcggata	ttgttgaggc	tctgaacaag
aaggaacaca	gaggggtgca	cagcccagac
300		
cctgatactt	catatgtgct	aactccacat
acagaagaaa	aatataaaaa	aattaatgag
360		
gaatttgata	atatgatgcg	gaatcataaa
atcgcacctg	gtctgccacc	tcagaacttt
420		

tcaatgtctg	tcacagttcc	agtgaccagc	cccaatgctt	tgtcctacac	taacccaggg	480
agttcactgg	tgtcccatc	tttggcagcc	agctcaacgt	taacagattc	aagcatgctc	540
tctccacctc	aaaccacatt	acatagaaat	gtgtctcctg	gagctcctca	gagaccacca	600
agtactggca	atgcaggtgg	gatgttgagc	actacagacc	tcacagtgcc	aaatggagct	660
ggaagcagtc	cagtggggaa	tggatttgta	aactcaagag	cttctccaaa	tttgattgga	720
gctactggtg	caaatagctt	aggcaaagtc	atgcctacaa	agtctcccc	tccaccaggt	780
ggtggtaatc	ttggaatgaa	cagtaggaaa	ccagatcttc	gagttgtcat	cccccttca	840
agcaagggca	tgatgcctcc	actaaatacc	cagaggatca	gtagttctca	agccactcaa	900
cctcttgcta	ccccagtcgt	gtctgtgaca	acccaagct	tgcctccgca	aggacttggtg	960
tactcagcaa	tgccgactgc	ctacaacact	gattattcac	tgaccagcgc	tgacctgtca	1020
gcccttcaag	gcttcaactc	gccaggaatg	ctgtcgtgg	gacaggtgtc	ggcctggcag	1080
cagcaccacc	taggacaagc	agccctcagc	tctcttggtg	ctggagggca	gttatctcag	1140
ggttccaatt	tatccattaa	taccaaccaa	aacatcagca	tcaagtccga	accgatttca	1200
cctcctcggg	atcgtatgac	cccacgggc	ttccagcagc	agcagcagca	gcagcagcag	1260
cagcagccgc	cgccaccacc	gcagccccag	ccacaacccc	cgcagcccca	gccccgacag	1320
gaaatggggc	gctcccctgt	ggacagtctg	agcagctcta	gtagctccta	tgatggcagt	1380
gatcgggagg	atccacgggg	cgacttccat	tctccaattg	tgcttggccg	acccccaaac	1440
actgaggaca	gagaaagccc	ttctgtaaag	cgaatgagga	tggacgcgtg	ggtgacctaa	1500

<210> 193
 <211> 1743
 <212> DNA
 <213> Homo sapiens

<400> 193						
atgtcggaca	cgtggagctc	tatccaggcc	cacaagaagc	agctggactc	tctgcggggag	60
aggctgcagc	ggaggcggaa	gcaggactcg	gggcacttgg	atctacggaa	tccagaggca	120
gcattgtctc	caaccttccg	tagtgacagc	ccagtgccta	ctgcacccac	ctctggtggc	180
cctaagccca	gcacagcttc	agcagttcct	gaattagcta	cagatcctga	gttagagaag	240
aagttgctac	accacctctc	tgatctggcc	ttaacattgc	ccactgatgc	tgtgtccatc	300
tgtcttgcca	tctccacgcc	agatgctcct	gccactcaag	atggggtaga	aagcctcctg	360
cagaagtttg	cagctcagga	gttgattgag	gtaaagcgag	gtctcctaca	agatgatgca	420
catcctactc	ttgtaaccta	tgctgaccat	tccaagctct	ctgccatgat	gggtgctgtg	480
gcagaaaaga	agggccctgg	ggaggtagca	gggactgtca	cagggcagaa	gcggcgtgca	540
gaacaggact	cgactacagt	agctgccttt	gccagttcgt	tagtctctgg	tctgaactct	600
tcagcatcgg	aaccagcaaa	ggagccagcc	aagaaatcaa	ggaaacatgc	tgccctcagat	660
gttgatctgg	agatagagag	ccttctgaac	caacagtcca	ctaaggaaca	acagagcaag	720

aaggtcagtc	aggagatcct	agagctatta	aatactacaa	cagccaagga	acaatccatt	780
gttgaaaaat	ttcgctctcg	aggtcgggcc	caagtgaag	aattctgtga	ctatggaacc	840
aaggaggagt	gcatgaaagc	cagtgatgct	gatcgaccct	gtcgcaagct	gcacttcaga	900
cgaattatca	ataaacacac	tgatgagtct	ttaggtgact	gctctttcct	taatacatgt	960
ttccacatgg	atacctgcaa	gtatgttcac	tatgaaattg	atgcttgcat	ggattctgag	1020
gcccctggca	gcaaagacca	cacgccaagc	caggagcttg	ctcttacaca	gagtgtcgga	1080
ggtgattcca	gtgcagaccg	actcttccca	cctcagtgga	tctgttgtga	tatccgctac	1140
ctggacgtca	gtatcttggg	caagtttgca	gttgtgatgg	ctgaccacc	ctgggatatt	1200
cacatggaac	tgccctatgg	gaccctgaca	gatgatgaga	tgcgaggct	caacataccc	1260
gtactacagg	atgatggctt	tctcttcctc	tgggtcacag	gcagggccat	ggagttgggg	1320
agagaatgtc	taaacctctg	ggggtatgaa	cgggtagatg	aaattatttg	ggtgaagaca	1380
aatcaactgc	aacgcatcat	tcggacaggc	cgtacaggct	actggttgaa	ccatgggaag	1440
gaacactgct	tggttggtgt	caaaggaaat	ccccaggct	tcaaccaggg	tctggattgt	1500
gatgtgatcg	tagctgaggt	tcgttccacc	agtcataaac	cagatgaaat	ctatggcatg	1560
attgaaagac	tatctcctgg	cactcgcaag	attgagttat	ttggacgacc	acacaatgtg	1620
caacccaact	ggatcacctt	tggaaaccaa	ctggatggga	tccacctact	agaccagat	1680
gtggttgcac	ggttcaagca	aaggtaacca	gatggtatca	tctctaaacc	taagaattta	1740
tag						1743

<210> 194
 <211> 2208
 <212> DNA
 <213> Homo sapiens

<400> 194	
atggcggctg	gcggagctgt cgctgcggcg cccgagtgcc ggcttctccc ctacgcgcta 60
cacaagtgga	gctccttttc ctccacctac cttcccgaga acattttagt ggacaaacca 120
aatgaccaat	cttcaagatg gtcttcagag agcaactatc ctccccagta cttgattcta 180
aagctcgaaa	ggcctgctat agttcagaat atcacatttg gaaaatatga gaaaactcat 240
gtttgcaatt	tgaagaaatt taaagtcttt ggtggaatga atgaagaaaa tatgacagag 300
ctgttgcca	gtggcttaaa gaatgattat aacaaagaaa cattcacctt gaagcataaa 360
attgatgaac	agatgttccc ttgtcgattc attaaaatag ttccactctt gtcctgggga 420
cccagcttta	actttagcat ctggtatgtt gaacttagtg gcattgatga tcctgatata 480
gtacaacctt	gtctcaactg gtatagcaag taccgtgaac aggaagctat tcgcctttgc 540
ctaaaacact	tcagacaaca caactataca gaagcttttg agtcactgca aaagaaaacc 600
aagattgcac	tggaacatcc catgttaaca gatattcatg acaagctggg gttgaagggg 660
gattttgatg	cttgcaaga gttgattgaa aaggctgtaa atgatggctt gttcaatcag 720
tatatcagtc	aacaggaata taagccacga tggagtcaaa tcattcccaa aagtaccaa 780

ggtgatgggg	aagataaccg	tccaggaatg	agaggaggcc	atcagatggt	tattgatgtt	840
caaacagaga	ctgtttat	gtttggtggc	tgggatggaa	cacaagatct	tgctgacttc	900
tgggcgtaca	gtgtgaagga	gaaccagtgg	acatgtatct	ctagagacac	tgaaaaagag	960
aatggtccta	gtgccagatc	gtgtcataaa	atgtgcattg	atattcaacg	gaggcaaatc	1020
tacacattgg	ggcgttactt	ggattcctct	gtgaggaaca	gcaaattctct	gaaaagtgac	1080
ttctatcggt	atgacattga	tacaaacaca	tggatgttac	taagtgagga	tactgctgct	1140
gatggagggc	cgaaattggt	gtttgatcat	cagatgtgta	tggactcaga	aaaacatatg	1200
atctacactt	ttggtggtag	aattttgact	tgtaatggca	gcgtagatga	cagcagagcc	1260
agtgaaccac	aattcagtgg	cttgtttgct	ttcaactgtc	aatgtcaaac	ctggaaactt	1320
cttcgagagg	actcctgtaa	tgctgggcct	gaggacatcc	agtctcgaat	aggacactgc	1380
atgttattcc	actcaaaaaa	tcgttgctta	tatgtatttg	gtggccagcg	atcaaagacc	1440
tatttgaatg	atttctttag	ttatgatgtg	gactctgatc	atgtagacat	aatatcagat	1500
ggcaccaaga	aagactctgg	gatggttcca	atgacaggat	ttacacagag	agcaactatt	1560
gatccagaac	tgaatgaaat	acacgtctta	tctggactca	gcaaagataa	ggaaaagagg	1620
gaagaaaatg	ttagaaattc	attctggatt	tatgacattg	tgaggaatag	ttggtcttgt	1680
gtctataaga	atgatcaagc	tgcaaaggat	aatccaacta	aaagtcttca	ggaagaagaa	1740
ccatgtccaa	ggtttgccca	tcagcttgta	tacgatgagc	tacacaaggt	tcattactta	1800
tttgggtggga	atccaggaaa	atcttgctct	ccaagatga	gattagatga	cttctggtca	1860
ctgaagtgtg	gtagaccttc	aaaagattat	ttactgaggc	attgcaagta	cctcataaga	1920
aaacacaggt	ttgaagaaaa	ggccaagtg	gatccctta	gtgctctgaa	atattttacaa	1980
aatgatcttt	atataactgt	ggatcattca	gaccagaag	agacaaaaga	gtttcagctc	2040
ctggcatcag	ctctattcaa	atctggttca	gattttacag	ctctgggctt	ttctgatgtg	2100
gatcacacct	atgctcaaag	aactcagctc	tttgacacct	tagtaaattt	ctttcctgac	2160
agcatgactc	ctcctaaagg	caacctggta	gacctcatca	cactgtaa		2208

<210> 195
 <211> 1449
 <212> DNA
 <213> Homo sapiens

<400> 195	atggcggagg	ctgcaactcc	cggaacaaca	gccacaacat	caggagcagg	agcggcagcg	60
	gcgacggcgg	cagcagcctc	ccccaccccg	atccccacag	tcaccgcccc	gtccctgggg	120
	gcgggcggag	ggggcggcgg	cagcgacggc	agcggcggcg	gctggactaa	acaggtcacc	180
	tgcaggtatt	ttatgcatgg	ggtttgtaag	gaaggagaca	actgtcgcta	ctcgcatgac	240
	ctctctgaca	gtccgtatag	tgtagtgtgc	aagtattttc	agcgagggta	ctgtatttat	300
	ggagaccgct	gcagatatga	acatagcaaa	ccattgaaac	aggaagaagc	aactgctaca	360

gagctaacta	caaagtcac	ccttgctgct	tcctcaagtc	tctcatcgat	agttggacca	420
cttggtgaaa	tgaatacagg	cgaagctgag	tcaagaaatt	caaactttgc	aactgtagga	480
gcaggttcag	aggactgggt	gaatgctatt	gagtttgctc	ctgggcaacc	ctactgtggc	540
cgtactgctc	cttcctgcac	tgaagcacc	ctgcagggct	cagtgaccaa	ggaagaatca	600
gagaaagagc	aaaccgccgt	ggagacaaag	aagcagctgt	gcccctatgc	tgcagtggga	660
gagtgccgat	acggggagaa	ctgtgtgtat	ctccacggag	attcttgtga	catgtgtggg	720
ctgcaggtcc	tgcattcaat	ggatgctgcc	cagagatcgc	agcatatcaa	atcgtgcatt	780
gaggcccatg	agaaggacat	ggagctctca	tttgccgtgc	agcgagcaa	ggacatgggtg	840
tgtgggatct	gcatggaggt	ggtctatgag	aaagccaacc	ccagtgagcg	ccgcttcggg	900
atcctctcca	actgcaacca	cacctactgt	ctcaagtgc	ttcgcaagtg	gaggagtgt	960
aagcaatttg	agagcaagat	cataaagtcc	tgcccagaat	gccggatcac	atctaacttt	1020
gtcattccaa	gtgagtactg	ggtggaggag	aaagaagaga	agcagaaact	cattctgaaa	1080
tacaaggagg	caatgagcaa	caaggcgtgc	aggtattttg	atgaaggacg	tgggagctgc	1140
ccatttggag	ggaactgttt	ttacaagcat	gcgtaccctg	atggccgtag	agaggagcca	1200
cagagacaga	aagtgggaac	atcaagcaga	taccggggcc	aacgaaggaa	ccacttctgg	1260
gaactcattg	aggaaagaga	gaacagcaac	ccctttgaca	acgatgaaga	agaggttgct	1320
acctttgagc	tgggagagat	gttgcttatg	cttttggtgc	caggtgggga	cgacgaacta	1380
acagactctg	aagatgagtg	ggacttggtt	catgatgagc	tggaagattt	ttatgacttg	1440
gatctatag						1449

<210> 196
 <211> 1689
 <212> DNA
 <213> Homo sapiens

<400> 196	
atgcggctgc	ggctccggct tctggcgctg ctgcttctgc tgctggcacc gcccgcgctc 60
gccccgaagc	cctcggcgca ggacgtgagc ctggcgctgg actggctgac tcgctatggt 120
tacctgccgc	cacccaccc tgcccaggcc cagctgcaga gccctgagaa gttgcgcgat 180
gccatcaaag	tcatgcagag gttcgcgggg ctgccggaga ccggccgcat ggaccaggg 240
acagtggcca	ccatgcgtaa gccccgctgc tccctgcctg acgtgctggg ggtggcgggg 300
ctggtcaggc	ggcgtcgccg gtacgtctg agcggcagcg tgtggaagaa gcgaaccctg 360
acatggaggg	tacgttcctt ccccagagc tcccagctga gccaggagac cgtgcgggtc 420
ctcatgagct	atgccctgat ggcctggggc atggagtcag gcctcacatt tcatgaggtg 480
gattcccccc	agggccagga gcccgacatc ctcatcgact ttgcccgctc cttccaccag 540
gacagctacc	ccttcgacgg gttggggggc accctagccc atgccttctt ccctggggag 600
caccccatct	ccggggacac tcactttgac gatgaggaga cctggacttt tgggtcaaaa 660
gacggcgagg	ggaccgacct gtttgccgtg gctgtccatg agtttggcca cgccctgggc 720

ctggggccact cctcagcccc caactccatt atgaggccct tctaccaggg tccggtgggc	780
gaccctgaca agtaccgcct gtctcaggat gaccgcgatg gcctgcagca actctatggg	840
aaggcgcccc aaaccccata tgacaagccc acaaggaaac ccctgggtcc tccgccccag	900
ccccggcct cgccacaca cagcccatcc ttcccatcc ctgatcgatg tgagggcaat	960
tttgacgcca tcgccaacat ccgaggggaa actttcttct tcaaaggccc ctggttcttg	1020
cgctccagc cctccggaca gctggtgtcc ccgcgacccg cacggctgca ccgcttcttg	1080
gaggggctgc ccgcccaggt gaggggtgtg caggccgcct atgctcggca ccgagacggc	1140
cgaatcctcc tcttttagcg gccccagttc tgggtgttcc aggaccggca gctggagggc	1200
ggggcgcggc cgctcacgga gctggggctg cccccgggag aggaggtgga cgccgtgttc	1260
tcgtggccac agaacgggaa gacctacctg gtccgcggcc ggcagtactg gcgctacgac	1320
gaggcggcgg cgcgcccga cccgggtac cctcgcgacc tgagcctctg ggaaggcgcg	1380
ccccctccc ctgacgatgt caccgtcagc aacgcaggtg acacctactt cttcaagggc	1440
gcccactact ggcgttccc caagaacagc atcaagaccg agccggacgc ccccagccc	1500
atggggccca actggctgga ctgccccgcc ccgagctctg gtccccgcgc cccaggccc	1560
cccaaagcga ccccggtgtc cgaaacctgc gattgtcagt gcgagctcaa ccaggccgca	1620
ggacgttggc ctgctcccat cccgctgtc ctcttgcccc tgctggtggg ggggtgtagcc	1680
tcccgctga	1689

<210> 197
 <211> 2820
 <212> DNA
 <213> Homo sapiens

<400> 197	
atggcggcgc agccaccccg cgggatacgc ctcagcgcg tttgcccga gtttttacat	60
acaaattcta ctagtcacac ctggccattc agtgcagttg ctgaattaat agataatgct	120
tatgatcctg atgtgaacgc taaacaaata tggattgaca aaacagtgat aaatgaccat	180
atatgcttga cattcaccga caatgggaat ggtatgactt ctgataaatt acataaaatg	240
ctaagctttg gcttcagtga caaagtcacc atgaatggtc atgtcccagt tggattatat	300
gggaatggct tcaagtcggg ttctatgcgt ctgggtaaag acgcaatcgt ttttacaaa	360
aatggagaaa gcatgagcgt gggccttttg tctcagacct acttggaagt cataaaagcg	420
gagcatgttg ttgttccaat agtggcattc aacaagcacc gacagatgat taatttagca	480
gaatcaaaag ccagccttgc tgcaattctg gaacattctc tgttttccac ggaacagaag	540
ttactggcag aacttgatgc tattataggc aagaagggga cgaggatcat catttggaat	600
cttagaagct acaaaaatgc aacagagttc gattttgaaa aggataaata tgatatcaga	660
attcccaggg atttagatga gataacaggg aagaaggggt acaagaagca ggaaaggatg	720
gaccagattg cccctgagag tgactattcc ctgagggctt attgcagtat attatatcta	780

aagccaagaa tgcagatcat cctacgtgga cagaaagtga agacacagct ggtttcgaag	840
agtcttgcct acatcgaacg tgatgtttat cgacccaaat ttttatctaa aacagtgaga	900
attacctttg gattcaactg cagaaataaa gatcattatg ggataatgat gtatcacaga	960
aatagactca tcaaagctta tgaaaaagtt ggatgtcagt taagggcaaa caacatgggt	1020
gttggagtggt ttggaattat agagtgtaat ttccttaagc caactcataa taaacaagat	1080
ttcgactata ctaatgagta cagacttaca ataacagcac taggagaaaa gctgaatgat	1140
tactggaatg aaatgaaagt gaagaaaaat acagaatatc ctctaaatct gccagttgaa	1200
gatatacaga agcgtcctga tcagacatgg gttcagtggt atgcctgtct aaagtggcgg	1260
aaattacctg atgggatgga tcaacttcct gaaaaatggt attgctcaa taaccctgac	1320
ccacagttca gaaattgtga ggttccagaa gaacctgaag atgaggattt ggtacatccc	1380
acttatgaaa aaacctacaa aaagaccaac aaggaaaaat tcaggatcag acaaccggaa	1440
atgatccctc ggattaatgc tgaactgttg tttcggccaa ctgctctttc aactccaagc	1500
ttttcttctc ctaaggaaag tgttccaaga agacatcttt cagaaggaaac aaattcttat	1560
gcgacaagac ttctaaataa tcatcaagtt ccacctcagt ctgaacctga gagcaacagc	1620
ttgaaacgga gactttctac tcgttcctca attttgaatg caaagaatcg gagattgagt	1680
agtcagtttg aaaattcagt ttataaaggt gatgatgatg atgaagatgt catcatctta	1740
gaagaaaaca gtacccccaac acctgcagta gatcatgata ttgacatgaa atcagaacag	1800
agtcacgttg agcaaggtgg tgttcaggtt gagtttgtgg gtgacagtga acctgtggc	1860
cagactgggt caacaagcac ctcatcatcc cgatgcgacc agggaaatac tgcagctacc	1920
cagactgaag taccaagttt agttgttaaa aaagaagaaa ctggtgaaga cgagatagac	1980
gtaagaaatg atgcagtgat tctgccctcc tgtgtagaag ctgaagcaaa gatacatgaa	2040
accaggaaa ccaccgataa atctgcagat gatgcaggct gccaattaca agaactgaga	2100
aaccagctac tccttgtcac tgaggaaaaa gagaattata aaagacagtg tcatatgttt	2160
actgatcaaa tcaaagtgtt acaacagagg atactagaaa tgaatgacaa gtatgttaag	2220
aaagaaactt gccatcagtc cactgaaacc gatgctgtat ttttacttga aagtattaat	2280
ggcaaatctg aaagtccaga ccatatggta tctcagtatc agcaagcttt ggaagaaata	2340
gaaaggctga aaaaacaatg tagtgctttg caacatgtaa aggctgaatg cagccagtgt	2400
tccaataatg agagtataag tgaaatggat gagatggctg tgacagcttg cgatgtgttt	2460
agacaactgg acaaatgcag tattgagagg gaccagtata aaagtgaggt tgaattgctg	2520
gaaatggaaa agtcacaaat ccgttcacag tgtgaagaac tcaaaactga agtagaacag	2580
ttaaaatcta caaatcaaca gacggcaaca gatgtttcaa catcaagtaa cattgaggag	2640
tctgtaaatac atatggatgg agaaagcctc aaactccgat ctcttcgagt taacgtagga	2700
caactgctgg ctatgattgt gcctgatctt gatcttcagc aagtgaatta cgatgttgat	2760
gtagttgatg agattttagg acaagttgtt gaacaaatga gtgaaatcag tagtacttaa	2820

<210> 198
 <211> 1557
 <212> DNA
 <213> Homo sapiens

<400> 198
 atggcagaga atcacgcca gaataaagcc aagctcatct ctgagacccg gaggaggttc 60
 gaagctgagt atgtgacaga taagtcagat aaatatgatg cacgtgatgt tgaaaggcta 120
 caacaagatg ataactgggt tgaaagttac ttatcttgga gacataatat tgtagatgaa 180
 aactgaaga tgctcgatga gagttttcag tggaggaaag aaatttctgt caatgacctt 240
 aatgaatcct ccattccag atggttattg gaaattggtg ttatttatct ccatggttat 300
 gacaaagaag gtaacaaatt gttctggatc aggggtgaagt atcatgtaaa agaccagaaa 360
 accatattgg acaaaaagaa gctcatagca ttctggttg aacgttatgc taagagggaa 420
 aatgggaaac ctgtaacagt gatgtttgac ctgtcagaaa ctggaataaa tagcattgac 480
 atggactttg tacgctttat catcaactgc ttttaaggttt attaccctaa atacctctca 540
 aaaatagtga tctttgatat gccttggtta atgaatgctg ctttcaaaat tgtgaaaacc 600
 tggcttggtc cagaagcagt gagcttggtg aagtttaca gcaaaaatga agtccaggac 660
 tatgtcagt tagaatacct gcctccccc atgggtggaa ctgaccttt caagtatagc 720
 tatccaccac tagtagatga tgacttccag accccactgt gtgagaatgg gcctattacc 780
 agtgaggatg aaacttcaag taaagaagac atagaaagt atggcaaaga aacattggaa 840
 acaatttcta atgaagaaca aacacctctt cttaaaaaga ttaaccaaac cgaatctact 900
 tcaaagcag aagaaaatga aaaagttgat tcaaaagtga aagctttcaa gaaaccattg 960
 agtgatttta aaggcccctt actacacatc agcccagcag aagaactgta ctttggaagt 1020
 acagaatccg gagagaagaa aaccttaata gtgttgacaa atgtaactaa aaatatagt 1080
 gcatttaagg tgagaacaac agtccagaa aaatacagag tcaagccaag caatagcagc 1140
 tgtgaccggt gtgcatcagt ggatatagtt gtgtctcccc atggggggtt aacagtctct 1200
 gcccaagacc gttttctgat aatggctgca gaaatggaac agtcatctgg cacaggccca 1260
 gcagaattaa ctgagttttg gaaagaagtt ccagaaaca aagtgatgga acataggtta 1320
 agatgccata ctgttgaaag cagtaaacca aacactctta cgttaaaaga caatgctttc 1380
 aatatgtcag ataaaaccag tgaagatata tgtctacaac tcagtcgttt actagaaagc 1440
 aataggaagc ttgaagacca agttcagcgt tgtatctggt tccagcagct gctgctttcc 1500
 ttaacaatgc tcttgcttgc tttgtcacc tctttcttct atttattgta cagttaa 1557

<210> 199
 <211> 1191
 <212> DNA
 <213> Homo sapiens

<400> 199
 atggcgatga tcgaattggg gtttgaaga cagaattttc atccattaaa gaggaagagt 60

PCTAU2016050927-seq1-000001-EN-20161013

tcattgctgt	tgaaactcat	agctgttgtc	tttgctgtgc	ttctattttg	tgaattttta	120
atctattact	tagcgatctt	tcagtgtaat	tggcctgaag	tgaaaaccac	agcctctgat	180
ggatgaacaga	ccacacgtga	gcctgtgtgc	aaagccatgt	ttttggctga	cacccatttg	240
cttgggggaat	tcctaggcca	ctggctggac	aaattacgaa	gggaatggca	gatggagaga	300
gcgttccaga	cagctctgtg	gttgctgcag	ccggaagtcg	tcttcacctc	gggggatatc	360
tttgatgaag	ggaagtggag	cacccttgag	gcctgggcgg	atgatgtgga	gcggtttcag	420
aaaatgttca	gacacccaag	tcatgtacag	ctgaaggtag	ttgctggaaa	ccatgacatt	480
ggcttccatt	atgagatgaa	cacatacaaa	gtagaacgct	ttgagaaagt	gttcagctct	540
gaaagactgt	tttcttgaa	aggcattaac	tttgtgatgg	tcaacagcgt	ggcgtgaac	600
ggggatggct	gtggcatctg	ctctgaaaca	gaagcagagc	tcattgaagt	ttctcacaga	660
ctgaactgct	cccagaggc	acgtggctcc	agccggtgtg	gacctgggcc	tctgctgccc	720
acgtctgccc	ctgtcctcct	gcagcattat	cctctgtatc	ggagaagtga	tgctaactgt	780
tctggggaag	acgtgctcc	tgagaggaa	aggacatcc	catttaagga	gaactatgac	840
gtgctttcac	gggaggcatc	acaaaagctg	ctgtggtggc	tccagccgcg	cctggttctc	900
agtggccaca	cgcacagcgc	ctgcgaggtg	caccacgggg	gccgagtccc	cgagctcagc	960
gtcccatctt	tcagttggag	gaacagaaac	aacccagtt	tcatcatggg	tagcatcacg	1020
cccacagact	acaccctctc	caagtgtctac	ctcccacgtg	aggatgtggg	tttgatcatc	1080
tactgtggag	tgggtgggctt	ccttgtgtgc	ctcacactca	ctcactttgg	gcttctagcc	1140
tcaccttttc	tttctggttt	gaacttgctc	ggaaagcgta	agacaagatg	a	1191

<210> 200
 <211> 1056
 <212> DNA
 <213> Homo sapiens

<400> 200	atggaaaggc	ggatgcagct	ggtaaagaag	gataacgaga	aagaaaggca	caagctgttt	60
	cagggctatg	aaactgaaga	gagagaggaa	acagagctat	ctgagaaaat	taaactggag	120
	tgccagccgg	agctttccga	gacatcccag	actctgcctc	ccaagccctt	ctcatgtggg	180
	cggagtggaa	aggacataa	aaggaaatcc	ccatttgga	gtacagaaag	aaagactcct	240
	gttaaaaagc	tggctcctga	attttcaaaa	gtcaaaacaa	aaactcctaa	gcactctcct	300
	attaaagagg	aaccctgtgg	ttccttatct	gaaactgttt	gtaaacgtga	attgaggagc	360
	caagaaaccc	cagaaaagcc	ccggtcttca	gtggacaccc	caccaagact	ctccactccc	420
	caaaaggggac	ccagcaccca	tccaaggag	aaagccttct	caagtgagat	agaagatttg	480
	ccgtaccttt	ccaccacaga	aatgtatttg	tgtcgttggc	accagcctcc	cccatacccg	540
	ttaccattac	gggaatcctc	tcaaagaag	gaggagactg	tagcaagggtg	tctgatgcc	600
	tcaagtgttg	caggagaaac	ttcagtcttg	gctgttcctt	cttgagggga	ccactcagta	660
	gagcctctaa	gggacccaaa	tccttcagac	cttttgagga	acctggatga	cagtgtgttt	720

PCTAU2016050927-seq1-000001-EN-20161013

tcgaagcggc atgcaaaact ggagctggat gagaagagaa ggaaaagatg ggatattcag	780
aggatcaggg aacaaagaat ttacagcga ctgcagctca gaatgtataa aaagaaagga	840
attcaggaat ctgagcctga ggttacctca tttttccctg agccagatga tgttgaaagt	900
ttgatgatta ccccttctt gcctgttgta gcatttgac gaccattacc aaaattaact	960
ccacagaatt ttgagctacc ctggttgat gagcgtagcc gatgcagatt ggagatccag	1020
aagaagcaaa cacctcaccg gacgtgtagg aaatag	1056

<210> 201
 <211> 3597
 <212> DNA
 <213> Homo sapiens

<400> 201	
atggatgaag agactcggca cagccttgag tgcattcagg ccaatcagat ctttcccagg	60
aagcagctga tccgggagga tgagaatctt caggttcctt tccttgaact tcatggagag	120
agcacagagt ttgtgggccg tgccgaggat gccatcattg ccctttccaa ttacagactt	180
cacatcaagt tcaaggagtc tcttgttaat gttccattac agcttataga aagtgttgaa	240
tgccgagata tatttcagct tcatttgact tgcaaagact gcaaagttat caggtgtcag	300
ttttcaacct ttgagcagt tcaagagtgg ctgaagagac tgaacaacgc aatccgacca	360
cctgctaaaa tagaagatct cttctcattt gcataccatg cttggtgcat ggaggcttat	420
gccagtgaag aagagcaaca tggagacctg tgcagaccag gggagcatgt aacttcaagg	480
tttaaaaacg aggtggagag gatgggtttt gatatgaaca acgcctggag gatttccaac	540
atcaatgaga agtacaatt atgtggtagc tatcctcaag agctcatagt gcctgcctgg	600
atcactgaca aagaactgga aagtgtatca agtttcaggt cctggaagcg catccctgcc	660
gtcatctaca ggcaccagag caatggagct gtcattgccc gctgtggaca gccagagggt	720
agctggtggg gctggcgaaa tgcagatgat gagcatctgg tacagtcagt agccaaagct	780
tgtgcctctg actcccgatc gagtggcagc aagctgtcaa ctaggaacac ttctcgagac	840
tttccaatg ggggagacct ttctgacgtg gagttcgatt cttctctgtc aaatgcttca	900
ggagcagaga gtttagccat ccaaccgag aagcttttga tcttgatgc acgctcctat	960
gcagctgctg tggcaaaccg agccaaagga ggaggctgcg aatgccaga gtattacca	1020
aactgtgaag ttgtgtttat ggggatggca aacattcatt ctattcggag gagttttcag	1080
tctctgcggt tgctgtgcac tcagatgcca gatccgggaa attggctatc agctcttgaa	1140
agcacaaaat ggctccatca cttgtctgtg cttctgaaat cagcgcttct ggtagtgcatt	1200
gctgtggatc aggatcagcg gccggtgcta gtacactgct cagatggctg ggaccgcacc	1260
ccccagattg tggcattggc taagctcttg ctggaccctt attaccgaac catagaggggt	1320
ttccaggtcc tcgtggaaat ggagtggctg gattttggcc ataaatttgc tgaccggtgt	1380
ggtcatgggg agaactcgga tgatctgaat gaacgttgcc cagtgtttct gcagtggctt	1440

gactgtgttc atcagcttca gaggcaattt cttgtctctt ttgagttcaa tgaagcattc	1500
cttgtgaaac tgggtgcagca tacctattcc tgcctgtttg gaacattcct gtgcaacaac	1560
gccaaggaga gaggggaaaa gcatactcag gaacggacat gttccgtgtg gtcacttctt	1620
cgggcaggca acaaggcttt caaaaaccta ctgtattcct ctcagtcaga agccgtgctg	1680
taccctgtgt gccatgtgcg taacctgatg ctgtggagtg cagtgtacct gccctgcccc	1740
tccccaacca cccctgtgga cgacagctgt gcaccatacc cagccccagg caccagccct	1800
gatgatcccc ccctgagccg gctaccaaag actagatcat acgacaatct gaccacagcc	1860
tgtgacaaca cagtgcctct ggccagccgg cgctgcagcg accccagcct gaacgagaag	1920
tggcaggagc accggcgctc actagagctg agcagcctgg ctggccctgg agaggatccc	1980
ctttctgccg acagcctagg gaagcccacc agagtgccgg ggggtgccga gctttctgtt	2040
gcagccggag tagctgaggg gcagatggag aacatcttgc aggaggccac caaagaggag	2100
agtggagtag aggaacctgc ccacagggca ggcattgaga tacaggaggg taaagaggac	2160
cctctcttag aaaaggagag caggaggaag acacctgagg cctcagccat tggacttcac	2220
caagaccag aactgggtga tgctgctctg aggagccatc tggatatgag ctggcctctg	2280
ttctcacagg gcatttctga acagcagagt gggctcagtg ttctcctcag ttctctccag	2340
gtcccccca ggggagagga ttccctggag gtccctgtgg agcagtttcg aatagaagag	2400
attgcagagg gtagggagga agcagttctt ccaatcccag tagatgcaaa agttggctat	2460
ggtacctcac agtcatgttc tctgctacct tcccaagtcc cttttgagac cagaggacca	2520
aacgtggaca gttctacaga catgttagtg gaagataagg tgaagtcagt aagtgggccc	2580
caaggtcatc atagatcttg ccttgtaaag agtggcaagg acaggcttcc tcagaccatg	2640
gaaccagcc cttcagagac aagcctggtc gagaggcccc aagtggggtc tgtggtgcat	2700
aggacttccc ttggcagcac tctcagcctg acacgttccc cttgtgcctt gcctttagcc	2760
gaatgtaaag aggggcttgt gtgcaatggg gccccagaga ctgaaaacag ggcctcagag	2820
cagccccag gtcttagcac cctccagatg taccacacac ccaatgggca ttgcgccaat	2880
ggggaggctg gtaggagcaa ggactcactg agccgtcagc tgtctgctat gagctgcagc	2940
tctgcccact tacactcaag gaacttgac cacaagtggc tgcatagcca ctcaggaagg	3000
ccatctgcaa ccagcagccc cgaccagcct tcccgcagcc acctggacga tgatggcatg	3060
tcagtgtaca cagacacgat ccaacagcgc ctgcgtcaga ttgagtcagg ccaccagcag	3120
gaagtagaaa ctttgaagaa acaagtccag gagctgaaga gtcgcctgga gagccagtac	3180
ctgaccagct ccctacactt taatggagac tttggggatg aggtgacttc aatccccgac	3240
tcggaaagca atctggatca gaactgtttg tctcgctgca gcacagagat tttctctgaa	3300
gccagctggg agcaggtgga taaacaggac acagagatga cccgttggct tcctgaccac	3360
ctggccgccc actgctatgc gtgcgacagt gccttctggc ttgccagcag gaagcaccac	3420
tgcaggaatt gtgggaacgt attctgctcc agttgttgta accagaaggt tccagttccc	3480

agccagcagc tctttgaacc cagtcgagta tgcaagtctt gctatagcag cctacatccc 3540
acaagctcca gcattgacct tgaactggat aagcccattg ctgccacttc caactga 3597

<210> 202
<211> 1989
<212> DNA
<213> Homo sapiens

<400> 202
atggttgttt ccgaagtgga catcgcaaaa gctgatccag ctgctgcatc ccaccctcta 60
ttactgaatg gagatgctac tgtggcccag aaaaatccag gctcgggtggc tgagaacaac 120
ctgtgcagcc agtatgagga gaaggtgctc ccctgcatcg acctcattga ctccctgcgg 180
gctctaggtg tggagcagga cctggccctg ccagccatcg ccgtcatcgg ggaccagagc 240
tcgggcaaga gctccgtgtt ggaggcactg tcaggagttg cccttcccag aggcagcggg 300
atcgtgacca gatgcccgct ggtgctgaaa ctgaagaaac ttgtgaacga agataagtgg 360
agaggcaagg tcagttacca ggactacgag attgagattt cggatgcttc agaggtagaa 420
aaggaaatta ataaagccca gaatgccatc gccggggaag gaatgggaat cagtcatgag 480
ctaatacccc tggagatcag ctcccagat gtcccggatc tgactctaata agaccttctt 540
ggcataacca gagtggctgt gggcaatcag cctgctgaca ttgggtataa gatcaagaca 600
ctcatcaaga agtacatcca gaggcaggag acaatcagcc tgggtgggtgg cccagtaata 660
gtggacatcg ccaccacaga ggctctcagc atggcccagg aggtggaccc cgaggagagac 720
aggaccatcg gaatcttgac gaagcctgat ctggtggaca aaggaactga agacaaggtt 780
gtggacgtgg tgcggaacct cgtgttcac ctgaagaagg gttacatgat tgtcaagtgc 840
cggggccagc aggagatcca ggaccagctg agcctgtccg aagccctgca gagagagaag 900
atcttctttg agaaccaccc atatttcagg gatctgctgg aggaaggaaa ggccacggtt 960
ccctgcctgg cagaaaaact taccagcgag ctcatcacac atatctgtaa atctctgccc 1020
ctgttagaaa atcaaatcaa ggagactcac cagagaataa cagaggagct acaaaagtat 1080
ggtgtcgaca taccggaaga cgaaaatgaa aaaatgttct tcctgataga taaagttaat 1140
gcctttaatc aggacatcac tgctctcatg caaggagagg aaactgtagg ggaggaagac 1200
attcggctgt ttaccagact ccgacacgag ttccacaaat ggagtacaat aattgaaaac 1260
aattttcaag aaggccataa aattttgagt agaaaaatcc agaaatttga aaatcagtat 1320
cgtggttagag agctgccagg ctttgtgaat tacaggacat ttgagacaat cgtgaaacag 1380
caaatcaagg cactggaaga gccggctgtg gatatgctac acaccgtgac ggatatggtc 1440
cggcttgctt tcacagatgt ttcgataaaa aattttgaag agttttttta cctccacaga 1500
accgccaagt ccaaaattga agacattaga gcagaacaag agagagaagg tgagaagctg 1560
atccgcctcc acttcagat ggaacagatt gtctactgcc aggaccaggt atacaggggt 1620
gcattgcaga aggtcagaga gaaggagctg gaagaagaaa agaagaagaa atcctgggat 1680
tttggggctt tccagtccag ctccggaaca gactcttcca tggaggagat ctttcagcac 1740

ctgatggcct atcaccagga ggccagcaag cgcattctcca gccacatccc tttgatcatc	1800
cagttcttca tgctccagac gtacggccag cagcttcaga aggccatgct gcagctcctg	1860
caggacaagg acacctacag ctggctcctg aaggagcgga gcgacaccag cgacaagcgg	1920
aagttcctga aggagcggct tgcacggctg acgcaggctc ggcgccggct tgcccagttc	1980
cccggttaa	1989

<210> 203
 <211> 687
 <212> DNA
 <213> Homo sapiens

<400> 203	
atggagcggg tgaagatgat caacgtgcag cgtctgctgg aggctgccga gtttttggag	60
cgccgggagc gagagtgtga acatggctac gcctcttcat tcccgtccat gccgagcccc	120
cgactgcagc attcaaagcc cccacggagg ttgagccggg cacagaaaca cagcagcggg	180
agcagcaaca ccagcactgc caacagatct acacacaatg agctggaaaa gaatcgacga	240
gctcatctgc gcctttgttt agaacgctta aaagttctga ttccactagg accagactgc	300
acccggcaca caacacttgg tttgctcaac aaagccaaag cacacatcaa gaaacttgaa	360
gaagctgaaa gaaaaagcca gcaccagctc gagaatttgg aacgagaaca gagattttta	420
aagtggcgac tggaacagct gcagggctcct caggagatgg aacgaatacg aatggacagc	480
attggatcaa ctatttcttc agatcgttct gattcagagc gagaggagat tgaagtggat	540
gttgaaagca cagagttctc ccatggagaa gtggacaata taagtaccac cagcatcagt	600
gacattgatg accacagcag cctgccgagt attgggagtg acgaggggta ctccagtgcc	660
agtgtcaaac tttcattcac ttcataag	687

<210> 204
 <211> 1365
 <212> DNA
 <213> Homo sapiens

<400> 204	
ctggattttt ttcgggtagt ggaaaaccag cagcctcccg cgacgatgcc cctcaacgtt	60
agcttcacca acaggaacta tgacctcgac tacgactcgg tgcagccgta tttctactgc	120
gacgaggagg agaacttcta ccagcagcag cagcagagcg agctgcagcc cccggcgccc	180
agcgaggata tctggaagaa attcagagctg ctgcccaccc cgcccctgtc ccctagccgc	240
cgctccgggc tctgctcgcc ctcctacgtt gcggtcacac ccttctccct tcggggagac	300
aacgacggcg gtggcgggag cttctccacg gccgaccagc tggagatggt gaccgagctg	360
ctgggaggag acatggtgaa ccagagtttc atctgcgacc cggacgacga gaccttcac	420
aaaaacatca tcatccagga ctgtatgtgg agcggcttct cggccgccgc caagctcgtc	480
tcagagaagc tggcctccta ccaggctgcg cgcaaagaca gcggcagccc gaaccccgcc	540
cgcgccaca gcgtctgctc cacctccagc ttgtacctgc aggatctgag cgccgccgcc	600

PCTAU2016050927-seq1-000001-EN-20161013

tcagagtga	tcgaccctc	ggtggtcttc	ccctaccctc	tcaacgacag	cagctcgccc	660
aagtcctgcg	cctcgcaaga	ctccagcgcc	ttctctccgt	cctcggattc	tctgctctcc	720
tcgacggagt	cctccccgca	gggcagcccc	gagcccctgg	tgctccatga	ggagacaccg	780
cccaccacca	gcagcgactc	tgaggaggaa	caagaagatg	aggaagaaat	cgatgttggt	840
tctgtggaaa	agaggcaggc	tcctggcaaa	aggtcagagt	ctggatcacc	ttctgctgga	900
ggccacagca	aacctcctca	cagcccactg	gtcctcaaga	ggtgccacgt	ctccacacat	960
cagcacaact	acgcagcgcc	tccctccact	cggaaggact	atcctgctgc	caagagggtc	1020
aagttggaca	gtgtcagagt	cctgagacag	atcagcaaca	accgaaaatg	caccagcccc	1080
aggtcctcgg	acaccgagga	gaatgtcaag	aggcgaacac	acaacgtctt	ggagcgccag	1140
aggaggaacg	agctaaaacg	gagctttttt	gccctgcgtg	accagatccc	ggagttggaa	1200
aacaatgaaa	aggcccccaa	ggtagttatc	cttaaaaaag	ccacagcata	catcctgtcc	1260
gtccaagcag	aggagcaaaa	gctcatttct	gaagaggact	tgttgcggaa	acgacgagaa	1320
cagttgaaac	acaaacttga	acagctacgg	aactcttggt	cgtaa		1365

<210> 205
 <211> 2691
 <212> DNA
 <213> Homo sapiens

<400> 205	
atggcggccc	gggcggtgct ggacgagttc actgcgccag ctgagaaggc ggagctgctg 60
gagcagagcc	gcggccgtat cgagggcctg tttggcgtga gcctagccgt gctcggcgcg 120
ctaggggctg	aggagccgct gcccgcgcgc atctggctgc agctctgcgg ggcgcaggag 180
gcggtgcaca	gcgccaagga atatattaaa ggaatctgtg aacctgaact agaagaaaga 240
gaatgttacc	ccaaggacat gcactgcatt tttgttgggg cagagagcct gtttctgaaa 300
agcttgattc	aggatacttg tgctgacctc tgcattctgg acattggcct tcttggcatc 360
agaggaagtg	ctgaggctgt ggtcatggct aggagtcaca ttcaacaatt tgtaaagctc 420
tttgaaaata	aagagaacct acccagtagt cagaaagaat cagaggtgaa aagggaattc 480
aaacaatttg	ttgaagccca tgcagacaat tacacaatgg atttgttgat tttgccact 540
tccttgaaaa	aagaactttt gacactcaca caaggtgagg agaattctctt tgaaacagga 600
gatgatgagg	ttattgaaat gagagattct caacaaacag agtttacaca gaatgctgcc 660
acagggctga	atatttctag agatgaaact gttttgcagg aagaggcaag aaataaagct 720
gggactcctg	tttctgagct tacaaaacaa atggacacag tcctttctag ctcaccagat 780
gtgctttttg	atccaataaa tggcttaacc ccagatgaag aggcactttc caatgagaga 840
atgtgtcaga	aaaggagatt ttctgattct gaagaaaggc atacgaagaa gcagttttct 900
ttggaaaatg	ttcaggaggg ggagatttta cacgatgcta agacattggc tggaaatgta 960
atagctgacc	tatctgattc ttctgctgat tctgaaaatt taagtccaga tataaaagaa 1020

actactgagg	aaatggaata	caacatcctc	gtaaactttt	ttaaaacccat	gggctactcc	1080
caagaaattg	ttgaaaaggt	cattaaggtg	tatggacccat	ctactgaacc	attattgctc	1140
ttagaggaaa	ttgaaaaaga	aaataaaaga	ttccaagaag	acagagaatt	ttcagctggt	1200
acagtgtatc	cagagaccaa	caaaaccaa	aataaaggtg	tttatagcag	cacaaatgag	1260
cttacaactg	attccactcc	aaagaaaaca	caggctcaca	cacagcaaaa	tatggtagaa	1320
aaattttctc	agttaccatt	caaagtggaa	gctaaacccat	gtacctcaaa	ttgtagaatt	1380
aatactttca	gaacagtgcc	aatagaacag	aaacatgaag	tctgggggttc	aaaccagaac	1440
tacatttgta	acacagaccc	tgaaactgat	ggcctttcac	cttctgttgc	ctctccaagt	1500
cccaaagaag	tcaattttgt	ttcaagggga	gcttcaagtc	accagcccag	agttccactt	1560
tttcctgaaa	atggttttaca	ccagcagcca	gaacccttgc	ttccaaataa	tatgaaatct	1620
gcctgtgaaa	aacgttttag	atgtttagt	tctcctcatt	ctaagccaaa	ttgctcaacc	1680
ctttctccac	caatgccact	gccccagctg	ttaccttcgg	ttactgatgc	aaggctcgga	1740
ggaccttctg	atcatattga	ttcctcagtt	actgggggttc	aaagggtttcg	agatactcta	1800
aaaataccct	acaagctgga	attaaaaaat	gaaccagga	gaacggattt	gaaacacatt	1860
gttatagatg	ggagcaatgt	tgcaattacc	catgggtctga	aaaagttctt	ttcttgtcgt	1920
ggaattgcaa	ttgcagttga	atatttttgg	aagcttggca	acagaaacat	cactgtattt	1980
gtccctcagt	ggagaacaag	gcgtgatcct	aatgtcacag	aacagcactt	cttaaccag	2040
ctccaggagc	tcggaatatt	atctttaact	cctgcccgga	tggtcttttg	agaaagaatt	2100
gcttctcatg	atgacaggtt	tctactacac	ttagcggaca	aaactgggtg	cataattgtg	2160
acaaatgata	atttcagaga	atttgtgaat	gagtcagtct	cttggagaga	aattattaca	2220
aaaaggctgc	tgcaagtacac	gttcgtgggg	gacatattta	tggttcccga	tgatcctctg	2280
ggaagaagtg	gacctcgatt	agaggagttt	cttcagaagg	aagtctgtct	tagagatatg	2340
cagcccctac	tcagtgcctt	gccaaatgtg	ggcatgtttg	accccagctt	cagagtccct	2400
ggcaccag	cagccagcac	cagccaccag	cctccgaccc	ggattcaggg	agccccttca	2460
agccactggc	tccctcagca	gccccacttc	ccactgctgc	cagccctccc	cagtctccag	2520
cagaacctgc	ccatgccagc	tcagagatct	tctgcagaaa	ccaacgagct	gaggggaagcc	2580
cttctgaaga	tcttcctga	ctcagagcaa	agactgaaaa	tagaccagat	cttgggtggcc	2640
caccataca	tgaaagatct	aaatgcgctt	tctgccatgg	tgttggattg	a	2691

<210> 206
 <211> 1464
 <212> DNA
 <213> Homo sapiens

<400> 206		
atggctgcgg	ccttaccag	gaccctgggg
gagttgcagc	tgtatagaat	attacaaaaa
		60
gccaatctac	tttcttattt	tgatgccttt
atccaacaag	gtggatga	tgtccagcaa
		120
ctctgtgaag	caggagaaga	ggagtttttg
gaaatcatgg	cactcgtggg	catggctagc
		180

aagccccttc atgttagaag gctgcagaag gctttgagag actgggtcac aaaccctggg	240
cttttcaatc agccactgac ttcccttcct gtcagtagca taccatcta taaattacca	300
gagggatcac caacatggct gggaatatcc tgcagtagtt atgaaaggag tagcaatgcc	360
cgggaaacctc atttaaaaat ccccaaagt gctgccacca cctgtgtgca gagcttggga	420
caggggaagt cagatgtggt tgggagccta gactgcaga gtgttggtga gtccagactc	480
tggcaaggcc accatgccac tgagagcgag cacagcctct cccagcaga cctgggctcc	540
cccgcgtccc caaaggagag cagtgaggcg ctggatgctg ctgctgcgct ctctgtggct	600
gagtgtgtgg agcggatggc cccacactg caaaaagtg acttgaatga agtgaaagag	660
ctgctaaaaa ccaacaagaa gttggccaaa atgattggct acatctttga gatgaacgat	720
gatgatccac acaaagagga ggaaattcgg aaatacagt caatatatgg cagatttgac	780
tcaaagagga aggatgggaa acatctcaca ctcatgagc tctgtttaa tgaagcggct	840
gctcaactct gtgtgaagga taatgccctg ctgacaagaa gagatgagct ttttgccttg	900
gctcgacaga tttctcgaga agtcacctat aaatatactt acagaaccac caagtcaaaa	960
tgtggagaaa gagatgaatt atcccaaag agaattaaag tggaggatgg gtttcagat	1020
ttccaggatt ctgtgcaaac actcttcag caggctagag ctaagagtga agaacttgca	1080
gctcttagtt cacagcagcc tgaagagggt atggcaaagc agatggagtt cctttgcaac	1140
caagctggct atgagagact gcagcatgcc gagaggaggt tgtctgcagg gctttacagg	1200
cagagctcag aagagcacag tcctaacggc ttgacttccg ataactcaga tggacaagga	1260
gaaagacctt tgaatctccg aatgcctaatt ttacagaaca gacaaccca tcattttgtg	1320
gtggatgggg agctgagcag actttacccc agtgaggcaa agtcccactc atcagagagc	1380
cttgggattt taaaagacta ccctcattca gcttttacct tagaaaagaa agtcatcaaa	1440
acagagcctg aagattcaag atag	1464

<210> 207
 <211> 648
 <212> DNA
 <213> Homo sapiens

<400> 207	
atgcccggcg aagccacaga aaccgtccct gctacagagc aggagttgcc gcagccccag	60
gctgagacag ggtctggaac agaattctgac agtgatgaat cagtaccaga gcttgaagaa	120
caggattcca cccaggcaac cacacaacaa gccagctgg cggcagcagc tgaattgat	180
gaagaaccag tcagtaaagc aaaacagagt cggagtgaag agaaggcacg gaaggctatg	240
tccaaactgg gtcttcggca gggtacagga gttactagag tctatccg gaaatctaag	300
aatatcctct ttgtcatcac aaaaccagat gtctacaaga gccctgcttc agatacttac	360
atagtttttg gggaagccaa gatcgaagat ttatcccagc aagcacaact agcagctgct	420
gagaaattca aagttcaagg tgaagctgtc tcaaacattc aagaaaacac acagactcca	480

actgtacaag aggagagtga agaggaagag gtcgatgaaa caggtgtaga agttaaggac	540
attgaattgg tcatgtcaca agcaaattgtg tcgagagcaa aggcagtccg agccctgaag	600
aacaacagta atgatattgt aaatgcgatt atggaattaa caatgtaa	648

<210> 208
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 208	
atgtcgggtg gcctcctgaa ggcgctgctg agcgactcct acgtggagct gagccagttac	60
cgggaccagc acttccgggg tgacaatgaa gaacaagaaa aattactgaa gaaaagctgt	120
acgttatatg ttggaaatct ttctttttac acaactgaag aacaaatcta tgaactcttc	180
agcaaaagtg gtgacataaa gaaaatcatt atgggtcttg ataaaatgaa gaaaacagca	240
tgtggattct gttttgtgga atattactca cgcgcatgat cggaaaacgc catgcggtac	300
ataaatggga cggtcttgga tgaccgaatc attcgacag actgggacgc aggctttaag	360
gagggcaggc aatacggccg tgggcgatct gggggccagg ttcgggatga gtatcggcag	420
gactacgatg ctgggagagg aggctatgga aaactggcac agaaccagtg a	471

<210> 209
 <211> 4326
 <212> DNA
 <213> Homo sapiens

<400> 209	
atgagtggcc tcggggacag ttcattccgac cctgctaacc cagactcaca taagaggaaa	60
ggatcgccat gtgacacact ggcattcaagc acggaaaaga ggcgcaggga gcaagaaaat	120
aaatatttag aagaactagc tgagttactg tctgccaaca ttagtgacat tgacagcttg	180
agtgtaaaac cagacaaatg caagattttg aagaaaacag tcgatcagat acagctaattg	240
aagagaatgg aacaagagaa atcaacaact gatgacgatg tacagaaatc agacattctca	300
tcaagtagtc aaggagtgat agaaaaggaa tccttgggac ctcttctttt ggaggctttg	360
gatggatttt tctttgttgt gaactgtgaa gggagaattg tatttgtgtc agagaatgta	420
accagctact taggttacaa tcaggaggaa ttaatgaata cgagcgtcta cagcatactg	480
cacgtggggg atcatgcaga atttgtgaag aatctgctac caaaatcact agtaaattga	540
gttccttggc ctcaagaggc aacacgacga aatagccata cctttaactg caggatgcta	600
attcacctc cagatgagcc agggaccgag aaccaagaag cttgccagcg ttatgaagta	660
atgcagtgtt tcaactgtgtc acagccaaaa tcaattcaag aggatggaga agatttccag	720
tcatgtctga tttgtattgc acggcgatta cctcggcctc cagctattac ggggtgtagaa	780
tcctttatga ccaagcaaga tactacaggt aaaatcatct ctattgatac tagttccctg	840
agagctgctg gcagaactgg ttgggaagat ttagtgagga agtgcattta tgcttttttc	900
caacctcagg gcagagaacc atcttatgcc agacagctgt tccaagaagt gatgactcgt	960

ggcactgcct ccagcccctc ctatagattc atattgaatg atgggacaat gcttagcgcc	1020
cacaccaagt gtaaactttg ctaccctcaa agtccagaca tgcaaccttt catcatggga	1080
attcatatca tcgacagga gcacagtggg ctttctcctc aagatgacac taattctgga	1140
atgtcaattc cccgagtaaa tccctcggtc aatcctagta tctctccagc tcatggtgtg	1200
gctcgttcat ccacattgcc accatccaac agcaacatgg tatccaccag aataaaccgc	1260
cagcagagct cagaccttca tagcagcagt catagtaatt ctagcaacag ccaaggaagt	1320
ttcggatgct caccgggaag tcagattgta gccaatgttg ccttaaacca aggacaggcc	1380
agttcacaga gcagtaatcc ctctttaaac ctcaataatt ctcctatgga aggtacagga	1440
atatccctag cacagtcat gtctccaagg agacaggtta cttctggatt ggcaacaagg	1500
cccaggatgc caaacaattc ctttctcct aatatttcga cattaagctc tcccgttggc	1560
atgacaagta gtgcctgtaa taataataac cgatcttatt caaacatccc agtaacatct	1620
ttacagggta tgaatgaagg acccaataac tccgttggct tctctgccag ttctccagtc	1680
ctcaggcaga tgagctcaca gaattcacct agcagattaa atatacaacc agcaaaagct	1740
gagtccaaag ataacaaaga gattgcctca attttaaagt aaatgattca atctgacaac	1800
agctctagt atggcaaacc tctggattca gggcttctgc ataacaatga cagactttca	1860
gatggagaca gtaaatactc tcaaaccagt cacaactag tgagctttt gacaacaact	1920
gccgaacagc agttacggca tgctgatata gacacaagct gcaaagatgt cctgtcttgc	1980
acaggcactt ccaactctgc ctctgctaac tcttcaggag gttcttgtcc ctcttctcat	2040
agctcattga cagaacggca taaaattcta caccggctct tacaggagg tagccccctca	2100
gatatcacca ctttgtctgt cgagcctgat aaaaaggaca gtgcatctac ttctgtgtca	2160
gtgactggac aggtacaagg aaactccagt ataaaactag aactggatgc ttcaaagaaa	2220
aaagaatcaa aagaccatca gtcctacgc tatcttttag ataaagatga gaaagattta	2280
agatcaactc caaacctgag cctggatgat gtaaagggtga aagtggaaaa gaaagaacag	2340
atggatccat gtaatacaaa cccaaccca atgaccaaac ccactcctga ggaaataaaa	2400
ctggaggccc agagccagtt tacagctgac cttgaccagt ttgatcagtt actgccacg	2460
ctggagaagg cagcacagtt gccaggctta tgtgagacag acaggatgga tgggtgcggtc	2520
accagtgtaa ccatcaaadc ggagatcctg ccagcttcac ttcagtccgc cactgccaga	2580
cccacttcca ggctaaatag attacctgag ctggaattgg aagcaattga taaccaattt	2640
ggacaaccag gaacaggcga tcagattcca tggacaaata atacagtgac agctataaat	2700
cagagtaa atcagaagacca gtgtattagc tcacaattag atgagcttct ctgtccaccc	2760
acaacagtag aaggagagaa tgatgagaag gctcttcttg aacagctggg atccttcctt	2820
agtggcaaag atgaaactga gctagctgaa ctagacagag ctctgggaat tgacaaactt	2880
gttcaggggg gtggattaga tgtattatca gagagatttc caccacaaca agcaacgcca	2940
cctttgatca tggaagaaag acccaacctt tattcccagc cttactcttc tccttctcct	3000

actgccaatc tccctagccc tttccaaggc atgggtcaggc aaaaaccttc actgggggacg	3060
atgcctgttc aagtaacacc tccccgaggt gctttttcac ctggcatggg catgcagccc	3120
aggcaaactc taaacagacc tccggctgca cctaaccagc ttcgacttca actacagcag	3180
cgattacagg gacaacagca gttgatacac caaaatcggc aagctatctt aaaccagttt	3240
gcagcaactg ctctgtttgg catcaatatg agatcaggca tgcaacagca aattacacct	3300
cagccacccc tgaatgtca aatgtttggc caacgtcagc gggaactgta cagtcaacag	3360
caccgacaga ggcagctaata acagcagcaa agagccatgc ttatgaggca gcaaagcttt	3420
gggaacaacc tccctccctc atctggacta ccagttcaaa tggggaaccc ccgtcttctt	3480
caggggtgtc cacagcaatt cccctatcca ccaaactatg gtacaaatcc aggaacccca	3540
cctgtcttcta ccagcccgtt ttcacaacta gcagcaaatc ctgaagcatc cttggccaac	3600
cgcaacagca tgggtgagcag aggcattgaca ggaaacatag gaggacagtt tggcactgga	3660
atcaatcctc agatgcagca gaatgtcttc cagtatccag gagcaggaat ggttcccca	3720
ggtgaggcca actttgtctc atctctaagc cctgggagct ccatggtgcc gatgccaatc	3780
cctcctcctc agagttctct tctccagcaa actccacctg cctccgggta tcagtcacca	3840
gacatgaagg cctggcagca aggagcgata ggaaacaaca atgtgttcag tcaagctgtc	3900
cagaaccagc ccacgcctgc acagccagga gtatacaaca acatgagcat caccgtttcc	3960
atggcagggtg gaaatacgaa tgttcagaac atgaacccaa tgatggccca gatgcagatg	4020
agctctttgc agatgccagg aatgaacact gtgtgccctg agcagataaa tgatcccga	4080
ctgagacaca caggcctcta ctgcaaccag ctctcatcca ctgaccttct caaaacagaa	4140
gcagatggaa cccagcaggt gcaacagggt caggtgtttg ctgacgtcca gtgtacagtg	4200
aatctggtag gcggggaccc ttacctgaac cagcctgggt cactgggaac tcaaaagccc	4260
acgtcaggac cacagacccc ccaggcccag cagaagagcc tccttcagca gctactgact	4320
gaataa	4326

<210> 210
 <211> 1845
 <212> DNA
 <213> Homo sapiens

<400> 210	
atgaatacct tccaagacca gagtggcagc tccagtaata gagaaccctt tttgaggtgt	60
agtgatgcac ggagggactt ggagcttgct attggtggag ttctccgggc tgaacagcaa	120
attaaagata acttgcgaga ggtcaaagct cagattcaca gttgcataag ccgtcacctg	180
gaatgtctta gaagccgtga ggtatggctg tatgaacagg tggaccttat ttatcagctt	240
aaagaggaga cacttcaaca gcaggctcag cagctctact cgttattggg ccagttcaat	300
tgtcttactc atcaactgga gtgtacccaa aacaaagatc tagccaatca agtctctgtg	360
tgcttgaga gactgggcag tttgaccctt aagcctgaag attcaactgt cctgctcttt	420
gaagctgaca caattactct gcgccagacc atcaccacat ttgggtctct caaaaccatt	480

PCTAU2016050927-seql-000001-EN-20161013

caaattcctg agcacttgat ggctcatgct agttcagcaa atattgggcc cttcctggag	540
aagagagggt gtatctccat gccagagcag aagtcagcat ccggtattgt agctgtccct	600
ttcagcgaat ggctccttgg aagcaaacct gccagtgggt atcaagctcc ttacataccc	660
agcaccgacc cccaggactg gcttacccaa aagcagacct tggagaacag tcagacttct	720
tccagagcct gcaatttctt caataatgtc gggggaaacc taaagggtt agaaaactgg	780
ctcctcaaga gtgaaaaatc aagttatcaa aagtgtaca gccattccac tactagttct	840
ttctccattg aaatggaaaa ggttgagat caagagcttc ctgatcaaga tgagatggac	900
ctatcagatt ggctagtgc tccccaggaa tcccataagc tgcggaagcc tgagaatggc	960
agtcgtgaaa ccagtggaaa gtttaagctc ttattccagt cctataatgt gaatgattgg	1020
cttgtcaaga ctgactcctg taccaactgt cagggaaacc agcccaaagg tgtggagatt	1080
gaaaacctgg gcaatctgaa gtgcctgaat gaccattgg aggccaagaa accattgtcc	1140
acccccagca tgggttacaga ggattggctt gtccagaacc atcaggacc atgtaaggta	1200
gaggagggtg gcagagccaa tgagccctgc acaagctttg cagagtgtgt gtgtgatgag	1260
aattgtgaga aggaggctct gtataagtgg cttctgaaga aagaaggaaa ggataaaaat	1320
gggatgcctg tggaacccaa acctgagcct gagaagcata aagattccct gaatatgtgg	1380
ctctgtccta gaaaagaagt aatagaacaa actaaagcac caaaggcaat gactccttct	1440
agaattgctg attccttcca agtcataaag aacagccct tgtcggagtg gcttatcagg	1500
ccccataca aagaaggaag tcccaaggaa gtgcctggta ctgaagacag agctggcaaa	1560
cagaagtta aaagcccat gaatacttcc tgggtgttct ttaacacagc tgactgggtc	1620
ctgccaggaa agaagatggg caacctcagc cagttatctt ctggagaaga caagtggctg	1680
cttcgaaaga aggcccagga agtattactt aattcacctc tacaggagga acataacttc	1740
ccccagacc attatggcct ccctgcagtt tgtgatctct ttgcctgtat gcagcttaaa	1800
gttgataaag agaagtgggt atatcgaact cctctacaga tgtga	1845

<210> 211
 <211> 1008
 <212> DNA
 <213> Homo sapiens

<400> 211	
atggaggact ccggaagac tticagctcc gaggaggaag aagctaacta ttgaaagat	60
ctggcgatga cctacaaaca gagggcagaa aatacgcaag aggaactccg agaattccag	120
gaggggaagcc gagaatatga agctgaattg gagacgcagc tgcaacaaat tgaaccagg	180
aacagagacc tcctgtccga aaataaccgc cttcgcattg agctggaaac catcaaggag	240
aagtttgaag tgcagcactc tgaaggctac cggcagatct cagccttggg ggatgacctc	300
gcgagacca aagccattaa agaccaattg cagaaatata tcagagagct ggagcaagca	360
aatgacgacc tggaaagagc caagcgcgcc acgatcatgt ctctgaaga ctttgagcag	420

PCTAU2016050927-seq1-000001-EN-20161013

cgcttgaatc aggccatcga aagaaatgcc ttcctggaaa gtgaacttga tgaaaaagag 480
aatctcctgg aatctgttca gagactgaag gatgaagcca gagatttgcg gcaggaactg 540
gccgtgcagc agaagcagga gaaaccagg acccccatgc ccagctcagt ggaagctgag 600
aggacagaca cagctgtgca ggccacgggc tccgtgccgt ccacgcccat tgctcaccga 660
ggaccagct caagtttaaa cacacctggg agcttcagac gtggcctgga cgactccacc 720
ggggggaccc ccctcacacc tgcggcccgg atatcagccc tcaacattgt gggagaccta 780
ctgcggaaag tcggggcact ggagtccaaa ctcgcttcct gccggaacct cgtgtacgat 840
cagtcccaa accgaacagg tggcccagcc tctgggcgga gcagcaagaa cagagatggc 900
ggggagagac ggccaagcag caccagcgtg cttttgggtg ataaggggtt ggacacgagt 960
tgccgctggt tgtccaaatc aacaaccagg tcgtccagct cctgctga 1008

<210> 212
<211> 1038
<212> DNA
<213> Homo sapiens

<400> 212
atggatggtg aagatatacc agatttttca agtttaaagg aggaaactgc ttattggaag 60
gaactttcct tgaagtataa gcaaagcttc caggaagctc gggatgagct agttgaattc 120
caggaaggaa gcagagaatt agaagcagag ttggaggcac aattagtaca ggctgaacaa 180
agaaatagag acttgcaggc tgataaccaa agactgaaat atgaagtgga ggcattaaag 240
gagaagctag agcatcaata tgcacagagc tataagcagg tctcagtgtt agaagatgat 300
ttaagtcaga ctcgggccat taaggagcag ttgcataagt atgtgagaga gctggagcag 360
gccaacgacg acctggagcg agccaaaagg gcaacaatag tttcactgga agactttgaa 420
caaaggctaa accaggccat tgaacgaaat gcatttttag aaagtgaact tgatgaaaag 480
gaatctttgt tgggtctctgt acagagggtta aaggatgaag caagagattt aaggcaagaa 540
ctagcagttc gggaaagaca acaggaagta actagaaagt cggctcctag ctctccaact 600
ctagactgtg aaaagatgga ctccgccgtc caagcatcac tttctttgcc agctaccctt 660
gttggcaaag gaacggagaa cacttttcct tcaccgaaag ctataccaaa tggttttggt 720
accagtccac taactccctc tgctaggata tcagcactaa acatcgtggg ggatctctta 780
cggaaagtag gggctttaga atccaaatta gcagcttgca ggaattttgc aaaggaccaa 840
gcatcacgaa aatcctatat ttcagggaat gttaactgtg ggggtgctgaa tggcaatggc 900
acaaagttct ctcgatcagg gcatacatct ttcttcgaca aaggggcagt aaacggcttt 960
gaccccgctc ctctcctcc tgggtctgggc tcctcgcgtc catcgtcagc gccgggtatg 1020
ctgcctctca gtgtgtga 1038

<210> 213
<211> 666
<212> DNA
<213> Homo sapiens

<400> 213
 atggcggttg cgttggcggc gctggcggcg gtcgagccgg cctgcggcag ccggtaccag 60
 cagttgcaga atgaagaaga gtctggagaa cctgaacagg ctgcagggtga tgctcctcca 120
 ccttacagca gcatttctgc agagagcgca gcatattttg actacaagga tgagtctggg 180
 tttccaaagc ccccatctta caatgtagct acaacactgc ccagttatga tgaagcggag 240
 aggaccaagg ctgaagctac tatccctttg gttcctggga gagatgagga ttttgtgggt 300
 cgggatgatt ttgatgatgc tgaccagctg aggataggaa atgatgggat tttcatgtta 360
 acttttttca tggcattcct ctttaactgg attgggtttt tcctgtcttt ttgcctgacc 420
 acttcagctg caggaaggta tggggccatt tcaggatttg gtctctctct aattaaatgg 480
 atcctgattg tcaggttttc cacctatttc cctggatatt ttgatgggtca gtactggctc 540
 tgggtgggtgt tccttgtttt aggttttctc ctgtttctca gaggatttat caattatgca 600
 aaagttcgga agatgccaga aactttctca aatctcccca ggaccagagt tctctttatt 660
 tattaa 666

<210> 214
 <211> 792
 <212> DNA
 <213> Homo sapiens

<400> 214
 atggaggaga gcgggtacga gtcggtgctc tgtgtcaagc ctgacgtcca cgtctaccgc 60
 atccctccgc gggctaccaa ccgtggctac agggctgcgg agtggcagct ggaccagcca 120
 tcatggagtg gccggctgag gatcactgca aaggacaga tggcctacat caagctggag 180
 gacaggacgt caggggagct ctttgctcag gccccggtgg atcagtttcc tggcacagct 240
 gtggagagtg tgacggattc cagcaggtag ttcgtgatcc gcatcgaaga tggaaatggg 300
 cgacgggcgt ttattggaat tggcttcggg gaccgaggtg atgcctttga cttcaatgtt 360
 gcattgcagg accatttcaa gtgggtgaaa cagcagtgtg aatttgcaaa acaagcccag 420
 aaccagacc aaggccctaa actggacctg ggcttcaagg agggccagac catcaagctc 480
 aacatcgcaa acatgaagaa gaaggaagga gcagctggga atccccgagt ccggcctgcc 540
 agcacaggag ggctgagcct gttccccct cccccagggg ggaaaacctc caccctgac 600
 cctccccctg gggagcagtt ggctgtgggg ggatccctcg tccagccagc agttgctccc 660
 agttcaggag gtgctcctgt accctggcca cagcccaatc ctgccactgc tgacatctgg 720
 ggagacttta ccaaacttac aggatcaact tccagccaga cccagccagg cacaggctgg 780
 gtccagttct ga 792

<210> 215
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 215

atggatgagc aatcacaagg aatgcaaggg ccacctgttc ctcagttcca accacagaag	60
gccttacgac cggatatggg ctataataca ttagccaact ttcgaataga aaagaaaatt	120
ggtcgcggaac aatttagtga agtttataga gcagcctgtc tcttgatgg agtaccagta	180
gctttaaaaa aagtgcagat atttgattta atggatgcca aagcacgtgc tgattgcatc	240
aaagaaatag atcttcttaa gcaactcaac catccaaatg taataaaata ttatgcatca	300
ttcattgaag ataatgaact aaacatagtt ttggaactag cagatgctgg cgacctatcc	360
agaatgatca agcattttta gaagcaaaag aggctaattc ctgaaagaac tgtttggaag	420
tattttgttc agctttgcag tgcattggaa cacatgcatt ctcgaagagt catgcataga	480
gatataaaac cagctaattg gttcattaca gccactgggg tggtaaaact tggagatctt	540
gggcttggcc ggtttttcag ctcaaaaacc acagctgcac attctttagt tggtagcct	600
tattacatgt ctccagagag aatacatgaa aatggataca acttcaaadc tgacatctgg	660
tctcttggct gtctactata tgagatggct gcattacaaa gtcctttcta tggtagacaa	720
atgaatttat actcactgtg taagaagata gaacagtgtg actaccacc tcttccttca	780
gatcactatt cagaagaact ccgacagtta gttaatatgt gcatcaaccc agatccagag	840
aagcgaccag acgtcaccta tgtttatgac gtagcaaaga ggatgcatgc atgcactgca	900
agcagctaa	909

<210> 216
 <211> 2910
 <212> DNA
 <213> Homo sapiens

<400> 216	
atggcagaag atgatccata tttgggaagg cctgaacaaa tgtttcattt ggatccttct	60
ttgactcata caatatttaa tccagaagta tttcaaccac agatggcact gccaacagca	120
gatggcccat accttcaaat attagagcaa cctaaacaga gaggatttcg tttccgttat	180
gtatgtgaag gcccatccca tgggtgacta cctggtgcct ctagtgaaaa gaacaagaag	240
tcttaccctc aggtcaaaat ctgcaactat gtgggaccag caaaggttat tgttcagttg	300
gtcacaaatg gaaaaaatat ccacctgcat gccacagcc tgggtgggaaa acactgtgag	360
gatgggatct gcactgtaac tgctggacc aaggacatgg tggtcggctt cgcaaacctg	420
ggtatacttc atgtgacaaa gaaaaaagta tttgaaacac tggaagcacg aatgacagag	480
gcgtgtataa ggggctataa tcctggactc ttggtgcacc ctgaccttgc ctatttgcaa	540
gcagaagggtg gaggggaccg gcagctggga gatcgggaaa aagagctaata ccgccaagca	600
gctctgcagc agaccaagga gatggacctc agcgtggtgc ggctcatgtt tacagctttt	660
cttccggata gcactggcag cttcacaagg cgcttggaa cctgtggtatc agacgccatc	720
tatgacagta aagccccaa tgcatccaac ttgaaaattg taagaatgga caggacagct	780
ggatgtgtga ctggagggga ggaaatttat cttctttgtg acaaagttca gaaagatgac	840
atccagattc gatatttatga agaggaagaa aatggtggag tctgggaagg atttgagat	900

ttttcccca	cagatgttca	tagacaattt	gccattgtct	tcaaaactcc	aaagtataaa	960
gatattaata	ttacaaaacc	agcctctgtg	tttgtccagc	ttcggaggaa	atctgacttg	1020
gaaactagt	aacccaaaacc	tttcctctac	tatcctgaaa	tcaaagataa	agaagaagt	1080
cagaggaaac	gtcagaagct	catgcccaat	ttttcggata	gtttcggcgg	tggtagtgg	1140
gctggagctg	gaggcggagg	catgtttgg	agtggcgggtg	gaggaggggg	cactggaagt	1200
acagggtccag	ggtatagctt	cccacactat	ggatttccta	cttatggtgg	gattactttc	1260
catcctggaa	ctactaaatc	taatgctggg	atgaagcatg	gaacatgga	cactgaatct	1320
aaaaaggacc	ctgaaggttg	tgacaaaagt	gatgacaaaa	acactgtaaa	cctctttggg	1380
aaagttattg	aaaccacaga	gcaagatcag	gagcccagcg	aggccaccgt	tggaatgg	1440
gaggtcactc	taacgtatgc	aacaggaaca	aaagaagaga	gtgctggagt	tcaggataac	1500
ctctttctag	agaaggctat	gcagcttgca	aagaggcatg	ccaatgccct	tttcgactac	1560
gcggtgacag	gagacgtgaa	gatgctgctg	gccgtccagc	gccatctcac	tgctgtgcag	1620
gatgagaatg	gggacagtgt	cttacctta	gcaatcatcc	accttcattc	tcaacttgtg	1680
agggatctac	tagaagtcac	atctggtttg	atttctgatg	acattatcaa	catgagaaat	1740
gatctgtacc	agacgccctt	gcacttggca	gtgatcacta	agcaggaaga	tgtggtggag	1800
gatttgctga	gggctggggc	cgacctgagc	cttctggacc	gcttgggtaa	ctctgttttg	1860
cacctagctg	ccaaagaagg	acatgataaa	gttctcagta	tcttactcaa	gcacaaaaag	1920
gcagcactac	ttcttgacca	ccccaacggg	gacggtctga	atgccattca	tctagccatg	1980
atgagcaata	gcctgccatg	tttgctgctg	ctggtggccg	ctggggctga	cgtcaatgct	2040
caggagcaga	agtccgggcg	cacagcactg	cacctggctg	tggagcacga	caacatctca	2100
ttggcaggct	gcctgctcct	ggagggtgat	gcccattgtg	acagtactac	ctacgatgga	2160
accacacccc	tgcatatagc	agctgggaga	gggtccacca	ggctggcagc	tcttctcaaa	2220
gcagcaggag	cagatcccct	ggtggagaac	tttgagcctc	tctatgacct	ggatgactct	2280
tgggaaaatg	caggagagga	tgaaggagtt	gtgcctggaa	ccacgcctct	agatatggcc	2340
accagctggc	aggtatttga	catattaaat	gggaaacat	atgagccaga	gtttacatct	2400
gatgatttac	tagacaagg	agacatgaaa	cagctggctg	aagatgtgaa	gctgcagctg	2460
tataagttac	tagaaattcc	tgatccagac	aaaaactggg	ctactctggc	gcagaaatta	2520
ggtctgggga	tacttaataa	tgcttccgg	ctgagtcctg	ctccttccaa	aacacttatg	2580
gacaactatg	aggtctctgg	gggtacagtc	agagagctgg	tggaggccct	gagacaaatg	2640
ggctacaccg	aagcaattga	agtgatccag	gcagcctcca	gcccagtga	gaccacctct	2700
caggccact	cgctgcctct	ctcgctgcc	tccacaaggc	agcaaataga	cgagctccga	2760
gacagtgaca	gtgtctgcga	cagcggcgtg	gagacatcct	tccgcaaact	cagctttacc	2820
gagtctctga	ccagtgtg	ctcactgcta	actctcaaca	aaatgcccc	tgattatggg	2880
caggaaggac	ctctagaagg	caaaatttag				2910

<210> 217
 <211> 1044
 <212> DNA
 <213> Homo sapiens

<400> 217
 atggagcagt atacagcaaa cagcaatagt tcgacagagc agattgttgt ccaggcagga 60
 cagattcagc agcagcagca ggggtggtgtc actgctgtgc agttgcagac tgaggcccag 120
 gtggcatccg cctcaggcca gcaagtccag accctccagg tagtccaagg gcagccatta 180
 atggtgcagg tcagtggagg ccagctaatc acatcaactg gccaacccat catggtccag 240
 gctgtccctg gtggacaagg tcaaaccatc atgcaagtac ctgtttcttg aacacaggggt 300
 ttgcagcaaa tacagttggt cccacctgga cagatccaga tccaggggtg acaggctgtg 360
 cagggtgcagg gccagcaggg ccagaccag cagatcatca tccagcagcc ccagacgggt 420
 gtcactgctg gccagactca gacacagcag cagattgctg tccagggaca gcaagtggca 480
 cagactgctg aagggcagac catcgtctat caaccagtta atgcagatgg caccattctc 540
 cagcaagtta cagtccctgt ttcaggcatg atcactatcc cagcagccag tttggcagga 600
 gcacagattg ttcaaacagg agccaatacc aacacaacca gcagtgggca agggactgtc 660
 actgtgacac taccagtggc aggcaatgtg gtcaattcag gagggatggt catgatggtt 720
 cctgggggctg gctctgtgcc tgctatccaa agaatccctc tacctggagc agagatgctt 780
 gaagaagagc ctctctacgt gaatgcaaaa caataccacc gtattcttaa gaggaggcaa 840
 gcccagacta aactagaggc agaaggaaa attccaaagg agagaaggaa atacctgcat 900
 gagtctcggc accgtcatgc catggcacgg aagcgtgggtg aagggtggacg atttttctct 960
 ccaaaggaaa aggatagtcc ccatatgcag gatccaaacc aagccgatga agaagcaatg 1020
 acacagatca tccgagtgtc ctaa 1044

<210> 218
 <211> 4290
 <212> DNA
 <213> Homo sapiens

<400> 218
 atggctggcg gagcctgggg ccgcctggcc tgttacttgg agttcctgaa gaaggaggag 60
 ctgaaggagt tccagcttct gctcgccaat aaagcgact ccaggagctc ttcgggtgag 120
 acacccgctc agccagagaa gacgagtggc atggagggtg cctcgtacct ggtggctcag 180
 tatggggagc agcgggcctg ggacctagcc ctccatacct gggagcagat ggggctgagg 240
 tcaactgtcg cccaagccca ggaaggggca ggccactctc cctcattccc ctacagccca 300
 agtgaacccc acctgggggtc tcccagccaa cccacctcca ccgcagtgt aatgccctgg 360
 atccatgaat tgccggcggg gtgcaccag ggctcagaga gaagggtttt gagacagctg 420
 cctgacacat ctggacgccg ctggagagaa atctctgcct cactcctcta ccaagctctt 480
 ccaagctccc cagaccatga gtctccaagc caggagtcac ccaacgcccc cacatccaca 540

gcagtgtctgg	ggagctgggg	atccccacct	cagcccagcc	tagcaccag	agagcaggag	600
gctcctggga	cccaatggcc	tctggatgaa	acgtcaggaa	tttactacac	agaaatcaga	660
gaaagagaga	gagagaaatc	agagaaaggc	aggcccccac	gggcagcggg	ggtaggaacg	720
ccccacagg	cgcacaccag	cctacagccc	caccaccacc	catgggagcc	ttctgtgaga	780
gagagcctct	gttccacatg	gccctggaaa	aatgaggatt	ttaacaaaaa	attcacacag	840
ctgctacttc	tacaaagacc	tcaccccaga	agccaagatc	ccctgggtcaa	gagaagctgg	900
cctgattatg	tggaggagaa	tcgaggacat	ttaattgaga	tcagagactt	atttgcccca	960
ggcctggata	cccaagaacc	tcgcatagtc	atactgcagg	gggctgtctg	aattgggaag	1020
tcaacactgg	ccaggcaggt	gaaggaagcc	tgggggagag	gccagctgta	tggggaccgc	1080
ttccagcatg	tcttctactt	cagctgcaga	gagctggccc	agtccaaggt	ggtgagtctc	1140
gctgagctca	tcggaaaaga	tgggacagcc	actccggctc	ccattagaca	gatcctgtct	1200
aggccagagc	ggctgtctct	catcctcgat	ggtgtagatg	agccaggatg	ggtccttgag	1260
gagccgagtt	ctgagctctg	tctgcaactg	agccagccac	agccggcgga	tgcactgtctg	1320
ggcagtttgc	tggggaaaac	tatacttccc	gaggcatcct	tcctgatcac	ggctcggacc	1380
acagctctgc	agaacctcat	tccttctttg	gagcaggcac	gttgggtaga	ggtcctgggg	1440
ttctctgagt	ccagcaggaa	ggaatatatt	tacagatatt	tcacagatga	aaggcaagca	1500
attagagcct	ttaggttggt	caaatacaac	aaagagctct	gggccctgtg	tcttgtgccc	1560
tgggtgtcct	ggctggcctg	cacttgccctg	atgcagcaga	tgaagcggaa	ggaaaaactc	1620
acactgactt	ccaagaccac	cacaaccctc	tgtctacatt	accttgccca	ggctctccaa	1680
gctcagccat	tgggacccca	gctcagagac	ctctgtctctc	tggctgtctga	gggcatctgg	1740
caaaaaaaga	cccttttcag	tccagatgac	ctcaggaagc	atgggttaga	tggggccatc	1800
atctccacct	tcttgaagat	gggtattctt	caagagcacc	ccatccctct	gagctacagc	1860
ttcattcacc	tctgtttcca	agagttcttt	gcagcaatgt	cctatgtctt	ggaggatgag	1920
aaggggagag	gtaaacattc	taattgcac	atagatttgg	aaaagacgct	agaagcatat	1980
ggaatacatg	gcctgttttg	ggcatcaacc	acacgtttcc	tattgggcct	gttaagtgat	2040
gagggggaga	gagagatgga	gaacatcttt	cactgccggc	tgtctcaggg	gaggaacctg	2100
atgcagtggg	tcccgtccct	gcagctgctg	ctgcagccac	actctctgga	gtccctccac	2160
tgcttgtagc	agactcggaa	caaaacgttc	ctgacacaag	tgatggccca	tttcgaagaa	2220
atgggcatgt	gtgtagaaac	agacatggag	ctcttagtgt	gcactttctg	cattaaattc	2280
agccgccacg	tgaagaagct	tcagctgatt	gagggcaggc	agcacagatc	aacatggagc	2340
cccaccatgg	tagtcctgtt	caggtgggtc	ccagtcacag	atgcctattg	gcagattctc	2400
ttctccgtcc	tcaaggtcac	cagaaacctg	aaggagctgg	acctaagtgg	aaactcgctg	2460
agccactctg	cagtgaagag	tctttgtaag	accctgagac	gccctcgctg	cctcctggag	2520
accctgcggg	tggctggctg	tggcctcaca	gctgaggact	gcaaggacct	tgcccttggg	2580

ctgagagcca	accagaccct	gaccgagctg	gacctgagct	tcaatgtgct	cacggatgct	2640
ggagccaaac	acctttgcc	gagactgaga	cagccgagct	gcaagctaca	gcgactgcag	2700
ctggtcagct	gtggcctcac	gtctgactgc	tgccaggacc	tggcctctgt	gcttagtgcc	2760
agccccagcc	tgaaggagct	agacctgcag	cagaacaacc	tggatgacgt	tggcgtgcga	2820
ctgctctgtg	aggggctcag	gcctcctgcc	tgcaaactca	tacgcctggg	gctggaccag	2880
acaactctga	gtgatgagat	gaggcaggaa	ctgagggccc	tggagcagga	gaaacctcag	2940
ctgctcatct	tcagcagacg	gaaaccaagt	gtgatgacct	ctactgaggg	cctggatacg	3000
ggagagatga	gtaatagcac	atcctcactc	aagcggcaga	gactcggatc	agagagggcg	3060
gcttcccatg	ttgctcaggc	taatctcaaa	ctcctggacg	tgagcaagat	cttcccaatt	3120
gctgagattg	cagaggaaag	ctccccagag	gtagtaccgg	tggaactctt	gtgcgtgcct	3180
tctcctgcct	ctcaagggga	cctgcatacg	aagccttttg	ggactgacga	tgacttctgg	3240
ggccccacgg	ggcctgtggc	tactgaggta	gttgacaaag	aaaagaactt	gtaccgagtt	3300
cacttccctg	tagctggctc	ctaccgctgg	ccaacacgg	gtctctgctt	tgtgatgaga	3360
gaagcgggtg	ccgttgagat	tgaattctgt	gtgtgggacc	agttcctggg	tgagatcaac	3420
ccacagcaca	gctggatggg	ggcagggcct	ctgctggaca	tcaaggctga	gcctggagct	3480
gtggaagctg	tgcacctccc	tcactttgtg	gctctccaag	ggggccatgt	ggacacatcc	3540
ctgttccaaa	tggccactt	taaagaggag	gggatgctcc	tggagaagcc	agccaggggtg	3600
gagctgcatc	acatagttct	ggaaaacccc	agcttctccc	ccttgggagt	cctcctgaaa	3660
atgatccata	atgccctgcg	cttcattccc	gtcacctctg	tgggtgttgct	ttaccaccgc	3720
gtccatcctg	aggaagtcac	cttcacctc	tacctgatcc	caagtgactg	ctccattcgg	3780
aaggaactgg	agctctgcta	tcgaagccct	ggagaagacc	agctgttctc	ggagttctac	3840
gttggccact	tgggatcagg	gatcaggctg	caagtgaaag	acaagaaaga	tgagactctg	3900
gtgtgggagg	ccttgggtgaa	accaggagat	ctcatgcctg	caactactct	gatccctcca	3960
gcccgcatag	ccgtaccttc	acctctggat	gcccgcagct	tgctgcactt	tgtggaccag	4020
tatcgagagc	agctgatagc	ccgagtgaca	tcggtggagg	ttgtcttgga	caaactgcat	4080
ggacaggtgc	tgagccagga	gcagtacgag	aggggtgctg	ctgagaacac	gaggcccagc	4140
cagatgcgga	agctgttcag	cttgagccag	tcctgggacc	ggaagtgcaa	agatggactc	4200
taccaagccc	tgaaggagac	ccatcctcac	ctcattatgg	aactctggga	gaagggcagc	4260
aaaaagggac	tcctgccact	cagcagctga				4290

<210> 219
 <211> 3123
 <212> DNA
 <213> Homo sapiens

<400> 219	
atgggggaag	aggggtggttc agcctctcac gatgaggagg aaagagcaag tgtcctcctc 60

ggacattctc	cgggttgtga	aatgtgctcg	caggaggctt	ttcaggcaca	gaggagccag	120
ctggtcgagc	tgctggtctc	aggggtccctg	gaaggcttcg	agagtgtcct	ggactggctg	180
ctgtcctggg	aggtcctctc	ctgggaggac	tacgagggtc	tccacctcct	gggccagcct	240
ctctcccact	tggccaggcg	ccttctggac	accgtctgga	ataagggtac	ttgggcctgt	300
cagaagctca	tcgcggtgc	ccaagaagcc	caggccgaca	gccagtcccc	caagctgcat	360
ggctgctggg	acccccactc	gctccacca	gcccagagacc	tgcagagtca	ccggccagcc	420
attgtcagga	ggctccacag	ccatgtggag	aacatgctgg	acctggcatg	ggagcgggggt	480
ttcgtcagcc	agtatgaatg	tgatgaaatc	aggttgccga	tcttcacacc	gtcccagagg	540
gcaagaaggc	tgcttgatct	tgccacggtg	aaagcgaatg	gattggctgc	cttccttcta	600
caacatgttc	aggaattacc	agtcccattg	gccctgcctt	tggaagctgc	cacatgcaag	660
aagtatatgg	ccaagctgag	gaccacggtg	tctgctcagt	ctcgcttcct	cagtacctat	720
gatggagcag	agacgctctg	cctggaggac	atatacacag	agaatgtcct	ggagggtctgg	780
gcagatgtgg	gcatggctgg	acccccgcag	aagagcccag	ccaccctggg	cctggaggag	840
ctcttcagca	cccctggcca	cctcaatgac	gatgcggaca	ctgtgctggg	gggtgggtgag	900
gcggggcagt	gcaagagcac	gctcctgcag	cggctgcact	tgctgtgggc	tgcagggcaa	960
gacttccagg	aatttctctt	tgtcttccca	ttcagctgcc	ggcagctgca	gtgcatggcc	1020
aaaccactct	ctgtgcggac	tctactcttt	gagcactgct	gttggcctga	tgttgggtcaa	1080
gaagacatct	tccagttact	ccttgaccac	cctgaccgtg	tcctgttaac	ctttgatggc	1140
tttgacgagt	tcaagttcag	gttcacggat	cgtgaacgcc	actgctcccc	gaccgacccc	1200
acctctgtcc	agaccctgct	cttcaacctt	ctgcagggca	acctgctgaa	gaatgcccg	1260
aagggtggtg	ccagccgtcc	ggccgctgtg	tcggcgttcc	tcaggaagta	catccgcacc	1320
gagttcaacc	tcaagggctt	ctctgaacag	ggcatcgagc	tgtacctgag	gaagcgccat	1380
catgagcccc	gggtggcgga	ccgcctcatc	cgctgtctcc	aagagacctc	agccctgcac	1440
ggtttgtgcc	acctgcctgt	cttctcatgg	atggtgtcca	aatgccacca	ggaactgttg	1500
ctgcaggagg	gggggtcccc	aaagaccact	acagatatgt	acctgctgat	tctgcagcat	1560
tttctgctgc	atgccacccc	cccagactca	gcttcccaag	gtctgggacc	cagtcttctt	1620
cggggccgcc	tccccaccct	cctgcacctg	ggcagactgg	ctctgtgggg	cctgggcatg	1680
tgctgctacg	tgttctcagc	ccagcagctc	caggcagcac	aggtcagccc	tgatgacatt	1740
tctcttggct	tcctgggtgc	tgccaaaggt	gtcgtgccag	ggagtacggc	gcccctggaa	1800
ttccttcaca	tcactttcca	gtgcttcttt	gccgcgttct	acctggcact	cagtgtgtgat	1860
gtgccaccag	ctttgctcag	acacctcttc	aattgtggca	ggccaggcaa	ctcaccaatg	1920
gccaggctcc	tgcccacgat	gtgcatccag	gcctcggagg	gaaaggacag	cagcgtggca	1980
gctttgctgc	agaaggccga	gccgcacaac	cttcagatca	cagcagcctt	cctggcaggg	2040
ctgttgtccc	gggagcactg	gggcctgctg	gctgagtgcc	agacatctga	gaaggccctg	2100

ctccggcgcc aggcctgtgc ccgctggtgt ctggcccgcga gcctccgcaa gcacttccac	2160
tccatcccg cagctgcacc gggtagaggc aagagcgtgc atgcatgcc cgggttcac	2220
tggctcatcc ggagcctgta cgagatgcag gaggagcggc tggctcggaa ggctgcacgt	2280
ggcctgaatg ttgggcacct caagttgaca ttttgacgtg tgggccccac tgagtgtgct	2340
gccctggcct ttgtgctgca gcacctccgg cggcccgtgg ccctgcagct ggactacaac	2400
tctgtgggtg acattggcgt ggagcagctg ctgccttgcc ttggtgtctg caaggctctg	2460
tatttgcgcg ataacaatat ctcagaccga ggcatctgca agctcattga atgtgctctt	2520
cactgcgagc aattgcagaa gttagctcta ttcaacaaca aattgactga cggctgtgca	2580
cactccatgg ctaagctcct tgcagtcagg cagaacttct tggcattgag gctggggaat	2640
aactacatca ctgccgcggg agcccaagtg ctggccgagg ggctccgagg caacacctcc	2700
ttgcagttcc tgggattctg gggcaacaga gtgggtgacg agggggccca ggccctggct	2760
gaagccttgg gtgatcacca gagcttgagg tggctcagcc tgggtgggaa caacattggc	2820
agtgtgggtg cccaagcctt ggactgatg ctggcaaaga acgtcatgct agaagaactc	2880
tgcctggagg agaaccatct ccaggatgaa ggtgtatgtt ctctcgaga aggactgaag	2940
aaaaattcaa gtttgaaaat cctgaagttg tccaataact gcatcaccta cctaggggca	3000
gaagccctcc tgcaggccct tgaaaggaat gacaccatcc tggaagtctg gctccgaggg	3060
aacactttct ctctagagga ggttgacaag ctcggtgca gggacaccag actcttgctt	3120
tga	3123

<210> 220
 <211> 906
 <212> DNA
 <213> Homo sapiens

<400> 220	
atgacgcggc atggcaagaa ctgcaccgca ggggccgtct acacctacca cgagaagaag	60
aaggacacag cggcctcggg ctatgggacc cagaacattc gactgagccg ggatgccgtg	120
aaggacttcg actgctgttg tctctccctg cagccttgcc acgatcctgt tgtcacccca	180
gatggctacc tgtatgagcg tgaggccatc ctggagtaca ttctgcacca gaagaaggag	240
attgcccggc agatgaaggc ctacgagaag cagcggggca cccggcgcca ggagcagaag	300
gagcttcagc gggcggcctc gcaggaccat gtgcggggct tcctggagaa ggagtcggct	360
atcgtgagcc ggcccctcaa ccctttcaca gccaaaggccc tctcgggcac cagcccagat	420
gatgtccaac ctggggccag tgtgggtcct ccaagtaagg acaaggacaa agtgctgccc	480
agcttctgga tcccgtcgct gacgcccga gccaaaggcca ccaagctgga gaagccgtcc	540
cgcacggtga cctgccccat gtcagggaag cccctgcgca tgtcggacct gacgcccgtg	600
cacttcacac cgctagacag ctccgtggac cgcgtggggc tcatcacccg cagcgagcgc	660
tacgtgtgtg ccgtgaccg cgacagcctg agcaacgcca cccctgcgc tgtgctgcgg	720
ccctctgggg ctgtgggtcac cctcgaatgc gtggagaagc tgattcggaa ggacatgggtg	780

gaccctgtga ctggagacaa actcacagac cgcgacatca tcgtgctgca gcggggcggt	840
accggcttcg cgggctccgg agtgaagctg caagcggaga aatcacggcc ggtgatgcag	900
gcctga	906

<210> 221
 <211> 963
 <212> DNA
 <213> Homo sapiens

<400> 221 atggccttcc caaagaagaa acttcagggt cttgtggctg caaccatcac gccaatgact	60
gagaatggag aaatcaactt ttcagtaatt ggtagtatg tggattatct tgtgaaagaa	120
cagggagtga agaacatttt tgtgaatggc acaacaggag aaggcctgtc cctgagcgtc	180
tcagagcgtc gccaggttgc agaggagtgg gtgacaaaag ggaaggacaa gctggatcag	240
gtgataattc acgtaggagc actgagcttg aaggagtcac aggaactggc ccaacatgca	300
gcagaaatag gagctgatgg catcgtgtc attgcaccgt tcttcctcaa gccatggacc	360
aaagatatcc tgattaattt cctaaaggaa gtggctgctg cggcccctgc cctgccattt	420
tattactatc acattcctgc cttgacaggg gtaaagattc gtgctgagga gttgttgat	480
gggattctgg ataagatccc caccttccaa gggctgaaat tcagtgatac agatctctta	540
gacttcgggc aatgtgttga tcagaatcgc cagcaacagt ttgctttcct ttttgggggtg	600
gatgagcaac tgttgagtgc tctgggtgat ggagcaactg gagcagtggg cagtacctat	660
aactacctgg gaaaaagac aaaccagatg ttggaggctt ttgaacaaaa ggacttctct	720
ttagccctga actatcagtt ttgtatccag agatttatca actttgttgt caaactaggt	780
tttggagtgt cacagaccaa agccatcatg actctggtct ctgggattcc aatgggcca	840
ccccggcttc cactgcagaa agcctccagg gagtttactg atagtgtga agctaaactg	900
aagagcctgg atttcctttc tttcactgat ttaaaggatg gaaacttgga agctggtagc	960
tag	963

<210> 222
 <211> 2334
 <212> DNA
 <213> Homo sapiens

<400> 222 atggactcca aagaatcatt aactcctggg agagaagaaa accccagcag tgtgcttgct	60
caggagaggg gagatgtgat ggacttctat aaaaccctaa gaggaggagc tactgtgaag	120
gtttctgcgt cttcacctc actggctgtc gcttctcaat cagactccaa gcagcgaaga	180
cttttggttg attttccaaa aggctcagta agcaatgcgc agcagccaga tctgtccaaa	240
gcagtttcac tctcaatggg actgtatatg ggagagacag aaacaaaagt gatgggaaat	300
gacctgggat tcccacagca gggccaaatc agcctttcct cgggggaaac agacttaaag	360
cttttgggaag aaagcattgc aaacctcaat aggtcgacca gtgttcaga gaacccaag	420

agttcagcat	ccactgctgt	gtctgctgcc	cccacagaga	aggagtttcc	aaaaactcac	480
tctgatgtat	cttcagaaca	gcaacatttg	aagggccaga	ctggcaccaa	cgggtggcaat	540
gtgaaattgt	ataccacaga	ccaaagcacc	tttgacattt	tgcaggattt	ggagttttct	600
tctgggtccc	caggtaaaga	gacgaatgag	agtccttgga	gatcagacct	gttgatagat	660
gaaaactgtt	tgctttctcc	tctggcgggg	gaagacgatt	cattcctttt	ggaaggaaac	720
tcgaatgagg	actgcaagcc	tctcatttta	ccggacacta	aacccaaaat	taaggataat	780
ggagatctgg	ttttgtcaag	ccccagtaat	gtaacactgc	ccaagtga	aacagaaaaa	840
gaagatttca	tcgaactctg	caccctggg	gtaattaagc	aagagaaact	gggcacagtt	900
tactgtcagg	caagctttcc	tggagcaa	ataattggta	ataaaatgtc	tgccattttct	960
gttcatggtg	tgagtacctc	tggaggacag	atgtaccact	atgacatgaa	tacagcatcc	1020
ctttctcaac	agcaggatca	gaagcctatt	tttaatgtca	ttccaccaat	tcccgttgggt	1080
tccgaaaatt	ggaataggtg	ccaaggatct	ggagatgaca	acttgacttc	tctggggact	1140
ctgaacttcc	ctggtcgaac	agttttttct	aatggctatt	caagccccag	catgagacca	1200
gatgtaagct	ctcctccatc	cagctcctca	acagcaacaa	caggaccacc	tcccaaactc	1260
tgcttgggtg	gctctgatga	agcttcagga	tgtcattatg	gagtcttaac	ttgtggaagc	1320
tgtaaagttt	tcttcaaaag	agcagtggaa	ggacagcaca	attacctatg	tgctggaagg	1380
aatgattgca	tcatcgataa	aattcgaaga	aaaaactgcc	cagcatgccg	ctatcgaaaa	1440
tgtcttcagg	ctggaatgaa	cctggaagct	cgaaaaacaa	agaaaaaaat	aaaaggaatt	1500
cagcaggcca	ctacaggagt	ctcacaagaa	acctctgaaa	atcctggtaa	caaaacaata	1560
gttcctgcaa	cgttaccaca	actcaccct	accctgggtg	cactgttgga	ggttattgaa	1620
cctgaagtgt	tatatgcagg	atatgatagc	tctgttccag	actcaacttg	gaggatcatg	1680
actacgtca	acatgttagg	agggcggcaa	gtgattgcag	cagtgaaatg	ggcaaaggca	1740
ataccagggt	tcaggaactt	acacctggat	gaccaaata	ccctactgca	gtactcctgg	1800
atgtttctta	tggcatttgc	tctgggggtg	agatcatata	gacaatcaag	tgcaaacctg	1860
ctgtgttttg	ctcctgatct	gattattaat	gagcagagaa	tgactctacc	ctgcatgtac	1920
gaccaatgta	aacacatgct	gtatgtttcc	tctgagttac	acaggcttca	ggtatcttat	1980
gaagagtatc	tctgtatgaa	aaccttactg	cttctctctt	cagttcctaa	ggacgggtctg	2040
aagagccaag	agctatttga	tgaattaga	atgacctaca	tcaaagagct	aggaaaagcc	2100
attgtcaaga	gggaaggaaa	ctccagccag	aactggcagc	ggttttatca	actgacaaaa	2160
ctcttggatt	ctatgcatga	agtggttgaa	aatctcctta	actattgctt	ccaaacattt	2220
ttggataaga	ccatgagtat	tgaattcccc	gagatgttag	ctgaaatcat	caccaatcag	2280
ataccaaaat	attcaaatgg	aaatatcaaa	aaacttctgt	ttcatcaaaa	gtga	2334

<210> 223

<211> 864

<212> DNA
 <213> Homo sapiens

<400> 223
 atggaagtaa tggaaggacc cctcaacctg gctcatcaac agagcagacg agcagaccgt 60
 ttattagctg caggcaaata cgaagaggct atttcttgct acaaaaaggc tgcagcatat 120
 ctttctgaag ccatgaagct gacacagtca gagcaggctc atctttcact ggaattgcaa 180
 agggatagcc atatgaaaca gctcctcctc atccaagaga gatggaaaag ggcccagcgt 240
 gaagaaagat tgaaagccca gcagaacaca gacaaggatg cagctgcca tcttcagaca 300
 tctcaciaaac cctctgcaga ggatgcagag ggccagagtc ccctttctca gaagtacagc 360
 ccttccacag agaaatgcct gcctgagatt caggggatct ttgacaggga tccagacaca 420
 ctactttatt tacttcagca aaagagttag ccagcagagc catgtattgg aagcaaagcc 480
 ccaaaagatg ataaaacaat tatagaggag caggcaacca aaattgcaga tttgaagagg 540
 catgtggaat tccttggtgc tgagaatgaa agattaagga aagaaaataa acaactaaag 600
 gctgaaaagg ccagacttct aaaaggcca atagaaaagg agctggatgt agatgctgat 660
 tttgtagaaa cgtcagagtt atggagcttg ccaccacatg cagaaactgc tacagcctcc 720
 tcaacctggc agaagttcgc agcaaatact gggaaagcca aggacattcc aatccccaat 780
 cttcctccct tggattttcc atctccagaa cttcctctta tggagctctc tgaggatatt 840
 ctgaaaggat ttatgaataa ttaa 864

<210> 224
 <211> 1023
 <212> DNA
 <213> Homo sapiens

<400> 224
 atgctgaccc agctgaaagc aaaatcagag gggaagcttg caaacagat ttgcaaagtt 60
 gtgttgatc attttgaaaa acagtattcc aaagaactcg gagatgcctg gaatacagta 120
 agggagatac taacatctcc atcatgctgg caatatgctg tcctgcttaa ccgattcaat 180
 tatccttttg aactggaaaa ggatttacat ttgaagggtc atcacacact ctctcaggga 240
 tctttaccca actatcctaa atcagtgaag tgttacctta gcagaactcc gggccgaatc 300
 ccttcagaaa gacacaaat tggaacctg aaaaaatatt atctcctaaa tgctgcttct 360
 cttctcccag tgttggctct ggaattaagg gatggggaga aggttctgga tctctgtgct 420
 gctcctggag ggaaatcaat agctctgctg cagtgtgctt gtccagggtta tcttcattgt 480
 aatgaatatg atagtctgag attgaggtgg ctaaggcaga cgttggaatc tttcatccca 540
 cagcctttga taaatgtaat taaagtgtct gaattggatg gcagaaaaat gggagatgcc 600
 cagcctgaaa tgtttgacaa ggtgttagtg gatgctccgt gttcaaataa tcgaagctgg 660
 ttgttttctt ctgactctca gaaggcatcc tgtaggataa gtcaaaggag gaatttgctt 720
 cttctacaga tagagctgtt aaggctctga attaaggcct tacgtcctgg agggatactt 780
 gtatactcta catgcacgct ttccaaggca gaaatcaag atgtgatcag tgaaatttta 840

aactcccacg gtaacatcat gcctatggac attaaaggaa tagcaaggac ttgctcccac	900
gacttcacat ttgctcccac tggccaggaa tgtgggctct tagtgattcc agataagggc	960
aaagcctggg gcccaatgta tgtagccaaa ttgaagaaat catggagcac aggaaaatgg	1020
tga	1023

<210> 225
 <211> 1923
 <212> DNA
 <213> Homo sapiens

<400> 225	
atgaacaaat tacggcaaag ttttaggaga aagaaggatg tttatgttcc agaggccagt	60
cgtccacatc agtggcagac agatgaagaa ggcgttcgca ccggaaaatg tagcttcccg	120
gttaagtacc ttggccatgt agaagttgat gaatcaagag gaatgcacat ctgtgaagat	180
gctgtaaaaa gattgaaagc tactggaaag aaagcagtta aagcagttct gtgggtctca	240
gcagatggac tcagagttgt ggatgaaaaa actaaggacc tcatagttga ccagacgata	300
gagaaagttt ctttctgtgc ccagacagg aactttgata gagccttttc ttacatatgc	360
cgtgatggca ccactcgtcg ctggatctgt cactgcttca tggctgtcaa ggacacaggt	420
gaaaggttga gccatgcagt aggctgtgct tttgcagcct gtttagagcg caagcagaag	480
cgggagaagg aatgtggagt gactgctact tttgatgcta gtcggaccac ttttacaaga	540
gaaggatcat tccgtgtcac aacagccact gaacaagcag aaagagagga gatcatgaaa	600
caaatgcaag atgccaagaa agctgaaaca gataagatag tcgttggttc atcagttgcc	660
cctggcaaca ctgccccatc cccatcctct cccacctctc ctacttctga tgccacgacc	720
tctctggaga tgaacaatcc tcatgccatc ccacgccggc atgctccaat tgaacagctt	780
gctcgccaag gctctttccg aggttttcct gctcttagcc agaagatgtc accctttaaa	840
cgccaactat ccctacgcat caatgagttg ccttccacta tgcagaggaa gactgatttc	900
cccattaaaa atgcagtgcc agaagtagaa ggggaggcag agagcatcag ctccctgtgc	960
tcacagatca ccaatgcctt cagcacacct gaggaccctt tctcatctgc tccgatgacc	1020
aaaccagtga cagtgggtggc accacaatct cctaccttcc aagctaattg cactgactca	1080
gccttccatg tgcttgctaa gccagcccat actgctctag cacccgtagc aatgcctgtg	1140
cgtgaaacca acccttgggc ccatgccctt gatgctgcta acaaggaaat tgcagccaca	1200
tgttcgggga ccgagtgggg tcaatcttct ggtgctgcct ctccaggtct cttccaggcc	1260
ggtcatagac gtactccctc tgaggccgac cgatggttag aagaggtgtc taagagcgtc	1320
cgggctcagc agccccaggc ctgagctgct cctctgcagc cagttctcca gcctcctcca	1380
cccactgcca tctcccagcc agcatcacct ttccaaggga atgcattcct cacctctcag	1440
cctgtgccag tgggtgtggg ccagccctg caaccagcct ttgtccctgc ccagtcctat	1500
cctgtggcca atggaatgcc ctatccagcc cctaattgtc ctgtggtggg catcactccc	1560

PCTAU2016050927-seq1-000001-EN-20161013

tcccagatgg	tgccaacgt	atttggcact	gcaggccacc	ctcaggctgc	ccatcccat	1620
cagtcacca	gcctggtcag	gcagcagaca	ttccctcact	acgaggcaag	cagtgtacc	1680
accagtcct	tctttaagcc	tcctgtcag	cacctcaacg	gttctgcagc	tttcaatggt	1740
gtagatgatg	gcaggttggc	ctcagcagac	aggcatacag	aggttcctac	aggcacctgc	1800
ccagtggatc	cttttgaagc	ccagtgggct	gcattagaaa	ataagtccaa	gcagcgtact	1860
aatccctccc	ctaccaaccc	tttctccagt	gacttacaga	agacgtttga	aattgaactt	1920
taa						1923

<210> 226
 <211> 2064
 <212> DNA
 <213> Homo sapiens

<400> 226	
atgggaaatg	gggagtccca gctgtcctcg gtgcctgctc agaagctggg ttggtttatc 60
caggaatacc	tgaagcccta cgaagaatgt cagacactga tgcacgagat ggtgaacacc 120
atctgtgacg	tcctgcagga acccgaacag ttccccctgg tgcaggaggat ggccataggt 180
ggctcctatg	gacggaaaac agtcttaaga ggcaactccg atggtaccct tgtcctcttc 240
ttcagtgact	taaaacaatt ccaggatcag aagagaagcc aacgtgacat cctcgataaa 300
actggggata	agctgaagtt ctgtctgttc acgaagtggg tgaaaaacaa tttcgagatc 360
cagaagtccc	ttgatgggtt caccatccag gtgttcacaa aaaatcagag aatctctttc 420
gaggtgctgg	ccgccttcaa cgctctgagc ttaaatgata atcccagccc ctggatctat 480
cgagagctca	aaagatcctt ggataagaca aatgccagtc ctgggtgagtt tgcagtctgc 540
ttcactgaac	tccagcagaa gttttttgac aaccgtcctg gaaaactaaa ggatttgatc 600
ctcttgataa	agcactggca tcaacagtgc cagaaaaaaa tcaaggattt accctcgctg 660
tctccgtatg	ccctggagct gcttacggtg tatgcctggg aacaggggtg cagaaaagac 720
aactttgaca	ttgctgaagg cgtcagaacc gtactggagc tgatcaaata ccaggagaag 780
ctgtgtatct	attggatggt caactacaac tttgaagatg agaccatcag gaacatcctg 840
ctgcaccagc	tccaatcagc gaggccagta atcttggatc cagttgacct aaccaataat 900
gtgagtggag	ataaaaatat ctggcaatgg ctgaaaaaag aagctcaaac ctggttgact 960
tctcccaacc	tggataatga gttacctgca ccatcttggg atgttctgcc tgcaccactc 1020
ttcacgacct	caggccacct tctggataag ttcatacagg agtttctcca gcccaacaaa 1080
tgcttcctag	agcagattga cagtgtgttt aacatcatcc gtacattcct taaagaaaac 1140
tgcttccgac	aatcaacagc caagatccag attgtccggg gaggatcaac cgccaaaggc 1200
acagctctga	agactggctc tgatgccgat ctgctcgtgt tccataactc acttaaaagc 1260
tacacctccc	aaaaaaacga gcggcacaaa atcgtcaagg aaatccatga acagctgaaa 1320
gccttttgga	gggagaagga ggaggagctt gaagtcagct ttgagcctcc caagtggaag 1380
gctcccaggg	tgctgagctt ctctctgaaa tccaaagtcc tcaacgaaag tgctcagctt 1440

gatgtgcttc	ctgcctttaa	tgcactgggt	cagctgagtt	ctggctccac	accagcccc	1500
gaggtttatg	cagggctcat	tgatctgtat	aaatcctcgg	acctcccggg	aggagagttt	1560
tctacctgtt	tcacagtcct	gcagcgaaac	ttcattcgct	cccgggccac	caaactaaag	1620
gatttaattc	gcctggtgaa	gcactggtac	aaagagtgtg	aaaggaaact	gaagccaaag	1680
gggtctttgc	ccccaaagta	tgccttggag	ctgctcacca	tctatgcctg	ggagcagggg	1740
agtggagtgc	cggattttga	cactgcagaa	ggtttccgga	cagtcctgga	gctggtcaca	1800
caatatcagc	agctctgcat	cttctggaag	gtcaattaca	actttgaaga	tgagaccgtg	1860
aggaagtttc	tactgagcca	gttgcaaaa	accaggcctg	tgatcttgga	cccagccgaa	1920
cccacaggtg	acgtgggtgg	aggggaccgt	tggtgttggc	atcttctggc	aaaagaagca	1980
aaggaatggg	tatcctctcc	ctgcttcaag	gatgggactg	gaaaccaat	accaccttgg	2040
aaagtgccgg	taaaagtcac	ctaa				2064

<210> 227
 <211> 1545
 <212> DNA
 <213> Homo sapiens

<400> 227	
atggcactga	tgcaggaact gtatagcaca ccagcctcca ggctggactc cttcgtggct 60
cagtggctgc	agccccaccg ggagtggaaag gaagaggtgc tagacgctgt gcggaccgtg 120
gaggagtttc	tgaggcagga gcatttccag gggaagcgtg ggctggacca ggatgtgcgg 180
gtgctgaagg	tagtcaaggt gggctccttc gggaatggca cggttctcag gagcaccaga 240
gaggtggagc	tggtggcggt tctgagctgt ttccacagct tccaggaggc agccaagcat 300
cacaaagatg	ttctgaggct gatatggaaa accatgtggc aaagccagga cctgctggac 360
ctcgggctcg	aggacctgag gatggagcag agagtccccg atgctctcgt cttcaccatc 420
cagaccaggg	ggactgcgga gcccatcacg gtcaccattg tgctgccta cagagccctg 480
gggccttctc	ttcccaactc ccagccaccc cctgaggtct atgtgagcct gatcaaggcc 540
tgcggtggtc	ctggaaattt ctgccatcc ttcagcgagc tgcaagaaaa tttcgtgaaa 600
catcggccaa	ctaagctgaa gagcctcctg cgcttggtga aacactggta ccagcagtat 660
gtgaaagcca	ggtccccag agccaatctg cccctctct atgctcttga acttctaacc 720
atctatgcct	gggaaatggg tactgaagaa gacgagaatt tcatgttgga cgaaggcttc 780
accactgtga	tggacctgct cctggagtat gaagtcattc gtatctactg gaccaagtac 840
tacacactcc	acaatgcaat cattgaggat tgtgtcagaa aacagctcaa aaaagagagg 900
cccatcatcc	tggatccggc cgacccacc ctcaacgtgg cagaagggtg cagatgggac 960
atcggtgctc	agagggcctc ccagtgcctg aaacaggact gttgctatga caacagggag 1020
aaccccatct	ccagctggaa cgtgaagagg gcacgagaca tccacttgac agtggagcag 1080
aggggttacc	cagatttcaa cctcatcgtg aacccttatg agcccataag gaagggtaaa 1140

PCTAU2016050927-seql-000001-EN-20161013

gagaaaatcc	ggaggaccag	gggctactct	ggcctgcagc	gtctgtcctt	ccaggttcct	1200
ggcagtgaga	ggcagcttct	cagcagcagg	tgctccttag	ccaaatatgg	gatcttctcc	1260
cacactcaca	tctatctgct	ggagaccatc	ccctccgaga	tccaggtctt	cgtgaagaat	1320
cctgatgggtg	ggagctacgc	ctatgccatc	aaccccaaca	gcttcatact	gggtctgaag	1380
cagcagattg	aagaccagca	ggggcttcct	aaaaagcagc	agcagctgga	attccaaggc	1440
caagtctctg	aggactgggt	gggtctgggg	atctatggca	tccaagacag	tgacactctc	1500
atcctctcga	agaagaaagg	agaggctctg	tttccagcca	gttag		1545

<210> 228
 <211> 1356
 <212> DNA
 <213> Homo sapiens

<400> 228	
atgggcaacc	tgctcggcgg ggtcagcttc cgcgagccca ccaccgtgga ggactgcgac 60
tccacctggc	agaccgactc ggagcccgag cccgaagaac cagggccggg cggcggcagc 120
gagggcccgg	ggcaggagtc cgagcagccc gcgcagcccc cggagcaagc cggcgggagg 180
cccggcgcca	gccccgcgcc ggacgaggac gccgaggcgg cgggcgccga gcaggggtgtt 240
gattccactg	aagcaactgc caaaccaaag agaagttttt atgctgccag ggatttgtac 300
aagtaccgac	accagtacc aaacttcaaa gatatccgat atcaaaatga cttgagcaat 360
cttcgttttt	ataagaataa aattccattc aagccagatg gtgtttacat tgaagaagtt 420
ctaagtaa	at ggaaaggaga ttatgaaaaa ctggagcaca accacactta cattcaatgg 480
cttttcccc	tgagagaaca aggcttgaac ttctatgcca aagaactaac tacatatgaa 540
attgaggaat	tcaaaaaaac aaaagaagca attagaagat tcctcctggc ttataaaatg 600
atgctagaat	tttttggaaat aaaactgact gataaaactg gaaatgttgc tcgggctgtt 660
aactggcagg	aaagatttca gcatctgaat gagtcccagc acaactatct aagaatcact 720
cgtattctta	aaagccttgg tgagcttggga tatgaaagtt ttaaactctc tcttgtaaaa 780
tttattcttc	atgaagctct tgtggagaat actattccca atattaagca gagggtctta 840
gagtattttg	tttatacaat tagagacaga agagaaagga gaaagctcct gcgggttcgcc 900
cagaaacact	acacgccttc agagaacttt atctggggac cgcctcgaaa agaacagtcg 960
gaggaagca	aagcccagaa aatgtcttcc cctctcgcct ccagtcataa cagtcaaact 1020
tctatgcaca	aaaaagccaa ggactccaaa aattcctcct cagctgttca tttaaatagc 1080
aaaacagctg	aagacaaaaa agtggcacca aaagagcctg tggaagagac agacaggccc 1140
agcccagagc	ccagcaatga agctgccaag ccaagaaata cagagaagga cagtaatgct 1200
gagaacatga	attctcaacc tgagaaaaca gttactactc ccacagaaaa aaaggagagt 1260
gtatctcctg	agaataacga agaaggtgga aatgataacc aagacaatga aaatcctgga 1320
aatacaaat	gccatgatgt tgtactagta cagtga 1356

<210> 229

<211> 2244

<212> DNA

<213> Homo sapiens

<400> 229

atgcaggggg	gtgaaccagt	gtccacaatg	aaagtctcgg	agagcgaagg	aaagctggag	60
ggccaggcca	cagcgggtgac	cccgaacaag	aacagcagct	gtggagggtg	aatcagtagc	120
agcagcagca	gccgcggtgg	cagtgcacaa	ggctggcagt	acagtgatca	catggaaaat	180
gtgtatggct	atttaaatgaa	gtataccaac	cttgtcactg	ggtggcagta	caggtttttt	240
gttttaaaca	atgaagctgg	gctgttggag	tactttgtga	atgaacagtc	tagaaatcag	300
aaacctagag	gaacttttga	gcttgcagga	gctgtaatat	caccagtgat	tgaggattct	360
cacaccttca	ctgtaaacgc	tgccagtggg	gaacaatata	aactcagagc	tacagatgca	420
aaagagcgac	agcactgggt	tagcagactt	cagatatgta	cacagcatca	tactgaagct	480
attggaaaga	ataatcctcc	tctgaagtca	cggagcttct	cacttgcata	tagtagtaat	540
tctcctatat	cgcagaggag	accaagtcaa	aatgccattt	ctttttttta	tgttggacat	600
tccaaactgc	aatcactgag	caaaagaact	aatttacctc	cagaccatct	tgtggaagtc	660
agagaaatga	tgtctcatgc	tgaaggacaa	caaagagact	taattagacg	aattgaatgc	720
cttcctactt	ctggccatct	tagttccttg	gaccaggatc	tcttaatgct	caaagctact	780
tccatggcaa	ctatgaactg	cttaaatgac	tgctttcata	ttctccagtt	acagcatgca	840
tcacatcaga	agggtcatt	gccttcagga	acgacaatcg	agtgggttaga	accaaagata	900
tctttatcaa	accactataa	aatggagct	gaccagccct	ttgcaactga	tcagagtaag	960
ccggtggcag	tcccagaaga	gcagcctgtt	gcagaatctg	gactattagc	gagggagcct	1020
gaagaaataa	atgcagatga	tgagatagag	gatacatgtg	accacaaaga	ggatgacctg	1080
ggagctgtag	aagaacaacg	tagtgtcatc	ctacatctct	tgtcacagct	taagctgggc	1140
atggatttaa	caagagtggg	gcttcctaca	tttatcctag	agaagcgttc	cttgctggaa	1200
atgtatgcag	actttatgtc	tcacccagac	ctatttatag	ccatcactaa	tgagagccaca	1260
gctgaggaca	gaatgattcg	ctttgttgag	tactacctta	cctcatttca	tgaaggccgt	1320
aagggagcca	ttgctaaaaa	accatacaat	cctatcattg	gagaaacatt	tcactgttcc	1380
tggaagatgc	caaaaagcga	ggtagcatcc	agtgttttta	gcagttcttc	caccagggga	1440
gtcacaaatc	atgctccttt	atcgggggag	tctttgacct	aggtgggatc	agactgttac	1500
acagtcagat	ttgttgctga	gcaggtttct	catcatcctc	cagtctcagg	attttatgca	1560
gaatgtacag	agaggaagat	gtgtgtaaat	gcgcatgtct	ggactaagag	caagttctta	1620
ggcatgtcaa	taggcgtgac	aatgggttga	gaaggatatc	ttagtctgtt	ggagcatgga	1680
gaagagtaca	cattttctct	accctgtgca	tatgctcggt	caattttgac	tgttccttgg	1740
gtagaactgg	gtggcaaagt	cagtgtcaac	tgtgcaaaaa	ctggatatcc	agccagcatc	1800
acttttcata	ccaagccatt	ttatggtggc	aaactgcatc	gggttacagc	tgaagtaaag	1860

cacaacatca ccaacactgt ggtatgcaga gtgcaagggg aatggaatag tgttcttgag	1920
ttcacatata gcaatggaga gacaaagtat gtggacttga ctaaattggc agtgacgaag	1980
aaaagagtga gacctctgga gaagcaggat ccatttgaat ccaggcgatt gtggaaaaat	2040
gtgacagact cgctgagaga atctgaaatt gataaggcca cagagcataa gcataccctg	2100
gaagaacgtc agaggactga agaaaggcat cgtactgaaa caggcacacc ttggaaaacc	2160
aaatatTTTA ttaaagaggg agatggctgg gtttatcata aaccactttg gaaaataatt	2220
ccaacaacac aaccagcaga gtga	2244

<210> 230
 <211> 1407
 <212> DNA
 <213> Homo sapiens

<400> 230	
atgaacggag aggaagaatt ctttcatgcc gtcacagagg caaatcagaa agtcacggga	60
atgattgact tagacaccag caaaaataat aggattggga aaactgggga gagggcctct	120
caagagaacg gaattcagaa acacaggaca tcgctgccgg ctcccatgtt cagcagaagc	180
gacttcagcg tgtggacat cctgaagaag tgtgttggcc tggagctgtc caagatcacg	240
atgccaatcg cttcaacga gcctctgagc ttcttgcagc ggatcacgga gtacatggag	300
cacgtgtacc tcatccacag ggctcctgc cagccccagc ccctggagag gatgcagtct	360
gtggctgctt ttgctgtttc ggctgtggct tcccagtggg agaggaccgg caaaccattt	420
aatccactct tgggagaaac gtatgaatta atcaggaag atttaggatt cagatttata	480
tcggaacagg tcagtcacca ccccccatc agtgcgttcc actcggaagg tctcaacat	540
gacttcctgt tccatggctc catctacccc aagctcaagt tctggggcaa aagcgtggag	600
gcggagcccc gaggcacat caccctggag ctgctcaaac ataatgaagc ctacacctgg	660
accaaccca cctgctgctt ccacaacgtc atcatcgga agctgtggat agagcagtat	720
gggacagtgg agattttaaa ccacagaact ggacataagt gtgtgcttca ctttaaaccg	780
tgtggattat ttggaaaaga acttcacaag gtggaaggac acattcaaga caaaaacaaa	840
aagaagctct ttatgatcta tggcaaatgg acggaatgtt tgtggggcat agatcctgtt	900
tcgtatgaat cttcaagaa gcaggagagg agaggtgacc acctgagaaa ggccaagctg	960
gatgaagact ccgggaaggc tgacagcgac gtggctgacg acgtgcctgt ggcccaggag	1020
accgtgcagg tcattcctgg cagcaagctg ctctggagga tcaacacccg gcccccaac	1080
tctgcccaga tgtataattt caccagtttc actgtgagcc tcaacgagct ggagacaggc	1140
atggagaaga ccctgccacc cacggactgc cgcctgcgcc ctgacatccg cggcatggag	1200
aatggcaaca tggatctggc cagccaggag aaggagcggc tggaggagaa gcagagagaa	1260
gcacggaggg agcgggcaa ggaggaggca gagtggcaga cgaggtgggt ctaccaggc	1320
aataaccctt aactgggac ccccgactgg ttgtatgcag gggattactt tgagcggaat	1380
ttctccgact gccagatat ctactga	1407

<210> 231
 <211> 1461
 <212> DNA
 <213> Homo sapiens

<400> 231
 atgtctgtca catatgatga ttccgttgga gtagaagtgt ccagcgacag cttctgggag 60
 gtcgggaact acaagcggac tgtgaagcgg atcgacgatg gccaccgcct gtgcagcgac 120
 ctcatgaact gcctgcatga gcgggcgcg atcgagaagg cgtatgcgca gcagctcact 180
 gagtgggccc ggcgctggag gcagctcgtg gagaaagggc cccagtacgg gaccgtggag 240
 aaggcctgga tggccttcat gtccgaggca gagagggtga gcgagctgca cctcgagggtg 300
 aaggcctcac tgatgaacga tgacttcgag aagatcaaga actggcagaa ggaagccttt 360
 cacaagcaga tgatgggagg cttcaaggag accaaggaag ctgaggacgg ctttcggaag 420
 gcacagaagc cctgggcca gaagctgaaa gaggtagaag cagcaaagaa agcccacat 480
 gcagcgtgca aagaggagaa gctggctatc tcacgagaag ccaacagcaa ggcagaccca 540
 tccctcaacc ctgaacagct caagaaattg caagacaaaa tagaaaagtg caagcaagat 600
 gttcttaaga ccaaagagaa gtatgagaag tccctgaagg aactcgacca gggcacaccc 660
 cagtacatgg agaacatgga gcaggtgttt gagcagtgcc agcagttcga ggagaaacgc 720
 cttcgcttct tccgggaggt tctgctggag gttcagaagc acctagacct gtccaatgtg 780
 gctggctaca aagccattta ccatgacctg gagcagagca tcagagcagc tgatgcagtg 840
 gaggacctga ggtggttccg agccaatcac gggccgggca tggccatgaa ctggccgcag 900
 tttgaggagt ggtccgcaga cctgaatcga accctcagcc ggagagagaa gaagaaggcc 960
 actgacggcg tcaccctgac gggcatcaac cagacaggcg accagtctct gccagtaag 1020
 cccagcagca cccttaatgt cccgagcaac cccgccagct ctgcgagtc acagtccagc 1080
 tacaaccctc tcgaggatga ggacgacacg ggcagaccg tcagtgagaa ggacgacact 1140
 aaggccaaaa atgtgagcag ctacgagaag acccagagct atcccaccga ctggtcagac 1200
 gatgagtcta acaaccctt ctctccacg gatgccaatg gggactcgaa tccattcgac 1260
 gacgaccca cctcggggac ggaagtgcga gtccggggcc tgtatgacta tgaggggagc 1320
 gagcatgatg agctgagctt caaggctggg gatgagctga ccaagatgga ggacgaggat 1380
 gagcagggct ggtgcaaggg acgcttgagc aacgggcaag ttggcctata cccggcaaat 1440
 tatgtggagg cgatccagtg a 1461

<210> 232
 <211> 1233
 <212> DNA
 <213> Homo sapiens

<400> 232
 atggtgctgt cccagagaca acgagatgaa ctaaatcgag ctatagcaga ttatcttcgt 60
 tcaaattggct atgaagaggc atattcagtt tttaaaaagg aagctgaatt agatgtgaat 120

gaagaattag	ataaaaagta	tgctggtctt	ttggaaaaaa	aatggacatc	tgttattaga	180
ttacaaaaga	aggttatgga	attagaatca	aagctaaatg	aagcaaaaaga	agaattttacg	240
tcagggtggac	ctcttggtca	gaaacgagac	ccaaaagaat	ggattccccg	tccgccagaa	300
aaatatgcat	tgagtggta	caggagtcca	gtcactcgag	tcattttcca	tcctgtgttc	360
agtgttatgg	tctctgcttc	agaggatgct	acaattaagg	tgtgggatta	tgagactgga	420
gattttgaac	gaactcttaa	aggacataca	gactctgtac	aggacatttc	attcgaccac	480
agcggcaagc	ttctggcttc	ctgttctgca	gatatgacca	ttaaactatg	ggattttcag	540
ggctttgaat	gcatcagaac	catgcacggc	catgaccaca	atgtttcttc	agtagccatc	600
atgccaatg	gagatcatat	agtgtctgcc	tcaagggata	aaactataaa	aatgtgggaa	660
gtgcaaacctg	gctactgtgt	gaagacattc	acaggacaca	gagaatgggt	acgtatggta	720
cggccaaatc	aagatggcac	tctgatagcc	agctgttcca	atgaccagac	tgtgctgtga	780
tgggtcgtag	caacaaagga	atgcaaggct	gagctccgag	agcatgagca	tgtggtagaa	840
tgcatttcct	gggctccaga	aagctcatat	tcctccatct	ctgaagcaac	aggatctgag	900
actaaaaaaaa	gtggtaaacc	tgggccattc	ttgctgtctg	gatccagaga	caagactatt	960
aagatgtggg	atgtcagtac	tggcatgtgc	cttatgacct	tcgtgggtca	tgataactgg	1020
gtacgtggag	ttctgttcca	ttctgggggg	aagtttattt	tgagttgtgc	tgatgacaag	1080
accctacgcg	tatgggatta	caagaacaag	cgatgcatga	agaccctcaa	tgcgcatgaa	1140
cactttgtta	cctccttgga	tttccacaag	acggcacctt	atgtcgtcac	tggcagcgta	1200
gatcaaacag	taaaagtgtg	ggagtgccgt	tga			1233

<210> 233
 <211> 2106
 <212> DNA
 <213> Homo sapiens

<400> 233	
atggcccagg	ccggcgtcgt
cgggtgaggtc	acccaggtgc
tgtgcgcggc	cgggggagcc
ctggagttgc	ccgagctgcg
gcgccgcttg	cggatgggct
tgagcgccga	cgcgctggag
cggctgctgc	ggcagcgtgg
gcgcttcgtg	gtggcgggtgc
gggaggggcg	cgcagccgcg
gccccggagc	gcgtgggtgct
ggccgcctcg	ccgctgcgcc
tgtgtcgcgc	gcaccagggc
tccaagccgg	gctgcgtggg
gctctgcgcg	cagctccacc
tctgcagggtt	catggtctac
ggcgctgca	agttcctgag
agccgggaag	aactgtagga
atagtcacag	cttgacaacc
gaacacaacc	tgagtgtgct
gagaactcat	ggcgttgacc
acctgagcta	taatgagcta
tgccaactct	tgtttcagaa
cgacccttg	cttttgccag
aaatttgcca	acattacaac
aaaggagatg	gacccacgg
ctcttggtgc	tttcaaaagc
agtgcacaa	gctccatctc
tgccagtatt	ttttacaggg
ggaatgcaag	tttggcacta
gctgtaagag	atcccatgat
ttctctaatt	ctgagaatct
ggaaaaattg	gagaagttgg
gtatgagctc	agacctgggtg
	660

agcaggctgc	ctaccattta	tagaaatgca	catgacatca	agaataagag	ctctgcccc	720
agcagagtgc	ctcctctttt	tgtcccacag	gggacttctg	aaagaaaaga	cagttcaggt	780
tctgtgtccc	caaacactct	tagccaggag	gagggtgatc	agatctgttt	gtaccatatc	840
cggaaaagtt	gtagctttca	agataagtgc	catagagttc	atttccattt	gccgtatcga	900
tggcaattct	tggatagagg	caaatgggag	gatttggaca	acatggaact	tattgaagag	960
gcatattgca	atcccaaaat	agaaaggatc	ctgtgctctg	agtcagccag	tacctttcac	1020
tctcattgtc	tgaactttta	cgccatgact	tacggtgcta	cccaggctcg	ccgcctctcc	1080
acggcctcct	ctgtcaccaa	acctccacac	ttcatcctca	ccactgactg	gatttggtag	1140
tggagtgatg	agtttggttc	ttggcaggaa	tatggaagac	agggcacggt	gcaccctgtg	1200
accactgtca	gcagtagcga	cgtggagaag	gcctacctgg	cctactgtac	accgggggtct	1260
gacggccagg	cagccacctt	gaagttccag	gccggaaagc	acaactacga	gttagatttc	1320
aaagccttcg	ttcagaaaaa	cctgggtctat	ggcacaacta	aaaaggtttg	ccgcagaccc	1380
aaatacgtgt	ctccccagga	tgtgacgacc	atgcaaacct	gcaataccaa	gtttccaggc	1440
ccgaagagca	tcccagacta	ttgggactcc	tctgccctgc	cagaccagg	ctttcagaag	1500
atcacctta	gttcttcctc	ggaagagtat	cagaaggctt	ggaacctctt	taaccgcacg	1560
ctgcctttct	actttgttca	gaagattgag	cgagtacaga	acctggccct	ctgggaagtc	1620
taccagtggc	aaaaaggaca	gatgcagaag	cagaacggag	ggaaggccgt	ggacgagcgg	1680
cagctgttcc	acggcaccag	cgccattttt	gtggacgcca	tctgccagca	gaactttgac	1740
tggcgggtct	gtggtgttca	tggcacttcc	tacggcaagg	ggagctactt	tgcccagat	1800
gctgcatatt	cccaccacta	cagcaaatcc	gacacgcaga	cccacacgat	gttcctggcc	1860
cgggtgctgg	tgggagagtt	cgtcaggggc	aatgcctcct	ttgtccgtcc	gccggccaag	1920
gagggctgga	gcaacgcctt	ctatgatagc	tgcgtgaaca	gtgtgtccga	cccctccatc	1980
tttgtgatct	ttgagaaaca	ccaggtctac	ccagagtatg	tcattccagta	caccacctcc	2040
tccaagccct	cggtcacacc	ctccatcctg	ctggccttgg	gctccctggt	cagcagccga	2100
cagtga						2106

<210> 234
 <211> 1305
 <212> DNA
 <213> Homo sapiens

<400> 234	
atggacgatc	aatccaggat gctgcagact ctggccgggg tgaacctggc tggccactcg 60
gtgcaggggg	gcatggccct gccgcctccc ccgcacggcc acgaaggggc ggacggcgac 120
ggcaggaagc	aggacatcgg cgacatcctc caccagatca tgaccatcac cgaccagagc 180
ttggacgagg	cgcaagcaaa gaaacatgcc ctgaactgtc acagaatgaa accagcgctc 240
ttcagcgtcc	tgtgtgagat caaagagaaa acaggtctca gcatcagagg agcccaggag 300
gaggaccctc	ccgatcccca gctaattgaga ctggacaata tgcttttggc agaagggggtt 360

PCTAU2016050927-seq1-000001-EN-20161013

tcaggtcctg	agaaagggtg	gggatcggcg	gcagcagctg	cagccgcggc	agcctctgga	420
ggttcttcag	ataactctat	tgaacactca	gattacagag	ccaaattgac	ccagatcaga	480
caaatctatc	acacagaact	ggagaaatat	gaacaggcat	gtaatgaatt	tactacacat	540
gtgatgaacc	ttctccgaga	acagagtaga	acacgtccca	tttctccaaa	agagattgaa	600
agaatgggtg	gcatcatcca	tcgaaaat	agttccattc	agatgcagct	caaacaaagc	660
acttgatgaag	cagttatgat	tttaagatca	aggttccttg	atgccagacg	gaaaaggcgt	720
aacttcagta	aacaggccac	agaaatcttg	aatgaatatt	tttactcaca	cctcagcaac	780
ccctacccca	gtgaagaagc	caaagaggag	ctggccaaga	aatgcagcat	cacagtgtca	840
caggatatcca	attggtttgg	caacaaacga	atcagggtaca	agaagaacat	tggcaagttt	900
caggaagaag	ccaacctcta	tgctgcaaag	acggccgtga	cagctgcaca	cgcagtagca	960
gcagctgtgc	agaacaacca	gaccaattcg	cccaccacac	caaattccgg	ttcttctggt	1020
tcttttaacc	tcccaaattc	tggggacatg	ttcatgaaca	tgcagagtct	gaatggggat	1080
tcttaccaag	ggtccaagt	cggagccaat	gtgcaatcac	aggtggatac	cctccgtcat	1140
gttatcaatc	agacgggagg	ctacagtgat	ggccttggag	gaaattcact	gtacagtcca	1200
cataatttaa	atgctaattg	aggctggcag	gacgcaacaa	ctccatcttc	tgtgacttct	1260
cctacagaag	gccaggaag	tgtgcactcg	gatacctcta	actaa		1305

<210> 235
 <211> 1101
 <212> DNA
 <213> Homo sapiens

<400> 235	
atggacaccg	gtgtgattga aggtggatta aatgtcactc tcaccatccg gctacttatg 60
catggaaagg	aagttggcag tatcatcgga aagaaaggag aatcagttaa gaagatgcgc 120
gaggagagtg	gtgcacgtat caacatctca gaaggggaatt gtcctgagag aattatcact 180
ttggctggac	ccactaatgc catcttcaaa gcctttgcta tgatcattga caaactggaa 240
gaggacataa	gcagctctat gaccaatagc acagctgcca gtagaccccc ggtcacccctg 300
aggctgggtg	tccctgctag tcagtgtggc tctctcattg gaaaagggtg atgcaagatc 360
aaggaaatac	gagagagtac aggggctcag gtccagggtg caggggatat gctacccaac 420
tcaactgagc	gggcatcac tattgtggc attccacaat ccatcattga gtgtgtcaaa 480
cagatctgcg	tggtcatgtt ggagactctc tcccagtccc cccgaaggg cgtgaccatc 540
ccgtaccggc	ccaagccgtc cagctctccg gtcattcttg cagggtgtca ggacagggtac 600
agcacaggca	gcgacagtgc gagctttccc cacaccaccc cgtccatgtg cctcaaccct 660
gacctggagg	gaccacctct agaggcctat accattcaag gacagtatgc cattccacag 720
ccagatttga	ccaagctgca ccagttggca atgcaacagt ctcatcttcc catgacgcat 780
ggcaacaccg	gattcagtgg cattgaatcc agctctccag aggtgaaagg ctattgggca 840

ggtttggatg catctgctca gactacttct catgaactca ccattccaaa cgatttgatt	900
ggctgcataa tcgggcgtca aggcgcctaaa atcaatgaga tccgtcagat gtctggggcg	960
cagatcaaaa ttgcgaaccc agtgggaagga tctactgata ggcagggttac catcactgga	1020
tctgctgcca gcattagcct ggctcaatat ctaatcaatg tcaggctttc ctcggagacg	1080
ggtggcatgg ggagcagcta g	1101

<210> 236
 <211> 4668
 <212> DNA
 <213> Homo sapiens

<400> 236	
atgtcagagc agacgccggc cgaggccggg gctgcggggg cccgggagga cgcctgtcgg	60
gattatcagt catcgctcga agacctgacc ttcaatagca agccgcacat caatatgctg	120
accattctag ccgaggagaa cctgcccttc gcccaaggaga tcgtctctct catcgaggcc	180
caaaccgcca aggctccttc ctcagagaag cttcctgtta tgtaccttat ggattctatt	240
gtgaaaaacg ttggaagaga gtatctcact gcctttacta aaaatctagt tgcaacattt	300
atttgtgtgt ttgaaaaggt ggatgaaaat actaggaaaa gtttatttaa gttacgttct	360
acatgggatg aaatattccc tttgaagaaa ctttatgccc tggatgtcag agtcaattca	420
ttagatcctg cttggcctat taaacctcta cccccaatg tgaatacgtc tagcatccat	480
gtgaatccta aatttttaaa taaatcgccc gaggagcctt caacacctgg tacagtggtc	540
agttccccta gcatctccac tcctccaatt gttcctgata tacaaaagaa tcttacacaa	600
gaacaactaa taaggcagca gttactggca aagcaaaaac agttgttaga acttcagcag	660
aaaaagctgg agcttgagct agagcaagct aaggcacagt tggcagtttc tcttagtggt	720
cagcaggaaa catccaattt aggtcctgga tctgcaccat ccaaattaca tgtttcacag	780
attcccccta tggcagttaa agtcctcat caggttcctg tgcaatctga gaaaagccgt	840
ccaggacat ccttacaat tcaggattta aaaggaacta accgggatcc tcgtctgaac	900
aggataagcc aacatttcta tggaaaagat cagagtcaca ggaaagaatt tctaataaac	960
acattaaacc agtctgatac taagacaagt aaaactatac cctctgaaaa actaaattca	1020
tccaagcaag aaaaaagtaa atcaggtgaa aaaataacca agaaagaact tgaccaatta	1080
gattctaaat cgaaatcgaa atcgaaatca ccctcacctt tgaaaaacaa attatctcac	1140
acaaaagact tgaaaaatca agaatcgga agtatgaggt tgtctgatat gaacaagaga	1200
gatccaagat taaaaaaca tcttcaggat aagaccgatg gcaaagatga tgatgtgaaa	1260
gagaagagaa aaactgcaga aaaaaaggat aaagatgagc acatgaagtc atccgaacac	1320
agactggctg gaagtagaaa taaaatcata aatggcattg tacaaaaaca ggatacaata	1380
acagaagagt cagaaaaaca ggggacaaaa ccaggagat cgagtactag aaagcgatca	1440
agatctcgat cacccaagtc taggtcacca attatacatt ccccaaagag aagagatagg	1500
cggtcaccca aacgaaggca aagaagtatg tctccaacat cgacacctaa agctggaaag	1560

attcgccaat	ctggagctaa	gcagtcacat	atggaagagt	ttacaccacc	ttctagggaa	1620
gacagaaatg	ctaagagaag	tactaaacag	gatattcggg	atccaaggcg	aatgaaaaag	1680
actgaagagg	agcgaccaca	agaaactaca	aatcagcatt	ctacaaagtc	aggcactgaa	1740
ccaaaggaga	atgtagaaaa	ctggcaaagt	tccaagtctg	ccaaaagatg	gaaatctggt	1800
tgggaagaaa	ataaaagctt	acaacagggt	gatgaacata	gtaaacctcc	tcattctgagg	1860
catagggaga	gctgggtcaag	cactaaagga	attttatcac	ctcgagcccc	aaagcagcaa	1920
cagcatcgat	taagtgtaga	tgccaatctt	cagattccta	aagagttaac	tcttgcaagc	1980
aaaagagaat	tacttcaaaa	gacgagtga	cgtttagcat	ctggtgaaat	tacacaggat	2040
gacttccttg	ttgttgtgca	tcaaattcga	cagctatttc	agtatcaaga	aggtgtgcga	2100
gaagagcaga	gatctccatt	caatgatcgt	ttccactta	agcgacctcg	atatgaagat	2160
tcagataaac	catttgtaga	tagtccagca	tcaagattcg	ccggcctgga	tacaaatcag	2220
cgacttacag	ctttagctga	agacagaccg	ttatttgatg	gacctagtag	gccatcagta	2280
gcaagagatg	gccaacgaa	gatgattttt	gaaggacca	ataaattaag	ccctcgaatt	2340
gatggacctc	ccacaccagc	ttctcttcgg	tttgatgggt	caccaggaca	aatgggggga	2400
ggaggccctt	tgagatttga	ggggccacaa	ggtcagctag	gaggtgggtg	tcctttgaga	2460
tttgaaggtc	ctccaggacc	agtggggaca	cctctgcggt	ttgaggggcc	aattgggtcaa	2520
gcaggaggag	gtggttttcg	gtttgaaggt	tcccctggtc	tgaggtttga	gggatctcca	2580
ggtggtttga	gatttgaggg	accaggaggc	cagcctgtgg	gtggtctgag	gtttgagggg	2640
catcgtggtc	aacctgtggg	tggcttaagg	tttgagggac	ctcatgggtca	gcctgtgggt	2700
ggacttagat	ttgataatcc	ccgagggtcag	cctgtaggtg	gacttagatt	tgaggggggt	2760
catggtccat	caggggctgc	gattaggttt	gatggacctc	atggtcagcc	aggaggtgga	2820
atcagatttg	agggcccttt	gctacagcaa	ggggttgaa	tgaggtttga	gggcccccat	2880
ggtcagtcag	tagctggtct	gagatttgag	ggacaacata	atcaacttgg	tggaacctt	2940
aggtttgagg	gtccacatgg	tcagccaggg	gttggtatca	ggtttgaagg	ccctttagtc	3000
caacaaggag	gtggaatgag	gtttgagggt	ccttctgtac	caggaggtgg	cctgagaatt	3060
gaagggcctc	tgggtcaagg	tgggtcaaga	tttgaaggtt	gtcatgcttt	aaggtttgat	3120
gggcagccag	gtcagccgtc	actcttgcca	agatttgatg	gattacatgg	tcagccagggt	3180
cctagatttg	aaaggactcc	tggtcagcca	ggccctcaga	ggtttgatgg	accacctgga	3240
cagcaggttc	aaccagatt	tgacggtgta	cctcaaagat	ttgatgggtcc	acaacatcag	3300
caagcatcaa	ggtttgatat	tcctcttggt	cttcaaggca	caagatttga	caatcatcct	3360
tcacaaaggc	ttgaatcagt	atctttcaat	cagactggtc	catataatga	tccacctggc	3420
aatgctttta	atgccccatc	ccaaggacta	cagttccaaa	gacatgaaca	aatatttgat	3480
tcacctcaag	gaccaaattt	taatggacca	catggccctg	gaaaccagag	tttctcta	3540
ccacttaaca	gagcttctgg	acactatttt	gatgaaaaaa	atcttcagag	ttctcaattt	3600

ggaaactttg gcaatatacc tgctccaatg acagtaggaa atattcaggc atctcaacag	3660
gttctgagtg gtgttgctca gccagtagct tttgggtcaag gacaacagtt tttaccagtt	3720
catccacaaa atcctgggatt tgttcagaat ctttcaggag ccctccctaa ggcataatcct	3780
gataatcatc tcagtcaggt ggatgtaaatt gaattgtttt caaaattgct aaaaacagga	3840
attctcaaatt tgtcccaaac tgattcagct acaacacaag taagtgaagt aactgctcag	3900
cctccccctg aagaggagga agatcaaaat gaagatcaag atgttccaga tcttactaat	3960
tttacagttg aagaattgaa acaacgttat gacagtggtta taaatcgact gtacactggt	4020
attcagtggt actcttggtg aatgaggttt acaacatcac agacagatgt ttatgcagat	4080
catttggtgact ggcattatcg gcaaaataga actgaaaagg atgttagccg aaaagtcact	4140
catagacgtt ggtactacag tttaacagac tggatagaat ttgaggagat agctgatctg	4200
gaagaacggg caaagagcca gttttttgaa aaggtgcatg aagaagttgt gctcaaaact	4260
caagaggctg ctaaagaaaa agagttccaa agtgtacctg ctggaccagc tggagcagtt	4320
gagagttgtg aaatctgtca agaacaattt gaacaatact gggatgaaga agaggaggaa	4380
tggcatttga aaaatgctat tagagtagat ggaaagattt atcatccatc atgttatgaa	4440
gattatcaaa atacatcttc atttgattgt acaccatctc ccagcaagac accagttgaa	4500
aacccttga atattatgtt gaacattgtc aaaaacgaat tgcaggaacc ctgtgacagt	4560
cccaaagtta aggaagaacg aattgataca ccaccagctt gtacagagga aagcatagca	4620
acaccctctg aaattaaaac agaaaatgac acagtcgagt cagtttaa	4668

<210> 237
 <211> 7026
 <212> DNA
 <213> Homo sapiens

<400> 237	
atggggtcgc agacgctgca gacctccga cagggggtgt gggccgcgct cagcgggggc	60
tggtactacg acccgacca ggccaccttc gtgaacgcgc tgcacctcta cctgtggctc	120
tttctgctgg gcctgccctt caccctctac atggcccttc cttctaccat gattatagta	180
gcagtttatt gtcctgtgat agctgctgtt ttcattgttc tgaagatggg caactatcga	240
ctacacagag cacttgatgc tggagaagtt gtagatagga ctgcaaata gttcacggat	300
cagcgaacca aagctgaaca aggcaactgt tcaaccagga gaaaagacag caatggaccg	360
agtgatcctg gtggagggat tgaaatgtct gagttcatcc gagaggccac acccccagtt	420
ggttgcagtt ccagaaattc ttatgccggt ctagatccaa gcaaccagat tggatctggt	480
tcctcgcgtc ttggaacagc agcaactatt aaaggagata cagacactgc taagacttct	540
gatgatatca gtttaagtct gggccaaagt tctagtcttt gtaaggaagg aagtgaagaa	600
caagatttgg cagctgatcg gaagctcttt cgtcttgtct ccaatgactc cttcatctct	660
attcagcctt ccttatcctc ttgtggacag gacttgccaa gggacttcag tgacaaagtg	720

aacctgccaa	gtcataacca	ccaccacat	gttgatcagt	ctctgtccag	cgctgtgac	780
acagaagtag	cttctcttgt	acctttacac	tcacactctt	atagaaaaga	ccaccggccg	840
cgaggtgtac	cacggacttc	tagctctgct	gtggcttttc	cagacacttc	actgaatgat	900
tttccccctt	atcagcaaag	acgtggatta	gatccagtta	gtgagttaga	atcttccaag	960
cctctttctg	gatccaaaga	atccttggtg	gaaaattctg	gtttatctgg	ggaatttcag	1020
cttgctggtg	acttgaaaat	caatacttct	cagccacca	caaaaagtgg	gaagagcaaa	1080
cctttgaaag	cagagaaaag	catggacagc	ttgaggagcc	tgagcacacg	gagtagtggg	1140
tcaacagaaa	gctactgcag	tggaacggac	cgggacacta	acagtactgt	cagcagctat	1200
aaaagtgcag	agaccagctc	aactcacata	gagagcatcc	tgtcagagca	tgaggagtct	1260
cctaaagcag	gaacaaaaag	tgggaggaag	aaagagtgtc	gtgcaggccc	agaggagaag	1320
aatagctgtg	ccagtgcaca	aaggactagc	agtgaaaaga	ttgctatgga	agcgagtacc	1380
aacagtgggg	ttcacgaggc	caaggacccc	acccctctct	atgagatgca	caaccagaga	1440
ggctctcagc	cctctgcctc	tgaagaagcc	aataaaaatc	cccatgcaaa	tgaatttact	1500
tccaagggg	acagaccacc	tgggaacact	gcagaaaaca	aagaagagaa	gagtgataag	1560
tcagctgttt	ctgtggattc	caaagtgcgt	aaagatgttg	gtggaaagca	aaaggaaggg	1620
gatgttcgac	ctaaatcttc	tagcgtaatc	catcggacag	cttctgcca	caagtcaggc	1680
aggagacgca	caggaaaaaa	acgggctagc	agttttgatt	caagccggca	tagggactat	1740
gtttgctttc	gaggtgtttc	tggtaccaag	ccacacagtg	ctatatattt	tcacagcga	1800
gactctagt	atcagagtga	cttgagtaga	gcacaaagtg	ttcagctctg	tcaccagttc	1860
agcagtgcga	gctcttctag	caccacttct	cattcctgtc	agtctcctga	gggcagatac	1920
agtgtcttaa	agaccaaaca	cactcataaa	gaaaggggca	cagactctga	acacacacac	1980
aaagctcatt	tggttcctga	aggaaccagc	aaaaagcgtg	caacacgacg	gacttctagc	2040
acaaatagtg	ccaagactcg	tgcccgagtg	ttgagcctgg	acagtggcac	agtagcatgt	2100
ttgaatgact	caaacagggt	aatggcacct	gaaagtataa	agcccttaac	cacttcaaaa	2160
tcagatcttg	aggccaaaga	gggagaggtg	ctagatgagc	tatctttatt	aggacgggct	2220
tcccagttag	agacagtcac	tcgatctagg	aatagcttgc	caaaccaggt	tgcatttcct	2280
gaaggggaag	agcaagatgc	agtcagtggg	gcagcacaag	ccagcgagga	ggcagtgtca	2340
tttcgccgtg	aacgcagcac	atttaggcgc	caggcagtag	ggcgccggca	caatgcaggg	2400
agtaacccta	cccctcctac	attgctcatc	ggatcacccc	taagccttca	agatggctcag	2460
caaggccagc	agtccacagc	ccagggtcaa	gtccagtccc	gcccccttc	ccaggctgca	2520
gtgctcagtg	ctagtgcctc	cttgctggtg	agaaatggga	gtgtccactt	agaagcatca	2580
catgacaatg	catctgctgt	aggcggtagc	agtttgcacg	atgaacttgg	taagttctct	2640
tctacgctgt	atgagactgg	tggctgtgat	atgtcacttg	tgaattttga	accagcagca	2700
agaagagcat	ccaatatctg	tgacacagat	tctcatgtat	ccagttctac	ctcagttcga	2760

ttttatccac atgatgtgct ctctctccca cagattcgat tgaatagact attgaccatt	2820
gatacagatt tggttgagca acaggacatt gatctaagcc ctgacttggc agctacttac	2880
ggcccaacag aagaagctgc ccaaaagggt aaacactatt atcgcttttg gatcctaccc	2940
cagctgtgga ttggcattaa ctttgacaga ctcacacttt tggccctgtt tgatagaaat	3000
cgtgagatcc tggaaaatgt gttagctgtc atcctggcta ttctcgtggc ctttttggga	3060
tctattcttc tcatacaagg attcttcaga gatatctggg tcttccagtt ctgcctcgtc	3120
atagccagct gtcaatactc actgcttaag agtggttcaac cagattcttc ttctcccaga	3180
catggtcata atcgtatcat tgcctacagt agaccagttt atttctgcat atgttgcggt	3240
cttatttggc tcttgatta tggtagcaga aacctgactg caaccaagtt caaattatat	3300
ggaataactt tcaccaatcc actggtgttt atatcagcca gggatttagt tatagtgttt	3360
acactctgtt tccaatagt gtttttcatt ggtctcctgc ctcagggtgaa tacatttgta	3420
atgtaccttt gtgaacaatt ggatattcat atttttggtg gtaatgccac tacaagcctg	3480
cttgacgac tttacagttt tatctgtagc attgttgacg tagccttatt gtatggatta	3540
tgttatgggg ctttaaagga ttcttgggat ggccagcata ttccagtact tttctccatt	3600
ttttgtggtt tattagtggc agtgtcttac catctcagcc gacaaagcag tgatccatct	3660
gtacttttct ctttagtgca atccaagatt tttccaaaaa cggaagagaa aaatccagaa	3720
gaccctctat ctgaagtaaa agatccactg cctgaaaaac ttagaaattc tgttagttag	3780
cgattacagt ctgacctggt agtatgcatt gtaattggtg tgctgtattt tgctattcat	3840
gtaagcacag tcttcacagt attgcagcct gccctcaagt atgtgttgta tacattggtt	3900
ggctttgtgg gttttgtaac ccattatgtg ctgcctcaag ttagaaaaca gctaccatgg	3960
cactgtttct ctcatcctct gctaaagaca ctagagtata atcagtatga agttcgaaat	4020
gcagccacta tgatgtggtt tgagaaactt catgtgtggc ttctttttgt ggagaagaat	4080
ataatctatc cattgattgt tctcaatgaa ctgagcagca gtgcagagac aattgctagt	4140
ccaaagaaac tgaatacaga attaggtgct ttaatgatca ctggtgctgg tttgaagttg	4200
ctacgatcct cttttagcag ccctacatat cagtatgtta cagtcattct tactgtgctg	4260
tttttcaaat ttgactatga agctttttca gagaccatgc tgttggatct cttctttatg	4320
tccatactct tcaacaagct ttgggaacta ctttataaat tgcagtttgt gtatacctat	4380
attgccccat ggagatcac atggggttct gctttccatg cttttgctca gccttttgca	4440
gtgcctcatt cagccatgct gtttattcag gctgctgtct cggccttctt ctctactcca	4500
ctgaaccctt ttctgggaag tgcaatattc atcacttcat atgtccgacc tgtgaaattc	4560
tgggagagag actataacac aaaacgagtg gatcattcaa ataccagatt ggcttcccag	4620
cttgatagaa atccaggatc agatgacaac aatctgaatt ccatctttta tgagcattta	4680
actagatccc tacagcacag cctctgtggt gatttgctac taggacggtg gggaaactac	4740
agtacagggg actgtttcat ccttgcctct gactatctca atgcattagt acaccttata	4800

gagataggca	atggtctggt	cacttttcag	ctgcggggac	ttgaattcag	aggtagctac	4860
tgtcaacaac	gggaagtgga	ggccattact	gaaggtgtag	aggaagatga	aggattttgc	4920
tgttggaac	ctggccatat	tcctcacatg	ctttcattta	atgctgcatt	tagccagcga	4980
tggctagctt	gggaagtgat	agtcacaaag	tacattctgg	agggttatag	catcactgat	5040
aacagtgcgt	cttctatgct	tcaagtcttt	gatcttcgga	aagtactcac	cacttactat	5100
gtcaagggtg	tcatttatta	tgttacgacc	tcgtctaagc	tagaggagtg	gctagctaata	5160
gagacaatgc	aggaaggact	tcgtctgtgt	gctgatcgca	attatgtcga	tgtggacccg	5220
acctttaatc	caaacattga	tgaagactat	gaccaccgac	tggcaggcat	atctaggagag	5280
agtttctgtg	tgatttacct	caactggata	gagtactgct	cttcccgaag	agcaaagcct	5340
gtggatgtgg	acaagattc	atccctagt	actctctgtt	atggactctg	tgttctggga	5400
cggagagctt	tggggactgc	atcccatcat	atgtccagta	atttagagtc	attcctctat	5460
ggattgcatg	ccctatttaa	aggagatttc	cgtatttctt	caattcgaga	tgaatggatc	5520
tttgctgaca	tggaattgct	aagaaaagta	gtagtccctg	ggatccgtat	gtccattaaa	5580
cttcatcagg	atcattttac	ttctccagat	gaatatgatg	accctactgt	gctctatgaa	5640
gcatagtagt	ctcatgagaa	gaacctcgta	atagcccatg	aaggggaccc	tgcatggcgg	5700
agtgcagtac	ttgccaactc	tccttccttg	cttgctctgc	ggcatgtcat	ggatgatggc	5760
accaatgaat	ataaaatcat	catgtctaac	agacgctacc	tgagcttcag	ggtcattaaa	5820
gtgaataagg	aatgtgtccg	aggtctttgg	gcagggcaac	agcaggagct	tgtttttcta	5880
cgtaacgta	accagagag	aggtagcatc	caaaatgcaa	agcaagccct	gagaaacatg	5940
ataaactcat	cttgtgatca	acctattggc	tacccaatct	ttgtctcacc	cctgacaact	6000
tcttactctg	acagccacga	acagcttaaa	gacattcttg	ggggtcctat	cagcttggga	6060
aatatcagga	acttcatagt	gtcaacctgg	cacaggctta	ggaaagggtg	cggagctgga	6120
tgaacagtg	gtggcaatat	tgaagattct	gatactggag	gtgggacttc	ctgcactggt	6180
aacaatgcaa	caactgcaa	caatccccac	agcaacgtga	cccagggaag	cattggaaat	6240
cctgggcagg	gatcaggaac	tggactccac	ccacctgtca	catcttatcc	tccaacacta	6300
ggcactagcc	acagctctca	ctctgtgcag	tcgggcctgg	tcagacagtc	tcctgcccgg	6360
gcctcagtag	ccagccagtc	ttcctactgc	tatagcagcc	ggcattcatc	cctccggatg	6420
tccaccactg	ggtttgtgcc	ttgtcggcgc	tcttctacta	gtcagatata	gcttcgaaac	6480
ttgccatcat	ccatccaatc	ccgactgtcg	atggtgaacc	aaatggaacc	ctcaggctcag	6540
agcggcctgg	cctgtgtgca	gcacggcctg	ccttctctca	gcagctccag	ccaaagcatc	6600
ccagcctgca	aacatcacac	tctcgtgggc	tttcttgcca	cagagggagg	tcagagcagt	6660
gccactgatg	cacagccagg	caacacctta	agtcctgcca	acaattcaca	ctccagaaag	6720
gcagaagtga	tttacagagt	ccaaattgtg	gatcccagtc	aaattctgga	agggatcaac	6780
ctgtctaaaa	ggaaagagct	acagtggcct	gatgaaggaa	tccgggttaa	agctgggaga	6840

aatagctgga aagactggag tccgcaggag ggcatggaag gccatgtgat tcaccgatgg	6900
gtgccttgca gcagagatcc aggtaccaga tcccacatcg acaaggcagt gcttctggtc	6960
cagattgatg ataaatatgt gactgtaatt gaaactgggg tactagaact tggggctgaa	7020
gtgtga	7026

<210> 238
 <211> 2607
 <212> DNA
 <213> Homo sapiens

<400> 238	
atggcgacat tcatctcggg gcagctgaaa aagacctcag aggtggacct ggccaagccg	60
ctggtgaagt tcatccagca gacttaccca agcggcgggg aagagcaggc ccagtactgc	120
cgcgcggcgg aggagctcag caagctgctc cgccgcgcag tcggtcgtcc gctggacaag	180
cacgagggcg cgctcgagac gctcctgaga tattatgata agatttgctt tattgaaccc	240
aaattcccat tttctgaaaa tcagatctgc ttgacattta cctggaagga tgctttcgat	300
aaaggttcac tttttggagg ctctgtaaaa ctggctcttg caagcttagg atatgaaaag	360
agctgtgtgt tgttcaattg tgcagcctta gctagccaaa ttgcagcaga acagaacctg	420
gataatgatg aaggattgaa aatcgtctgt aaacattacc agtttgctag tgggtgccttt	480
ttacatatta aagagacggt tttatctgcc ttaagtcgag agccgaccgt ggacatatct	540
ccagatactg ttgggaccct cagtcttatt atgctggcac aggtcacaaga agtatttttt	600
ttaaaagcca caagagataa aatgaaagat gccatcatag ctaaattggc taatcaggct	660
gcagattatt ttggtgatgc tttcaaacag tgtcaataca aagatactct cccaaggag	720
gtgttccttg tcttggtgc aaagcactgt atcatgcagg ccaatgctga gtaccatcag	780
tctatcctgg caaaacagca gaagaaattt ggagaagaaa ttgcaagggt acagcatgca	840
gcagaactga ttaaaacagt ggcatctcgc tatgatgaat atgttaatgt gaaggatttt	900
tctgacaaaa tcaatcgtgc ccttgctgca gcaagaagg ataatgactt catttatcat	960
gatcgagttc cagaccttaa agatctagat cctattggca aagccacact tgtgaaatct	1020
accccggtca atgtacccat cagtcagaaa ttactgatac tgtttgagaa gatggttccc	1080
gtgtcagtac agcagtcttt ggctgcctat aatcagagga aagccgattt ggtaaacaga	1140
tcaattgctc agatgagaga agccaccact ttggcaaagt ggggtgctagc ttcccttaat	1200
cttcagcag caattgaaga tgtgtctgga gacactgtac ctcatgttat attgactaaa	1260
tccagatctg tgattgaaca gggaggcatc cagactgttg atcagttgat taaagaactg	1320
cctgaattac tgcaacgaaa tagagaaatc ctagatgagt cattaagggt gttggatgaa	1380
gaagaagcaa ccgataatga ttttaagagca aaatttaagg aacgttggca aaggacacca	1440
tccaatgaac tgtataagcc ttttaagagca gagggaacca acttcagaac agtttttagat	1500
aaagctgtgc aggcagatgg acaagtgaaa gaatgttacc agtctcatcg tgacaccatc	1560
gtgcttttgt gtaagccaga gcctgagctg aatgctgcc tcccttctgc taatccagca	1620

aagaccatgc	agggcagtga	ggttgtaa	gtcttaaa	ccttattgtc	aaatcttgat	1680		
gaagtaaaga	aggaaagaga	gggtctggag	aatgacttga	aatctgtgaa	ttttgacatg	1740		
acaagcaagt	ttttgacagc	cctggctcaa	gatgggtgtga	taaatgaaga	agctctttct	1800		
gttactgaac	tagatcgagt	ctatggaggt	cttacaacta	aagtccaaga	atctctaaag	1860		
aaacaggagg	gacttcttaa	aatattcag	gtctcacatc	aggaattttc	aaaaatgaaa	1920		
caatctaata	atgaagctaa	cttaagagaa	gaagttttga	agaatttagc	tactgcatat	1980		
gacaactttg	ttgaacttgt	agctaatttg	aaggaaggca	caaagtttta	caatgagttg	2040		
actgaaatcc	tggtcaggtt	ccagaacaaa	tgcagtgata	tagttttttg	acggaagaca	2100		
gaaagagatg	aactcttaaa	ggacttgcaa	caaagcattg	ccagagaacc	tagtgctcct	2160		
tcaattccta	cacctgcgta	tcagtcctca	ccagcaggag	gacatgcacc	aactcctcca	2220		
actccagcgc	caagaaccat	gccgcctact	aagccccagc	ccccagccag	gcctccacca	2280		
cctgtgcttc	cagcaa	atcg	agctccttct	gctactgctc	catctccagt	gggggctggg	2340	
actgctg	gcgc	cagctccatc	acaaacgcct	ggctcagctc	ctcctccaca	ggcgcaggga	2400	
ccaccctatc	ccacctatcc	aggatatcct	gggtattgcc	aaatgccc	atgccat	gccc	atgggc	2460
tataatcctt	atgcgtatgg	ccagtataat	atgccat	atc	caccagtgt	at	tcaccagagt	2520
cctggacagg	ctccataccc	gggaccccag	cagccttcat	accccttccc	tcagccccca			2580
cagcagtctt	actatccaca	gcagtaa						2607

<210> 239
 <211> 3339
 <212> DNA
 <213> Homo sapiens

<400> 239								
atgaggagg	acgagcgaga	cgccaaagcc	atgcggtccc	tgcagccgcc	ggatggggcc			60
ggctcgcccc	ccgagagtct	gaggaacggc	tacgtgaaga	gctgcgtgag	ccccttg	cg		120
caggaccctc	cgcgcggtt	cttcttccac	ctctgccgct	tctgcaacgt	ggagctgc	gg		180
ccgccgccg	cctctccca	gcagccgcg	cgctgctccc	ccttctgccg	ggcgcgcctc			240
tcgctggg	cg	ccctgggtgc	ctttgtcctc	gccctgctgc	tgggcgcgga	acccgagagc		300
tgggctgccg	gggccgcctg	gctgcggacg	ctgctgagcg	tgtgttcgca	cagcttgagc			360
cccctcttca	gcatcgctg	tgcttctt	cttctcacct	gcttctcac	ccggaccaag			420
cggggacccg	gcccgggccc	gagctgcggc	tcctgggtggc	tgctggcgct	gcccgcctgc			480
tgttacctgg	gggacttctt	ggtgtggcag	tggtggtctt	ggccttgggg	ggatggcgac			540
gcagggtccg	cggccccgca	cacgcccccg	gaggcggcag	cgggcagggt	gctgctggtg			600
ctgagctgcg	tagggctgct	gctgacgctc	gcgcacccgc	tcgggctccg	gcactgcgtt			660
ctggtgctgc	tcctggccag	cttcgtctgg	tgggtctcct	tcaccagcct	cgggtcgctg			720
ccctccgccc	tcaggccgct	gctctccggc	ctgggtggggg	gcgctggctg	cctgctggcc			780

ctgggggttg	atcacttctt	tcaaatacagg	gaagcgcctc	ttcatcctcg	actgtccagt	840
gccgccgaag	aaaaagtgc	tgtgatccga	ccccggagga	gggccagctg	cgtgtcgtta	900
ggagaaactg	cagccagtta	ctatggcagt	tgcaaaatat	tcaggagacc	gtcgttgcc	960
tgtatttcca	gagaacagat	gattcttttg	gattgggact	taaaacaatg	gtataagcct	1020
cattatcaaa	attctggagg	tggaaatgga	gttgatcttt	cagtgcataa	tgaggctcgc	1080
aatatgggtg	cagatcttct	gactgatcca	agccttccac	cacaagtcac	ttcctctcta	1140
cggagtatta	gtagcttaac	gggtgctttc	tcaggttcct	gtaggccaaa	gattaatcct	1200
ctcacaccat	ttcctggatt	ttaccctgt	tctgaaatag	aggaccacgc	tgagaaaggg	1260
gatagaaaac	ttaacaaggg	actaaatagg	aatagtttgc	caactccaca	gctgaggaga	1320
agctcaggaa	cttcaggatt	gctacctgtt	gaacagtcct	caagggtgga	tcgtaataat	1380
ggcaaaagac	ctcaccaaga	atttggcatt	tcaagtcaag	gatgctatct	aaatgggcct	1440
tttaattcaa	atctactgac	tatcccgaag	caaaggctac	cttctgtatc	actgactcac	1500
catgtaggtc	tcagaagagc	tggtgttttg	tccagtctga	gtcctgtgaa	ttcttccaac	1560
catggaccag	tgtctactgg	ctctctaact	aatcgatcac	ccatagaatt	tcctgatact	1620
gctgattttc	ttaataagcc	aagcgttatc	ttgcagagat	ctctgggcaa	tgacaccta	1680
actccagatt	tttatcagca	acttagaaat	tctgatagca	atctgtgtaa	cagctgtgga	1740
catcaaatgc	tgaaatatgt	ttcaacatct	gaatcagatg	gtacagattg	ctgcagtgga	1800
aaatcagggtg	aagaagaaaa	cattttctcg	aaagaatcat	tcaaacttat	ggaaactcaa	1860
caagaagagg	aaacagagaa	gaaagacagc	agaaaattat	ttcaggaagg	tgataagtgg	1920
ctaacagaag	aggcacagag	tgaacagcaa	acaatatattg	aacaggaagt	atcactggac	1980
ctgatttttag	tagaagagta	tgactcatta	atagaaaaga	tgagcaactg	gaattttcca	2040
atttttgaac	ttgtagaaaa	gatgggagag	aaatcaggaa	ggattctcag	tcaggttatg	2100
tataccttat	ttcaagacac	tggtttattg	gaaatattta	aaattcccac	tcaacaattt	2160
atgaactatt	ttcgtgcatt	agaaaatggc	tatcgagaca	ttccttatca	caatcgtata	2220
catgccacag	atgtgctaca	tgcatgttgg	tatctgacaa	cacggccagt	tcctggctta	2280
cagcagatcc	acaatgggtg	tggaacagga	aatgaaacag	attctgatgg	tagaattaac	2340
catgggcgaa	ttgcttatat	ttcttcgaag	agctgctcta	atcctgatga	gagttatggc	2400
tgctgtctt	caaacattcc	tgcattagaa	ttgatggctc	tatacgtggc	agctgccatg	2460
catgattatg	atcaccacag	gaggacaaat	gcatttctag	tggtacaaa	tgccctcag	2520
gcagttttat	acaatgacag	atctgttctg	gaaaatcatc	atgctgcgtc	agcttggaat	2580
ctatatcttt	ctcgcccaga	atacaacttc	cttcttcac	ttgatcatgt	ggaattcaag	2640
cgctttcgtt	ttttagtcat	tgaagcaatc	cttgctacgg	atcttaaaaa	gcattttgat	2700
tttctcgcag	aattcaatgc	caaggcaa	gatgtaaata	gtaatggcat	agaatggagt	2760
aatgaaaatg	atcgctctt	ggtatgccag	gtgtgcatca	aactggcaga	tataaatggc	2820

PCTAU2016050927-seq1-000001-EN-20161013

ccagcaaaag	ttcgagactt	gcatttgaaa	tggaacagaag	gcattgtcaa	tgaattttat	2880
gagcagggag	atgaagaagc	aaatcttggg	ctgcccacat	gtccattcat	ggatcgttct	2940
tctcctcaac	tagcaaaact	ccaagaatct	tttatcaccc	acatagtggg	tcccctgtgt	3000
aactcctatg	atgctgctgg	tttgctacca	ggtcagtggg	tagaagcaga	agaggataat	3060
gatactgaaa	gtgggtgatg	tgaagacggg	gaagaattag	atacagaaga	tgaagaaatg	3120
gaaaacaatc	taaatccaaa	accaccaaga	aggaaaagca	gacggcgaat	attttgtcag	3180
ctaattgcacc	acctcactga	aaaccacaag	atatggaagg	aaatcgtaga	ggaagaagaa	3240
aaatgtaaaag	ctgatgggaa	taaactgcag	gtggagaatt	cctccttacc	tcaagcagat	3300
gagattcagg	taattgaaga	ggcagatgaa	gaggaatag			3339

<210> 240
 <211> 2217
 <212> DNA
 <213> Homo sapiens

<400> 240						
atgcagccga	ggtgggccc	agggggccacg	atgtggcttg	gagtcctgct	gacccttctg	60
ctctgttcaa	gccttgaggg	tcaagaaaac	tctttcacaa	tcaacagtgt	tgacatgaag	120
agcctgccgg	actggacggg	gcaaaatggg	aagaacctga	ccctgcagtg	cttcgcggat	180
gtcagcacca	cctctcacgt	caagcctcag	caccagatgc	tgttctataa	ggatgacgtg	240
ctgttttaca	acatctcctc	catgaagagc	acagagagtt	attttattcc	tgaagtccgg	300
atctatgact	cagggacata	taaatgtact	gtgattgtga	acaacaaaga	gaaaaccact	360
gcagagtacc	aggtgttggg	ggaaggagtg	cccagtccca	gggtgacact	ggacaagaaa	420
gaggccatcc	aaggtgggat	cgtgaggggc	aactgttctg	tcccagagga	aaaggcccca	480
atacacttca	caattgaaaa	acttgaacta	aatgaaaaaa	tgggtcaagct	gaaaagagag	540
aagaattctc	gagaccagaa	ttttgtgata	ctggaattcc	ccgttgagga	acaggaccgc	600
gtttttatcct	tccgatgtca	agctaggatc	atttctggga	tccatatgca	gacctcagaa	660
tctaccaaga	gtgaactggg	caccgtgacg	gaatccttct	ctacacccaa	gttccacatc	720
agccccaccg	gaatgatcat	ggaaggagct	cagctccaca	ttaagtgcac	cattcaagtg	780
actcacctgg	cccaggagtt	tccagaaatc	ataattcaga	aggacaaggc	gattgtggcc	840
cacaacagac	atggcaacaa	ggctgtgtac	tcagtcatgg	ccatggtgga	gcacagtggc	900
aactacacgt	gcaaagtggg	gtccagccgc	atatccaagg	tcagcagcat	cgtggtcaac	960
ataacagaac	tattttccaa	gcccgaactg	gaatcttctt	tcacacatct	ggaccaaggt	1020
gaaagactga	acctgtcctg	ctccatccca	ggagcacctc	cagccaactt	caccatccag	1080
aaggaagata	cgattgtgtc	acagactcaa	gatttcacca	agatagcctc	aaagtcggac	1140
agtgggacgt	atatctgcac	tgacaggtatt	gacaaaagtg	tcaagaaaag	caacacagtc	1200
cagatagtcg	tatgtgaaat	gctctcccag	cccaggattt	cttatgatgc	ccagtttgag	1260
gtcataaaaag	gacagaccat	cgaagtccgt	tgcgaaatcg	tcagtggaac	tttgcctatt	1320

PCTAU2016050927-seql-000001-EN-20161013

tcttaccac	ttttaaaaac	aagtaaagtt	ttggagaata	gtaccaagaa	ctcaaagat	1380
cctgcggtat	tcaaagacaa	ccccactgaa	gacgtcgaat	accagtgtgt	tgcagataat	1440
tgccattccc	atgccaaaat	gttaagttag	gttctgaggg	tgaaggtgat	agccccggtg	1500
gatgaggtcc	agatttctat	cctgtcaagt	aaggtggtgg	agtctggaga	ggacattgtg	1560
ctgcaatgtg	ctgtgaatga	aggatctggt	cccatcacct	ataagtttta	cagagaaaaa	1620
gagggcaaac	ccttctatca	aatgacctca	aatgccaccc	aggcattttg	gaccaagcag	1680
aaggctagca	aggaacagga	gggagagtat	tactgcacag	ccttcaacag	agccaaccac	1740
gcctccagt	tccccagaag	caaaatactg	acagtcagag	tcattcttgc	cccatggaag	1800
aaaggactta	ttgcagtgg	tatcatcgga	gtgatcattg	ctctcttgat	cattgcggcc	1860
aaatgttatt	ttctgaggaa	agccaaggcc	aagcagatgc	cagtggaaat	gtccaggcca	1920
gcagtaccac	ttctgaactc	caacaacgag	aaaatgtcag	atcccaatat	ggaagctaac	1980
agtcattacg	gtcacaatga	cgatgtcaga	aaccatgcaa	tgaaccaat	aaatgataat	2040
aaagagcctc	tgaactcaga	cgtgcagtag	acggaagttc	aagtgtcctc	agctgagtct	2100
cacaaagatc	taggaaagaa	ggacacagag	acagtgtaca	gtgaagtccg	gaaagctgtc	2160
cctgatgccg	tggaaagcag	atactctaga	acggaaggct	cccttgatgg	aacttag	2217

<210> 241
 <211> 465
 <212> DNA
 <213> Homo sapiens

<400> 241	
atggcgcagt	ctattaacat
cacggagctg	aatctgccgc
agctagaaat	gctcaagaac
60	
cagctggacc	aggaagtgga
gttcttgtcc	acgtccattg
ctcagctcaa	agtggtagag
120	
accaagtatg	tggaagccaa
ggactgtctg	aacgtgctga
acaagagcaa	cgaggggaaa
180	
gaattactcg	ttccactgac
gagttctatg	tatgtccctg
ggaagctgca	tgatgtggaa
240	
cacgtgctca	tcgatgtggg
aactgggtac	tatgtagaga
agacagctga	ggatgccaa
300	
gacttcttca	agaggaagat
agattttcta	accaagcaga
tggagaaaat	ccaaccagct
360	
cttcaggaga	agcacgcat
gaaacaggcc	gtcatggaaa
tgatgagtca	gaagattcag
420	
cagctcacag	ccctgggggc
agctcaggct	actgctaagg
cctga	
465	

<210> 242
 <211> 1671
 <212> DNA
 <213> Homo sapiens

<400> 242	
atggcgggtg	cgccggcagc
tgccggcgga	cccgtgttct
ggaggcgact	gctgggcctc
60	
ctgcctggcc	gcccagggtc
ggccgcgctc	ctgggacgcc
tgtccgaccg	cctcggcagg
120	
aaccgggacc	gccagcgag
gaggtcacca	tggctgttat
tggctccctt	gctgtcccca
180	
gctgttcccc	aggtcacctc
cccaccttgc	tgctgtgtgc
cagaaggcgt	gcaccgggtc
240	

cagtggatca gaaacctggt tccagaattt ggagtctcca gttctcacgt tagggtgctt	300
tcttcccccg cagagttttt cgagctcatg aaggggcaga taagagtagc caagaggcgg	360
gtcgtgatgg catccctcta cctggggaca ggtccttttg aacaggagct ggtggactgc	420
ctggaaagta ctctagaaaa gtcactccaa gcaaagtttc cttcaaattc caaggtctcc	480
attctcttag acttcacgcg gggctcacga ggccggaaga actcccgcac aatgctgctc	540
ccactcctgc ggaggttccc agagcaggtc cgagtctccc tctttcacac gccgcacctc	600
cgtgggctgc ttcggctcct catccctgag cgcttcaacg agaccatcg cctccagcac	660
attaaggtgt acctcttcga caacagcgtc atcttgagcg gtgcaaacct gagtgactcc	720
tacttcacca accgccagga ccgctacgtg ttcctgcagg actgtgcgga gattgccgac	780
ttcttcacgg agctggtgga cgcggtgggg gatgtgtccc tgcagctgca gggggacgac	840
acggtgcagg tgggtgatgg gatggtgcat cttacaaag gggaccgggc cgagtactgc	900
aaggcagcca ataagagggg catggatgtg atcaactcag ccaggacccg ccagcagatg	960
ctgcatgccc agaccttcca cagcaactct cttttgacct aggaagatgc agcagctgct	1020
ggggatcgca gaccagcccc tgacacctgg atttatccgc tgattcagat gaagcccttc	1080
gagattcaaa tcgatgagat tgtcactgag accctgttga ctgaggcgga gcgcggggca	1140
aagggtctacc tcaccactgg ctatttcaac ctgacctcagg cctacatgga cctggtcttg	1200
ggcactcggg ctgagtacca gatcctgtg gcctcaccag aggtgaatgg cttctttggg	1260
gccaaggggg tggccggcgc catcccagcg gcctatgtgc acatcgagcg acagttcttc	1320
agtgagggtg gcagcctggg acagcaggag cgggtccagc ttcaggagta ctggcggagg	1380
ggctggacgt tccacgcaa aggcctctgg ctgtacctgg caggagcag cctgccctgt	1440
ctcacgctga ttggctctcc taattttggg tacaggtcag ttcaccggga cctggaggcc	1500
cagattgca tcgtgacgga gaaccaggcc ctgcagcagc agcttcacca ggagcaagag	1560
cagctctacc tgaggtcagg tgtggtgtcc tctgccacct tcgagcagcc gagtgcgag	1620
gtgaagctgt ggggtgaagat ggtgactcca ctgatcaaga acttcttctg a	1671

<210> 243
 <211> 972
 <212> DNA
 <213> Homo sapiens

<400> 243	
atgacctcag ggaacggaaa ctctgcctcc agcatcgccg gcactgcccc ccagaatggt	60
gagaataaac caccacaggc cattgtgaaa ccccaaattc tgacgcatgt tatcgaaggg	120
tttgtgatcc aggagggggc ggagcctttc ccggtgggac gctcgtccct gctggtgggg	180
aatctcaaga agaagtatgc acaggggttc ctgcctgaga aacttcaca gcaggatcac	240
accaccacca ctgactcggg gatggaggag ccctatctgc aagaatccaa agaggagggg	300
gctcccctca aactcaagtg tgagctctgt ggccgggtgg actttgccta taagttcaag	360

PCTAU2016050927-seq1-000001-EN-20161013

cggtccaagc gcttctgttc catggcttgt gcaaagaggt acaacgtggg atgcacaaaa	420
cgggtgggac tttccactc agaccggagc aagctgcaga aggcaggagc tgcgaccac	480
aaccgccgtc gggccagcaa agccagtctg ccaccactta ccaaggatac caagaagcag	540
ccaacaggca ctgtgcccct ttcggttact gctgctttgc agctaacaca cagccaggaa	600
gactccagcc gttgctcaga taactcaagc tatgaggaac ccttgtcacc catctcagcc	660
agctcatcta cttcccgccg gcgacaaggc cagcgggacc tggagctccc cgacatgcat	720
atgcgggacc tgggtgggcat gggacaccac ttcctgcaa gtgagccac caagtggaat	780
gtagaagacg tctacgaatt catccgctct ctgccaggct gccaggagat agcagaggaa	840
ttccgtgccc aggaaatcga cgggcaagcc ctgctgtgc tcaaggagga ccacctgatg	900
agcgccatga acatcaagct ggggcccgcc ctgaagatct acgcccgcac cagcatgctc	960
aaggactcct ag	972

<210> 244
 <211> 996
 <212> DNA
 <213> Homo sapiens

<400> 244	
atggcccagg cgtcgccgcc ccggcccag aggggtgctcg ggcgcagcag cccggaggcc	60
cggcccgcgc aggaggcgt cctccttccc accggtgtct ttcaggttgc agaaaagatg	120
gaaaaaagga catgtgcact ctgccccaaa gatgtcgaat ataatgtcct atactttgca	180
caatcagaga atatagctgc tcatgagaat tgtttgctgt attcttcagg acttgtggaa	240
tgtgaggatc aggatccact taatcctgat agaagttttg atgtggaatc agtaaagaaa	300
gaaatccaga gaggaaggaa gttgaaatgc aaattttgtc ataaaagagg agccaccgtg	360
ggatgtgatt taaaaaactg taacaagaat taccactttt tctgtgcaa gaaggacgac	420
gcagttccac agtctgatgg agttcgagga atttataaac tgctttgcca gcaacatgct	480
caattcccga tcatcgctca aagtgtctaaa ttttcaggag tgaaaagaaa aagaggaagg	540
aagaaacccc tctcaggcaa tcatgtacag ccacccgaaa caatgaaatg taatacatc	600
ataagacaag tgaaagaaga gcatggcaga cacacagatg caactgtgaa agttcctttt	660
cttaagaaat gcaaggaagc aggacttctt aattacttac ttgaagaaat attagacaaa	720
gttcattcaa ttccagaaaa actcatggat gagactactt cagaatcaga ctatgaagaa	780
atcgggagtg cactttttga ctgtagattg ttcgaagaca catttgtaaa ttttcaagca	840
gcaatagaga aaaaaattca tgcattctca caaaggtggc agcagttgaa ggaagagatt	900
gagctacttc aggacttaaa acaaaccttg tgctcttttc aagaaaatag agatcttatg	960
tcaagttcta catcaatatc atccctgtct tattag	996

<210> 245
 <211> 3291
 <212> DNA
 <213> Homo sapiens

<400> 245
atggcgacgg tgcccgtgta ctgcgctctgc cggctcccct acgacgttac ccgcttcatg 60
atcgagtgcg acgcctgcaa ggactgggtc cacggcagct gtgttggggg ggaagaggag 120
gagggcgccc acatcgacat ataccactgc ccaaactgtg agaaaaccca tgggaagtcc 180
accttaaaga agaagcggac ctggcacaaa cacggcccgg ggcaagcgcc tgacgtcaag 240
cccgtgcaga atggcagcca gctcttcac aaggagctgc ggagccggac ctttcccagt 300
gctgaagacg tgggtggccc tgtgccagga agtcagctca cgctgggcta catggaggag 360
cacggcttca ccgagcccat cctcgtccct aagaaagacg ggctgggtct ggctgtcccg 420
gccccacgt tctatgtcag tgacgtcgag aactacgtgg ggccggaacg gagtgtggat 480
gtgacagatg tcaccaagca gaaggactgc aagatgaagc tgaaggagtt tgtggactat 540
tactacagca ccaaccgcaa gcgggtcctc aacgtcacca acctcgagtt ctctgacacc 600
cgaatgtcca gcttcgtgga gccacctgac attgtaaaga aactgtcatg ggtagaaaac 660
tactggccag atgatgcatt gctggccaag ccaaagtga ccaagtactg cctaattctgc 720
gtgaaggaca gttacaccga cttccacatc gactctgggg gcgcctctgc ctggtaccac 780
gtgctcaagg gggagaagac cttctatctc atcaggccgg cctcggccaa catctccctg 840
tatgagcgct ggcggtctgc ctctaaccac agcgagatgt tctttgctga ccaggtcgac 900
aatgctaca agtgcacgt caagcagggc cagaccctct tcatcccctc aggctggatc 960
tacgccacac tcacccctgt ggactgcctg gccttcgcgg gacatttcct ccacagcctg 1020
agtgtggaga tgcagatgag agcatatgaa gtggaaagga ggttgaaact gggcagcctg 1080
actcagtttc ccaactttga aactgcgtgc tggtagatgg ggaagcacct gctggaggca 1140
ttcaaaggct ctcaaaaatc tgggaagcag ctgccccctc atctagtcca aggagctaaa 1200
attctcaatg gtgctttccg atcgtggacg aagaagcagg ctttggcaga gcatgaggac 1260
gagctcccgg agcacttcaa accttcacag ctaatcaaag acctggccaa agagatccgg 1320
ctcagtgaga atgcctcaa agccgtccga ccggaagtga atactgtcgc ctcgtcagat 1380
gaggtgtgtg acggggaccg ggagaaggag gagccccgt ctccattga ggccaccccg 1440
cctcaatccc tcctggagaa agtgtccaaa aaaaagactc caaaactgt gaagatgccc 1500
aagccatcca aaatcccaa gccccgaag cccctaagc cccaaggcc ccccaaacg 1560
ctgaagctca aagatggagg caagaagaaa gggaagaagt cccgggagtc agcctcacc 1620
accatccca acctggacct gctcgaagcc cacaccaagg aggcactgac caagatggag 1680
ccgccaaga agggcaaggc cacaagagt gtcctgagtg tgccaacaa agatgtggtt 1740
cacatgcaga atgatgtgga gaggtggaa attcgagagc aaaccaagag caagtcagag 1800
gccaagtgga agtacaagaa cagcaaact gactccttac tgaagatgga agaggagcag 1860
aagctagaga agtcgcctct agctggaaac aaagacaata agttctcttt ttctttctcc 1920
aacaagaaac tcctcggctc caaggctctc agggccccga cgagccctgg tgtgttcggg 1980

gccttgcaga	acttcaagga	ggacaagccc	aagcccgtgc	gggatgagta	tgagtacgtg	2040
tcggatgacg	gtgagctcaa	gatcgacgag	tttcccatca	ggaggaagaa	aaacgccccg	2100
aaaagggact	tgtccttctt	gttgataag	aaggctgtgc	tgccacgcc	tgtcacgaag	2160
ccaaagctgg	actcggcagc	gtacaagagt	gatgactcct	cggacgaggg	ttcgtgcac	2220
atcgacacag	acaccaagcc	cggccgcaat	gccagagtca	agaaggagag	tgggagctcg	2280
gcagctggca	tcttgacct	gctgcaggcc	agtgaggagg	ttggcgcgct	ggagtacaac	2340
cccagcagcc	agccccggc	ctccccagc	acacaggaag	ccattcaggg	aatgctgtcc	2400
atggccaacc	tgcaggcctc	cgactcctgc	ctgcagacca	cgtggggagc	tggccaggcc	2460
aaggggagct	cgctggctgc	ccatggtgcc	cggaagaatg	ggggtggcag	tggcaagagt	2520
gcaggcaaac	gactgctgaa	gagggctgcc	aagaacagtg	tcgacctgga	cgactacgag	2580
gaagagcagg	accacctgga	tgcctgcttc	aaggactcag	actacgttta	cccctcactg	2640
gagtcagatg	aagacaaccc	catctttaag	tcccggtcga	agaaaaggaa	aggctcagac	2700
gacgtccct	acagcccaac	agcaagggtc	ggcccatcgg	tgccaagaca	ggacaggcct	2760
gtgctgagg	gtacacgggt	ggcttccatc	gagaccgggc	tggcggctgc	tgcagctaag	2820
ttgtcccagc	aggaggagca	gaaaagcaag	aaaaaaaaaga	gtgccaagag	gaagctgact	2880
cctaacacca	cctccccctc	cacctccacc	tccatctctg	ccggcaccac	ctccacctcc	2940
accacgccag	cctctaccac	cccggcctcc	accaccccg	cctccaccag	cacggccagc	3000
agccaggcct	cgcaggaggg	cagctcgcca	gagccccgc	ctgagtcgca	tagcagcagc	3060
ctggcggacc	atgagtacac	agccgctggc	accttcaccg	gggccaggc	tggccgcacc	3120
tcccagccca	tggcccctgg	ggtctttctc	acacagaggc	ggccctccgc	atcgtctcca	3180
aacaacaaca	ccgctgccaa	aggaaaacgt	acgaaaaagg	gcatggcgac	cgccaagcag	3240
aggcttggga	aaattttgaa	aattcatcgg	aacgggaaac	tactccttta	a	3291

<210> 246
 <211> 3039
 <212> DNA
 <213> Homo sapiens

<400> 246	
atgacaaagc	atccacctaa cagacgagga atcagctttg aagtgggagc ccagttggaa 60
gcccgggacc	gtttaaaaaa ctggtatcca gtcacatag aagacattga ctacgaggaa 120
ggaaaagtac	tcatccattt caagcgttgg aaccatcggt atgatgagtg gttctgctgg 180
gacagtcctt	atttacgccc tttagagaaa atacagctga ggaaagaggg cttgcatgaa 240
gaggatggat	cttctgaatt tcaaataaat gagcagggtc ttgcttgctg gtctgattgt 300
cgtttttacc	cggccaaagt cactgctgtt aacaaggatg gtacttacac tgtgaaattt 360
tatgatggag	tagttcagac tgtcaaacat attcatgtca aagctttttc caaagatcag 420
aatattgtgg	gtaatgctag gcctaaagaa acagatcaca aaagtctttc atcatctcct 480
gataaacgag	agaagtttaa agaacagaga aaagcaacag tgaatgtgaa gaaagacaaa 540

gaagataaac	ccttaaagac	agaaaagcga	cccaagcagc	ctgataaaga	aggaaagtta	600
atctgttctg	aaaaggggaa	agtgtcagag	aaaagtcttc	ccaagaacga	gaaggaagac	660
aaggaaaaca	tttccgaaaa	tgacagagag	tattctggag	atgcccaagt	ggataagaaa	720
cctgaaaatg	acattgtgaa	gagtccacaa	gaaaacttga	gggaacccaa	aagaaaacga	780
ggcagacccc	cttccatagc	tcctactgct	gtggattcaa	actctcaaac	tttgcaacca	840
ataacattgg	aactgagaag	aaggaaaata	tcaaaaggat	gtgaagtccc	attaaaacgt	900
cctcggcttg	acaaaaattc	atcccaggaa	aagtcaaaaa	actactcgga	aaacactgac	960
aaagacttat	cgaggagacg	ttcctccagg	ctgtccacta	atgggaccca	tgagatccta	1020
gacctgact	tggttgtatc	agatttggtt	gatacggatc	ctttgcaaga	cacgttgtct	1080
agtaccaagg	aatctgaaga	aggtcagttg	aagtctgctt	tggaagctgg	ccaggtctca	1140
tctgcactga	cttgccactc	ctttggggat	ggatccgggg	ctgcaggctt	ggagttgaac	1200
tgcccatcaa	tgggagaaaa	cacgatgaaa	acagaaccga	cttctcccct	tgtggaatta	1260
caagagattt	cgactgtgga	agtaacaaat	acttttaaga	aaacagatga	ttttgggtca	1320
tctaattgcac	cagctgtcga	cctagaccat	aagtttagat	gcaaagttgt	ggactgttta	1380
aaatttttcc	gcaaagccaa	actgttgcac	tatcacatga	agtattttcca	tggaatggag	1440
aagtcactgg	agccagaaga	gagcccggga	aagaggcatg	tccaaaccag	gggcccttca	1500
gcttcagaca	agcccagcca	ggagaccctg	accaggaagc	gggtctctgc	cagttcccca	1560
actacaaaag	acaaggaaaa	gaataaagag	aagaaattca	aggagtttgt	gagagtgaag	1620
ccaaagaaga	aaaagaaaaa	gaaaaagaaa	accaaacctg	aatgccctg	cagtgaggag	1680
atcagtgaca	cctcccagga	accttctcca	cccaaggcat	ttgctgttac	caggtgtggg	1740
tcctcacaca	agccaggggt	ccatatgagc	ccgcagcttc	atggcccaga	atctggacac	1800
cacaaaggga	aagtgaaagc	attggaggag	gataatttga	gtgagtcctc	ttctgagagc	1860
tttctctgga	gtgatgatga	gtatggccaa	gatgtggatg	tgaccaccaa	cccagatgag	1920
gaacttgatg	gggatgaccg	ctatgacttc	gaggtggtcc	gctgcatctg	tgaggtccag	1980
gaggaaaatg	acttcatgat	tcagtgtgaa	gagtgccagt	gctggcagca	tggggtctgc	2040
atgggattac	tggaagaaaa	tgtgcccag	aaatacacct	gttatgtttg	ccaagacct	2100
ccaggtcaga	ggcctggctt	caagtactgg	tatgacaagg	agtggctgag	caggggacat	2160
atgcatggcc	tggcatttct	agaagagAAC	tactcccatc	agaatgccaa	gaagatcgtg	2220
gccaccacc	agcttcttgg	tgatgtgcag	agagtgattg	aggttctgca	tggcctgcag	2280
ctcaagatga	gcatcttgca	aagccgggag	catcctgatc	tgccgctgtg	gtgccagcct	2340
tggaaacagc	actcagggga	ggggagatct	catttcagaa	acatccctgt	cactgacacc	2400
aggagcaagg	aggaagctcc	aagctataga	actttgaacg	gggcagtgga	gaagcccagg	2460
cccctggccc	tgcccctgcc	gcgttctgtg	gaggaatcct	atatcaccag	tgagcattgc	2520
taccagaagc	cccgcgccta	ttaccctgcc	gtggagcaga	agctggtggg	ggagacgagg	2580

PCTAU2016050927-seq1-000001-EN-20161013

ggctctgccc	tcgacgatgc	ggtcaacccc	ctccatgaga	acggcgatga	ttccctttcc	2640
ccgcgcctgg	gctggcctct	agaccaagac	aggagcaagg	gggacagtga	ccccaacccc	2700
ggctccccc	aggtgaagga	atatgtctcc	aaaaaggccc	taccagaaga	agcccctgct	2760
cggaagctgc	tggacagagg	tggagagggg	ctgctgagct	cccagcacca	gtggcagttt	2820
aacctgctga	cccattgtga	atctcttcag	gatgaagtta	cgcacaggat	ggactccatt	2880
gagaaggagt	tggatgtgtt	ggagagctgg	ctggactaca	ctggggaact	ggagccccct	2940
gagccgctgg	ccaggcttcc	gcagctcaag	cattgtatca	agcagctgct	gatggacctg	3000
ggcaaggtgc	agcagatcgc	cctctgctgc	tcaacatga			3039

<210> 247
 <211> 3054
 <212> DNA
 <213> Homo sapiens

<400> 247						
atgagtaaaa	agcccccaa	tcgccctgga	atcacttttg	agattggtgc	tcgtttggag	60
gcactggact	acttacaaaa	atggtatcca	tcacgaattg	aaaaaattga	ctatgaggag	120
ggcaagatgt	tgggtccattt	tgagcgctgg	agtcatcggt	atgatgagtg	gattttactgg	180
gatagcaata	gattgcgacc	ccttgagaga	ccagcactaa	gaaaagaagg	gctaaaagat	240
gaggaagatt	tctttgatgtt	taaagctgga	gaagaagtgc	tggctcggtg	gacagactgt	300
cgctattacc	ctgccaagat	tgaagcaatt	aacaaagaag	gaacattttac	agttcagttt	360
tatgatggag	taattcggtg	tttaaaaaga	atgcacatta	aagccatgcc	cgaggatgct	420
aaggggcagg	tgaatccca	gcatccacta	agctggtggt	gtcctatcga	cccagctgga	480
tcgtgtaacc	agtctatggg	aagtgaggat	tggatagctt	tagtcaaagc	agctgctgca	540
gctgcagcca	agaacaaaac	agggagtaaa	cctcgaacca	gcgctaacag	caataaagat	600
aaggataaag	atgagagaaa	gtggttttaa	gtaccttcaa	agaaggagga	aacttcaact	660
tgtatagcca	caccagacgt	agagaagaag	gaagatctgc	ctacatctag	tgaaacattt	720
ggacttcatg	tagagaacgt	tcaaagatg	gtctttccac	agccagagag	cacattatca	780
aacaagagga	aaaataatca	aggcaactcg	tttcaggcaa	agagagctcg	acttaacaag	840
attactgggt	tgttggcatc	caaagctggt	ggggttgatg	gtgctgaaaa	aaaggaagac	900
tacaatgaaa	cagctccaat	gctggagcag	gcgatttcac	ctaaacctca	aagtcagaaa	960
aaaaatgaag	ctgacattag	cagttctgcc	aacactcaga	aacctgcact	gttatcctca	1020
actttgtctt	caggggaaggc	tcgcagcaag	aaatgcaaac	atgaatctgg	agattcttct	1080
gggtgtataa	aaccccctaa	atcaccactt	tccccagaat	taatacaagt	cgaggatttg	1140
acgcttgat	ctcagctttc	ttcttcagt	ataaataaaa	ctagtcctcc	acagcctgtg	1200
aatcccccta	gacctttcaa	gcatagttag	cggagaagaa	gatctcagcg	tttagccacc	1260
ttacccatgc	ctgatgattc	tgtagaaaag	gtttcttctc	cctctccagc	cactgatggg	1320

aaagtattct ccatcagttc tcaaaatcag caagaatctt cagtaccaga ggtgcctgat	1380
gttgcacatt tgccacttga gaagctggga ccctgtctcc ctcttgactt aagtcgtggt	1440
tcagaagtta cagcaccggt agcctcagat tcctcttacc gtaatgaatg tcccagggca	1500
gaaaaagagg atacacagat gcttccaaat ctttcttcca aagcaatagc tgatggaaga	1560
ggagctccag cagcagcagg aatatcgaac acagaaaaaa aagtgaattt ggaagacaaa	1620
agctcaacag catttggtta gagaaaagaa aaagataagg aaagaagaga gaagagagac	1680
aaagatcact acagaccaa acagaagaag aagaaaaaaa agaaaaagaa atctaagcaa	1740
catgactatt cagactatga agacagttcc ctcgaatttt tggaaagggtg ctcttctcca	1800
ctaactcgat cttctgggag ttctctgggt tcacgaagca tgtttacgga gaaaactaca	1860
acctatcagt acccaagggc aattctatcc gttgatctta gtggtgaaaa cttatcagat	1920
gtagacttcc tagatgattc ttcaacggag agtttgcttc tgagtgggga tgaatacaat	1980
caggactttg attcaaccaa ttttgaggaa tctcaggatg aggatgatgc tcttaatgaa	2040
attgtgcat gtatttgtga gatggatgag gagaatggct tcatgatcca gtgtgaagag	2100
tgcttggtt ggcaacacag cgtgtgcatg gggctgctgg aggagagcat tccagagcag	2160
tacatctgct atatctgccg ggaccacca ggtcagaggt ggagtgcaaa atatcgttat	2220
gataaggagt ggttgaataa tgggagaatg tgcgggttat ctttttcaa agaaaattat	2280
tctcatctca atgccaaaa gatagtttct acacatcacc tgcttgctga tgtctatggt	2340
gttacagaag tgctacacgg gctacagctg aagattggaa tactaaagaa taaacatcat	2400
cctgaccttc atctctgggc ttgttccggg aagcgaaaag accaagatca aataatagct	2460
ggggtggaga aaaaaatagc tcaagacaca gttaatcgag aagaaaagaa atatgtacag	2520
aaccataaag aaccacctcg tttgccccta aaaatggaag gaacttatat aacaagttag	2580
catagctatc aaaagccaca aagttttggt caggactgta aatctctcgc agaccctggg	2640
agctcagatg atgatgatgt tagtagtttg gaagaagaac aagaattcca catgagaagt	2700
aaaaacagtt tacagtactc agcaaaagaa catggaatgc ctgaaaagaa tccagctgaa	2760
gggaatacag tatttgttta taatgataaa aagggcaccg aagaccagg agactcacat	2820
cttcagtggc agtcaatct ctttacacac atagaaaatg tgcagaacga agttaccagc	2880
aggatggacc taatagaaaa agaagtcgat gttctggaaa gctggcttga tttcacaggg	2940
gagttggagc caccagatcc tcttgcaaga ttgcccacac ttaaagcca cataaaacag	3000
ctcctaattg acatgggcaa agtacagcag atagcaactc tttgctctgt atga	3054

<210> 248
 <211> 6120
 <212> DNA
 <213> Homo sapiens

<400> 248	
atggatatag ttgatacatt taatcattta attcctactg aacacttaga tgatgcccta	60
tttctaggat ccaacctgga gaatgaagtc tgtgaggatt ttagtgcaag tcaaaatgtc	120

ttagaggact	cgctgaagaa	catgctcagc	gataaggatc	ctatgctagg	atctgcaagt	180
aaccagttct	gtttgcctgt	tttgatagc	aatgatccca	atttccagat	gccttgttca	240
acagttgttg	gtcttgacga	tattatggat	gaaggagttg	ttaaagaaag	tggcaatgat	300
accattgatg	aagaagaact	gattttacct	aacaggaact	taagggacaa	ggtagaagaa	360
aattcagtga	gatctccaag	aaaatcacct	cgtttaattg	cacaagaaca	agtaagaagt	420
ttgcgacaga	gcactattgc	caagcgttca	aatgcagcac	cattaagtaa	cacaaaaaaaa	480
gcatctggga	agactgtatc	tactgctaaa	gcaggagtga	aacaaccaga	aaggagtcag	540
gttaaagaag	aagtatgtat	gtcactgaaa	cctgagtacc	ataaggagaa	tagaagggtgc	600
agccgaaata	gcggacaaat	tgaagtggta	cctgaagtat	cagtgtcttc	aagtcattct	660
tcagtgtcat	cttgtcttga	aatgaaggat	gaagatggat	tagattctaa	gcataagtgt	720
aataatccgg	gagaaataga	tgtgccatct	catgaattaa	attgttccact	tctttcagag	780
acttgtgtta	ctattggaga	aaagaaaaat	gaagctttga	tggaatgtaa	agccaagcct	840
gttggtagtc	cattgtttaa	gttttcagat	aaagaagaac	atgaacaaaa	tgattccatt	900
tcaggtaaaa	cgggtgagac	tgttgttgaa	gaaatgatag	caacaagaaa	agttgaacaa	960
gattcaaagg	agacagtaaa	attatcccat	gaagatgacc	atattcttga	ggacgctgga	1020
tcttctgata	tttctagtga	tgctgcttgt	acaaatccaa	ataagacaga	aaacagcctt	1080
gtaggtttgc	ctagtttgtg	agatgaagtg	actgaatgta	atttggaatt	gaaggatacc	1140
atgggtattg	ctgataaaac	tgagaacacc	cttgaaagaa	ataaaattga	accgttgggt	1200
tattgtgaag	atgcggagtc	taataggcag	ttggagagca	ctgagtttaa	taaatcaaac	1260
ttagagggtg	ttgatactag	tactttttgga	ccggaaagta	atatcttgga	aaatgctatt	1320
tgtgatgtgc	ctgacaaaaa	ttcaaaacag	ttgaatgcta	tagaaagtac	taaaatagag	1380
tcccatgaaa	cagcaaacct	tcaggatgac	agaaacagcc	agtcaagtag	cgtttcttac	1440
ttagagtcaa	aaagtgtaaa	atccaaacat	acaaaacctg	taattcattc	taagcaaaac	1500
atgaccacag	atgctccgaa	gaaaattgtt	gcagcaaagt	atgaagtaat	acatagcaaa	1560
actaaagtta	atgtcaaaag	tgtgaaacga	aatactgatg	taccagaatc	tcagcaaaat	1620
tttcataggc	cagtcaaagt	cagaaaaaaa	caaattgata	aggagccaaa	gattcagagt	1680
tgcaattctg	gggttaaadc	tgtgaaaaac	caagctcatt	ctgtactgaa	aaaaacatta	1740
caggatcaaa	ctttagtaca	aattttcaag	cccttaactc	attctttgag	tgataagtca	1800
cacgctcatc	ctggttgctt	gaaagaacct	catcatcctg	cacaaactgg	acatgtatca	1860
cattctagcc	agaaacagtg	tcataagcct	cagcaacagg	ccccagcaat	gaaaaccaat	1920
agtcacgtga	aggaagagct	tgaacacca	ggcgttgagc	attttaagga	agaggataaa	1980
ctgaaactga	aaaaacctga	gaagaacct	caaccccgcc	aaagaagaag	cagcaaaagt	2040
ttttctttag	atgagccacc	attgttcatt	ccagataaca	tagctaccat	aagaagagaa	2100
ggctctgatc	atagctcctc	atttgaaagc	aaatatatgt	ggactcccag	caagcagtgt	2160

gggttttgca	aaaaaccaca	tggcaacagg	tttatggttg	gctgtgggag	atgtgatgac	2220
tggtttcatg	gtgattgtgt	tgggttaagt	ctttctcaag	cacagcagat	gggcgaggaa	2280
gacaaagaat	atgtctgtgt	aaaatgttgt	gctgaagaag	acaaaaagac	tgaaatacta	2340
gatccagata	ctttggaaaa	ccaagctaca	gttgaattcc	atagtggaga	taaaacaatg	2400
gagtgtgaaa	agcttggatt	atcaaaacac	acaacaaatg	atagaaccaa	atatatagat	2460
gatacagtga	agcacaaggt	caaaatttta	aaacgggagt	ctggtgaagg	cagaaattca	2520
tcagactgta	gagataatga	aattaaaaaa	tggcagctag	ctcctcttcg	taagatggga	2580
caaccagttt	tacctcggag	atcctcagaa	gaaaaaagtg	aaaaaatacc	gaaagagtct	2640
acaactgtta	cttgcacagg	agaaaaagct	tcaaaaccag	gtactcatga	gaagcaagag	2700
atgaaaaaga	agaaagttga	aaaaggagtg	cttaatgtac	atcctgctgc	ttctgcttcc	2760
aagccttctg	cagatcagat	caggcaaagt	gtcagacatt	ctctcaaaga	cattcttatg	2820
aagagactta	cagactcaaa	tttgaaggta	ccagaggaaa	aggcagcaaa	agttgccaca	2880
aaaattgaga	aagagctttt	ctcttttttt	cgggacacag	atgctaaata	taagaacaaa	2940
tatagaagtt	tgatgtttaa	tttgaaagat	cctaaaaaca	atatattatt	taaaaaagta	3000
ctgaaaggag	aagtaactcc	tgatcatctt	atcagaatga	gtccagaaga	actagcttct	3060
aaagagttag	ctgcttggag	acgaagagaa	aacagacata	ccatagaaat	gattgagaaa	3120
gagcagagag	aagtggaacg	acggccaatc	acaaaaataa	ctcataaagg	tgaaatagaa	3180
attgagagtg	atgccccaat	gaaagaacag	gaagcagcca	tggagattca	ggaaccagcc	3240
gccaataagt	cattggagaa	gccagaagga	tctgaaaaac	aaaaagagga	ggttgactct	3300
atgtctaaag	ataccactag	tcaacacaga	cagcatcttt	ttgatctcaa	ctgcaaaatc	3360
tgcataggtc	gaatggcacc	acctgtagat	gatctttctc	caaaaaaagt	aaaagttggt	3420
gtaggagtag	ctcgcaaaca	ttcagacaat	gaagcagaaa	gtatagcaga	tgcatatatct	3480
tcaacctcaa	atattttggc	ttctgaattc	tttgaggagg	agaaacagga	gtctccaaag	3540
tcaacgttct	ctcctgctcc	acgtccagag	atgcctggaa	ctgttgaagt	tgagtctacc	3600
tttctggctc	gattgaactt	catctggaaa	ggttttatca	acatgccttc	tgtggcaaaa	3660
tttgttacca	aagcctatcc	agtatctggc	tcccagaat	acctgacaga	ggacctacca	3720
gatagtattc	aagtaggtgg	caggatatca	cctcagacag	tttgggatta	tgtggaaaaa	3780
ataaaagcat	caggaaccaa	ggaaatttgt	gtggttcgct	tcacaccagt	aactgaagaa	3840
gatcaaattt	cttatacttt	gctctttgca	tacttcagta	gcagaaagcg	ctatggagta	3900
gctgctaaca	acatgaagca	ggttaaagat	atgtacctta	ttcctttggg	tgccacagat	3960
aaaattccac	accctcttgt	gccttttgat	ggacctgggc	ttgaactgca	tagacctaat	4020
ctattgttgg	gcttaattat	tcgtcagaaa	ctgaagcgac	agcacagtgc	ctgtgctagt	4080
actagtcata	tagctgagac	tcctgaaagt	gcaccaccaa	tagcattgcc	acctgataaa	4140
aaaagtaaaa	tagaagtttc	tacagaagaa	gcaccagagg	aagaaaatga	cttttttaat	4200

tcttttacaa	ctgtattaca	caagcagaga	aataaacctc	agcagaatct	tcaggaagac	4260
cttccaacag	cagttgaacc	tttaatggaa	gtcaccaaac	aggagccacc	aaaaccttta	4320
agatttcttc	ctggcgtggt	gattggctgg	gagaatcaac	ctactactct	ggaattagca	4380
aataaacctc	ttcctgtgga	tgatatactt	caaagccttt	tgggcaccac	tggtcaagta	4440
tatgaccagg	cccagtcagt	gatggaacaa	aacactgtta	aagaaattcc	atttttaaat	4500
gagcagacca	actcaaaaat	agagaaaaca	gataatgtgg	aagtaactga	tggtgaaaac	4560
aaggagataa	aagttaaagt	agataatatt	tcagaatcta	cagataagtc	agcagaaaata	4620
gaaacatcag	tagtagggtc	ctcttcatt	tctgcagggt	ctttgacgag	tcttagtctc	4680
agaggtaagc	caccagatgt	ttctacagaa	gcatttttaa	caaatttatc	aattcagtca	4740
aaacaagagg	aaactgtgga	gagtaaagag	aaaacattaa	aaagacagct	tcaggaagat	4800
caagagaata	atttgcaaga	taaccagact	tcaaatagtt	ctccatgcag	atctaagtga	4860
ggaaaaggaa	acatagatgg	taatgtgagc	tgtagtgaag	accttggtgc	taatacagcg	4920
aggtctccac	agtttatcaa	cctgaaaagg	gatcctaggc	aagcagcagg	acgaagtcag	4980
cctgtaacta	cttcagaaaag	caaagatgga	gatagttgcc	ggaatggaga	aaaacacatg	5040
ctgcctggcc	tgtcacacaa	caaggagcac	ttaacagAAC	aatcaatgt	agaggaaaag	5100
ttgtgttctg	cagagaaaaa	ctcgtgtggt	cagcagagtg	acaattttaa	agttgcacaa	5160
aactcaccat	cagtagaaaa	catacagact	tctcaagcag	aacaagcaaa	acccttacag	5220
gaggatattt	taatgcaaaa	tattgaaact	gtgcacccat	ttcgaagagg	atcagcagta	5280
gcgacatctc	attttgaagt	tggaacaca	tgtccatcag	aatttccttc	taaaagcatc	5340
acctttactt	ccagaagcac	cagccccaga	acaagtacaa	acttttcacc	catgaggcca	5400
cagcagccca	accttcagca	tctcaagtct	agcccacctg	gatttccatt	tccagggcct	5460
cctaattttc	ccccacaaag	catgtttgga	tttccaccac	atttgccacc	tccattactt	5520
ccccctccag	gctttggctt	tgctcaaaat	cccatggttc	cctggccacc	tgttgttcat	5580
ctcccaggtc	agccacagcg	tatgatgggt	cctctctcac	aagcatcaag	gtatataggc	5640
ccgcagaatt	tttaccagg	ttaaagacatt	cggaggccag	aaaggcgcca	tagtgaccct	5700
tggggtaggc	aagaccaaca	gcaactggat	aggccattta	ataggggtaa	aggggaccgc	5760
cagagatttt	atagtgattc	acaccatttg	aaaagagagc	gacatgaaaa	ggaatgggag	5820
caagaatctg	aaaggcatag	acgcagagac	agaagccaag	acaaggacag	agacagaaaa	5880
agcagggagg	aagggcacia	agataaagag	agggcacggt	tatcacatgg	tgatcgagga	5940
acagatggaa	aagcaagcag	agatagtagg	aatgtagaca	agaagccaga	taaacctaaa	6000
agtgaagact	atgagaagga	caaagaacga	gagaaaagta	aacacagaga	aggagaaaag	6060
gacagggata	ggtaccacaa	agatagggac	cacactgaca	gaactaaaag	caaaaggtaa	6120

<210> 249
<211> 1956

<212> DNA
 <213> Homo sapiens

<400> 249
 atggcggaca gtgcggaact aaagcaaagt gttatgagcc ttagagtttc tgaactccaa 60
 gtactgttgg gctacgccgg gagaaacaag cacggacgca aacacgaact tctcacaaaa 120
 gccctgcatt tgctaaaggc tggctgtagt cctgctgtgc aaatgaaaat taaggaaactc 180
 tataggcggc ggttcccaca gaaaatcatg acgcctgcag acttgtccat cccaacgta 240
 cattcaagtc ctatgccagc aactttgtct ccatctacca ttccacaact cacttacgat 300
 ggtcaccctg catcatcgcc attactccct gtttctcttc tgggacctaa acatgaactg 360
 gaactcccac atcttacatc agctcttcac ccagtccatc cggatataaa acttcaaaaa 420
 ttaccatttt atgatttact ggatgaactg ataaaacca ccagtctagc atcagacaac 480
 agtcagcgct ttcgagaaac ctgttttgca tttgccttga caccacaaca agtgcagcaa 540
 atcagtagtt ccatggatat ttctgggacc aaatgtgact tcacagtaca ggtccagtta 600
 aggttttgtt tatcagaaac cagttgtcca caagaagatc acttcccacc caatctttgt 660
 gtgaaagtga atacaaaacc ttgcagcctt ccagggttacc ttccacctac aaaaaatggc 720
 gtggaaccaa agcgaccag ccgaccaatt aatatcacct cacttgtccg actgtccaca 780
 acagtaccaa acacgattgt tgtttcttgg actgcagaaa ttggaagaaa ctattccatg 840
 gcagtatatc ttgtaaaaca gttgtcctca acagttcttc ttcagagggtt acgagcaaa 900
 ggaataagga atccggatca ttctagagct ttaattaaag agaagttgac tgcggatcca 960
 gacagtgaat tagctacaac cagcctaagg gtttctctac tatgtccact tggtaaaatg 1020
 cggctgacaa ttccgtgtcg ggcccttaca tgttctcatc tacaatgttt tgacgcaact 1080
 ctttacattc agatgaatga gaaaaaacca acctgggttt gtcctgtctg tgataagaag 1140
 gctccatatg aacaccttat tattgatggc ttgtttatgg aaatcctaaa gtactgtaca 1200
 gactgtgatg aaatacaatt taaggaggat ggcacttggg caccgatgag atcaaaaaag 1260
 gaagtacagg aagtttctgc ctcttacaat ggagtcgatg gatgcttgag ctccacattg 1320
 gagcatcagg tagcgtctca ccaccagtcc tcaataaaaa acaagaaagt agaagtgatt 1380
 gacctaacca tagacagttc atctgatgaa gaggaagaag agccatctgc caagaggacc 1440
 tgtccttccc tatctcccac atcaccacta aataataaag gcattttaag tcttccacat 1500
 caagcatctc cagtatcccg caccacaagc cttcctgctg tagacacaag ctacattaat 1560
 acctccctca tccaagacta taggcacctt ttccacatga caccatgcc ttacgactta 1620
 caaggattag atttctttcc tttcttatca ggagacaatc agcattacaa cacctccttg 1680
 cttgccgctg cagcagcagc agtttcagat gatcaagacc tcctacactc gtctcggttt 1740
 ttcccgata cctctcaca gatgtttctt gatcagttaa gtgcaggagg cagtacttct 1800
 ctgccaacca ccaatggaag cagtagtggc agtaacagca gcctgggttc ttccaacagc 1860
 ctaagggaat gccatagcca caccgtcaca aacaggagca gcacggacac ggcacccatc 1920

tttggcatca taccagacat tatttcattg gactga

1956

<210> 250
 <211> 792
 <212> DNA
 <213> Homo sapiens

<400> 250
 atgctgttgg cctgggtaca agcattcctc gtcagcaaca tgctcctagc agaagcctat 60
 ggatctggag gctgtttctg ggacaacggc cacctgtacc gggaggacca gacctcccc 120
 gcgccggggc tccgtgcct caactggctg gacgcgcaga gcgggctggc ctcgggcccc 180
 gtgtcggggg ccggcaatca cagttactgc cgaaacccgg acgaggaccg gcgcggggcc 240
 tgggtgctacg tcagtggcga ggccggcgct cctgagaaac ggccttgcca ggacctgcgc 300
 tgtccagaga ccacctcca ggccctgcca gccttcacga cagaaatcca ggaagcgtct 360
 gaagggccag gtgcagatga ggtgcaggtg ttcgctcctg ccaacgccct gcccgctcgg 420
 agtgaggcgg cagctgtgca gccagtatt gggatcagcc agcgggtgcg gatgaactcc 480
 aaggagaaaa aggacctggg aactctgggc tacgtgctgg gcattaccat gatggtgatc 540
 atcattgcca tcggagctgg catcatcttg ggctactcct acaagagggg gaaggatttg 600
 aaagaacagc atgatcagaa agtatgtgag agggagatgc agcgaatcac tctgcccttg 660
 tctgccttca ccaacccac ctgtgagatt gtggatgaga agactgtcgt ggtccacacc 720
 agccagactc cagttgacct tcaggagggc accaccccc ttatgggcca ggccgggact 780
 cctggggcct ga 792

<210> 251
 <211> 1746
 <212> DNA
 <213> Homo sapiens

<400> 251
 atggcggtgc gacaggcgct gggccgcggc ctgcagctgg gtcgagcgct gctgctgcgc 60
 ttcacgggca agcccggccg ggcctacggc ttggggcggc cgggcccggc ggcgggctgt 120
 gtccgcgggg agcgtccagg ctgggccgca ggaccgggcg cggagcctcg cagggtcggg 180
 ctcgggctcc ctaaccgtct ccgcttcttc cgccagtcgg tggccgggct ggcggcgcg 240
 ttgcagcggc agttcgtggt gcgggcctgg ggctgcgcgg gcccttgagg ccgggcagtc 300
 tttctggcct tcgggctagg gctgggcctc atcaggaaa aacaggcgga gagccggcgg 360
 gcggtctcgg cctgtcagga gatccaggca atttttaccc agaaaagcaa gccggggcct 420
 gacccgttgg acacgagacg cttgcagggc tttcggttgg aggagtatct gatagggcag 480
 tccattggtg agggctgcag tgctgctgtg tatgaagcca ccatgcctac attgccccag 540
 aacctggagg tgacaaagag caccgggttg cttccaggga gaggcccagg taccagtga 600
 ccaggagaag ggcaggagcg agctccgggg gccctgcct tccccttggc catcaagatg 660
 atgtggaaca tctcggcagg ttcctccagc gaagccatct tgaacacaat gagccaggag 720

ctggtcccag	cgagccgagt	ggccttggct	ggggagtatg	gagcagtcac	ttacagaaaa	780
tccaagagag	gtcccaagca	actagcccct	cacccaaca	tcatccgggt	tctccgcgcc	840
ttcacctctt	ccgtgccgct	gctgccaggg	gccctggtcg	actaccctga	tgtgctgccc	900
tcacgcctcc	accctgaagg	cctgggccat	ggccggacgc	tgttcctcgt	tatgaagaac	960
tatccctgta	ccctgcgcca	gtacctttgt	gtgaacacac	ccagcccccg	cctcgccgcc	1020
atgatgctgc	tgcagctgct	ggaaggcgtg	gaccatctgg	ttcaacaggg	catcgcgcac	1080
agagacctga	aatccgacaa	catccttgtg	gagctggacc	cagacggctg	cccctggctg	1140
gtgatcgag	attttggctg	ctgcctggct	gatgagagca	tcggcctgca	gttgcccttc	1200
agcagctggg	acgtggatcg	gggcggaaac	ggctgtctga	tggccccaga	gggtgtccacg	1260
gcccgtcctg	gccccagggc	agtgattgac	tacagcaagg	ctgatgcctg	ggcagtgagg	1320
gccatcgcct	atgaaatctt	cgggcttgtc	aatcccttct	acggccaggg	caaggccac	1380
cttgaaagcc	gcagctacca	agaggctcag	ctacctgcac	tggccgagtc	agtgcctcca	1440
gacgtgagac	agttggtgag	ggcactgctc	cagcgagagg	ccagcaagag	accatctgcc	1500
cgagtagccg	caaattgtgt	tcatctaagc	ctctgggggtg	aacatattct	agccctgaag	1560
aatctgaagt	tagacaagat	ggttggctgg	ctcctccaac	aatcggccgc	cactttgttg	1620
gccaacaggc	tcacagagaa	gtgttgtgtg	gaaacaaaaa	tgaagatgct	ctttctggct	1680
aacctggagt	gtgaaacgct	ctgccaggca	gccctcctcc	tctgctcatg	gagggcagcc	1740
ctgtga						1746

<210> 252
 <211> 1128
 <212> DNA
 <213> Homo sapiens

<400> 252	
atgatgtgtc	agtcagaggc gcggaagga ccagagctcc gcgcggcgaa atggttgac 60
ttcccccagc	tggccctgag gcggaggctg gggcagctga gctgcatgtc cagaccgct 120
ctgaaactgc	gctcctggcc cttgaccgtc ctctactacc tcctgccctt cggcgccctc 180
agaccgctca	gccgggtggg atggaggccc gtaagcaggg tggctttgta caagtcaagt 240
ccaacgcgct	tgctgtcacg ggcctggggg cgctcaatc aggtggagct gccacactgg 300
ctgcgcaggc	ccgtctacag cctgtacatc tggacgtttg ggggtgaacat gaaagaggcc 360
gctgtggagg	acctgcatca ctaccgcaac ctacagcaggt tcttccggcg caagtgaag 420
ccgcaggccc	ggcctgtctg tggcctgcac agcgtgatta gccatcgga tggaaggatc 480
ctcaactttg	ggcaggtgaa gaactgtgag gtggagcagg taaagggggg cacctactcc 540
ctggagtcgt	tcctggggcc gcgtatgtgc acagaggacc tgcccttccc accagccgcy 600
tcgtgtgact	ccttcaagaa ccagctggtc acccggaag ggaatgagct ctatcactgt 660
gtcatctacc	tggcccctgg ggactaccac tgcttccact cccccaccga ctggactgtg 720
tcccaccggc	gccacttccc aggctccctg atgtcagtga accctggcat ggctcgctgg 780

PCTAU2016050927-seq1-000001-EN-20161013

atcaaagagc	tcttctgcc	taacgagcgg	gtggctcctga	cgggggactg	gaaacatggc	840
ttcttctcac	tgacagctgt	gggggccacc	aacgtgggct	ccattcgcat	ctactttgac	900
cgggacctgc	acacaaacag	cccaaggcac	agcaagggct	cctacaatga	cttcagcttc	960
gtgacgcaca	ccaatagaga	gggcgtcccc	atgcgtaagg	gcgagcacct	gggcgagttc	1020
aacctgggct	ccaccatcgt	gctcatcttc	gaggccccc	aggacttcaa	tttccagctg	1080
aaaacaggac	agaaaatccg	ctttggggaa	gccctgggct	cgctctag		1128

<210> 253
 <211> 813
 <212> DNA
 <213> Homo sapiens

<400> 253	
atggtgctgc	tcaaggagta
tcgagtaatc	ctgcctgtgt
ctgtagatga	gtatcaagtg
60	
gggcagctgt	attctgtggc
tgaggccagt	aaaaatgaaa
cgggtggtgg	cgaaggcgtg
120	
gaggtcctgg	tgaatgagcc
ctacgagaag	gacggtgaga
aaggccagta	cacacacaag
180	
atctaccacc	tgacagagcaa
agtaccacg	tttgttcgaa
tgctggcccc	agaggggagcc
240	
ctgaatatac	acgagaaagc
ctggaatgct	taccctact
gcagaaccgt	tattacaaat
300	
gagtacatga	aagaagactt
tctgattaaa	attgaaacct
ggcacaacc	agatcttggc
360	
acgcaggaga	atgtgcataa
gctggagcct	gaggcgtgga
aacacgtgga	agccgtatat
420	
atagacattg	cagatcgaag
ccaagtgtc	agcaaggatt
acaaggcaga	ggaagaccca
480	
gcaaaattta	aatctatcaa
aacaggccga	ggacccttgg
gccccattg	gaagcaagag
540	
cttgtaaacc	agaaggactg
cccatatatg	tgtgcataca
aactggtgac	cgtcaagttc
600	
aagtgggtgg	gcctgcagaa
caaagtggag	aacttcatcc
ataagcaaga	gaggcgtctg
660	
tttacaact	tccacaggca
gctgttctgt	tggtcgcata
agtgggttga	cctgaccatg
720	
gacgacattc	gaaggatgga
agaagagacg	aagagacagc
tggatgaaat	gagacaaaag
780	
gacccagtga	aaggaatgac
agcagatgac	taa
813	

<210> 254
 <211> 1230
 <212> DNA
 <213> Homo sapiens

<400> 254	
atgatgaaga	agaacaattc
cgccaagcgg	ggacctcagg
atggaaacca	gcagcctgca
60	
ccgcccgaga	aggtcggctg
ggtccgaaa	ttctgcggga
aagggtttt	caggagatt
120	
tggaacc	gctatgtggt
gctgaaagg	gaccagctct
acatctctga	gaaggaggta
180	
aaagatgaga	aaaatattca
agagggtatt	gacctgagt
actatgagaa	gtgtgaagag
240	
ctccggaagt	ccaagagcag
gagcaagaaa	aatcatagca
agtttactct	tgcccactcc
300	
aaacagccc	gtaacacggc
acccaacctg	atcttctctg
cagtgagtcc	agaagagaag
360	
gaatcgtgga	tcaatgccct
caactctgcc	atcaccgcag
ccaagaaccg	tatcttggat
420	

gaggtcaccg	ttgaggagga	cagctatctt	gcccattcca	ctcgagacag	ggcaaaaatc	480
cagcactccc	gccgcccccc	aacaagggga	cacctaattg	ctgtggcttc	cacctctacc	540
tcggatggga	tgctgacctt	ggacttgatc	caagaggaag	acccttcccc	tgaggaacca	600
acctcttggt	ctgagagctt	tcgggttgac	ctggacaagt	ctgtggccca	gctggcaggg	660
agccggcgga	gagcggactc	agaccgcata	cagccctccg	cagaccgggc	aagcagtctc	720
tcccgcacct	gggaaaaaac	agacaaaggg	gccacctaca	ccccccaggc	accaagaag	780
ttgacgcca	cagagaaagg	ccgtgcgcc	tccctggagg	agatcctatc	tcagcgggat	840
gctgcctctg	cccgaccctt	ccagctgcgg	gctgaggaac	cccccaaccc	tgccctcccc	900
aaccgggggc	agctgtcccc	gatccaggac	ctggtagcaa	ggaaactgga	ggagactcag	960
gagcttctgg	cagaggttca	gggactggga	gatgggaagc	gaaaggccaa	ggacccccct	1020
cggctctccg	cggattctga	gtcagagcag	ctgctgctgg	agacggaacg	gctgctggga	1080
gaggcatcat	cgaattggag	ccaggcaaag	aggggtgctg	aggagggtcag	ggagctgaga	1140
gacctgtaca	gacagatgga	cctgcagacc	ccggactccc	acctcagaca	gaccaccccg	1200
cacagtcaat	accggaagag	cctgatgtga				1230

<210> 255
 <211> 1473
 <212> DNA
 <213> Homo sapiens

<400> 255	
atggaggagg	aggggtgtgaa ggaagccggt gagaagcctc ggggagcaca gatggtggac 60
aaggctggct	ggatcaagaa gagcagtggg ggcctcctgg gtttctggaa agaccgatat 120
ctgctcctct	gccaggccca gctgctggtc tatgagaatg aggatgatca gaagtgtgtg 180
gagactgtgg	agctgggcag ctatgagaag tgccaggacc ttcgtgccct cctcaagcga 240
aaacaccgct	ttatcctgct gcgatcccca gggaacaagg tcagcgacat caaattccag 300
gcaccaccg	gggaggagaa ggaatcctgg atcaaagccc tcaatgaagg gattaaccga 360
ggcaaaaaca	aggctttcga tgaggtaaag gtggacaaga gctgcgccct ggagcatgtg 420
acacgggacc	gggtgcgagg gggccagcga cgccggccac caacgagagt ccacctgaag 480
gaggtggcca	gtgcagcttc tgacggtctt ctgcgcctgg atcttgatgt tccggacagt 540
gggcccaccg	tgtttgcccc cagcaatcat gtcagtgaag cccaacctcg ggagacaccc 600
cggcccctca	tgccctctac caagcctttc ctagcacctg agaccaccag ccctggtgac 660
aggggtggaga	cccctgtggg ggagagagcc ccaacccttg tctcagcaag ctctgaggtc 720
tcccctgaga	gccaagagga ctcagagacc ccagcagagg aggacagtgg ctctgagcag 780
cctcccaaca	gcgtcctgcc tgacaaactg aaggtgagct gggagaaccc cagccccag 840
gaggcccctg	ctgcagagag tgcagaaccg tcccaggcac cctgttctga gacttctgag 900
gctgccccca	gggagggtgg gaagccccct acacccccac ccaagatctt atcagagaaa 960

PCTAU2016050927-seql-000001-EN-20161013

ctgaaagcct ccatgggtga gatgcaggct tctgggccac ctgctccagg cacagtgcag	1020
gtctcagtga atggcatgga tgacagtcct gagcctgccca agccctctca ggctgagggc	1080
accccaggaa ctctccaaa ggatgcaaca acatccacag cactgcccc ctgggacctg	1140
ccacctcagt tccatccccg ctgctcctcc cttggggact tgcttgggga agggccgcgg	1200
catcccttgc agcccaggga acggctatat cgggccagc tggaggtgaa ggtggcctcg	1260
gaacagacgg agaaactgtt gaacaagggtg ctgggcagtg agccggcccc tgttagtgcc	1320
gaaacattgc tcagccaggc tgtggagcag ctgaggcagg ccaccagggt cctgcaggaa	1380
atgagagatt tgggagagct gagccaggaa gcacctgggc taaggagaaa gcggaaggag	1440
ctggtgaccc tctacaggag aagtgcaccc tag	1473

<210> 256
 <211> 4707
 <212> DNA
 <213> Homo sapiens

<400> 256	
atggaggtct cccggaggaa ggcgccgccg cccccccgc gccccgcagc gccactgccc	60
ctgctcgcct atctgctggc actggcggct cccggccggg gcgcggacga gccctgttg	120
cggtcggagc aagccatcgg agccatcgcg gcgagccagg aggacggcgt gtttgtggcg	180
agcggcagct gcctggacca gctggactac agcctggagc acagcctctc gcgcctgtac	240
cgggaccaag cgggcaactg cacagagccg gtctcgttg cgccccccgc gcggccccgg	300
cccgaggagca gttcagcaa gctgctgctg ccctaccgcg agggggcggc cggcctcggg	360
gggctgctgc tcaccggctg gaccttcgac cggggcgcct gcgaggtgcg gccctgggc	420
aacctgagcc gcaactccct gcgcaacggc accgaggtgg tgtcgtgccca cccgcagggc	480
tcgacggccg gcgtggtgta ccgcgcgggc cggaacaacc gctggtacct ggcggtggcc	540
gccacctacg tgctgcctga gccggagacg gcgagccgct gcaacccgcg ggcattccgac	600
cacgacacgg ccatcgcgt caaggacacg gaggggcgca gcctggccac gcaggagctg	660
gggcgcctca agctgtgcga gggcgcgggc agcctgcact tcgtggacgc ctttctctgg	720
aacggcagca tctacttccc ctactacccc tacaactaca cgagcggcgc tgccaccggc	780
tggccagca tggcgcgat cgcgagagc accgaggtgc tgttccaggg ccaggcatcc	840
ctcgactgcg gccacggcca cccgacggc cgccgcctgc tcctctctc cagcctagt	900
gaggccctgg acgtctgggc gggagtgttc agcgcggccg ctggagaggg ccaggagcgg	960
cgctcccca ccaccacggc gctctgcctc ttcagaatga gtgagatcca ggcgcgcgcc	1020
aagagggcca gctgggactt caagacggc gagagccact gcaaagaagg ggatcaacct	1080
gaaagagtcc aaccaatcgc atcatctacc ttgatccatt ccgacctgac atccgtttat	1140
ggcaccgtgg taatgaacag gactgtttta ttcttgggga ctggagatgg ccagttactt	1200
aaggttattc ttggtgagaa tttgacttca aattgtccag aggttatcta tgaaattaaa	1260
gaagagacac ctgttttcta caaactcgtt cctgatcctg tgaagaatat ctacatttat	1320

ctaacagctg	ggaaagaggt	gaggagaatt	cgtgttgcaa	actgcaataa	acataaatcc	1380
tgttcggagt	gtttaacagc	cacagaccct	cactgcggtt	ggtgccattc	gctacaaagg	1440
tgcacttttc	aaggagattg	tgtacattca	gagaacttag	aaaactggct	ggatatttcg	1500
tctggagcaa	aaaagtgcc	taaaattcag	ataattcgaa	gcagtaaaga	aaagactaca	1560
gtgactatgg	tgggaagctt	ctctccaaga	cactcaaagt	gcatggtgaa	gaatgtggac	1620
tctagcaggg	agctctgcc	gaataaaagt	cagcccaacc	ggacctgcac	ctgtagcatc	1680
ccaaccagag	caacctacaa	agatgtttca	gttgtcaacg	tgatgtttct	cttcggttct	1740
tggaaatttat	cagacagatt	caactttacc	aactgctcat	cattaaaaga	atgcccgaca	1800
tgcgtagaaa	ctggctgcgc	gtggtgtaaa	agtgaagaa	ggtgtatcca	ccccttcaca	1860
gcttgcgacc	cttctgatta	tgagagaaac	caggaacagt	gtccagtggc	tgtcgagaag	1920
acatcaggag	gaggaagacc	caaggagaac	aaggggaaca	gaaccaacca	ggctttacag	1980
gtcttctaca	ttaagtccat	tgagccacag	aaagtatcga	cattagggaa	aagcaacgtg	2040
atagtaacgg	gagcaaactt	taccggggca	tcgaacatca	caatgatcct	gaaaggaacc	2100
agtacctgtg	ataaggatgt	gatacagggt	agccatgtgc	taaatgacac	ccacatgaaa	2160
ttctctcttc	catcaagccg	gaaagaaatg	aaggatgtgt	gtatccagtt	tgatggtggg	2220
aactgctctt	ctgtgggatc	cttatcctac	attgctctgc	cacattgttc	ccttatattt	2280
cctgctacca	cctggatcag	tggtggtcaa	aatataacca	tgatgggcag	aaattttgat	2340
gtaattgaca	acttaatcat	ttcacatgaa	ttaaaggaa	acataaatgt	ctctgaatat	2400
tgtgtggcga	cttactgcgg	gttttttagcc	cccagtttaa	agagttcaaa	agtgcgcacg	2460
aatgtcactg	tgaagctgag	agtacaagac	acctacttgg	attgtggaac	cctgcagtat	2520
cgggaggacc	ccagattcac	ggggtatcgg	gtggaatccg	aggtggacac	agaactggaa	2580
gtgaaaattc	aaaaagaaaa	tgacaacttc	aacattttcca	aaaaagacat	tgaaattact	2640
ctcttccatg	gggaaaatgg	gcaattaaat	tcagtttttg	aaaatattac	tagaaatcaa	2700
gatcttacca	ccatcctttg	caaaattaaa	ggcatcaaga	ctgcaagcac	cattgccaac	2760
tcttctaaga	aagttcgggt	caagctggga	aacctggagc	tctacgtcga	gcaggagtca	2820
gttccttcca	catggtattt	tctgattgtg	ctccctgtct	tgctagtgat	tgtcattttt	2880
gcggccgtgg	gggtgaccag	gcacaaatcg	aaggagctga	gtcgcaaaca	gagtcaacaa	2940
ctagaattgc	tggaaagcga	gctccggaaa	gagatacgtg	acggctttgc	tgagctgcag	3000
atggataaat	tggatgtggt	tgatagtttt	ggaactgttc	ccttccttga	ctacaaacat	3060
tttgctctga	gaactttctt	ccctgagtca	ggtggcttca	cccacatctt	cactgaagat	3120
atgcataaca	gagacgcaa	cgacaagaat	gaaagtctca	cagcttttga	tgccctaata	3180
tgtaataaaa	gctttcttgt	tactgtcatc	cacacccttg	aaaagcagaa	gaacttttct	3240
gtgaaggaca	ggtgtctgtt	tgccctcttc	ctaaccattg	cactgcaaac	caagctggtc	3300
tacctgacca	gcacccatga	ggtgctgacc	agggacttga	tggaacagtg	tagtaacatg	3360

cagccgaaac tcatgctgag acgcacggag tccgtcgtcg aaaaactcct cacaaactgg	3420
atgtccgtct gcctttctgg atttctccgg gagactgtcg gagagccctt ctatttgctg	3480
gtgacgactc tgaaccagaa aattaacaag ggtcccgtgg atgtaatcac ttgcaaagcc	3540
ctgtacacac ttaatgaaga ctggctgttg tggcaggttc cggaattcag tactgtggca	3600
ttaaactgtc tctttgaaaa aatcccggaa aacgagagtg cagatgtctg tcggaatatt	3660
tcagtcaatg ttctcgactg tgacaccatt ggccaagcca aagaaaagat tttccaagca	3720
ttcttaagca aaaatggctc tccttatgga cttcagctta atgaaattgg tcttgagctt	3780
caaatgggca cagcacagaa agaacttctg gacatcgaca gttcctccgt gattcttgaa	3840
gatggaatca ccaagctaaa caccattggc cactatgaga tatcaaattg atccactata	3900
aaagtcttta agaagatagc aaattttact tcagatgtgg agtactcgga tgaccactgc	3960
catttgattt taccagattc ggaagcattc caagatgtgc aaggaaagag acatcgaggg	4020
aagcacaagt tcaaagtaaa agaaatgtat ctgacaaagc tgctgtcgac caaggtggca	4080
attcattctg tgcttgaaaa actttttaga agcatttgga gtttacccaa cagcagagct	4140
ccatttgcta taaaatactt ttttgacttt ttggacgccc aggctgaaaa caaaaaaatc	4200
acagatcctg acgtcgtaca tatttggaac acaaacagcc ttcctcttcg cttctgggta	4260
aacatcctga agaaccctca gtttgtcttt gacattaaga agacaccaca tatagacggc	4320
tgtttgtagc tgattgcccc ggcatcattg gatgcatttt ctctcacaga gcagcaacta	4380
gggaaggaag caccaactaa taagcttctc tatgccaagg atatcccaac ctacaaagaa	4440
gaagtaaaat cttattacaa agcaatcagg gatttgccctc cattgtcatc ctgagaaatg	4500
gaagaatttt taactcagga atctaagaaa catgaaaatg aatttaatga agaagtggcc	4560
ttgacagaaa ttacaaata catcgtaaaa tattttgatg agattctaaa taaactagaa	4620
agagaacgag ggctggaaga agctcagaaa caactcttgc atgtaaaagt cttatttgat	4680
gaaaagaaga aatgcaagtg gatgtaa	4707

<210> 257
 <211> 1008
 <212> DNA
 <213> Homo sapiens

<400> 257	
atgagcaaac ggaaggcgcc gcaggagact ctcaacgggg gaatcaccga catgctcaca	60
gaactcgcaa actttgagaa gaacgtgagc caagctatcc acaagtacaa tgcttacaga	120
aaagcagcat ctgttatagc aaaataccca cacaaaataa agagtggagc tgaagctaag	180
aaattgcctg gagtaggaac aaaaattgct gaaaagattg atgagttttt agcaactgga	240
aaattacgta aactggaaaa gattcggcag gatgatacga gttcatccat caatttcctg	300
actcgagtta gtggcattgg tccatctgct gcaaggaagt ttgtagatga aggaattaaa	360
acactagaag atctcagaaa aatgaagat aaattgaacc atcatcagcg aattgggctg	420

PCTAU2016050927-seq1-000001-EN-20161013

aaatatattttg gggacttttga aaaaagaatt cctcgtgaag agatgttaca aatgcaagat	480
attgtactaa atgaagttaa aaaagtggat tctgaataca ttgctacagt ctgtggcagt	540
ttcagaagag gtgcagagtc cagtgggtgac atggatgttc tcctgaccca tcccagcttc	600
acttcagaat caaccaaaca gccaaaactg ttacatcagg ttgtggagca gttacaaaag	660
gttcatttta tcacagatac cctgtcaaag ggtgagacaa agttcatggg tgtttgccag	720
cttcccagta aaaatgatga aaaagaatat ccacacagaa gaattgatat cagggttgata	780
cccaaagatc agtattactg tgggtgttctc tatttctactg ggagtgatat tttcaataag	840
aatatgaggg ctcatgccct agaaaagggg ttcacaatca atgagtacac catccgtccc	900
ttgggagtc ctggagttgc aggagaacct ctgccagtgg atagtgtaaa agacatcttt	960
gattacatcc agtggaaata ccgggaacct aaggaccgga gcgaatga	1008

<210> 258
 <211> 324
 <212> DNA
 <213> Homo sapiens

<400> 258	
atgggccgga agcggctcat cactgattcc taccgggttg tgaagaggag ggaggggccc	60
gctgggcaca gcaaggggga gctggcacc gagctagggg aggagcccca gccccgcgac	120
gaggaggaag cggagctgga gctgctgagg cagtttgacc tggcctggca gtacgggccc	180
tgcaccggga tcacacggct gcagcgctgg tgtcgggcca agcagatggg cttggagcct	240
ccccagagg tgtggcaggt gctgaagacc caccgggag acccccgctt ccagtgcagt	300
ctctggcatc tctatcccct atga	324

<210> 259
 <211> 402
 <212> DNA
 <213> Homo sapiens

<400> 259	
atggaagagg atcaggagct ggagagaaaa atatctggat tgaagacctc aatggctgaa	60
ggcgagagga agacagccct ggaaatggc caggcagctg gaacagatag aactgtgtg	120
acatttgtat tgcacgagga agaccatacc ctaggaaatt ctctacgtta catgatcatg	180
aagaacccgg aagtggaatt ttgtggttac actacgacct atccttcaga gagcaaaatt	240
aatttacgca ttcagactcg aggtaccctt ccagctgttg agccatttca gagaggcctg	300
aatgagctca tgaatgtctg ccaacatgtg cttgacaagt ttgaggccag cataaaggac	360
tataaggatc aaaaagcaag cagaaatgaa tccacattct ag	402

<210> 260
 <211> 1326
 <212> DNA
 <213> Homo sapiens

<400> 260	
atggagcagc cacaggagga agcccctgag gtccgggaag aggaggagaa agaggaagtg	60

gcagaggcag aaggagcccc agagctcaat gggggaccac agcatgcact tccttccagc	120
agctacacag acctctcccc gagctcctcg ccaccctcac tgctggacca actgcagatg	180
ggctgtgacg gggcctcatg cggcagcctc aacatggagt gccgggtgtg cggggacaag	240
gcatcgggct tccactacgg tgttcattgca tgtgaggggt gcaagggctt cttccgtcgt	300
acgatccgca tgaagctgga gtacgagaag tgtgagcgca gctgcaagat tcagaagaag	360
aaccgcaaca agtgccagta ctgccgcttc cagaagtgcc tggcactggg catgtcacac	420
aacgctatcc gttttggctg gatgccggag gctgagaaga ggaagctggt ggcagggctg	480
actgcaaacg aggggagcca gtacaacca caggtggccg acctgaaggc cttctccaag	540
cacatctaca atgcctacct gaaaaacttc aacatgacca aaaagaaggc ccgcagcatc	600
ctcaccggca aagccagcca cacggcgccc tttgtgatcc acgacatcga gacattgtgg	660
caggcagaga aggggctggt gtggaagcag ttggtgaatg gcctgcctcc ctacaaggag	720
atcagcgtgc acgtcttcta ccgctgccag tgcaccacag tggagaccgt gcgggagctc	780
actgagttcg ccaagagcat cccagcttc agcagcctct tcctcaacga ccaggttacc	840
cttctcaagt atggcgtgca cgaggccatc ttcgccatgc tggcctctat cgtcaacaag	900
gacgggctgc tggtagccaa cggcagtggc tttgtcaccg gtgagttcct gcgcagcctc	960
cgcaaaccct tcagtgatat cattgagcct aagtttgaat ttgctgtcaa gttcaacgcc	1020
ctggaacttg atgacagtga cctggcccta ttcattgcgg ccatcattct gtgtggagac	1080
cggccaggcc tcatgaacgt tccacgggtg gaggctatcc aggacaccat cctgcgtgcc	1140
ctcgaattcc acctgcaggc caaccaccct gatgccagat acctcttccc caagctgctg	1200
cagaagatgg ctgacctgcg gcaactggtc accgagcacg cccagatgat gcagcggatc	1260
aagaagaccg aaaccgagac ctcgctgcac cctctgctcc aggagatcta caaggacatg	1320
tactaa	1326

<210> 261
 <211> 1365
 <212> DNA
 <213> Homo sapiens

<400> 261	
atgtcctctg gagccccaca gaagagcagc ccaatggcca gtggagctga ggagacccca	60
ggcttccttg acacgctcct gcaagacttc ccagccctgc tgaaccaga ggaccctctg	120
ccatggaagg ccccagggac ggtgctcagc caggaggagg tggagggcga gctggctgag	180
ctggccatgg gctttctggg cagcaggaag gccccgccac cacttgctgc tgctctggcc	240
cacgaagcag ttacacagct gctacagaca gacctttccg aattcaggaa gttgcccagg	300
gaggaagaag aagaggagga ggacgatgac gaggaggaaa aggcccctgt gaccttgctg	360
gatgccc aaa gcctggcaca gagtttcttt aaccgccttt gggaagtcgc cggccagtgg	420
cagaagcagg tgccattggc tgcccgggcc tcacagcggc agtggctggt ctccatccac	480

gccatccgga	acactcgccg	caagatggag	gaccggcacg	tgtccctccc	ttccttcaac	540
cagctcttcg	gcttgtctga	ccctgtgaac	cgcgccctact	ttgctgtgtt	tgatgggtcac	600
ggaggcgtag	atgctgagag	gtacgccgct	gtccacgtgc	acaccaacgc	tgcccggccag	660
ccagagctgc	ccacagaccc	tgagggagcc	ctcagagaag	ccttcgggag	caccgaccag	720
atgtttctca	ggaaagccaa	gagagagcgg	ctgcagagcg	gcaccacagg	tgtgtgtgag	780
ctcattgcag	gagcgaccct	gcacgtcgcc	tggctcgggg	attcccagggt	catttttggtta	840
cagcagggac	aggtggtgaa	gctgatggag	ccacacagac	cagaacggca	ggatgagaag	900
gcgcgcattg	aagcattggg	tggctttgtg	tctcacatgg	actgctggag	agtcaacggg	960
accctggccg	tctccagagc	catcggggat	gtcttccaga	agccctacgt	gtctggggag	1020
gccgatgcag	cttcccgggc	gctgacgggc	tccgaggact	acctgctgct	tgctgtgat	1080
ggcttctttg	acgtcgtacc	ccaccaggaa	gttgtttggc	tggctccagag	ccacctgacc	1140
aggcagcagg	gcagcgggct	ccgtgtcgcc	gaggagctgg	tggctgcggc	ccgggagcgg	1200
ggctcccacg	acaacatcac	ggtcatggtg	gtcttctctca	gggaccccca	agagctgctg	1260
gagggcgggg	accagggaga	aggggacccc	caggcagaag	ggaggaggca	ggacttgccc	1320
tccagccttc	cagaacctga	gaccagggt	ccaccaagaa	gctag		1365

<210> 262
 <211> 381
 <212> DNA
 <213> Homo sapiens

<400> 262	
atggccgagg	caggggctgg
gctgagcgag	accgtcactg
agacaacgggt	taccgtgaca
	60
accgagcccc	agaaccggag
ccttaccatc	aaacttcgga
aacggaagcc	agagaaaaag
	120
gtagaatgga	caagtgcac
tgtggacaat	gaacacatgg
gccgccgctc	atccaaatgc
	180
tgctgtattt	atgagaaacc
tcgggccttt	ggcagagagct
ccacggaaag	tgatgaggag
	240
gaagaagagg	gctgtgtgta
tacacactgt	gtacgtggcc
accgcaaagg	acggcgctgt
	300
gcaaccctag	gaccgacccc
caccaccct	ccccagcctc
ctgacccttc	ccagccccct
	360
ccagggccaa	tgacgacta
a	
	381

<210> 263
 <211> 618
 <212> DNA
 <213> Homo sapiens

<400> 263	
atggcggcct	cgacggcctc
gcaccggccc	atcaagggga
tcttgaagaa	caagacctct
	60
acgacttcct	ctatggtggc
gtcggccgaa	cagccccgag
ggaatgtcga	cgaggagctg
	120
agcaaaaaat	cccagaagtg
ggatgaaatg	aacatcttgg
cgacgtatca	tccagcagac
	180
aaagactatg	gtttaatgaa
aatagatgaa	ccaagcactc
cttaccatag	tatgatgggg
	240
gatgatgaag	atgcctgtag
tgacaccgag	gccactgaag
ccatggcgcc	agacatctta
	300

gccaggaaat tagctgcagc tgaaggcttg gagccaaagt atcggattca ggaacaagaa	360
agcagtggag aggaggatag tgacctctca cctgaagaac gagaaaaaaa gcgacaattt	420
gaaatgaaaa ggaagcttca ctacaatgaa ggactcaata tcaaactagc cagacaatta	480
atttcaaaag acctacatga tgatgatgaa gatgaagaaa tgttagagac tgcagatgga	540
gaaagcatga atacggaaga atcaaatcaa ggatctactc caagtgacca acagcaaaac	600
aaattacgaa gttcatag	618

<210> 264
 <211> 1461
 <212> DNA
 <213> Homo sapiens

<400> 264 atgtcgtcgt cgtcgccgcc ggcgggggct gccagcgccg ccatctcggc ctcgagaaaa	60
gtggacggct tcacccgga atcgggtccgc aaggcgcaga ggcagaagcg ctcccagggc	120
tcgtcgcagt ttcgcagcca gggcagccag gcagagctgc acccgctgcc ccagctcaaa	180
gatgccactt caaatgaaca acaagagctt ttctgtcaga agttgcagca gtgttgtata	240
ctgtttgatt tcatggactc tgtttcagac ttgaagagca aagaaattaa aagagcaaca	300
ctgaatgaac tggttgagta tgtttcaact aatcgtggtg taattgttga atcagcgtat	360
tctgatatag taaaaatgat cagtgtctaac atcttccgta cacttcctcc aagtgataat	420
ccagattttg atccagaaga ggatgaaccc acgcttgagg cctcttggcc tcacatacag	480
ttggtatatg aattcttctt gagatttttg gagagccctg atttccagcc tagcattgca	540
aaacgatata ttgatcagaa attcgtacaa cagctcctgg agctttttga tagtgaagat	600
cccagagaac gtgacttcct gaagactgtt ctgcaccgaa tttatgggaa atttcttgga	660
ttaagagcat tcatcagaaa acaaattaac aacattttcc tcaggtttat atatgaaaca	720
gaacatttca atgggtgttg tgaacttctt gaaatattag gaagtattat caatggcttt	780
gcattgccac tgaaagcaga acataaacia tttctaataga aggttcttat tcctatgcat	840
actgcaaaag gattagcttt gtttcatgct cagctagcat attgtgttgt acagttcctg	900
gagaaagata caacactaac agagccagtg atcagaggac tgctgaaatt ttggccaaaa	960
acctgcagtc agaaagaggt gatgttttta ggagaaattg aagaaatctt agatgtcatt	1020
gaaccaacac agttcaaaaa aattgaagag ccacttttca agcagatatc caagtgtgta	1080
tccagttctc attttcaggt tgcagaaagg gcattgtact tctggaataa cgaatatatt	1140
cttagtttga ttgaggagaa cattgataaa attctgcaa ttatgtttgc cagtttgtac	1200
aaaatttcca aagaacactg gaatccgacc attgtagcac tggatatacaa tgtgctgaaa	1260
accctaattg aatgaatgg caagcttttc gatgacctta ctagtcata caaagctgaa	1320
agacagagag agaaaaagaa ggaattggaa cgtgaagaat tatggaaaaa attagaggag	1380
ctaaagctaa agaaagctct agaaaaacag aatagtgtt acaacatgca cagtattctc	1440
agcaatacaa gtgccgaata a	1461

<210> 265
 <211> 513
 <212> DNA
 <213> Homo sapiens

<400> 265
 atgggaaatg aggcaagtta tcctttggaa atgtgctcac actttgatgc ggatgaaatt 60
 aaaaggctag gaaagagatt taagaagctt gatttggaca attctggttc tttgagtgtg 120
 gaagagttca tgtctctgcc tgagttacaa cagaatcctt tagtacagcg agtaatagat 180
 atattcgaca cagatgggaa tggagaagta gactttaaag aattcattga gggcgtctct 240
 cagttcagtg tcaaaggaga taaggagcag aaattgaggt ttgctttccg tatctatgac 300
 atggataaag atggctatat ttccaatggg gaactcttcc aggtattgaa gatgatggtg 360
 gggaacaatc tgaaagatac acagttacag caaattgtag acaaaaccat aataaatgca 420
 gataaggatg gagatggaag aatatccttt gaagaattct gtgctgttgt aggtggccta 480
 gatatccaca aaaagatggt ggtagatgtg tga 513

<210> 266
 <211> 2802
 <212> DNA
 <213> Homo sapiens

<400> 266
 atggcggacc tctcgctgct tcaggaggac ctgcaggagg acgcagacgg atccctggac 60
 tttgtctcac aagatgaaat gttgacgcc ctggggagat tggacaagta tgctgcaagt 120
 gagaacatat ttaacagaca aatggtggcc cggagtttgc tcgatacctt gagggaagtc 180
 tgcgatgatg aaagagattg tattgctgtt ttggaaagaa ttagcagatt ggccgatgat 240
 tcagaaccaa ctgtgagagc ggagctgatg gaacagggtgc ctcacatcgc actgttttgt 300
 caagaaaacc ggccttcaat accatatgct ttttcaaaat tcttactacc tattgtggtt 360
 agataccttg cagatcagaa taatcagggtg agggaaacaa gtcaggcagc tttgctggct 420
 ctgttgagc aggagctcat tgaacgattt gatgtggaga ccaaagtgtg ccctgtcctc 480
 atagagctga cagccccaga tagcaatgat gatgtgaaaa cagaagctgt ggctataatg 540
 tgcaaaatgg ctcccatggt tgggaaggat attacagagc gtcttatcct ccctaggttt 600
 tgtgagatgt gctgcgattg cagaatgttt cacgttcgaa aggtctgtgc tgccaatttt 660
 ggagatattt gcagtgtagt tggccagcaa gctactgaag aaatgttgct gccagattt 720
 ttccagcttt gttctgataa tgtatgggga gtccgaaagg cttgtgctga atgcttcatg 780
 gcggtttcat gtgcaacatg tcaagaaatc cgacggacca aattatcagc actttttatt 840
 aatttgatca gtgatccttc acgttgggtt cgccaagcag cttttcagtc tctgggacct 900
 ttcatatcta cttttgctaa tccatctagc tcaggccagt attttaaaga agaaagcaaa 960
 agttcagaag agatgtcagt agaaaacaaa aataggacca gagatcaaga agccccagag 1020
 gatgtacaag tcaggccaga ggatactcct tcagatctca gtgttagtaa ttccagtgtc 1080

atactggaaa	acacgatgga	agaccatgct	gctgaggcat	ccgggaagcc	tctaggtgaa	1140
attagtgttc	cactggacag	ctctttactt	tgtactttgt	cctcagaatc	tcaccaggaa	1200
gcagctagta	atgagaatga	taaaaaacct	ggtaactaca	aatctatggt	acgaccagag	1260
gttggcacca	cttcacaaga	ttcagctctc	ttagatcagg	aattgtataa	ctccttccat	1320
ttctggagga	ctcctcttcc	tgaaatagat	ctagacatag	agcttgaaca	gaactctggg	1380
ggaaaaccca	gcccagaggg	accagaggaa	gaatctgagg	gccctgtgcc	cagttctcca	1440
aacatcacca	tggccaccag	aaaggaactg	gaagaaatga	tagaaaatct	agagccccac	1500
attgatgatc	cagatgttaa	agcacaagtg	gaagtgtgtg	ccgctgcact	acgtgcttcc	1560
agcctggatg	cacatgaaga	gaccatcagt	atagaaaaga	gaagtgattt	gcaagatgaa	1620
ctggatataa	atgagctacc	aaattgtaaa	ataaatcaag	aagattctgt	gcctttaatc	1680
agcgatgctg	ttgagaatat	ggactccact	cttcactata	ttcacagcga	ttcagacttg	1740
agcaacaata	gcagttttag	ccctgatgag	gaaaggagaa	ctaaagtaca	agatgttgta	1800
cctcaggcgt	tgtagatca	gtatttatct	atgactgacc	cttctcgtgc	acagacgggt	1860
gacactgaaa	ttgctaagca	ctgtgcatat	agcctccctg	gtgtggcctt	gacactcgga	1920
agacagaatt	ggcactgcct	gagagagacg	tatgagactc	tggcctcaga	catgcagtgg	1980
aaagttcgac	gaactctagc	attctccatc	cacgagcttg	cagttattct	tggagatcaa	2040
ttgacagctg	cagatctggt	tccaattttt	aatggatttt	taaaagacct	cgatgaagtc	2100
aggataggtg	ttcttaaaca	cttgcatgat	tttctgaagc	ttcttcatat	tgacaaaaga	2160
agagaatatc	tttatcaact	tcaggagttt	ttggtgacag	ataatagtag	aaattggcgg	2220
tttcgagctg	aactggctga	acagctgatt	ttacttctag	agttatatag	tcccagagat	2280
gtttatgact	atttacgtcc	cattgctctg	aatctgtgtg	cagacaaagt	ttcttctggt	2340
cgttggattt	cctacaagtt	ggtcagcgag	atggtgaaga	agctgcacgc	ggcaacacca	2400
ccaacgttcg	gagtggacct	catcaatgag	cttgtggaga	actttggcag	atgtcccaag	2460
tggctctggc	ggcaagcctt	tgtctttgtc	tgccagactg	tcattgagga	tgactgcctt	2520
cccatggacc	agtttgctgt	gcattctcatg	ccgcatctgc	taaccttagc	aaatgacagg	2580
gttcctaacg	tgcgagtgtc	gcttgcaaag	acattaagac	aaactctact	agaaaaagac	2640
tatttcttgg	cctctgccag	ctgccaccag	gaggctgtgg	agcagaccat	catggctctt	2700
cagatggacc	gtgacagcga	tgtcaagtat	tttgcaagca	tccaccctgc	cagtacaaaa	2760
atctccgaag	atgccatgag	cacagcgtcc	tcaacctact	ag		2802

<210> 267
 <211> 1680
 <212> DNA
 <213> Homo sapiens

<400>	267	
atgcgacagac	tcagttcctg	gagaaagatg gcgacagccg agaagcagaa acacgacggg 60

cggtgaaga	tcggccacta	cattctgggt	gacacgctgg	gggtcggcac	cttcggcaaa	120
gtgaagggtg	gcaaacatga	attgactggg	cataaagtag	ctgtgaagat	actcaatcga	180
cagaagattc	ggagccttga	tgtggttaga	aaaatccgca	gagaaattca	gaacctcaag	240
cttttcaggc	atcctcatat	aattaaactg	taccagggtca	tcagtacacc	atctgatatt	300
ttcatggtga	tggaatatgt	ctcaggagga	gagctatgtt	attatatctg	taagaatgga	360
aggctggatg	aaaaagaaa	tcggcgtctg	ttccaacaga	tcctttctgg	tgtggattat	420
tgtcacaggc	atatggtggt	ccatagagat	ttgaaacctg	aaaatgtcct	gcttgatgca	480
cacatgaatg	caaagatagc	tgattttggt	ctttcaaaca	tgatgtcaga	tggtgaattt	540
ttaagaacaa	gttgtggctc	acccaactat	gctgcaccag	aagtaatttc	aggaagattg	600
tatgcaggcc	cagaggtaga	tatatggagc	agtggggtta	ttctctatgc	tttattatgt	660
ggaacccttc	catttgatga	tgaccatgtg	ccaactcttt	ttaagaagat	atgtgatggg	720
atcttctata	cccctcaata	tttaaatcct	tctgtgatta	gccttttgaa	acatatgctg	780
caggctggatc	ccatgaagag	ggccacaatc	aaagatatca	gggaacatga	atggtttaaa	840
caggaccttc	caaaatatct	ctttcctgag	gatccatcat	atagttcaac	catgattgat	900
gatgaagcct	taaaagaagt	atgtgaaaag	tttgagtgtc	cagaagagga	agttctcagc	960
tgtctttaca	acagaaatca	ccaggatcct	ttggcagttg	cctaccatct	cataatagat	1020
aacaggagaa	taatgaatga	agccaaagat	ttctatattg	cgacaagccc	acctgattct	1080
tttcttgatg	atcatcacct	gactcggccc	catcctgaaa	gagtaccatt	cttggttgct	1140
gaaacaccaa	gggcacgcca	tacccttgat	gaattaaatc	cacagaaatc	caaacaccaa	1200
ggtgtaagga	aagcaaatg	gcatttagga	attagaagtc	aaagtcgacc	aatgatatt	1260
atggcagaag	tatgtagagc	aatcaaacaa	ttggattatg	aatggaaggt	tgtaaaccba	1320
tattatttgc	gtgtacgaag	gaagaatcct	gtgacaagca	cttactccaa	aatgagtcta	1380
cagttatacc	aagtggatag	tagaacttat	ctactggatt	tccgtagtat	tgatgatgaa	1440
attacagaag	ccaaatcagg	gactgctact	ccacagagat	cgggatcagt	tagcaactat	1500
cgatcttgcc	aaaggagtga	ttcagatgct	gaggctcaag	gaaaatcctc	agaagtttct	1560
cttacctcat	ctgtgacctc	acttgactct	tctcctgttg	acctaactcc	aagacctgga	1620
agtcacacaa	tagaattttt	tgagatgtgt	gcaaatctaa	ttaaaattct	tgacacaataa	1680

<210> 268
 <211> 1710
 <212> DNA
 <213> Homo sapiens

<400> 268	atgggaagcg	cggttatgga	caccaagaag	aaaaaagatg	tttccagccc	cggcgggagc	60
	ggcggcaaga	aaaatgccag	ccagaagagg	cgttcgctgc	gcgtgcacat	tccggacctg	120
	agtccttcg	ccatgccgct	cctggacgga	gacctggagg	gttccggaaa	gcattcctct	180
	cgaaagggtg	acagcccctt	cggcccgggc	agcccctcca	aagggttctt	ctccagagggc	240

ccccagcccc	ggccctccag	ccccatgtct	gcacctgtga	ggcccaagac	cagccccggc	300
tctcccaaaa	ccgtgttccc	gttctcctac	caggagtccc	cgccacgctc	ccctcgacgc	360
atgagcttca	gtgggatctt	ccgctcctcc	tccaaagagt	cttcccccaa	ctccaaccct	420
gctacctcgc	ccggggggcat	cagggtttttc	tcccgcctcca	gaaaaacctc	cggcctctcc	480
tcctctccgt	caacaccac	ccaagtgacc	aagcagcaca	cgtttccctt	ggaatcctat	540
aagcacgagc	ctgaacggtt	agagaatcgc	atctatgcct	cgtcttcccc	cccggacaca	600
gggcagaggt	tctgcccgtc	ttccttccag	agcccgacca	ggcctccact	ggcatcaccg	660
acacactatg	ctccctccaa	agccgcggcg	ctggcgggcg	ccctgggacc	cgcggaagcc	720
ggcatgctgg	agaagctgga	gttcgaggac	gaagcagtag	aagactcaga	aagtgggtgtt	780
tacatgcgat	tcatgaggtc	acacaagtgt	tatgacatcg	ttccaaccag	ttcaaagctt	840
gttgctcttg	atactacatt	acaagttaaa	aaggccttct	ttgctttggg	agccaacggt	900
gtccgagcag	cgccactgtg	ggagagtaaa	aaacaaagtt	ttgtaggaat	gctaacaatt	960
acagatttca	taaatatact	acatagatac	tataaatcac	ctatggtaca	gatttatgaa	1020
ttagagggaac	ataaaattga	aacatggagg	gagctttatt	tacaagaaac	atttaagcct	1080
ttagtgaata	tatctccaga	tgcaagcctc	ttcgatgctg	tatactcctt	gatcaaaaat	1140
aaaatccaca	gattgcccgt	tattgaccct	atcagtggga	atgcacttta	tatacttacc	1200
cacaaaagaa	tcctcaagtt	cctccagctt	tttatgtctg	atatgccaaa	gcctgccttc	1260
atgaagcaga	acctggatga	gcttggaata	ggaacgtacc	acaacattgc	cttcatacat	1320
ccagacactc	ccatcatcaa	agccttgaac	atattttgtg	aaagacgaat	atcagctctg	1380
cctgttggtg	atgagtcagg	aaaagttgta	gatattttatt	caaattttga	tgtaattaat	1440
cttgctgctg	agaaaacata	caataaccta	gatatcacgg	tgaccaggc	ccttcagcac	1500
cgttcacagt	attttgaagg	tgttgtgaag	tgcaataagc	tggaataact	ggagaccatc	1560
gtggacagaa	tagtaagagc	tgagggtccat	cggctgggtg	tggtaaatga	agcagatagt	1620
attgtgggta	ttatttccct	gtcggacatt	ctgcaagccc	tgatcctcac	accagcaggt	1680
gccaaaacaaa	aggagacaga	aacggagtga				1710

```
<210> 269
<211> 2031
<212> DNA
<213> Homo sapiens
```

Page 288

aaggctgagt tctggctgga cctgcagcct caggccaagg tgttgatgtc tgttcagtat	360
ttcctggagg acgtggattg caaacagtct atgcgcagtg aggacgaggc caagttccca	420
acgatgaacc gccgcggagc catcaaacag gccaaaatcc actacatcaa gaaccatgag	480
tttatcgcca ctttcttttg gcaaccacc ttctgttctg tgtgcaaaga ctttgtctgg	540
ggcctcaaca agcaaggcta caaatgcagg caatgtaacg ctgccatcca caagaaatgc	600
atcgacaaga tcatcggcag atgactggc accgcggcca acagccggga cactatatcc	660
cagaaagaac gcttcaacat cgacatgccg caccgcttca aggttcacaa ctacatgagc	720
cccaccttct gtgaccactg cggcagcctg ctctggggac tgggtgaagca gggattaaag	780
tgtgaagact gcggcatgaa tgtgcacat aaatgccggg agaaggtggc caacctctgc	840
ggcatcaacc agaagctttt ggctgaggcc ttgaaccaag tcaccagag agcctcccgg	900
agatcagact cagcctcctc agagcctgtt gggatatatc agggtttcga gaagaagacc	960
ggagtgtctg gggaggacat gcaagacaac agtgggacct acggcaagat ctgggagggc	1020
agcagcaagt gcaacatcaa caacttcac ttccacaagg tcctgggcaa aggcagcttc	1080
gggaaggtgc tgcttgagga gctgaagggc agaggagagt actttgccat caaggccctc	1140
aagaaggatg tggctcctgat cgacgacgac gtggagtgca ccatggttga gaagcgggtg	1200
ctgacacttg ccgcagagaa tccctttctc acccacctca tctgcacctt ccagaccaag	1260
gaccacctgt tctttgtgat ggagtctctc aacggggggg acctgatgta ccacatccag	1320
gacaaaggcc gctttgaact ctaccgtgcc acgttttatg ccgctgagat aatgtgtgga	1380
ctgcagtctc tacacagcaa gggcatcatt tacagggacc tcaaactgga caatgtgctg	1440
ctggaccggg atggccacat caagattgcc gactttggga tgtgcaaaga gaacatatcc	1500
ggggagagcc gggccagcac cttctgcggc acccctgact atatcgcccc tgagatccta	1560
cagggcctga agtacacatt ctctgtggac tgggtggtctt tcggggctct tctgtacgag	1620
atgctcattg gccagtcccc cttccatggt gatgatgagg atgaactctt cgagtccatc	1680
cgtgtggaca cgccacatta tccccgctgg atcaccaagg agtccaagga catcctggag	1740
aagctctttg aaagggaacc aaccaagagg ctgggagtga ccggaacat caaaatccac	1800
cccttcttca agaccataaa ctggactctg ctggaaaagc ggaggttgga gccacctttc	1860
aggcccaaag tgaagtcacc cagagactac agtaactttg accaggagtt cctgaacgag	1920
aaggcgcgcc tctctacag cgacaagaac ctcatcgact ccatggacca gtctgcattc	1980
gctggcttct cttttgtgaa ccccaaattc gagcacctcc tggaagattg a	2031

<210> 270
 <211> 1302
 <212> DNA
 <213> Homo sapiens

<400> 270	
atggcaacat caggtgactg tcccagaagt gaatcgcagg gagaagagcc tgctgagtgc	60
agtgaggccg gtctcctgca ggagggagta cagccagagg agtttgtggc catcgcgagc	120

PCTAU2016050927-seq1-000001-EN-20161013

tacgctgcca	ccgatgagac	ccagctcagt	tttttgagag	gagaaaaaat	tcttatcctg	180
agacaaacca	ctgcagattg	gtggtggggt	gagcgtgcgg	gctgctgtgg	gtacattccg	240
gcaaaccatg	tggggaagca	cgtggatgag	tacgaccccg	aggacacgtg	gcaggatgaa	300
gagtacttcg	gcagctatgg	aactctgaaa	ctccacttgg	agatgttggc	agaccagcca	360
cgaacaacta	aataccacag	tgtcatcctg	cagaataaag	aatccctgac	ggataaagtc	420
atcctggacg	tgggctgtgg	gactgggatc	atcagtctct	tctgtgcaca	ctatgcgcgg	480
cctagagcgg	tgtacgcggt	ggaggccagt	gagatggcac	agcacacggg	gcagctggtc	540
ctgcagaacg	gctttgtgta	catcatcacc	gtgtaccagc	agaaggtgga	ggatgtgggtg	600
ctgcccgaga	aggtggacgt	gctgggtgtct	gagtggatgg	ggacctgcct	gctgtttgag	660
ttcatgatcg	agtccatcct	gtatgcccg	gatgcctggc	tgaaggagga	cggggtcatt	720
tggcccacca	tggctgcgtt	gcaccttgtg	ccctgcagt	ctgataagga	ttatcgtagc	780
aaggtgctct	tctgggacaa	cgcgtacgag	ttcaacctca	gcgctctgaa	atcttttagca	840
gttaaggagt	ttttttcaaa	gccaagtat	aaccacattt	tgaaccaga	agactgtctc	900
tctgaaccgt	gcactatatt	gcagttggac	atgagaaccg	tgcaaatttc	tgatctagag	960
accctgaggg	gcgagctgcg	cttcgacatc	aggaaggcgg	ggacctgca	cggcttcacg	1020
gcctggttta	gcgtccactt	ccagagcctg	caggaggggc	agccgccgca	ggtgctcagc	1080
accggggcct	tccacccac	cacacactgg	aagcagacgc	tgttcatgat	ggacgaccca	1140
gtccctgtcc	atacaggaga	cgtggtcacg	ggttcagttg	tgttgagag	aaaccagtg	1200
tggagaaggc	acatgtctgt	ggctctgagc	tgggctgtca	cttcagaca	agacccaca	1260
tctcaaaaag	ttggagaaaa	agtcttcccc	atctggagat	ga		1302

<210> 271
 <211> 1362
 <212> DNA
 <213> Homo sapiens

<400> 271						
atggaggact	acctgcaggg	ttgtcgagct	gctctgcagg	agtcccgacc	tctacatggt	60
gtgctgggaa	atgaagcctg	tgatttggac	tccacagtgt	ctgctcttgc	cctggctttt	120
tacctagcaa	agacaactga	ggctgaggaa	gtctttgtgc	cagttttaaa	tataaaacgt	180
tctgaactac	ctctgcgagg	tgacattgtc	ttctttcttc	agaaggttca	tattccagag	240
agtatcttga	tttttcggga	tgagattgac	ctccatgcat	tataccaggc	tggccaactc	300
accctcatcc	ttgtcgacca	tcatatctta	tccaaaagtg	acacagccct	agaggaggca	360
gtagcagagg	tgctagacca	tcgacccatc	gagccgaaac	actgccctcc	ctgccatggt	420
tcagttgagc	tgggtggggtc	ctgtgctacc	ctggtgaccg	agagaatcct	gcagggggca	480
ccagagatct	tggacaggca	aactgcagcc	cttctgcatg	gaaccatcat	cctggactgt	540
gtcaacatgg	accttaaaat	tggaaaggca	accccaaagg	acagcaaata	tgtggagaaa	600

PCTAU2016050927-seq1-000001-EN-20161013

ctagaggccc	ttttcccaga	cctaccaag	agaaatgata	tatttgattc	cctacaaaag	660
gcaaagtttg	atgtatcagg	actgaccact	gagcagatgc	tgagaaaaga	ccagaagact	720
atctatagac	aaggcgtcaa	ggtggccatt	agtgcataat	atatggattt	ggaggccttt	780
ctgcagaggt	ctaacctcct	tgcatatctc	catgctttct	gccaggctca	cagctatgat	840
gtcctgggtg	ccatgactat	ctttttcaac	actcacaatg	agccagtgcg	gcagttggct	900
attttctgtc	cccatgtggc	actccaaaca	acgatctgtg	aagtcctgga	acgctccac	960
tctccacccc	tgaagctgac	ccctgcctca	agtaccacc	ctaacctcca	tgcctatctt	1020
caaggcaaca	cccaggctctc	tcgaaagaaa	cttctgcccc	tgctccagga	agccctgtca	1080
gcatattttg	actccatgaa	gatcccttca	ggacagcctg	agacagcaga	tgtgtccagg	1140
gagcaagtgg	acaaggaatt	ggacagggca	agtaactccc	tgatttctgg	cctgagtcaa	1200
gatgaggagg	accctccgct	gccccgacg	cccatgaaca	gcttggtgga	tgagtgcctt	1260
ctagatcagg	ggctgcctaa	actctctgct	gaggccgtct	tcgagaagtg	cagtcagatc	1320
tcactgtcac	agtctaccac	agcctccctg	tccaagaagt	ga		1362

<210> 272
 <211> 1575
 <212> DNA
 <213> Homo sapiens

<400> 272	
atgtacgccc	tcttcctcct ggccagcctc ctgggcgcgg ctctagccgg cccggtcctt 60
ggactgaaag	aatgcaccag gggctcggca gtgtggtgcc agaattgtgaa gacggcgtcc 120
gactgcgggg	cagtgaagca ctgcctgcag accgtttgga acaagccaac agtgaaatcc 180
cttcctgctg	acatatgcaa agacgttgct accgcagctg gtgatatgct gaaggacaat 240
gccactgagg	aggagatcct tgtttacttg gagaagacct gtgactggct tccgaaaccg 300
aacatgtctg	cttcatgcaa ggagatagtg gactcctacc tccctgtcat cctggacatc 360
attaaaggag	aaatgagccg tcctggggag gtgtgctctg ctctcaacct ctgagagtct 420
ctccagaagc	acctagcaga gctgaatcac cagaagcagc tggagtccaa taagatccca 480
gagctggaca	tgactgaggt ggtggcccc ttcatggcca acatccctct cctcctctac 540
cctcaggacg	gccccgcag caagccccag ccaaaggata atggggacgt ttgccaggac 600
tgcattcaga	tggtgactga catccagact gctgtacgga ccaactccac ctttgtccag 660
gccttggtgg	aacatgtcaa ggaggagtgt gaccgcctgg gccctggcat ggccgacata 720
tgcaagaact	atatcagcca gtattctgaa attgctatcc agatgatgat gcacatgcaa 780
cccaaggaga	tctgtgcgct ggttgggttc tgtgatgagg tgaaagagat gcccatgcag 840
actctgggtc	ccgccaaagt ggcctccaag aatgtcatcc ctgccctgga actggtggag 900
cccattaaga	agcacgaggt ccagcaaag tctgatgttt actgtgaggt gtgtgaattc 960
ctggtgaagg	aggtgaccaa gctgattgac aacaacaaga ctgagaaaga aatactcgac 1020
gcttttgaca	aaatgtgctc gaagctgccg aagtcctgt cggaagagtg ccaggagggtg 1080

PCTAU2016050927-seql-000001-EN-20161013

gtggacacgt acggcagctc catcctgtcc atcctgctgg aggaggctcag ccctgagctg	1140
gtgtgcagca tgctgcacct ctgctctggc acgcggtgc ctgcactgac cgttcacgtg	1200
actcagccaa aggacggtgg cttctgcgaa gtgtgcaaga agctggtggg ttatttgat	1260
cgcaacctgg agaaaaacag caccaagcag gagatcctgg ctgctcttga gaaaggctgc	1320
agcttcctgc cagaccctta ccagaagcag tgtgatcagt ttgtggcaga gtacgagccc	1380
gtgctgatcg agatcctggt ggagggtgatg gatccttcct tcgtgtgctt gaaaattgga	1440
gcctgcccct cggcccataa gcccttggtt ggaactgaga agtgtatatg gggcccaagc	1500
tactggtgcc agaacacaga gacagcagcc cagtgcagt ctgtcgagca ttgcaaacgc	1560
catgtgtgga actag	1575

<210> 273
 <211> 1404
 <212> DNA
 <213> Homo sapiens

<400> 273 atgacagagt tacctgcacc gttgtcctac ttccagaatg cacagatgtc tgaggacaac	60
cacctgagca atactgtacg tagccagaat gacaatagag aacggcagga gcacaacgac	120
agacggagcc ttggccaccc tgagccatta tctaattggac gaccccaggg taactcccgg	180
cagggtggtg agcaagatga ggaagaagat gaggagctga cattgaaata tggcgccaag	240
catgtgatca tgctctttgt ccctgtgact ctctgcatgg tgggtggctgt ggctaccatt	300
aagtcagtca gcttttatac ccggaaggat gggcagctaa tctatacccc attcacagaa	360
gataccgaga ctgtggggcca gagagccctg cactcaattc tgaatgctgc catcatgatc	420
agtgtcattg ttgtcatgac taccctcctg gtggttctgt ataaatacag gtgctataag	480
gtcatccatg cctggcttat tatatcatct ctattgttgc tgttcttttt ttcattcatt	540
tacttggggg aagtgtttaa aacctataac gttgctgtgg actacattac tgttgcactc	600
ctgatctgga attttggtgt ggtgggaatg atttcattc actggaaagg tccacttcga	660
ctccagcagg catactcat tatgattagt gccctcatgg ccctggtgtt tatcaagtac	720
ctccctgaat ggactgctg gctcatcttg gctgtgattt cagtatatga tttagtggct	780
gttttgtgtc cgaaagggtcc acttcgtatg ctggttgaaa cagctcagga gagaaatgaa	840
acgctttttc cagctctcat ttactcctca acaatggtgt ggttggtgaa tatggcagaa	900
ggagaccgg aagctcaaag gagagtatcc aaaaattcca agtataatgc agaaagcaca	960
gaaagggagt cacaagacac tgttgcagag aatgatgatg gcgggttcag tgaggaatgg	1020
gaagcccaga gggacagtca tctagggcct catcgctcta cacctgagtc acgagctgct	1080
gtccaggaac tttccagcag taccctcgct ggtgaagacc cagaggaaaag gggagtaaaa	1140
cttggattgg gagatttcat tttctacagt gttctggttg gtaaagcctc agcaacagcc	1200
agtggagact ggaacacaac catagcctgt ttcgtagcca tattaattgg tttgtgcctt	1260

acattattac	tccttgccat	tttcaagaaa	gcattgccag	ctcttccaat	ctccatcacc	1320
tttgggcttg	ttttctactt	tgccacagat	tatcttgtac	agccttttat	ggaccaatta	1380
gcattccatc	aattttatat	ctag				1404

<210> 274
 <211> 1251
 <212> DNA
 <213> Homo sapiens

<400> 274						
atgatgccc	agctgcagtt	caaagatgcc	ttttggtgca	gggacttcac	agccccacacg	60
ggctacgagg	tgctgctgca	gcggtctctg	gatggcagga	agatgtgcaa	agacatggag	120
gagctactga	ggcagagggc	ccaggcggag	gagcgggtacg	ggaaggagct	ggtgcagatc	180
gcacggaagg	caggtggcca	gacggagatc	aactccctga	gggcctcctt	tgactccttg	240
aagcagcaaa	tggagaatgt	gggcagctca	cacatccagc	tggccctgac	cctgcgtgag	300
gagctgcgga	gtctcgagga	gtttcgtgag	aggcagaagg	agcagaggaa	gaagtatgag	360
gccgtcatgg	accgggtcca	gaagagcaag	ctgtcgtctt	acaagaaggc	catggagtcc	420
aagaagacat	acgagcagaa	gtgccgggac	gcgagcagacg	cggagcaggc	cttcgagcgc	480
attagcgcca	acggccacca	gaagcaggtg	gagaagagtc	agaacaaagc	caggcagtg	540
aaggactcgg	ccaccgaggc	agagcgggta	tacaggcaga	gcattgcgca	gctggagaag	600
gtccgggctg	agtgggagca	ggagcaccgg	accacctgtg	aggcctttca	gctgcaagag	660
tttgaccggc	tgaccattct	ccgcaacgcc	ctgtgggtgc	acagcaacca	gctctccatg	720
cagtgtgtca	aggatgatga	gctctacgag	gaagtgcggc	tgacgctgga	aggctgcagc	780
atagacgccg	acatcgacag	tttcatccag	gccaaagaca	cgggcacaga	gccccccgct	840
ccggtgccct	accagaacta	ttacgatcgg	gaggtcacc	cgctgaccag	cagccctggc	900
atacagccgt	cctgcggcat	gataaagagg	ttctctggac	tgctgcacgg	aagtcccaag	960
accacttcgt	tggcagcttc	tgctgcgtcc	acagagaccc	tgacccccac	ccccgagcgg	1020
aatgaggggtg	tctacacagc	catcgcagtg	caggagatac	agggaaaccc	ggcctcacca	1080
gcccaggagt	accggggcgt	ctacgattat	acagcgcaga	accagatga	gctggacctg	1140
tccgcgggag	acatcctgga	ggtgatcctg	gaaggggagg	atggctggtg	gactgtggag	1200
aggaacgggc	agcgtggctt	cgtccctggt	tcctacctgg	agaagctttg	a	1251

<210> 275
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 275						
atggagccac	atgactcctc	ccacatggac	tctgagttcc	gatacactct	cttcccatt	60
gtttacagca	tcattcttgt	gctcggggtc	attgctaattg	gctacgtgct	gtgggtcttt	120
gcccgcctgt	acccttgcaa	gaaattcaat	gagataaaga	tcttcatggt	gaacctcacc	180

atggcggaca	tgctcttctt	gatcaccctg	ccactttgga	ttgtctacta	ccaaaaccag	240
ggcaactgga	tactcccaa	attcctgtgc	aacgtggctg	gctgcctttt	cttcatcaac	300
acctactgct	ctgtggcctt	cctgggcgtc	atcacttata	accgcttcca	ggcagtaact	360
cggcccatca	agactgctca	ggccaacacc	cgcaagcgtg	gcatctcttt	gtccttggtc	420
atctgggtgg	ccattgtggg	agctgcatcc	tacttcctca	tcctggactc	caccaacaca	480
gtgcccgaca	gtgctggctc	aggcaacgtc	actcgctgct	ttgagcatta	cgagaagggc	540
agcgtgccag	tcctcatcat	ccacatcttc	atcgtgttca	gcttcttcct	ggctcttcctc	600
atcatcctct	tctgcaacct	ggatcatcatc	cgtaccttgc	tcatgcagcc	ggatgcagcag	660
cagcgcaacg	ctgaagtcaa	gcgccgggcg	ctgtggatgg	tgtgcacggg	cttggcggtg	720
ttcatcatct	gcttcgtgcc	ccaccacgtg	gtgcagctgc	cctggaccct	tgctgagctg	780
ggcttcagg	acagcaaatt	ccaccaggcc	attaatgatg	cacatcagggt	caccctctgc	840
ctccttagca	ccaactgtgt	cttagaccct	gttatctact	gtttcctcac	caagaagtcc	900
cgcaagcacc	tcaccgaaaa	gttctacagc	atgcgcagta	gccggaaatg	ctcccggggc	960
accacggata	cggtcactga	agtgggtgtg	ccattcaacc	agatccctgg	caattccctc	1020
aaaaattag						1029

<210> 276
 <211> 1212
 <212> DNA
 <213> Homo sapiens

<400> 276	
atgacagcca	tcacaaaga gatcgttagc agaaacaaaa ggagatatca agaggatgga 60
ttcgacttag	acttgaccta tatttatcca aacattattg ctatgggatt tcctgcagaa 120
agacttgaag	gcgtatacag gaacaatatt gatgatgtag taagggtttt ggattcaaag 180
cataaaaacc	attacaagat atacaatctt tgtgtgaaa gacattatga caccgcaaaa 240
tttaattgca	gagttgcaca atatcctttt gaagaccata acccaccaca gctagaactt 300
atcaaaccct	tttgtgaaga tcttgaccaa tggctaagtg aagatgacaa tcatgttgca 360
gcaattcact	gtaaagctgg aaaggacga actgggtgtaa tgatatgtgc atatttatta 420
catcggggca	aatttttaaa ggcacaagag gccctagatt tctatgggga agtaaggacc 480
agagacaaaa	aggagtaac tattcccagt cagaggcgct atgtgtatta ttatagctac 540
ctgttaaaga	atcatctgga ttatagacca gtggcactgt tgtttcacia gatgatgttt 600
gaaactattc	caatgttcag tggcggaact tgcaatcctc agtttgtggt ctgccagcta 660
aagggtgaaga	tatattcctc caattcagga cccacacgac gggaagacaa gttcatgtac 720
tttgagttcc	ctcagccgtt acctgtgtgt ggtgatatca aagtagagtt cttccacaaa 780
cagaacaaga	tgctaaaaaa ggacaaaatg ttacactttt gggtaaatac attcttcata 840
ccaggaccag	aggaaacctc agaaaaagta gaaaatggaa gtctatgtga tcaagaaatc 900
gatagcattt	gcagtataga gcgtgcagat aatgacaagg aatatctagt acttacttta 960

acaaaaaatg atcttgacaa agcaaataaa gacaaagcca accgatactt ttctccaaat	1020
tttaaggtga agctgtactt cacaaaaaca gtagaggagc cgtcaaattcc agaggctagc	1080
agttcaactt ctgtaacacc agatgttagt gacaatgaac ctgatcatta tagatattct	1140
gacaccactg actctgatcc agagaatgaa ccttttgatg aagatcagca tacacaaatt	1200
acaaaagtct ga	1212

<210> 277
 <211> 1467
 <212> DNA
 <213> Homo sapiens

<400> 277	
atgtccactc ccgggggtcaa ttcgtccgcc tccttgagcc ccgaccggct gaacagccca	60
gtgaccatcc cggcgggtgat gttcatcttc ggggtgggtgg gcaacctggg ggccatcgtg	120
gtgctgtgca agtcgcgcaa ggagcagaag gagacgacct tctacacgct ggtatgtggg	180
ctggctgtca ccgacctgtt gggcactttg ttggtgagcc cggtgaccat cgccacgtac	240
atgaagggcc aatggcccgg gggccagccg ctgtgcgagt acagcacctt cattctgctc	300
ttcttcagcc tgtccggcct cagcatcatc tgcgccatga gtgtcgagcg ctacctggcc	360
atcaaccatg cctatttcta cagccactac gtggacaagc gattggcggg cctcacgctc	420
tttgagctct atgctgctcaa cgtgctcttt tgcgcgtgc ccaacatggg tctcggtagc	480
tcgcggtgct agtaccaga cacctgggtgc ttcacgact ggaccaccaa cgtgacggcg	540
cacgccgctt actcctacat gtacgcgggc ttcagctcct tcctcattct cgccaccgtc	600
ctctgcaacg tgcttgtgtg cggcgcgtg ctccgcatgc accgccagtt catgcccgc	660
acctcgctgg gcaccgagca gcaccacgcg gccgcggccg cctcggttgc ctcccggggc	720
caccccgtg cctccccagc cttgccgcgc ctcagcgact ttcggcgccg ccggagcttc	780
cgccgcatcg cgggcgcgga gatccagatg gtcattctac tcattgccac ctccctggtg	840
gtgctcatct gtcctatccc gctcgtgggtg cgagtattcg tcaaccagtt atatcagcca	900
agtttgagc gagaagtcag taaaaatcca gatttgagc ccatccgaat tgcttctgtg	960
aaccccatcc tagaccctg gatatatatc ctcttgagaa agacagtgtc cagtaaagca	1020
atagagaaga tcaaatgcct cttctgccgc attggcgggt cccgcaggga gcgctccgga	1080
cagcactgct cagacagtca aaggacatct tctgccatgt caggccactc tcgctccttc	1140
atctcccggg agctgaagga gatcagcagt acatctcaga ccctcctgcc agacctctca	1200
ctgccagacc tcagtgaata tggccttggg ggcaggaatt tgcttcagg tgtgcctggc	1260
atgggcctgg cccaggaaga caccacctca ctgaggactt tgccaatatc agagacctca	1320
gactcttcac agggctcagga ctcagagagt gtcttactgg tggatgaggc tgggtgggagc	1380
ggcagggctg ggctgcccc taaggggagc tccctgcaag tcacatttcc cagtgaacaa	1440
ctgaacttat cagaaaaatg tatataa	1467

<210> 278
 <211> 1788
 <212> DNA
 <213> Homo sapiens

<400> 278
 atggtgaggt ggtttcaccg agacctcagt gggctggatg cagagaccct gctcaagggc 60
 cgaggtgtcc acggtagctt cctggctcgg cccagtcgca agaaccaggg tgactttctcg 120
 ctctccgtca ggggtggggga tcaggtgacc catattcgga tccagaactc aggggatttc 180
 tatgacctgt atggagggga gaagtttgcg actctgacag agctggtgga gtactacact 240
 cagcagcagg gtgtcctgca ggaccgagc ggcaccatca tccacctcaa gtaccgctg 300
 aactgctccg atcccactag tgagaggtgg taccatggcc acatgtctgg cgggcaggca 360
 gagacgctgc tgcaggccaa gggcgagccc tggacgtttc ttgtgctga gagcctcagc 420
 cagcctggag acttcgtgct ttctgtgctc agtgaccagc ccaaggctgg cccaggctcc 480
 ccgctcaggg tcaccacat caaggtcatg tgcgaggggtg gacgctacac agtgggtggt 540
 ttggagacct tcgacagcct cacggacctg gtggagcatt tcaagaagac ggggattgag 600
 gaggcctcag gcgcctttgt ctacctgagg cagccgtact atgccacgag ggtgaatgcg 660
 gctgacattg agaaccgagt gttggaactg aacaagaagc aggagtccga ggatacagcc 720
 aaggctggct tctgggagga gtttgagagt ttgcagaagc aggaggtgaa gaacttgac 780
 cagcgtctgg aagggcagcg gccagagaac aagggcaaga accgctacaa gaacattctc 840
 ccctttgacc acagccgagt gatcctgcag ggacgggaca gtaacatccc cgggtccgac 900
 tacatcaatg ccaactacat caagaaccag ctgctaggcc ctgatgagaa cgctaagacc 960
 tacatcgcca gccaggggtg tctggaggcc acggtcaatg acttctggca gatggcgtgg 1020
 caggagaaca gccgtgtcat cgtcatgacc acccgagagg tggagaaagg ccggaacaaa 1080
 tgcgtcccat actggcccga ggtgggcatg cagcgtgctt atgggccccta ctctgtgacc 1140
 aactgcgggg agcatgacac aaccgaatac aaactccgta ccttacaggt ctccccgctg 1200
 gacaatggag acctgattcg ggagatctgg cattaccagt acctgagctg gcccgaccat 1260
 ggggtcccca gtgagcctgg ggggtgtcctc agcttcctgg accagatcaa ccagcggcag 1320
 gaaagtctgc ctacgcagg gccatcatc gtgactgca gcgccggcat cggccgcaca 1380
 ggcaccatca ttgtcatcga catgctcatg gagaacatct ccaccaaggg cctggactgt 1440
 gacattgaca tccagaagac catccagatg gtgcgggcgc agcgtcggg catggtgcag 1500
 acggaggcgc agtacaagtt catctacgtg gccatcgccc agttcattga aaccactaag 1560
 aagaagctgg aggtcctgca gtcgcagaag ggccaggagt cggagtacgg gaacatcacc 1620
 tatccccag ccatgaagaa tgcccatgcc aaggcctccc gcacctcgtc caaacacaag 1680
 gaggatgtgt atgagaacct gcacactaag aacaagaggg aggagaaagt gaagaagcag 1740
 cggtcagcag acaaggagaa gagcaagggt tccctcaaga ggaagtga 1788

<210> 279
 <211> 2103
 <212> DNA
 <213> Homo sapiens

<400> 279
 atggagccct tgtgtccact cctgctggtg ggtttttagct tgccgctcgc cagggctctc 60
 aggggcaacg agaccactgc cgacagcaac gagacaacca cgacctcagg ccctccggac 120
 ccggg'gcct cccagccgct gctggcctgg ctgctactgc cgctgctgct cctcctcctc 180
 gtgctccttc tcgccgccta cttcttcagg ttcaggaagc agaggaaagc tgtggtcagc 240
 accagcgaca agaagatgcc caacggaatc ttggaggagc aagagcagca aagggtgatg 300
 ctgctcagca ggtcacctc agggcccaag aagtattttc ccatccccgt ggagcacctg 360
 gaggaggaga tccgtatcag atccgccgac gactgcaagc agtttcggga ggagttcaac 420
 tcattgccat ctggacacat acaaggaact tttgaactgg caaataaaga agaaaacaga 480
 gaaaaaaaca gatatccaa catccttccc aatgaccatt ctagggtgat tctgagccaa 540
 ctggatggaa ttccctgttc agactacatc aatgcttcct acatagatgg ttacaaagag 600
 aagaataaat tcatagcagc tcaaggtccc aaacaggaaa cggttaacga cttctggaga 660
 atggtctggg agcaaaagtc tgcgaccatc gtcattgtaa caaacttgaa agaaaggaaa 720
 gaggaaaagt gccatcagta ctggcccgac caaggctgct ggacctatgg aaacatccgg 780
 gtgtgcgtgg aggactgctg ggtttttggtc gactacacca tccggaagtt ctgcatacag 840
 ccacagctcc ccgacggctg caaagccccc aggctggtct cacagctgca cttcaccagc 900
 tggcccgact tcggagtgcc ttttaccccc attgggatgc tgaagttcct caagaaagta 960
 aagacgtca accccgtgca cgctgggccc atcgtggtcc actgtagcgc gggcgtgggc 1020
 cggacgggca cttcattgt gatcgatgcc atgatggcca tgatgcacgc ggagcagaag 1080
 gtggatgtgt ttgaatttgt gtctcgaatc cgtaatcagc gccctcagat ggttcaaacg 1140
 gatatgcagt acacgttcat ctaccaagcc ttactcgagt actacctcta cggggacaca 1200
 gagctggacg tgtcctccct ggagaagcac ctgcagacca tgcacggcac caccaccac 1260
 ttcgacaaga tcgggctgga ggaggagttc aggaaattga caaatgtccg gatcatgaag 1320
 gagaacatga ggacgggcaa cttgccggca aacatgaaga aggccagggt catccagatc 1380
 atcccgtatg acttcaaccg agtgatcctt tccatgaaaa ggggtcaaga atacacagac 1440
 tacatcaacg catccttcat agacggctac cgacagaagg actatttcat cgccaccag 1500
 gggccactgg cacacacggt tgaggacttc tggaggatga tctgggaatg gaaatccac 1560
 actatcgtga tgctgacgga ggtgcaggag agagagcagg ataaatgcta ccagtattgg 1620
 ccaaccgagg gctcagttac tcatggagaa ataacgattg agataaagaa tgataccctt 1680
 tcagaagcca tcagtatacg agactttctg gtcactctca atcagcccca ggcccgcag 1740
 gaggagcagg tccgagtagt gcgccagttt cacttccacg gctggcctga gatcgggatt 1800
 cccgccgagg gcaaaggcat gattgacctc atcgagccg tgcagaagca gcagcagcag 1860

acaggcaacc	accccatcac	cgtgcactgc	agtgccggag	ctgggcgaac	aggtacattc	1920
atagccctca	gcaacatttt	ggagcgagta	aaagccgagg	gactttttaga	tgtatttcaa	1980
gctgtgaaga	gtttacgact	tcagagacca	catatggtgc	aaaccctgga	acagtatgaa	2040
ttctgctaca	aagtgggtaca	agatttttatt	gatataatttt	ctgattatgc	taattttcaaa	2100
tga						2103

<210> 280
 <211> 3195
 <212> DNA
 <213> Homo sapiens

<400> 280						
atgaatcatg	attttcaagc	tcttgcatta	gaatctcggg	gaatgggaga	gcttttgcct	60
acaaaaagt	tttgggaacc	tgatgattca	acaaaagatg	gacaaaaagg	catatttctt	120
ggggatgatg	aatggagaga	gactgcatgg	ggagcttctc	accattcaat	gtcccagcct	180
attatggtac	agagaagatc	tggacagggt	tttcatggaa	acagtgaagt	aaatgcaata	240
ctgtctccgc	gatcagaaag	tggaggcctt	ggtgtgagca	tggtagaata	tgtattaagt	300
tcttctcctg	ctgataaatt	ggattctcga	tttaggaagg	gaaatttttg	cactagagat	360
gctgaaacag	atggacctga	gaaaggagat	caaaaaggca	aggcttctcc	atttgaggag	420
gacaaaaaca	gagatcttaa	acaaggagat	gatgatgatt	ctaaaataaa	tggcagaggt	480
ttgccaaatg	gaatggatgc	cgattgcaaa	gattttaatc	gtactcctgg	aagtcgtcaa	540
gcctctccaa	ctgaagtagt	tgagcgcttg	ggccccaata	ctaattccctc	agaaggactg	600
gggcctcttc	ctaattctac	agctaataaa	ccacttgttg	aagaattttc	aaatcctgaa	660
actcagaatc	tggtatgcat	ggaacaagtt	ggtctggaat	ccttacagtt	tgactatcct	720
ggtaatcagg	taccaatgga	ctcttcagga	gctactgtag	gcctttttga	ctacaattcc	780
cagcagcagc	tctttcagag	gactaatgca	ctaacagttc	aacagttaac	tgcagctcaa	840
cagcagcaat	atgcattagc	agcagctcag	cagccacata	tagctggtgt	attctcagca	900
ggccttgctc	cagctgcatt	tgtgccaaat	ccatacatta	ttagtgctgc	tcctccaggg	960
accgatccgt	atactgcagc	aggattggct	gcagcagcta	cattagcagg	tccagcagtg	1020
gttcacctc	agtattacgg	cgttccatgg	ggggtgtatc	cagccaactt	atttcagcag	1080
caagctgcag	ctgcggcaaa	taacacagcc	agtcagcaag	cagcatcaca	agctcagcct	1140
ggacagcaac	aggttctccg	tgctggagca	ggtcagcgtc	ctcttactcc	caatcagggg	1200
cagcaagggc	agcaagcaga	atcacttgcg	gcagctgcag	cagcaaatcc	aacattggct	1260
tttggtcagg	gtcttgctac	tggcatgcca	ggctatcaag	tactagctcc	aactgcctat	1320
tatgatcaga	ctgggtgcctt	agtggttggc	cctggagcaa	ggactggcct	tggagctcca	1380
gttcgggttaa	tggctccaac	acctgtttta	attagttcag	cagcagcaca	agctgcagca	1440
gcagcagcag	ctggaggaac	tgcaagtagc	cttacaggca	gcacaaatgg	tctgtttcgg	1500
ccaattggca	ctcagccacc	acagcagcag	caacagcagc	caagcactaa	tctgcaatct	1560

aattcatttt atggaagcag ttctttgact aatagctccc agagtagttc tttattttct	1620
catggacctg gtcaacctgg aagtacatct cttggccttg gaagtggtaa ctctttgggt	1680
gctgctatag gctcagccct cagtggattt ggttcacag ttggcagttc tgcaagtagt	1740
agtgccacaa ggagagagtc tctatctact agctctgact tgtacaaaag atctagtagc	1800
agcctagcac ccatagggca accattttac aatagtctgg gatcttcctc ctctccaagt	1860
ccaataggca tgcctctgcc aagccaaact ccaggacatt cacttacgcc accgccatca	1920
ctttcatcac atggatcctc atccagtttg catttaggag gactgacaaa tggtagtggt	1980
cgatatact ctgcagcacc tggagcagaa gcaaaatata gaagtgcctc aagcacttcc	2040
agtctattta gctccagcag ccagctcttt cctccttccc ggcttcggta taataggtct	2100
gatattatgc cttctggccg cagtagatta ttggaagatt tcagaaacaa ccgcttccca	2160
aaccttcagc ttagagactt gattggacat atagttgagt tttctcaaga ccagcatggt	2220
tctagattca tacagcaaaa actagagaga gctactccag ctgagcgaca gatggtat	2280
aatgaaattc tgcaagcagc ctatcaatta atgactgatg tttttggcaa ctatgttata	2340
cagaagtttt ttgagtttgg gagtctggat caaaaattag ccctggctac tcgtattcgt	2400
ggatcatgtt tacccttagc cttgcagatg tatggctgcc gcgttattca gaaagcatta	2460
gaatctattt cttctgacca gcagagtga atggtaaagg agctggatgg tcatgtgctc	2520
aaatgtgtga aagatcagaa tggaaacat gttgtacaaa aatgtatcga atgtgttcag	2580
ccacagtcac tacagttcat cattgatgct ttcaaggac aagtatttgt gctttcaact	2640
catccttatg gctgcagagt aattcagcgc atcctagagc attgcactgc agaacagacc	2700
ttacctatct tagaagaact ccaccaacat acagagcagt tggtagagga tcagtatggc	2760
aattatgtta ttcagcatgt actggaacac ggtcgacctg aagacaagag caaaattgtt	2820
tccgaaatca ggggaaagg ttttagccctg agtcaacaca aatttgccag caatgtagta	2880
gaaaagtgtg ttactcatgc ctcccgtgct gagagagctt tactgattga cgaggtttgc	2940
tgccagaatg atggctctca cagtgcctta tacaccatga tgaaggacca gtatgccaat	3000
tacgtggttc aaaagatgat tgatatggct gaacctgctc agagaaagat aatcatgcac	3060
aagattcgac ctacattac tactttgcgc aaatacacat acgggaagca tatactggcc	3120
aagttgaaa agtattattt gaagaatagc ccggacctag gacctattgg aggaccacca	3180
aatggaatgc tgtaa	3195

<210> 281
 <211> 2931
 <212> DNA
 <213> Homo sapiens

<400> 281	
atgtctaaca gtaacactac tcaagagacc ctggaaataa tgaaagaatc agaaaaaaaa	60
ctggtggaag aatctgtaaa caaaaacaag tttatatcta agactccaag taaggaagaa	120

attgagaaag aatgtgaaga taccagtttg cgtcaggaga cacagaggcg gacatctaac	180
catggtcatg ccaggaaaag agccaagtct aattccaagc taaagttggt gcgtagcctg	240
gcagtgtgtg aggagtcctc caccctttt gctgatgggc cattagaaac ccaggatata	300
attcaattgc acatcagttg cccttctgac aaggaggaag aaaagtccac aaaagatgtc	360
tctgaaaagg aagacaagga caaaaacaaa gaaaagatcc caaggaagat gctgtccaga	420
gactccagcc aggaatatac ggactccact ggaatagacc tacatgaatt tcttgtaaat	480
acactgaaaa agaacccaag ggacagaatg atgctgctaa aattagaaca ggagattctg	540
gaattttatta atgacaacaa taatcagttc aagaagttcc ctcagatgac ctcatatcac	600
cggatgctat tacaccgggt agctgcctat tttgggatgg accacaatgt tgatcaaact	660
gggaaagctg tcatcatcaa caaaactagt aacacaagaa tccctgaaca gaggtttctca	720
gaacatataa aggatgagaa gaatacagaa tttcaacaga ggttcattct caagagagat	780
gatgccagta tggaccgaga tgataaccag actggccaga acggatatct aaatgacatc	840
agactctcca aagaagcctt ttcttctagc tctcacaaga gaaggcagat ttttaggggg	900
aaccgtgaag gactgagccg cacctcaagc agccgccaga gcagcacaga cagcgaactc	960
aaatccctgg agccacgccc ttggagcagc acagactctg atggctctgt ccggagcatg	1020
cgaccccctg tcaccaaagc tagcagcttc agtggaatct ctatccttac ccgaggtgac	1080
agcatcggca gcagtaaagg cggcagtgcg ggaaggatct ccaggccagg tatggcacta	1140
ggtgccccag aagtgtgcaa ccaggtcacc tcatcccagt ctgtccgggg gcttctccct	1200
tgtactgccc agcagcaaca gcagcagcag cagcagcaac ttctgtctct cccaccacg	1260
cctcagcaac agccaccctt gaataatcac atgatctcac aggcagatga cctcagcaac	1320
ccctttggac aaatgagcct tagtcgcaa ggttctactg aagcagctga cccatctgca	1380
gctctattcc agacccact tatctcccag caccctcagc agactagctt catcatggct	1440
tccacgggtc agccctccc cacttccaac tattccacct ctagccatgc accacctact	1500
cagcaagttc tgccacccca ggggtacatg cagccccctc aacagatcca ggtttcttac	1560
tatccccctg gacaatatcc taactccaac cagcaatatc gacctctctc tcaccgggtg	1620
gcctatagcc cccaacgtgg tcagcagctg cctcagccat ccagcagcc tggtttacag	1680
cccatgatgc ctaaccagca gcaggcggct taccaaggca tgattggggg ccagcagcca	1740
cagaaccagg gcctgctcag cagccagagg agcagcatgg ggggccagat gcaaggcctg	1800
gtgggtcagt aactccact gccttcttac caagttccag tgggtagtga ctcgcaaaat	1860
gtggtccagc cgcttttcca gcaacccatg ctggtccctg tgagccagtc tgtgcaagga	1920
ggcctcccag cagcgggggt accagtgtac tatagcatga tcccacctgc tcagcagaac	1980
ggtacgagcc cttctgtagg gtttctgcaa cccctggct ctgagcagta ccagatgcct	2040
cagtctccct ctccctgcag tccaccacag atgccacagc agtactcagg agtgtcacct	2100
tctggaccag gtgtagtggg catgcagctg aatgtcccta atggaccca gcccctcag	2160

aacccatcca	tggtccagtg	gagtcattgt	aaatactaca	gcatggacca	gcgggggcag	2220
aagcctggag	acctgtacag	tcctgacagc	agcccccagg	ccaacacaca	aatgagcagc	2280
agccctgtca	catctcctac	ccagtctcca	gcaccctctc	ctgtcaccag	cctcagcagt	2340
gtctgcacag	gactcagtcc	cctgcctgtc	ctcacacagt	tcccccggcc	tgggggtcca	2400
gcacaggggtg	atgggcgcta	ctcccttttg	ggccagccat	tacagtacaa	tctgtccatc	2460
tgccctccct	tgctccatgg	ccagtcaact	tacacggtgc	accagggaca	gagtggactg	2520
aagcatggaa	accggggcaa	gagacaagca	ctcaaactctg	cctccactga	cctggggaca	2580
gcagatgttg	tcctggggcg	ggtgctggag	gtgacagatc	tccctgaggg	catcaccctg	2640
actgaggcgg	acaaactctt	cacgcagctc	gccatgtctg	gcgccaagat	ccagtggctc	2700
aaggatgctc	aggggctgcc	tggagggggt	gggggggaca	acagtgggac	tgctgagaat	2760
ggccgccact	cggacctcgc	tgccttgtag	accattgtgg	ctgtgttccc	cagccccctg	2820
gctgcccaa	atgcctccct	tcgtctcaac	aactccgtga	gtcgcttcaa	acttcgaatg	2880
gccaaaaaga	actatgacct	gaggatcctg	gagcgagcca	gctcccaata	a	2931

<210> 282
 <211> 1950
 <212> DNA
 <213> Homo sapiens

<400> 282	atgtccctaa	tggtctcggc	tggccggggc	ctggggggccg	tgtggtcccc	aaccacagtg	60
	caggtgacgg	tgctgcaggc	gcggggcctg	cgggccaagg	gccccggggg	cacgagcgac	120
	gcgtacgcgg	tgatccaggt	gggcaaggag	aagtacgcca	cctccgtgtc	ggagcgcagc	180
	ctgggcgcg	ccgtgtggcg	cgaggaggcc	accttcgagc	tgccatcgct	gctgtcctcc	240
	ggacccgcgg	ccgccgccac	cctgcagctc	accgtgctgc	accgcgcgct	gctcggcctc	300
	gacaagtcc	tgggcccgcg	cgaggtggac	ctgcgggatc	tgcaccgcca	ccagggccgc	360
	aggaagacgc	agtgggtataa	gttgaaatcc	aaaccaggaa	agaaggacaa	ggagcgagga	420
	gaaattgagg	ttgacatcca	gtttatgaga	aacaacatga	ctgccagcat	gtttgacctt	480
	tctatgaaag	acaagtctcg	gaatccattt	ggaaagctga	aggacaagat	caaggggaag	540
	aataaggaca	gtgggtcaga	caccgcctcc	gccatcatcc	ctagcacgac	accttcggtc	600
	gacagtgatg	atgagtctgt	ggttaaagac	aagaaaaaga	aatcaaagat	caagacctta	660
	ctttccaagt	caaatttgca	gaagacgcct	ctttcccagt	ccatgtctgt	cctgccgact	720
	tcaaagccag	aaaaagtgt	gcttcgtccc	ggagactttc	agtcccagtg	ggatgaagat	780
	gacaatgagg	atgagtcctc	ctcggcctcg	gatgtcatgt	ctcacaagag	aacagcgagt	840
	acggatctta	agcaactgaa	ccaggtcaac	tttacccttc	ccaagaagga	aggactttcc	900
	tttcttggtg	gccttcggtc	taagaatgat	gtcctttccc	gctctaattg	ctgcatcaat	960
	gggaaccatg	tttacctgga	gcagccagaa	gccaaagggtg	agatcaagga	tagcagcccg	1020
	tcctcctccc	catcccccaa	gggcttcaga	aagaagcatt	tgttctcttc	tacagagaac	1080

ctggcggctg ggtcttgga	ggagcctgct gaaggaggtg	ggctgtcttc tgacaggcag	1140
ctctccgaat cttccacaa	ggactccttg aagtctatga	ccctgccgtc ctaccgacct	1200
gccccactgg tcagtgggga	cctcaggga aacatggccc	ccgcaaactc agaggccaca	1260
aaagaagcta aggagagcaa	gaagccagag agcaggaggt	cctctttgct gtctctgatg	1320
acggggaaga aggatgtggc	taagggcagt gaaggtgaaa	accctctcac ggtcccaggg	1380
agggagaagg aaggcatgct	gatgggggtt aagccggggg	aggacgcatac ggggcctgct	1440
gaagaccttg tgagaagatc	tgagaaagat actgcagctg	ttgtctccag acagggcagc	1500
tccctgaacc tctttgaaga	tgtgcagatc acagaaccag	aagctgagcc agagtccaag	1560
tctgaaccga gacctccaat	ttcctctccg agggctcccc	agaccagagc tgtcaagccc	1620
cgacttcatac ctgtgaagcc	aatgaatgca atggccacca	aggttgctaa ctgcagcttg	1680
ggaactgcca ccatcatcag	tgagaacttg aacaatgagg	tcatgatgaa gaaatacagc	1740
ccctcggacc ctgcatttgc	atatgcgagc ctgaccacag	atgagctgat tcagctggtc	1800
ctcaaacaga aggaaacgat	aagcaagaag gagttccagg	tccgagagct ggaagactac	1860
attgacaacc tgcttgtcag	ggtcatggaa gaaaccccca	atatcctccg catcccgact	1920
caggttggca aaaaagcagg	aaagatgtaa		1950

<210> 283
 <211> 648
 <212> DNA
 <213> Homo sapiens

<400> 283			
atggcaactg caccatacaa	ctactcttac atctttaaat	atattattat tggggacatg	60
ggagtaggaa aatcttgctt	gcttcatcaa tttacagaaa	aaaaatttat ggctgattgt	120
cctcacacaa ttgggtgtga	atttggtaga agaataatcg	aagttagtgg ccaaaaaata	180
aaactgcaga tttgggatac	ggcaggacag gagcgattta	gggctgttac acggagctac	240
tacagaggag ctgcgggagc	tcttatggtc tatgatataca	ctagaagaag tacatataac	300
cacttaagca gctgggtgac	agatgcaagg aatctcacca	atccaaatac tgtaataatt	360
ctcataggaa ataaagcaga	tttgagggca cagagagatg	ttacatatga agaagccaaa	420
cagtttgctg aagaaaatgg	cttattgttc ctcgaagcga	gtgcaaaaac gggagagaat	480
gtagaagatg ccttccttga	ggctgccaag aaaatctatc	agaacattca ggatggaagc	540
ttggatctga atgctgctga	gtctggtgta caacacaaac	cttcagcccc gcagggaggc	600
cggctaacca gtgaacccca	acccagaga gaaggctgtg	gctgctag	648

<210> 284
 <211> 588
 <212> DNA
 <213> Homo sapiens

<400> 284			
atgatggcga tacgggagct	caaagtgtgc cttctcgggg	acactgggggt tgggaaatca	60

agcatcgtgt gtcgatttgt ccaggatcac tttgaccaca acatcagccc tactattggg	120
gcattctttta tgaccaaacc tgtgccttgt ggaaatgaac ttcacaagtt cctcatctgg	180
gacactgctg gtcaggaacg gtttcattca ttggctccca tgtactatcg aggctcagct	240
gcagctgtta tcgtgtatga tattaccaag caggattcat ttatatacctt gaagaaatgg	300
gtcaaggagc tgaaagaaca tgggtccagaa aacattgtaa tggccatcgc tggaaacaag	360
tgcgacctct cagatattag ggaggttccc ctgaaggatg ctaaggaata cgctgaatcc	420
ataggtgcca tcgtggttga gacaagtgc aaaaatgcta ttaatatcga agagctcttt	480
caaggaatca gccgccagat cccacccttg gaccccatg aaaatggaaa caatggaaca	540
atcaaagttg agaagccaac catgcaagcc agccgccggt gctgttga	588

<210> 285
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 285	
atggctgaga cctacgactt cctcttcaaa ttcttgggtga ttggcagtgc aggaactggc	60
aatcatgtc tccttcatca gttcattgag aataagttca aacaggactc caaccacaca	120
atcggcgtgg agtttggatc ccgggtggtc aacgtgggtg ggaagactgt gaagctacag	180
atttgggaca cggctggcca ggagcggttt cggtcagtga cgcggagtta ttaccgaggg	240
gcggctggag ccctgctggt gtacgacatc accagccggg agacatacaa ctactggct	300
gcctggctga cggatgccg caccctggcc agccccaaca tcgtggatcat cctctgtggc	360
aacaagaagg acctggacct tgagcgggag gtcactttcc tggaggcctc ccgctttgcc	420
caggagaatg agctgatgtt cctggagacc agcgtctca caggcgagaa cgtggaggag	480
gcgttcctca agtgtgccc cactatctc aacaagattg actcaggcga gctagacctg	540
gagaggatgg gctctggcat tcagtacggg gatgcgtccc tccgccagct tcggcagcct	600
cggagtggcc aggccgtggc ccctcagccg tgtggctgct ga	642

<210> 286
 <211> 624
 <212> DNA
 <213> Homo sapiens

<400> 286	
atgacctcta ggaagaaagt gttgctgaag gttatcatcc tgggagattc tggagtcggg	60
aagacatcac tcatgaacca gtatgtgaat aagaaattca gcaatcagta caaagccaca	120
ataggagctg actttctgac caaggaggtg atggtggatg acaggctagt cacaatgcag	180
atatgggaca cagcaggaca ggaacggttc cagtctctcg gtgtggcctt ctacagaggt	240
gcagactgct gcgttctggt atttgatgtg actgccccca acacattcaa aaccctagat	300
agctggagag atgagtttct catccaggcc agtccccgag atcctgaaaa cttcccattt	360
gttgtgttgg gaaacaagat tgacctcgaa aacagacaag tggccacaaa gcgggcacag	420

PCTAU2016050927-seq1-000001-EN-20161013

gcctggtgct	acagcaaaaa	caacattccc	tactttgaga	ccagtgccaa	ggaggccatc	480
aacgtggagc	aggcgttcca	gacgattgca	cggaatgcac	ttaagcagga	aacggaggtg	540
gagctgtaca	acgaatttcc	tgaacctatc	aaactggaca	agaatgaccg	ggccaaggcc	600
tcggcagaaa	gctgcagttg	ctga				624

<210> 287
 <211> 1947
 <212> DNA
 <213> Homo sapiens

<400> 287	
atggagcaca	tacagggagc ttggaagacg atcagcaatg gttttggatt caaagatgcc 60
gtgtttgatg	gctccagctg catctctcct acaatagttc agcagtttgg ctatcagcgc 120
cgggcatcag	atgatggcaa actcacagat ctttctaaga caagcaacac tatccgtggt 180
ttcttgccga	acaagcaaag aacagtggtc aatgtgcgaa atggaatgag cttgcatgac 240
tgccttatga	aagcactcaa ggtgaggggc ctgcaaccag agtgctgtgc agtgttcaga 300
cttctccacg	aacacaaagg taaaaaagca cgcttagatt ggaataactga tgctgcgtct 360
ttgattggag	aagaacttca agtagatttc ctggatcatg ttcccctcac aacacacaac 420
tttgctcgga	agacgttcct gaagcttgcc ttctgtgaca tctgtcagaa attcctgctc 480
aatggatttc	gatgtcagac ttgtggctac aaatttcatg agcactgtag caccaaagta 540
cctactatgt	gtgtggactg gagtaacatc agacaactct tattgtttcc aaattccact 600
attggtgata	gtggagtccc agcactacct tctttgacta tgcgtcgtat gcgagagtct 660
gtttccagga	tgctgttag ttctcagcac agatattcta cacctcacgc cttcaccttt 720
aacacctcca	gtccctcatc tgaaggttcc ctctcccaga ggcagaggtc gacatccaca 780
cctaattgtc	acatggtcag caccacctg cctgtggaca gcaggatgat tgaggatgca 840
attcgaagtc	acagcgaatc agcctcacct tcagccctgt ccagtagccc caacaatctg 900
agcccaacag	gctggtcaca gccgaaaacc cccgtgccag cacaaagaga gcgggcacca 960
gtatctggga	cccaggagaa aaacaaaatt aggcctcgtg gacagagaga ttcaagctat 1020
tattgggaaa	tagaagccag tgaagtgatg ctgtccactc ggattgggtc aggctctttt 1080
ggaactgttt	ataagggtaa atggcacgga gatgttgcag taaagatcct aaaggttgtc 1140
gaccaaccc	cagagcaatt ccaggccttc aggaatgagg tggctgttct gcgcaaaaca 1200
cggcatgtga	acattctgct tttcatgggg tacatgacaa aggacaacct ggcaattgtg 1260
accagtggt	gcgagggcag cagcctctac aaacacctgc atgtccagga gaccaagttt 1320
cagatgttcc	agctaattga cattgcccg cagacggctc agggaatgga ctatttgcac 1380
gcaaagaaca	tcatccatag agacatgaaa tccaacaata tttttctcca tgaaggctta 1440
acagtgaaaa	ttggagattt tggtttggca acagttaaagt cacgctggag tggttctcag 1500
caggttgaac	aacctactgg ctctgtcctc tggatggccc cagaggtgat ccgaatgcag 1560

PCTAU2016050927-seq1-000001-EN-20161013

gataacaacc cattcagttt ccagtcggat gtctactcct atggcatcgt attgtatgaa	1620
ctgatgacgg gggagcttcc ttattctcac atcaacaacc gagatcagat catcttcatg	1680
gtgggcccag gatatgcctc cccagatctt agtaagctat ataagaactg ccccaaagca	1740
atgaagaggc tggtagctga ctgtgtgaag aaagtaaagg aagagaggcc tctttttccc	1800
cagatcctgt cttccattga gctgctccaa cactctctac cgaagatcaa ccggagcgct	1860
tccgagccat ccttgcacgc ggcagcccac actgaggata tcaatgcttg cacgctgacc	1920
acgtccccga ggctgcctgt cttctag	1947

<210> 288
 <211> 621
 <212> DNA
 <213> Homo sapiens

<400> 288 atggctgcca acaagagtaa gggccagagc tccttggccc tccacaaggt gatcatggtt	60
ggcagcggag gcgttggcaa gtcagccctg acgcttcagt tcatgtatga cgagtttgta	120
gaagactatg aacctaccaa agctgacagt tatagaaaga aagtggttct tgatggggaa	180
gaagttcaga tagatattct ggacaccgct gggcaagagg actacgcagc cattcgagat	240
aactactttc ggagtgggga agggtttctt cttgtgttct caatcacaga acatgaatcc	300
tttacagcaa ctgccgaatt cagggaaacag attctccgtg tgaaggctga agaagataaa	360
attccactgc tcgtcgtggg aaacaagtct gacctagagg agcggaggca ggtgcctgtg	420
gaggaggcca ggagtaaagc cgaagagtgg ggcgtgcagt acgtggagac gtcagcgaag	480
acccgggcca acgtggacaa ggtgttcttt gacctaatga gagaaatcag aacaaagaag	540
atgtcagaaa acaaagacaa gaatggcaag aaaagcagca agaacaagaa aagtttttaa	600
gaaagatggt gcttactatg a	621

<210> 289
 <211> 1389
 <212> DNA
 <213> Homo sapiens

<400> 289 atggccagca acagcagctc ctgcccgaca cctggggggcg ggcacctcaa tgggtacctg	60
gtgcctccct acgccttctt cttccccctt atgctgggtg gactctcccc gccaggcgct	120
ctgaccactc tccagcacca gcttccagtt agtggatata gcacaccatc cccagccacc	180
attgagacct agagcagcag ttctgaagag atagtgccca gccctccctc gccacccctt	240
ctaccccgca tctacaagcc ttgctttgtc tgtcaggaca agtcctcagg ctaccactat	300
ggggtcagcg cctgtgaggg ctgcaagggc ttcttccgcc gcagcatcca gaagaacatg	360
gtgtacacgt gtcaccggga caagaactgc atcatcaaca aggtgacctg gaaccgctgc	420
cagtactgcc gactgcagaa gtgctttgaa gtgggcatgt ccaaggagtc tgtgagaaac	480
gaccgaaaca agaagaagaa ggagggtgcc aagcccagat gctctgagag ctacacgctg	540

acgccggagg	tgggggagct	cattgagaag	gtgcgcaaag	cgccaccagga	aaccttcctt	600
gccctctgcc	agctgggcaa	atacactacg	aacaacagct	cagaacaacg	tgtctctctg	660
gacattgacc	tctgggacaa	gttcagtga	ctctccacca	agtgcattcat	taagactgtg	720
gagttcgcca	agcagctgcc	cggcttcacc	accctcacca	tcgccgacca	gatcaccttc	780
ctcaaggctg	cctgcctgga	catcctgata	ctgcggatct	gcacgcggta	cacgcccag	840
caggacacca	tgaccttctc	ggacgggctg	accctgaacc	ggaccagat	gcacaacgct	900
ggcttcggcc	ccctcaccga	cctggtcttt	gccttcgcca	accagctgct	gcccctggag	960
atggatgatg	cggagacggg	gctgctcagc	gccatctgcc	tcattctcgg	agaccgccag	1020
gacctggagc	agccggaccg	ggtggacatg	ctgcaggagc	cgctgctgga	ggcgctaaag	1080
gtctacgtgc	ggaagcggag	gcccagccgc	ccccacatgt	tccccaagat	gctaataag	1140
attactgacc	tgcaagcat	cagcgccaag	ggggctgagc	gggtgatcac	gctgaagatg	1200
gagatcccgg	gctccatgcc	gcctctcatc	caggaaatgt	tggagaactc	agagggcctg	1260
gacactctga	gcggacagcc	ggggggtggg	gggcgggacg	ggggtggcct	ggcccccccg	1320
ccaggcagct	gtagccccag	cctcagcccc	agctccaaca	gaagcagccc	ggccaccac	1380
tccccgtga						1389

<210> 290
 <211> 981
 <212> DNA
 <213> Homo sapiens

<400> 290						
atggactaca	gccaccaaac	gtccctagtc	ccatgtggac	aagataaata	cattttccaaa	60
aatgaacttc	tcttgcatct	gaagacctac	aacttgtact	atgaaggcca	gaattttacag	120
ctccggcacc	gggaggaaga	agacgagttc	attgtggagg	ggctcctgaa	catctcctgg	180
ggcctgcgcc	ggccattcg	cctgcagatg	caggatgaca	acgaacgcat	tcgacccct	240
ccatcctcct	cctcctggca	ctctggctgt	aacctggggg	ctcagggaac	cactctgaag	300
cccctgactg	tgcccaaagt	tcagatctca	gaggtggatg	ccccgccgga	gggtgaccag	360
atgccaagct	ccacagactc	caggggcctg	aagcccctgc	aggaggacac	cccacagctg	420
atgcgcacac	gcagtgatgt	tgggggtgct	cgccgtggca	atgtgaggac	gcctagtgc	480
cagcggcgaa	tcagacgcca	ccgcttctcc	atcaacggcc	atttctacaa	ccataagaca	540
tccgtgttca	caccagccta	tggctctgtc	accaacgtcc	gcatacaacag	caccatgacc	600
acccacagg	tcctgaagct	gctgctcaac	aaatttaaga	ttgagaattc	agcagaggag	660
tttgccctgt	acgtggtcca	tacgagtgg	gagaaacaga	agctgaaggc	caccgattac	720
ccgctgattg	cccgaatcct	ccagggccca	tgtgagcaga	tctccaaagt	gttcctaattg	780
gagaaggacc	aggtggagga	agtcacctac	gacgtggccc	agtatatataa	gttcgagatg	840
ccggtactta	aaagcttcat	tcagaagctc	caggaggaag	aagatcggga	agtaaagaag	900
ctgatgcgca	agtacaccgt	gctccggcta	atgattcgac	agaggctgga	ggagatagcc	960

gagacccag caacaatctg a 981

<210> 291
 <211> 1272
 <212> DNA
 <213> Homo sapiens

<400> 291
 atggcatctg atgactttga catagtgtgatt gaggccatgc tggaagctcc ctataaaaaa 60
 gaagaggatg agcaacaaag gaaagaagtt aaaaaggatt atcctagcaa taccaccagc 120
 agcaccagca acagtggcaa tgagaccagt ggaagcagca ccatcgggga gacaagcaat 180
 cgtagtcgag atcgggatcg gtatagacgg agaaatagtc ggagccgaag tccaggtcgg 240
 cagtgtcgtc accgtagccg tagctgggat cgtcgacatg gtagtgagtc gcgaagtcgg 300
 gaccatcgtc gtgaggatcg tgtgcattac aggagtcctc cacttgccac tggttatagg 360
 tatggacaca gtaagagtcc tcatttcaga gagaagagcc cagtcaggga gccagttgat 420
 aatctgagtc ctgaggagcg tgatgccgc acagttttct gtatgcagtt agctgcccga 480
 attcggcctc gagatctgga ggactttttc tctgctgtag gcaaggttcg cgatgtacgt 540
 atcatctcag atcggaactc acgtcgttct aagggcattg cctacgtgga attctgtgaa 600
 atccagtctg tgccactggc cattgggctg actgggcagc ggttgctggg agtgcctatc 660
 attgtacagg cttcacaggc agagaaaaac cgactggcag ccatggccaa caacctgcaa 720
 aagggcaatg gtggaccaat gcgcctctat gtgggttccc tgcacttcaa tatcactgaa 780
 gacatgtccc ggggcatctt tgagcccttt ggtaaaattg ataatttgt cctgatgaag 840
 gactcagata caggccgctc taaaggttat ggtttcatca cgttctctga ttctgagtgt 900
 gcccggcggg ccctggaaca gttgaatggg tttgagcttg ctggtcgacc tatgagggtt 960
 ggccatgtga ctgagcgact ggatggtggc acagacatca cttttcctga tggggaccag 1020
 gagctggatc tgggatcagc aggtggacgt tttcagctca tggcaaaact ggcagaaggc 1080
 gctggaatcc aactgccaag cactgctgct gctgctgctg ccgccgccgc ccaggctgct 1140
 gccttgcaac tgaatggagc agttcccttg ggggccctga atccagcagc tctgactgct 1200
 ctgagtccag ccctgaacct tgcctcccag tgtttccagc tctccagcct ctttaccctc 1260
 cagacatgt aa 1272

<210> 292
 <211> 1221
 <212> DNA
 <213> Homo sapiens

<400> 292
 atgggcaaag tgtggaaaca gcagatgtac cctcagtagc ccacctaata ttacccccag 60
 tatctgcaag ccaagcagtc tctgggtcca gccacccca tggcccctcc cagtcccagc 120
 accaccagca gtaataacaa cagtagcagc agtagcaact caggatggga tcagctcagc 180
 aaaacgaacc tctatatccg aggactgcct cccacacca ccgaccagga cctggtgaag 240

PCTAU2016050927-seq1-000001-EN-20161013

ctctgtcaac	catatgggaa	aatagtctcc	acaaaggcaa	ttttggataa	gacaacgaac	300
aaatgcaaag	gttatggttt	tgtcgacttt	gacagccctg	cagcagctca	aaaagctgtg	360
tctgccctga	aggccagtgg	ggttcaagct	caaattggcaa	agcaacagga	acaagatcct	420
accaacctct	acatttctaa	tttgccactc	tccatggatg	agcaagaact	agaaaatatg	480
ctcaaaccat	ttggacaagt	tatttctaca	aggatactac	gtgattccag	tggtacaagt	540
cgtggtgttg	gctttgctag	gatggaatca	acagaaaaat	gtgaagctgt	tattgggtcat	600
tttaatggaa	aatttattaa	gacaccacca	ggagtttctg	ccccacaga	acctttattg	660
tgtaagtttg	ctgatggagg	acagaaaaag	agacagaacc	caaacaaata	catccctaata	720
ggaagaccat	ggcatagaga	aggagaggtg	agacttgctg	gaatgacact	tacttacgac	780
ccaactacag	ctgctataca	gaacggattt	tatccttcac	catacagtat	tgctacaaac	840
cgaatgatca	ctcaaacttc	tattacaccc	tatattgcat	ctcctgtatc	tgcttaccag	900
gtgcaaagtc	cttcgtggat	gcaacctcaa	ccatatattc	tacagcacc	tggtgccgtg	960
ttactccct	caatggagca	caccatgtca	ctacagcccg	catcaatgat	cagccctctg	1020
gccagcaga	tgagtcactc	gtcactaggc	agcaccggaa	catacatgcc	tgcaacgtca	1080
gctatgcaag	gagcctactt	gccacagtat	gcacatatgc	agacgacagc	ggttcctggt	1140
gaggaggcaa	gtggtcaaca	gcaggtggct	gtcgagacgt	ctaataacca	ttctccatat	1200
acctttcaac	ctaataagta	a				1221

<210> 293
 <211> 3195
 <212> DNA
 <213> Homo sapiens

<400> 293	
atgcctgtgc	aggcagctca atggacagaa tttctgtcct gtccaatctg ctataatgaa 60
tttgatgaga	atgtgcacaa acccatcagt ttaggttggt cacacactgt ttgcaagacc 120
tgcttgaata	aacttcatcg aaaagcttgt ccttttgacc agactgccat caacacagat 180
attgatgtac	ttcctgtcaa cttgcactt ctccagttag ttggagccca ggtaccagat 240
catcagtcaa	ttaagttaag taatctaggt gagaataaac actatgaggt tgcaaagaaa 300
tgcgttgagg	atttggcact ctacttaaaa ccactaagtg gaggtaaagg tgtagctagc 360
ttgaaccaga	gtgactgag ccgtccaatg caaaggaaac tggtgacact tgtaaactgt 420
caactgggtg	aggaagaagg tcgtgtaaga gccatgagag cagctcgttc ccttgagaaa 480
agaactgtaa	cagaactgat attacagcac cagaaccctc agcagttgtc tgccaatcta 540
tgggccgctg	tcagggctcg aggatgccag tttttagggc cagctatgca agaagaggcc 600
ttgaagctgg	tgttactggc attagaagat ggttctgccc tctcaaggaa agttctggta 660
ctttttgttg	tgtagagact agaaccaaga tttcctcagg catcaaaaac aagtattggt 720
catgttggtg	aactactgta tcgagcttct tgttttaagg ttaccaaaag agatgaagac 780

tcttccctaa	tgcagctgaa	ggaggaattt	cggagttatg	aagcattacg	cagagaacat	840
gatgccc aaa	ttgttcatat	tgccatggaa	gcaggactcc	gtatttcacc	tgaacagtgg	900
tcctctcttt	tgtatgggtga	tttggctcat	aaatcacaca	tgcagtctat	cattgataag	960
ctacagtctc	cagagtcatt	tgcaaagagt	gtccaggaat	tgacaattgt	tttgcaacga	1020
acaggtgacc	cagctaactt	aaatagactg	aggcctcatt	tagagcttct	tgcaaacata	1080
gaccctaatac	cagacgtgt	ttcaccaact	tgggagcagc	tggaaaatgc	aatggtagct	1140
gttaaaacag	tagttcatgg	ccttgtggac	ttcatacaaa	attatagtag	aaaaggccat	1200
gagacccctc	agcctcagcc	aaacagcaaa	tacaagacta	gcatgtgccg	agattttgcga	1260
cagcaagggg	gttgtccacg	aggaacaaat	tgtacatttg	cccattctca	ggaagagctt	1320
gaaaagtatc	gattaaggaa	caaaaagatc	aatgccactg	taagaacgtt	tcctcttcta	1380
aataaagtgt	gtgtaaacia	cactgtcaca	accacagccg	gaaatgtcat	ttctgtcata	1440
ggaagtactg	aaacaacagg	gaaaattgtt	ccaagtacaa	acggaatttc	aaatgcagaa	1500
aacagtgttt	cccagctaata	ctcacgtagt	actgacagta	ccttaagagc	tctggagacc	1560
gtgaagaaaag	tgggaaagggt	tggcgctaata	ggtcagaatg	ctgctggggc	ctctgcagat	1620
tctgtaactg	aaaataaaat	tggttctcca	cccaagactc	ctgtaagtaa	tgtagcagct	1680
acctcagctg	ggccctctaa	tgttggaaca	gagctgaatt	ctgtgcctca	aaaatccagc	1740
ccattttctaa	ctagagtacc	agtatatcct	ccgcattctg	aaaacattca	gtatttttcaa	1800
gatccaagga	ctcagatacc	ctttgaagtc	ccacagtacc	cacagacagg	atactatcca	1860
ccacctccaa	cggtagcagc	tgggtgtggct	ccctgtgttc	ctcgctttgt	gaggtccaat	1920
aacgttccag	agtcctccct	cccacctgct	tccatgccat	atgccgatca	ttacagtaca	1980
ttttcccctc	gagatcgaat	gaattcttct	ccttaccagc	ctcctcctcc	gcagccgtat	2040
ggaccagttc	ctccagtacc	ttctggaatg	tatgctcctg	tgtacgacag	caggcgcatac	2100
tggcgcccac	ctatgtacca	acgagatgac	attattagaa	gcaattcttt	acctccaatg	2160
gatgtgatgc	actcatctgt	ctatcagaca	tctttgcggg	aaagatataa	ctcattagat	2220
ggatattatt	cgggtggcttg	tcagccacca	agttagccaa	ggacaactgt	gcctttacca	2280
agggaaacctt	gtgggtcattt	gaagaccagt	tgcgaggagc	agataagaag	aaagccagat	2340
cagtgggcac	agtaccacac	tcagaaagca	cctcttgtct	cttcaactct	tcctgtggca	2400
acacagtcac	caacaccacc	ttctcctctg	ttcagtgtag	actttcgtgc	ggattttctca	2460
gagagtgtga	gtggtacaaa	atttgaagaa	gatcatcttt	cccattattc	tcctgtgtct	2520
tgtggcacca	taggctcctg	tataaatgcc	attgattcag	agcccaaaga	tgtcattgct	2580
aattcaaatg	ctgtgttaat	ggacctggac	agtggtagat	ttaagagaag	agtacattta	2640
tttgaaacct	agagaaggac	aaaagaagaa	gatccaataa	ttcccttttag	tgatggacct	2700
atcatctcaa	aatgggggtgc	gatttccaga	tcttcccgtg	caggttacca	taccacagat	2760
cctgtccagg	ccactgcttc	ccaaggaagt	gcgactaagc	ccatcagtgt	atcagattat	2820

gtccccttatg tcaatgctgt tgattcaagg tggagttcat atggcaacga ggccacatca	2880
tcagcacact atgttgaaag ggacagattc attgttactg atttatctgg tcatagaaag	2940
cattccagta ctggggacct tttgagcctt gaacttcagc aggccaagag caactcatta	3000
cttcttcaga gagaggccaa tgctttggcc atgcaacaga agtggaattc cctggatgaa	3060
ggccgtcacc ttaccttaaa ccttttaagc aaggaaattg aactaagaaa tggagaggta	3120
aagaaactga acctttcggc ttcattgctta atgtatttgt tttctgctgc tgcattcttg	3180
ttataccatt actga	3195

<210> 294
 <211> 4701
 <212> DNA
 <213> Homo sapiens

<400> 294 atgacagcgg acaaagacaa agacaaagac aaagagaagg accgggaccg agaccgggac	60
cgagagagag agaaaagaga caaagcaaga gagagtgaga attcaaggcc acgccggagc	120
tgtaccttgg aaggaggagc caaaaattat gctgagagtg atcacagtga agacgaggac	180
aatgacaaca atagtgccac cgcagaggag tccacgaaga agaataagaa gaaaccaccg	240
aaaaaaaaagt ctcgttatga aaggacagat accggtgaga taacatccta catcactgaa	300
gatgatgtgg tctacagacc aggagactgt gtgtatatcg agagtcggag gccaaacaca	360
ccgtatttca tctgtagcat tcaagacttc aaactggtcc acaactcca ggcctgttgc	420
agatctccaa ctctgtcttt gtgtgacccc ccagcatgct ctctgccggt ggcattcacag	480
ccaccacagc atctttctga agccgggaga gggcctgtag ggagtaagag ggaccatctc	540
ctcatgaacg tcaaattgga ctaccgtcaa tctgaggttc cagattctgt gtatcagcat	600
ttggttcagg atcgacataa tgaaaatgac tctggaagag aacttgatcat tacagaccca	660
gttatcaaga accgagagct cttcatttct gattacgttg acacttacca tgctgctgcc	720
cttagaggga agtgtaacat ctcccatttt tctgacatat ttgctgctag agagttttaa	780
gcccagatgg attcattttt ctacatatta ggatataacc ctgagacaag gaggctgaac	840
agtaccacag gggagattcg tgtcggtcct agtcatcagg ccaaacttcc agatctgcaa	900
ccatttcctt ctccagatgg tgatacagt acccaacatg aggaactggt ctggatgcct	960
ggagttaacg actgtgacct ccttatgtac ttgagggcag caaggagcat ggcggcattt	1020
gcaggaatgt gtgatggagg ctctacagag gacggctgtg tcgcagcctc tcgggatgac	1080
accactctga atgcactgaa cacactgcat gaaagcgggt acgatgctgg caaagccctg	1140
cagcgcctgg tgaagaagcc tgtgcccaag ctcatcgaga agtgctggac cgaggacgaa	1200
gtgaaacgct tcgttaaggg actcaggcag tacgggaaga acttcttcag aattagaaag	1260
gagctgcttc ccaataagga aacaggggag ctgatcacct tctattacta ttggaagaag	1320
acccccgaag cagccagctc ccgagcccat cgtaggcacc gcaggcaggc cgtgttcagg	1380
aggattaaga ctctgcaccgc gtccacaccc gtcaacacac cctccagacc cccgtccagt	1440

gaattcttgg	acctaagttc	agccagtga	gatgacttcg	acagtgagga	cagtgagcag	1500
gagctgaagg	ggtacgcctg	ccgccactgc	ttcaccacca	cctccaaaga	ttggcaccac	1560
ggaggccggg	agaacatcct	gctttgcacc	gactgtcgca	tccacttcaa	gaaatacgg	1620
gagctcccg	ccattgagaa	gcccgtggac	ccgccaccgt	ttatgttcaa	acccgtcaag	1680
gaagaggatg	atgggctcag	tgggaagcat	agcatgagga	cacggcggag	tcggggctcg	1740
atgtcgacac	tacgcagtgg	tcggaagaag	cagccagcca	gccctgatgg	tcgcacctca	1800
cccatcaatg	aagacatccg	ctccagcggc	cggaactccc	ccagcgtgc	cagtacctcc	1860
agcaatgaca	gtaaagcaga	gacagtgaag	aagtcggcca	agaaggtgaa	ggaggaagcc	1920
tcttcccctc	ttaagagtaa	caaacgccag	cgggagaagg	tggcctctga	tacggaggag	1980
gctgacagga	ccagctccaa	gaagacaaaa	acgcaggaga	tcagcaggcc	caactcgcca	2040
tctgaagggtg	agggagagag	ttcagacagt	cgcagcgtca	acgatgagg	tagcagtgc	2100
cccaaagaca	tcgaccagga	caatcgcagc	acgtccccga	gcatccccag	ccccaggac	2160
aatgagagt	actcggactc	gtcagcccag	cagcagatgc	tgaggccca	gccccagcc	2220
ttgcaggctc	ccactggggt	caccccagct	ccctcctcag	ctcctccagg	gacccctcag	2280
ctgcccacgc	cagggccac	gccctctgcc	actgcagttc	ccccacagg	ctccccacg	2340
gcctcccagg	cccctaacca	gccacaggct	cccacagcgc	ctgttcccca	caccacatc	2400
caacaggcac	cggccttgca	ccccagcgg	ccgccctcac	cgcaccccc	gccgcaccc	2460
tcgccacatc	ccccgctgca	gcctctgact	gggtcggcgg	gccagccttc	tgcaccctct	2520
catgcccagc	cccactgca	cggtcagggc	ccaccggcc	ctcacagcct	gcaggctggg	2580
cccctgctgc	agcaccagg	ccccccacag	ccctttggcc	tccctcccca	ggcctcccaa	2640
ggccaggccc	ctctggggac	ctccccagca	gcagcgtacc	ctcacacctc	cctgcagctg	2700
ccagcctctc	agtcagcgt	gcagtcccaa	cagcctccac	gggagcagcc	cctgccacca	2760
gcgcccttgg	ccatgcccc	catcaagccc	ccgcctacca	ctcccatccc	ccagctgccg	2820
gcgccacagg	cccacaagca	ccctccccac	ctctcggggc	cctcaccctt	ctccatgaat	2880
gccaacctgc	ctccccctcc	agccctgaag	cccctgagct	ccctgtccac	acatcacccc	2940
ccgtcggctc	acccccacc	cctgcaactc	atgcctcaga	gccagccatt	gccctcctcg	3000
cccgcccagc	ccccggggt	gaccagagc	cagaacctgc	ccccgcccc	tgctccac	3060
ccccctacag	gcctccacca	ggtggcccc	caacccccgt	ttgtcagca	cccctttgtc	3120
cctggaggcc	ctcctcccat	cacccctccg	acctgccct	ccacctctac	cccaccggcg	3180
ggacctggca	cctcggccca	gccaccctgc	tctggtgcgg	cggcttcagg	aggcagcata	3240
gcgggggggt	cgtcctgccc	actccccacc	gtccagatca	aggaggaggc	tctggacgac	3300
gctgaggagc	ctgagagccc	ccctccccca	ccaaggagcc	cgtccccgga	gccactgtg	3360
gtggacaccc	ccagtcacgc	cagccagtca	gctaggttct	acaaacacct	ggaccggggc	3420
tacaactcgt	gtgcccggac	agacctgtac	ttcatgcctc	tggccgggtc	caagctggcc	3480

PCTAU2016050927-seql-000001-EN-20161013

aagaagaggg	aggaggccat	tgagaaggcc	aagcgcgagg	ctgagcagaa	agccccgagag	3540
gagcgagagc	gggagaagga	gaaggagaag	gagcgggagc	gggagcgaga	gcgggagcgc	3600
gaggcagagc	gggcggctaa	ggcgtccagc	tcagcgcgatg	aaggctgcct	cagtgaacca	3660
cagctcagt	gtcctggcca	catgcggcca	tccttcgagc	caccaccaac	caccattgct	3720
gctgtgcccc	cctacatcgg	gccccacaca	cctgcccttc	ggactctgag	cgagtacgcc	3780
cggccccacg	tcatgtcgcc	caccaaccgc	aaccaccctt	tctacatgcc	ccttaacccc	3840
acggaccccc	tgctggccta	ccacatgcct	ggcctctaca	acgtcgaccc	caccatccgc	3900
gagcgggagc	tccgggagcg	ggagatccga	gagcgggaga	tccgagagcg	ggagctgcgg	3960
gagaggatga	agccgggctt	cgagggtgaag	ccccagagc	tggaccccct	gcaccagacc	4020
gccaacccca	tggagcactt	tgcccggcac	agcgcctca	ccatcccccc	gaccgccggg	4080
ccccaccctt	ttgtttcttt	ccaccgggc	ctgaaccctt	tggagaggga	gagactggcc	4140
ctggcgggcc	cccagctgcg	gcccagatg	agctaccctg	acagactggc	agccgagcgt	4200
atccacgcag	agcgcgatgg	atcgctgacc	agcgatcccc	tggcccgact	gcagatgttc	4260
aacgtgactc	cgcaccatca	ccagcactct	cacattcact	cccacctcca	cctccaccag	4320
caggaccccc	tccaccaagg	ttcagcaggc	ccggttcacc	cgctggtcga	ccccctgact	4380
gccggtcccc	acctggctcg	cttcccctac	ccgcctggca	ctctcccaa	ccctctgctt	4440
ggacagcccc	cacacgagca	cgagatgctt	cgccaccag	ttttcggcac	cccctacccc	4500
cgtgacctgc	ctggggccat	cccaccccc	atgtcagcag	cccaccagct	gcaggccatg	4560
catgcccagt	cggccgagct	gcagagactg	gccatggagc	agcagtggct	gcatggacac	4620
ccccacatgc	atggtggcca	cctaccaagt	caggaagatt	attacagtcg	actgaagaaa	4680
gaaggtgaca	agcagttata	a				4701

<210> 295
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<400> 295	atgccaggga	agcccaagca	cctgggcgtc	cccaacgggc	gcatggttct	ggctgtgtca	60
	gatggagagc	tgagcagcac	gacggggccc	cagggccagg	gagagggccg	cggcagctct	120
	ctcagcatcc	acagcctccc	cagtgtgtccc	agcagcccct	tcccaaccga	ggagcagcct	180
	gtggccagct	gggccctgtc	cttcgagcgg	ctgttgacag	acccgctggg	cctggcttac	240
	ttcactgagt	tcctgaagaa	ggagttcagc	gcggaaaacg	tgactttctg	gaaggcctgc	300
	gagcgcttcc	agcagatccc	ggccagcgat	accagcagc	tagctcagga	ggcccgaac	360
	atctaccagg	agttcctgtc	cagccaggcg	ctgagcccag	tgaacatcga	ccgtcaggcc	420
	tggcttggcg	aggaggtgct	ggccgagccc	cggccggaca	tgtttcgggc	acagcagctt	480
	cagatcttca	acttgatgaa	gttcgacagc	tatgcgcgct	tcgtcaagtc	cccgtgtac	540

cgcgagtgcc	tgctagccga	agccgagggg	cgccctctgc	gggaacctgg	ctcctcgcg	600
ctcggcagcc	ctgacgccac	gaggaagaag	ccgaagctga	agcccgggaa	gtcgtgccc	660
ctgggtgtgg	aggagttggg	gcagctgcca	cccgttgagg	gtcctggggg	ccgccctctc	720
cgcaagtcct	tccgccggga	gctgggcggg	actgcaaacg	ccgccttgcg	ccgagagtct	780
cagggctccc	tcaactcctc	cgccagcctg	gaccttggt	tcctagcctt	cgtcagcagc	840
aaatctgaga	gccaccggaa	gagccttggg	agcacggagg	gtgaaagtga	aagccggcca	900
gggaagtact	gctgtgtgta	cctgcccgat	ggcacagcct	ccttggccct	ggccagacct	960
ggcctcacca	tccgagacat	gctggcaggg	atctgtgaga	aacgaggcct	ctctctacct	1020
gacatcaagg	tctacctggt	gggcaatgaa	caggccctgg	tcctggatca	ggactgcacc	1080
gtgctggcgg	atcaggaagt	gcggctggaa	aacaggatca	ccttcgagct	ggagctgacg	1140
gcgctggagc	gcgtggtacg	aatctcagcc	aagcccacca	agcggctgca	ggaggcgctg	1200
cagcccattc	tggagaagca	cggcttgagc	ccgctagagg	tgggtgctgca	ccggccaggc	1260
gagaaacagc	ctctggatct	ggggaagcta	gtgagctcgg	tggcggccca	gagactggtt	1320
ttggacactc	ttccaggtgt	gaagatctcc	aaagcccgtg	acaaatctcc	ctgccgcagc	1380
cagggctgcc	cacctagaac	tcaggataag	gccaccatc	cccctccagc	gtccccagct	1440
tctctggtga	aggtgcccag	tagtgccact	ggaaagcggc	agacctgtga	catcgaaggc	1500
ctggtggagc	tgctgaaccg	ggtgcagagc	agcggggccc	acgaccagag	gggccttctg	1560
aggaaagagg	acctggtact	tccagaattt	ctgcagctgc	ccgcccagg	gccagctcc	1620
gaggagacc	caccacagac	caaatcagca	gccagccca	tcgggggatc	cttgaactcc	1680
accaccgact	cagccctctg	a				1701

<210> 296
 <211> 654
 <212> DNA
 <213> Homo sapiens

<400> 296	
atgccacccc	cgcatgaggc
tgagaagcag	atcacagggc
cagaggaggc	ggaccggccc
60	
ccttcaatgt	ccagtcatga
tacagcctct	ccagcggccc
ccagccgcaa	cccctgctgc
120	
ctgtgctggt	gctgctgctg
tagctgctcc	tggaaccaag
agcggcgggc	cgcgtggcag
180	
gcctcccggg	agagcaagct
gcagcccctc	cccagctgtg
aagtatgtgc	cacgccaagt
240	
cctgaggagg	tgagagctg
ggcgcagtct	tttgacaagc
tgatgcacag	cccagcggga
300	
cgcagcgtgt	tccgggcgtt
cctgcggaca	gagtacagcg
aggagaacat	gctcttctgg
360	
ttggcctgcg	aggagctgaa
ggccgaggcc	aaccagcatg
tggtagacga	gaaggcgagg
420	
ctcatctacg	aggactacgt
atccatcctg	tcccccaagg
aggtgagcct	ggactcccgt
480	
gtgcgggagg	gcatcaacaa
gaagatgcag	gagccgtccg
cacacacgtt	cgacgacgcg
540	
cagctgcaga	tctacacgct
catgcaccgg	gactcctacc
cccgttccct	cagctctccc
600	
acctaccgtg	ccctgctgct
gcagggggcca	tcacagtcct
cctccgaggc	ctag
654	

<210> 297
 <211> 576
 <212> DNA
 <213> Homo sapiens

<400> 297
 atgcagagca tcaagtgcgt ggtggtgggt gatggggctg tgggcaagac gtgcctgctc 60
 atctgtctaca caactaacgc tttcccaaaa gagtacatcc ccaccgtgtt cgacaattac 120
 agcgcgcaga gcgcagttga cgggcgcaca gtgaacctga acctgtggga cactgcgggc 180
 caggaggagt atgaccgcct ccgtacactc tcctaccctc agaccaacgt tttcgtcatc 240
 tgtttctcca ttgccagtcc gccgtcctat gagaacgtgc ggcacaagtg gcatccagag 300
 gtgtgccacc actgccctga tgtgcccata ctgctggtgg gcaccaagaa ggacctgaga 360
 gccagcctg acaccctacg gcgcctcaag gaggcgggc aggcgcccac cacaccgcag 420
 cagggccagg cactggccaa gcagatccac gctgtgcgt acctcgaatg ctcagccctg 480
 caacaggatg gtgtcaagga agtggtcgcc gaggctgtcc gggctgtgct caaccccacg 540
 ccgatcaagc gtgggcggtc ctgcatcctc ttgtga 576

<210> 298
 <211> 2958
 <212> DNA
 <213> Homo sapiens

<400> 298
 atgatccgac acgccggggc gccgcgcgc ggggaccca cgggtccggt tccagttgtt 60
 ggcaaaggag aggaagagga agaggaagat ggcatgcggc tttgtctgcc agccaacccg 120
 aaaaactgcc ttcctaccg ccggggcatc agcatcctgg agaagctcat caaaacatgc 180
 ccggtgtggc tgcagctgag tctgggccag gcagaggtgg ccaggatcct gcaccgggtg 240
 gtggctggga tgttcttgt tgcggggac agcagctcga agcagctggt gctctgtgtc 300
 cactttcctt ctctgaacga aagctcggc gaggtgctcg aatacaccat taaggaagaa 360
 aagtcgatat tgtacctgga aggtcggct cttgtgtttg aggacatctt cagattgatt 420
 gcgttctact gtgtcagtag agacttactg cccttcacac tgcggctacc ccaggccatc 480
 cttgaggcca gcagcttcac ggaccttgag accatcgcca acctgggtct gggtttctgg 540
 gactcctcgc tgaatcctcc acaagaaaga gggaagccag cagagcccc aagagaccgg 600
 gccccggat tccccctagt ctccagctc agggccacag cccatgacgc aaactgtgcc 660
 tgtgaaatcg agctgtcggg aggaaatgac cgcctgtggt ttgtgaatcc tattttcatc 720
 gaggactgca gcagcgcct gccaccgac cagccacctc ttggaaattg ccctgcacgc 780
 cctttgccgc ccacctctga tgccacctca cccacctcca ggtgggcccc acgccgcca 840
 ccacccctc cccagtgct gccctgcag ccctgcagcc cagcccagcc ccctgtgctc 900
 cctgtcttg ccccgcccc tgctgtcct ttgcccact cccccagt gcctgcccc 960
 cacgtcacac cccatgcccc aggtcccca gaccatccga accagccgcc catgatgacc 1020

tgcgagagac	tcccatgccc	cactgcaggc	ctgggcccc	tcagggagga	agcgatgaag	1080
ccaggggcag	cctccagtcc	cttgacagc	gtccccgccc	cgccactgcc	tgcgaagaag	1140
aaccttccca	ctgcccctcc	cagacgccgc	gtttccgaga	gggtgtcctt	agaagaccaa	1200
agtccgggga	tggcggcaga	gggggaccag	ctcagcctgc	ctccccaagg	gacctcagac	1260
ggccctgagg	acacgccccg	ggagagcacg	gagcaaggcc	aggacacaga	ggtgaaagcc	1320
agcgatcctc	acagcatgcc	agagctgccc	aggacagcca	aacaaccccc	agtcccgccc	1380
cccaggaaaa	aacggatctc	tcgacaactg	gcctcgaccc	tcccagctcc	cttagagaac	1440
gctgagctct	gcacacaggc	gatggccttg	gagacaccca	cgccgggtcc	accagagag	1500
ggccaaagcc	ctgcttctca	ggctgggact	cagcaccctc	ctgcccaggc	cactgcccac	1560
tcccagagct	ctccagagtt	caagggctcc	ctggcctccc	tctcagacag	cttgggggtg	1620
tctgtcatgg	ccaccgacca	ggactcctac	tccaccagca	gcacggagga	ggagctggag	1680
cagttcagca	gccccagcgt	gaagaagaag	ccctccatga	tcctgggcaa	ggctcggcac	1740
cggctgagct	ttgccagttt	cagcagcatg	ttccacgctt	tcctctcaa	caaccgcaag	1800
ctgtacaaga	aggtggtgga	gctggcgag	gacaagggct	cgtactttgg	cagcctggtg	1860
caggactaca	aggtgtacag	cctggagatg	atggcgcgcc	agacctccag	cacggagatg	1920
ctgcaggaga	ttcgacccat	gatgaccag	ctcaagagct	acctgctgca	gagcaccgag	1980
ctcaaggccc	tgggtgaccc	cgccctgcac	tccgaggagg	agctcgaagc	aattgtagag	2040
tctgccttgt	acaaatgtgt	cctgaagccc	ctgaaggaag	ccatcaactc	atgcctgcat	2100
cagatccaca	gcaaggatgg	ttcgctgcag	cagctcaagg	agaaccagtt	agtgatcctg	2160
gccaccacca	ccactgacct	aggtgtgacc	accagcgtgc	cggaggtgcc	catgatggag	2220
aagatcctgc	agaagtccac	cagcatgcac	aaggcctact	cacctgagaa	gaagatctcc	2280
atcctgctca	agacctgcaa	actcatctac	gactccatgg	ccctcggcaa	cccagggaag	2340
ccctatgggg	cggatgactt	cctgcctgtg	ctcatgtatg	tgctggcccc	cagcaacctc	2400
acggagatgc	ttctcaatgt	ggagtacatg	atggagctca	tggacccgcg	cctgcagctg	2460
ggggaggggt	cctactatct	gaccaccacc	tacggggccc	tggagcacat	caagagctac	2520
gacaagatca	cggtgacccg	gcagctgagt	gtggaggtgc	aggactccat	ccaccgctgg	2580
gagcgccggc	gtactctcaa	caaggcccgg	gcctcccgtc	cctccgtaca	ggacttcac	2640
tgcgtgtcgt	acctggagcc	cgagcagcag	gcgcggacgc	tggcgctcgcg	ggcggacacc	2700
caggcccagg	cgctgtgcgc	gcagtgcgcg	gagaagttcg	cgggtggagcg	gccgcaggcg	2760
caccggctgt	tcgtgctggt	ggacgggcgc	tgcttccagc	tggcggacga	cgcgctgccg	2820
cactgcatca	agggctacct	gctgcgcagc	gagcccaagc	gcgacttcca	ctttgtctac	2880
cggcccctgg	acgggtggtg	cggcggcggc	ggcgggagcc	cgccctgcct	ggtggtgcgg	2940
gagcccaact	tcctgtga					2958

<210> 299
 <211> 771
 <212> DNA
 <213> Homo sapiens

<400> 299
 atgcgccctg cagccctgcg cggggccctg ctgggctgcc tctgcctggc gttgctttgc 60
 ctgggcggtg cggacaagcg cctgcgtgac aaccatgagt ggaaaaaact aattatggtt 120
 cagcactggc ctgagacagt atgcgagaaa attcaaaacg actgtagaga ccctccggat 180
 tactggacaa tacatggact atggcccgat aaaagtgaag gatgtaatag atcgtggccc 240
 ttcaatttag aagagattaa ggatcttttg ccagaaatga gggcactactg gcctgacgta 300
 attcactcgt ttcccaatcg cagccgcttc tggaagcatg agtgggaaaa gcatgggacc 360
 tgcgccgccc aggtggatgc gctcaactcc cagaagaagt actttggcag aagcctggaa 420
 ctctacaggg agctggacct caacagtgtg cttctaaaat tggggataaa accatccatc 480
 aattactacc aagttgcaga ttttaaagat gcccttgcca gagtatatgg agtgataccc 540
 aaaatccagt gccttccacc aagccaggat gaggaagtac agacaattgg tcagatagaa 600
 ctgtgcctca ctaagcaaga ccagcagctg caaaactgca ccgagccggg ggagcagccg 660
 tcccccaagc aggaagtctg gctggcaaat ggggccgccc agagccgggg tctgagagtc 720
 tgtgaagatg gccagtcctt ctatcccca cctaaaaaga ccaagcattg a 771

<210> 300
 <211> 1260
 <212> DNA
 <213> Homo sapiens

<400> 300
 atgagctgcg cggggcgggc gggccctgcc cggctcgccg cgctcgccct gctgacctgc 60
 agcctgtggc cggcacgggc agacaacgcg agccaggagt actacacggc gctcatcaac 120
 gtgacggtgc aggagcccg cgcggcgccc ccgctcacgt ttcgcatcga ccgcgggcgc 180
 tacgggcttg actccccaa ggccgaggtc cgcggccagg tgctggcgcc gctgccctc 240
 cacggagttg ctgatcatct gggctgtgat ccacaaacc ggttctttgt ccctcctaata 300
 atcaaacagt ggattgcctt gctgcagagg ggaaactgca cgtttaaaga gaaaatatca 360
 cgggcccgtt tccacaatgc agttgctgta gtcacttaca ataataaatc caaagaggag 420
 ccagttacca tgactcatcc aggcactgga gatattattg ctgtcatgat aacagaattg 480
 aggggtaagg atatttttag ttatctggag aaaaacatct ctgtacaaat gacaatagct 540
 gttggaactc gaatgccacc gaagaacttc agccgtggct ctctagtctt cgtgtcaata 600
 tcctttattg ttttgatgat ttttcttca gcatggctca tattctactt cattcagaag 660
 atcaggtaca caaatgcacg cgacaggaac cagcgtcgtc tcggagatgc agccaagaaa 720
 gccatcagta aattgacaac caggacagta aagaagggtg acaaggaaac tgaccagac 780
 tttgatcatt gtgcagtctg catagagagc tataagcaga atgatgtcgt ccgaattctc 840
 ccctgcaagc atgttttcca caaatcctgc gtggatccct ggcttagtga acattgtacc 900

tgtcctatgt gcaaacttaa tatattgaag gccctgggaa ttgtgccgaa tttgccatgt	960
actgataacg tagcattcga tatggaaagg ctcaccagaa cccaagctgt taaccgaaga	1020
tcagccctcg gcgacctcg cggcgacaac tcccttggcc ttgagccact tcgaacttcg	1080
gggatctcac ctcttcctca ggatggggag ctcactccga gaacaggaga aatcaacatt	1140
gcagtaacaa aagaatgggt tattattgcc agttttggcc tcctcagtgc cctcacactc	1200
tgctacatga tcatcagagc cacagctagc ttgaatgcta atgaggtaga atggttttga	1260

<210> 301
 <211> 693
 <212> DNA
 <213> Homo sapiens

<400> 301	
atgggacagc aaatttcgga tcagacacag ttggttatta acaagttacc agaaaaagta	60
gcaaaacatg ttacgttggg tcgagagagt ggctccttaa cttatgaaga atttcttggg	120
agagtagctg agcttaatga tgtaacggct aaagtggctt ctggccagga aaaacatctt	180
ctctttgagg tacaacctgg gtctgattcc tctgcttttt ggaaagtggg tgtacgggtg	240
gtctgtacca agattaacaa aagcagtggc attgtggagg catcacggat catgaattta	300
taccagttta ttcaacttta taaagatatc acaagtcaag cagcaggagt attggcacag	360
agctccacct ctgaagaacc tgatgaaaac tcctcctctg taacatcttg tcaggctagt	420
ctttggatgg gaaggggtgaa gcagctgacc gatgaggagg agtggtgtat ctgtatggat	480
gggcgggctg acctcatcct gccttgtgct cacagctttt gtcagaagtg tattgataaa	540
tggagtgatc gacacaggaa ttgccctatt tgtcgacctac agatgactgg agcaaatgaa	600
tcttgggtgg tatcagatgc acccactgaa gatgatatgg ctaactatat tcttaacatg	660
gctgatgagg caggccagcc ccacaggcca tga	693

<210> 302
 <211> 1077
 <212> DNA
 <213> Homo sapiens

<400> 302	
atggctggct gtggtgaaat tgatcattca ataaacatgc ttcctacaaa caggaaagcg	60
aacgagtcct gttctaatac tgcaccttct ttaaccgtcc ctgaatgtgc catttgtctg	120
caaacatgtg ttcattccagt cagtctgccc tgtaagcacg ttttctgcta tctatgtgta	180
aaaggagctt catggcttgg aaagcgggtg gctctttgtc gacaagaaat tcccagggat	240
ttccttgaca agccaacctt gttgtcacca gaagaactca aggcagcaag tagaggaaat	300
ggtgaatatg catggtatta tgaaggaaga aatgggtggg ggcagtacga tgagcgact	360
agtagagagc tggaagatgc tttttccaaa ggtaaaaaga aactgaaat gttaattgct	420
ggctttctgt atgtcgtga tcttgaaaac atggttcaat ataggagaaa tgaacatgga	480
cgtcgcagga agattaagcg agatataata gatataccaa agaaggaggt agctggactt	540

PCTAU2016050927-seql-000001-EN-20161013

aggctagact	gtgatgctaa	taccgtaaac	ctagcaagag	agagctctgc	tgacggagcg	600
gacagtgtat	cagcacagag	tggagcttct	gttcagcccc	tagtgtcttc	tgtaaggccc	660
ctaacatcag	tagatgggtca	gttaacaagc	cctgcaacac	catcccctga	tgcaagcact	720
tctctggaag	actcttttgc	tcattttacaa	ctcagtggag	acaacacagc	tgaaaggagt	780
cataggggag	aaggagaaga	agatcatgaa	tcaccatctt	caggcagggg	accagcacca	840
gacacctcca	ttgaagaaac	tgaatcagat	gccagtagtg	atagtgagga	tgtatctgca	900
gttggtgcac	agcactcctt	gaccaaacag	agacttttgg	tttctaatagc	aaaccagaca	960
gtacccgatc	gatcagatcg	atcggaact	gatcgatcag	tagcaggggg	tggaacagtg	1020
agtgtcagtg	tcagatctag	aaggcctgat	ggacagtgca	cagtaactga	agtttaa	1077

<210> 303
 <211> 2199
 <212> DNA
 <213> Homo sapiens

<400> 303	
atggggtccg	agaaggactc cgagtcgccg cgctccacat cgctacatgc ggccgcaccc 60
gaccctaagt	gccgcagcgg cggccggcgc cggcgccctca ccttgccacag cgtcttctct 120
gcctcggccc	gcggccgccg cgcccgggcc aagccgcagg ccgagccgcc gccccggct 180
gcgcagccgc	cgcccgcgcc ggcccctgcc gcggcccagg gcccgccgcc cgaggcgctg 240
cccgccgagc	cggccgccga ggccgaggcg gaggccgcgg cggcgccggc ggagcctggg 300
ttcgacgatg	aggaggcggc ggaggcggt ggcccgggcg cggaggaggt ggagtgtccg 360
ctgtgcctgg	tgcggtgcc gcctgagcgg gcccgcgcc tcctcagctg tccgcaccgc 420
tcgtgccggg	actgcctccg ccactacctg cgcctggaga taagcgagag cagggtgccc 480
atcagctgcc	ccgagtgcag cgagcgactc aaccgcacg acatccgctt gctgctgcc 540
gacccgccgc	ttatgcacaa gtacgaggag ttcatgtgc gccgctacct agcctcggac 600
cccgactgcc	gctggtgccc ggcccggac tgcggttatg ctgttattgc ctatggctgt 660
gccagctgcc	cgaagctaac ttgtgagagg gaaggttgcc agactgagtt ctgctaccac 720
tgcaagcaga	tatggcatcc aaatcagaca tgcgatatgg ccgctcaaca gagggccag 780
actttacgag	ttcggaccaa acacacttca ggtctcagtt atgggcaaga atctggacca 840
gcagatgaca	tcaagccatg ccacgatgc agtgcatata ttatcaagat gaatgatgga 900
agctgtaatc	acatgacctg tgcagtgtgt ggctgtgaat tctgttggct ttgtatgaaa 960
gagatctcag	acttgcatca cctcagcccc tctggctgta cattctgggg caagaagcca 1020
tggagccgta	agaagaaaat tctttggcag ctgggcacgt tgattggtgc tccagtgggg 1080
atttctctca	ttgctggcat tgccattcct gccatggtca ttggcattcc tgtttatgtt 1140
ggaaggaaga	ttcacagcag gtatgaggga aggaaaacct ccaaacacaa gaggaatttg 1200
gctatcactg	gaggagtgc tttgtcggtc attgcatccc cagttattgc tgcagttagt 1260

gttgggtattg	gtgtcccat	tatgctggca	tatgtttatg	gggttggtgcc	catttctctt	1320
tgtcgtggag	gcggctgtgg	agttagcaca	gccaacggaa	aaggagtga	aattgaattt	1380
gatgaagatg	atggccaat	cacagtggca	gatgcctgga	gagccctcaa	gaatcccagc	1440
attggggaaa	gcagcattga	aggcctgact	agtgtattga	gcactagtgg	aagccctaca	1500
gatggactta	gtgttatgca	aggtccttac	agcgaaacgg	ccagctttgc	agccctctca	1560
gggggcacgc	tgagtggcgg	cattctctcc	agtggcaagg	gaaaatatag	cagggttagaa	1620
gttcaagccg	atgtccaaa	ggaaattttc	cccaaagaca	cagccagtct	tggtgcaatt	1680
agtgacaacg	caagcactcg	tgctatggcc	ggttcataa	tcagttccta	caaccacag	1740
gacagagaat	gcaacaatat	ggaaatccaa	gtggacattg	aagccaaacc	aagccactat	1800
cagctggtga	gtggaagcag	cacggaggac	tcgctccatg	ttcatgctca	gatggcagag	1860
aatgaagaag	aaggtagtgg	tggcggaggc	agtgaagagg	atccccctg	cagacaccaa	1920
agctgtgaac	agaaagactg	cctggccagc	aaaccttggg	acatcagcct	ggcccagcct	1980
gaaagcatcc	gcagtgcct	agagagttct	gatgcacagt	cagacgatgt	gccagacatc	2040
acctcagatg	agtgtggctc	ccccgctcc	catactgcag	cctgcccctc	gacccccaga	2100
gccaaggtg	caccgagccc	aagtgcccat	atgaacctct	ctgccctagc	cgagggacaa	2160
actgtcttga	agccagaagg	tggagaagcc	agagtatga			2199

<210> 304
 <211> 654
 <212> DNA
 <213> Homo sapiens

<400> 304	
atgagcagca	aagtctctcg cgacaccctg tacgaggcgg tgcgggaagt cctgcacggg 60
aaccagcgca	agcgccgcaa gttcctggag acggtggagt tgcagatcag cttgaagaac 120
tatgatcccc	agaaggacaa gcgcttctcg ggcaccgtca ggcttaagtc cactccccgc 180
cctaagtctt	ctgtgtgtgt cctgggggac cagcagcact gtgacgaggc taaggccgtg 240
gatatcccc	acatggacat cgaggcgctg aaaaaactca acaagaataa aaaactggtc 300
aagaagctgg	ccaagaagta tgatgcgttt ttggcctcag agtctctgat caagcagatt 360
ccacgaatcc	tcggcccagg tttaaataag gcaggaaagt tcccttcctt gctcacacac 420
aacgaaaaca	tggtggccaa agtggatgag gtgaagtcca caatcaagtt ccaaatgaag 480
aaggtgttat	gtctggctgt agctgttggc cacgtgaaga tgacagacga tgagcttgtg 540
tataacattc	acctggctgt caacttcttg gtgtcattgc tcaagaaaaa ctggcagaat 600
gtccgggcct	tatatatcaa gagcaccatg ggcaagcccc agcgctata ttaa 654

<210> 305
 <211> 387
 <212> DNA
 <213> Homo sapiens

<400> 305

PCTAU2016050927-seq1-000001-EN-20161013

atggctcctg	tgaaaaagct	tgtggtgaag	gggggcaaaa	aaaagaagca	agttctgaag	60
ttcactcttg	attgcacca	ccctgtagaa	gatggaatca	tgatgctgc	caatcttgag	120
cagtttttgc	aagaaaggat	caaagtgaac	ggaaaagctg	ggaaccttgg	tggaggggtg	180
gtgaccatcg	aaaggagcaa	gagcaagatc	accgtgacat	ccgaggtgcc	tttctccaaa	240
aggtatttga	aatatctcac	caaaaaatat	ttgaagaaga	ataatctacg	tgactggttg	300
cgcgtagttg	ctaacagcaa	agagagttac	gaattacgtt	acttccagat	taaccaggac	360
gaagaagagg	aggaagacga	ggattaa				387

<210> 306
 <211> 2208
 <212> DNA
 <213> Homo sapiens

<400> 306	
atgccgctcg	cccagctcaa ggagccctgg ccgctcatgg agctagtgcc tctggacccg 60
gagaatggac	agacctcagg ggaagaagct ggacttcagc cgtccaagga tgagggcgctc 120
ctcaaggaga	tctccatcac gcaccacgtc aaggctggct ctgagaaggc tgatccatcc 180
catttcgagc	tcctcaaggt tctggggccag ggatcctttg gcaaagtctt cctggtgcgg 240
aaagtcaccc	ggcctgacag tgggcacctg tatgctatga aggtgctgaa gaaggcaacg 300
ctgaaagtac	gtgaccgct ccggaccaag atggagagag acatcctggc tgatgtaaat 360
caccattcg	tggtgaagct gcactatgcc ttccagaccg agggcaagct ctatctcatt 420
ctggacttcc	tgcgtggtgg ggacctctt acccggtctt caaaagaggt gatgttcacg 480
gaggaggatg	tgaagtttta cctggctgag ctggctctgg gcctggatca cctgcacagc 540
ctgggtatca	tttacagaga cctcaagcct gagaacatcc ttctggatga ggagggccac 600
atcaaactca	ctgacttttg cctgagcaaa gaggccattg accacgagaa gaaggcctat 660
tctttctgcg	ggacagtgga gtacatggcc cctgaggtcg tcaaccgcca gggccactcc 720
catagtgcgg	actggtggtc ctatggggtg ttgatgtttg agatgctgac gggctccctg 780
cccttccagg	ggaaggaccg gaaggagacc atgacactga ttctgaaggc gaagctaggc 840
atgccccagt	ttctgagcac tgaagcccag agcctcttgc gggccctgtt caagcggaat 900
cctgccaacc	ggctcggctc cggccctgat ggggcagagg aaatcaagcg gcatgtcttc 960
tactccacca	ttgactggaa taagctatac cgtcgtgaga tcaagccacc cttcaagcca 1020
gcagtggctc	agcctgatga caccttctac tttagaccg agttcacgtc ccgcacaccc 1080
aaggattccc	caggcatccc cccagcgct ggggccatc agctgttccg gggcttcagc 1140
ttcgtggcca	ccggcctgat ggaagacgac ggcaagcctc gtgccccgca ggcacccctg 1200
cactcgggtg	tacagcaact ccatgggaag aacctggttt ttagtgacgg ctacgtggta 1260
aaggagacaa	ttggtgtggg ctctactct gagtgcaagc gctgtgtcca caaggccacc 1320
aacatggagt	atgctgtcaa ggtcattgat aagagcaagc gggatccttc agaagagatt 1380
gagattcttc	tgcggtatgg ccagcacccc aacatcatca ctctgaaaga tgtgtatgat 1440

PCTAU2016050927-seq1-000001-EN-20161013

gatggcaaac	acgtgtacct	ggtgacagag	ctgatgcggg	gtggggagct	gctggacaag	1500
atcctgcggc	agaagttctt	ctcagagcgg	gaggccagct	ttgtcctgca	caccattggc	1560
aaaactgtgg	agtatctgca	ctcacagggg	gttgtgcaca	gggacctgaa	gccagcaac	1620
atcctgtatg	tggacgagtc	cgggaatccc	gagtgcctgc	gcattctgtga	ctttggtttt	1680
gccaaacagc	tgcgggctga	gaatgggctc	ctcatgacac	cttgctacac	agccaacttt	1740
gtggcgcctg	aggtgctgaa	gcgccagggc	tacgatgaag	gctgcgacat	ctggagcctg	1800
ggcattctgc	tgtacaccat	gctggcagga	tatactccat	ttgccaacgg	tcccagtgac	1860
acaccagagg	aaatcctaac	ccggatcggc	agtgggaagt	ttaccctcag	tgggggaaat	1920
tggaacacag	tttcagagac	agccaaggac	ctggtgtcca	agatgctaca	cgtggatccc	1980
caccagcgcc	tcacagctaa	gcaggttctg	cagcatccat	gggtcaccca	gaaagacaag	2040
cttcccaaaa	gccagctgtc	ccaccaggac	ctacagcttg	tgaagggagc	catggctgcc	2100
acgtactccg	cactcaacag	ctccaagccc	acccccagc	tgaagcccat	cgagtcatcc	2160
atcctggccc	agcggcgagt	gaggaagttg	ccatccacca	ccctgtga		2208

<210> 307
 <211> 2223
 <212> DNA
 <213> Homo sapiens

<400> 307						
atgccgctgg	cgagctggc	ggacccgtgg	cagaagatgg	ctgtggagag	cccgtccgac	60
agcgctgaga	atggacagca	aattatggat	gaacctatgg	gagaggagga	gattaaccca	120
caaaactgaag	aagtcagtat	caaagaaatt	gcaatcacac	atcatgtaaa	ggaaggacat	180
gaaaaggcag	atccttccca	gtttgaactt	ttaaaagtat	tagggcaggg	atcatttgga	240
aaggttttct	tagttaaaaa	aatctcaggc	tctgatgcta	ggcagcttta	tgccatgaag	300
gtattgaaga	aggccacact	gaaagttcga	gaccgagttc	ggacaaaaat	ggaacgtgat	360
atcttggtag	aggtaaatca	tccttttatt	gtcaagttgc	attatgcttt	tcaaactgaa	420
gggaagttgt	atcttatctt	ggattttctc	aggggaggag	atttgtttac	acgcttatcc	480
aaagaggtga	tgttcacaga	agaagatgtc	aaattctact	tggctgaact	tgcacttgct	540
ttagaccatc	tacatagcct	gggaataatt	tatagagact	taaaaccaga	aaatatactt	600
cttgatgaag	aaggtcacat	caagttaaca	gatttcggcc	taagtaaaga	gtctattgac	660
catgaaaaga	aggcatattc	tttttgtgga	actgtggagt	atatggctcc	agaagtagtt	720
aatcgctcag	gtcatactca	gagtgtgac	tggtggtctt	ttggtgtgtt	aatgtttgaa	780
atgcttactg	gtacactccc	ttccaagga	aaagatcgaa	aagaaacaat	gactatgatt	840
cttaaagcca	aacttggaat	gccacagttt	ttgagtcctg	aagcgcagag	tcttttacga	900
atgcttttca	agcgaaatcc	tgcaaacaga	ttaggtgcag	gaccagatgg	agttgaagaa	960
attaaaagac	attcattttt	ctcaacgata	gactggaata	aactgtatag	aagagaaatt	1020

catccgccat ttaaacctgc aacgggcagg cctgaagata cattctatctt tgatcctgag	1080
tttactgcaa aaactcccaa agattcacct ggcattccac ctagtgctaa tgcacatcag	1140
ctttttcggg gggttagttt tgttgctatt acctcagatg atgaaagcca agctatgcag	1200
acagttggtg tacattcaat tgttcagcag ttacacagga acagtattca gtttactgat	1260
ggatatgaag taaaagaaga tattggagtt ggctcctact ctgtttgcaa gagatgtata	1320
cataaagcta caaacatgga gtttgacgtg aagattattg ataaaagcaa gagagaccca	1380
acagaagaaa ttgaaattct tcttcgttat ggacagcatc caaacattat cactctaaag	1440
gatgtatatg atgatggaaa gtatgtgtat gtagtaacag aacttatgaa aggaggtgaa	1500
ttgctggata aaattccttag acaaaaattt ttctctgaac gagaggccag tgctgtcctg	1560
ttcactataa ctaaaaccgt tgaatatctt cacgcacaag ggggtggttca tagagacttg	1620
aaacctagca acattcttta tgtggatgaa tctggttaac cggaatctat tcgaatttgt	1680
gattttggct ttgcaaaaca gctgagagcg gaaaatggct ttctcatgac tccttggttac	1740
actgcaaatt ttgttgacc agaggtttta aaaagacaag gctatgatgc tgcttgatgat	1800
atatggagtc ttggtgtcct actctataca atgcttaccg gttacactcc atttgcaaat	1860
ggctcctgatg atacaccaga ggaaatattg gcacgaatag gtagcggaaa attctcactc	1920
agtgggtggt actggaattc tgtttcagac acagcaaagg acctggtgtc aaagatgctt	1980
catgtagacc ctcatcagag actgactgct gctcttgctc tcagacatcc ttggatcgtc	2040
cactgggacc aactgccaca ataccaacta aacagacagg atgcaccaca tctagtaaag	2100
ggtgccatgg cagctacata ttctgctttg aaccgtaatc agtcaccagt tttggaacca	2160
gtaggccgct ctactcttgc tcagcggaga ggtattaaaa aaatcacctc aacagccctg	2220
tga	2223

<210> 308
 <211> 1086
 <212> DNA
 <213> Homo sapiens

<400> 308	
atgtgggtgc ttacacctgc tgcttttgct gggaagctct tgagtgtgtt caggcaacct	60
ctgagctctc tgtggaggag cctgggtccc ctgttctgct ggctgagggc aaccttctgg	120
ctgctagcta ccaagaggag aaagcagcag ctggctcctga gagggccaga tgagacaaaa	180
gaggaggaag aggaccctcc tctgcccacc accccaacca gcgtcaacta tcacttcact	240
cgccagtgca actacaaatg cggcttctgt ttccacacag ccaaaacatc ctttgctgtg	300
ccccttgagg aagcaaagag aggattgctt ttgcttaagg aagctgggtat ggagaagatc	360
aacttttcag gtggagagcc atttcttcaa gaccggggag aatacctggg caagttgggtg	420
aggttctgca aagtagagtt gcggctgccc agcgtgagca tcgtgagcaa tggaagcctg	480
atccgggaga ggtggttcca gaattatggt gagtatttgg acattctcgc tatctcctgt	540
gacagctttg acgaggaagt caatgtcctt attggccgtg gccaaggaaa gaagaacccat	600

PCTAU2016050927-seql-000001-EN-20161013

gtggaaaacc ttcaaaagct gaggaggtgg tgtagggatt atagagtcgc tttcaagata	660
aattctgtca ttaatcgttt caacgtggaa gaggacatga cggaacagat caaagcacta	720
aacctgtcc gctggaaagt gttccagtgc ctcttaattg agggtgagaa ttgtggagaa	780
gatgctctaa gagaagcaga aagatttggt attggtgatg aagaatttga aagattcttg	840
gagcgccaca aagaagtgtc ctgcttggtg cctgaatcta accagaagat gaaagactcc	900
taccttattc tggatgaata tatgcgcttt ctgaactgta gaaagggacg gaaggaccct	960
tccaagtcca tcctggatgt tgggtgtagaa gaagctataa aattcagtgg atttgatgaa	1020
aagatgtttc tgaagcgagg aggaaaatac atatggagta aggctgatct gaagctggat	1080
tggtag	1086

<210> 309
 <211> 711
 <212> DNA
 <213> Homo sapiens

<400> 309 atggcggagc cgtcggcggc cactcagtcc cattccatct cctcgtcgtc cttcggagcc	60
gagccgtccg cgcccggcgg cggcgggagc ccaggagcct gccccgccct ggggacgaag	120
agctgcagct cctcctgtgc ggtgcacgat ctgattttct ggagagatgt gaagaagact	180
gggtttgtct ttggcaccac gctgatcatg ctgctttccc tggcagcttt cagtgtcatc	240
agtgtggttt cttacctcat cctggctctt ctctctgtca ccatcagctt caggatctac	300
aagtccgtca tccaagctgt acagaagtca gaagaaggcc atccattcaa agcctacctg	360
gacgtagaca ttactctgtc ctcagaagct ttccataatt acatgaatgc tgccatggtg	420
cacatcaaca gggccctgaa actcattatt cgtctctttc tggtagaaga tctggttgac	480
tccttgaagc tggctgtctt catgtggctg atgacctatg ttggtgctgt ttttaacgga	540
atcacccctc taattcttgc tgaactgtc attttcagtg tcccgattgt ctatgagaag	600
tacaagaccc agattgatca ctatgttggc atcgcccag atcagaccaa gtcaattggt	660
gaaaagatcc aagcaaaact ccctggaatc gccaaaaaaa aggcagaata a	711

<210> 310
 <211> 741
 <212> DNA
 <213> Homo sapiens

<400> 310 atggtttag atttctggac ttgggagcag acatttcaag aactaatcca agaggcaaaa	60
ccccgggcca catggacgct gaagttggat ggcaaccttc agctagactg cctggctcaa	120
gggtggaagc aataccaaca gagagcattt ggctggttcc ggtgttcctc ctgccagcga	180
agttgggctt ccgccaagt gcagattctg tgccacacgt actgggagca ctggacatcc	240
cagggtcagg tgcgtatgag gctctttggc caaaggtgcc agaagtgtc ctggtcccaa	300
tatgagatgc ctgagttctc ctcggatagc accatgagga ttctgagcaa cctggtgcag	360

PCTAU2016050927-seql-000001-EN-20161013

catatactga agaaatacta tggaaatggc acgaggaagt ctccagaaat gccagtaatc	420
ctggaagtgt ccctggaagg atcccatgac acagccaatt gtgaggcatg cactttgggc	480
atctgtggac agggcttaaa aagctgcatg acaaagccgt ccaaatccct actccccac	540
ctaaagactg ggaattcctc acctggaatt ggtgctgtgt acctcgcaaa ccaagccaag	600
aaccagtcag ctgaggcaaa agaggctaag gggagtgggt atgagaaatt agggcccagt	660
cgagaccag atccactgaa catctgtgtc tttattttgc tgcttgatt tattgtagtc	720
aatgcttta catcagaatg a	741

<210> 311
 <211> 1389
 <212> DNA
 <213> Homo sapiens

<400> 311	
atggacacca aacatttcct gccgctcgat ttctccaccc aggtgaactc ctccctcacc	60
tccccgacgg ggcgaggctc catggctgcc ccctcgctgc acccgtcctt ggggcctggc	120
atcggctccc cgggacagct gcattctccc atcagcacc ctagctcccc catcaacggc	180
atggggccgc ctttctcggt catcagctcc cccatgggccc cccactccat gtcggtgccc	240
accacaccca ccctgggctt cagcactggc agccccagc tcagctcacc tatgaacccc	300
gtcagcagca gcgaggacat caagcccccc ctgggcctca atggcgctct caaggtcccc	360
gccaccccct caggaaacat ggcttccttc accaagcaca tctgcgccat ctgcggggac	420
cgctcctcag gcaagcacta tggagtgtac agctgcgagg ggtgcaaggg cttcttcaag	480
cggacggtgc gcaaggacct gacctacacc tgccgcgaca acaaggactg cctgattgac	540
aagcggcagc ggaaccggtg ccagtactgc cgctaccaga agtgccctggc catgggcatg	600
aagcgggaag ccgtgcagga ggagcggcag cgtggcaagg accggaacga gaatgaggtg	660
gagtcgacca gcagcgccaa cgaggacatg ccggtggaga ggatcctgga ggctgagctg	720
gccgtggagc ccaagaccga gacctacgtg gaggcaaaca tggggctgaa cccagctcg	780
ccgaacgacc ctgtcaccaa catttgccaa gcagccgaca aacagctttt caccctggtg	840
gagtgggcca agcggatccc acacttctca gagctgcccc tggacgacca ggtcatcctg	900
ctgcgggcag gctggaatga gctgctcatc gcctccttct cccaccgctc catcgccgtg	960
aaggacggga tcctcctggc caccgggctg cacgtccacc ggaacagcgc ccacagcgca	1020
ggggtgggcg ccatctttga cagggtgctg acggagcttg tgtccaagat gcgggacatg	1080
cagatggaca agacggagct gggctgcctg cgcgccatcg tcctctttta ccctgactcc	1140
aaggggctct cgaacccggc cgagggtgag gcgctgaggg agaaggctta tgcgtccttg	1200
gaggcctact gcaagcacia gtaccagag cagccgggaa ggttcgctaa gctcttgctc	1260
cgctgccgg ctctgcgctc catcgggctc aaatgcctgg aacatctctt cttcttcaag	1320
ctcatcgggg acacacccat tgacaccttc cttatggaga tgctggaggc gccgcaccaa	1380

atgacttag

1389

<210> 312
 <211> 954
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)..(2)
 <223> n is a, c, g, or t

<400> 312
 nngcttcctg cgccccgccg gcccccttccc ggggcgccgc cgccaccgcc tgggtgtgcga 60
 ggctatccgg cccggggccc gggcttgacg ggtgccagtg ggggcgcccg gttcccttcc 120
 tcgctctctc ttccagtccc cggaaagggt ggggtgggtgg tctcccagac gaagtttcca 180
 gcaactggatt cctgcgaaat tacgacggct caccgcgcgc tgtgttttgc tgtctctccc 240
 ccgttttcct gtcctctgcc tcttccctcc cttttccccc actctccact cctcggaagg 300
 ccaaaaagac aagcgaacc tgccgcagac gaagggtttt gggattgtag cgtctgcacc 360
 ttcagaaaca gtgctgaagc ctttaaagtc agcatctgcg atgtgaggaa aggcacctcc 420
 accagaaaac ctcgatcaa ttctcagctg gtggcacaac aagtggcaca acagtatgcc 480
 accccaccac cccctaaaaa ggagaagaag gagaaagttg aaaagcagga caaagagaaa 540
 cctgagaaaag acaaggaaat tagtcctagt gttaccaaga aaaataccaa caagaaaacc 600
 aaaccaaagt ctgacattct gaaagatcct cctagtgaag caaacagcat acagtctgca 660
 aatgctacaa caaagaccag cgaaacaaat cacacctcaa ggccccggct gaaaaacgtg 720
 gacaggagca ctgcacagca gttggcagta actgtgggca acgtcaccgt cattatcaca 780
 gactttaagg aaaagactcg ctctcatcg acatcctcat ccacagtgc ctccagtgc 840
 gggtcagaac agcagaacca gagcagctcg gggtcagaga gcacagacaa gggctcctcc 900
 cgttcctcca cgccaaaggc cgacatgtca gcagtcaatg atgaatcttt ctga 954

<210> 313
 <211> 2862
 <212> DNA
 <213> Homo sapiens

<400> 313
 atggcgagga ctctgcccgg gtcgggagac tcgggccctg gcacggcttc tctcgccccg 60
 ggcgttgagg agactgggac gaggcggctc agcgagctgc gggatgatcga tctgcgggag 120
 gagctgaaga agcggaaact ggacacgggc ggcaacaaga gcgtcctgat ggagcggctc 180
 aagaaggcgg ttaaagaaga ggggcaagat cctgatgaaa ttggcatcga gttagaagcc 240
 accagcaaga agtcagccaa gagatgtgtt aaaggactga agatggagga ggaaggcaca 300
 gaagataatg gcctggaaga cgattccaga gacgggcagg aggacatgga agcaagtctg 360
 gagaacctgc agaatatggg catgatggac atgagtgtgc tagacgaaac tgaagtggcg 420

aatagcagtg	ctccagattt	tggggaggat	ggcacggacg	gccttctcga	ttccttttgt	480
gatagtaaag	aatacgtggc	tgcacagctg	agacagctcc	cggctcagcc	cccagagcat	540
gctgtggatg	gggaaggatt	taagaacact	ttggaaactt	catcgttgaa	cttcaaagta	600
actccggaca	ttgaagaatc	ccttttggag	ccagaaaatg	agaaaatact	cgacattttg	660
ggggaaactt	gtaaatctga	gccagtaaaa	gaagaaagtt	ccgagctgga	gcagccattt	720
gcacaggaca	caagtagcgt	ggggccagac	agaaagcttg	cggaggaaga	ggacctattt	780
gacagcgccc	atccggaaga	gggtgattta	gatttggcca	gcgagtcaac	agcacacgct	840
cagtcgagca	aggcagacag	cctgttagcg	gtagtgaaaa	gggagcccgc	ggagcagcca	900
ggcgtggcg	agaggacgga	ctgtgagcct	gtagggctag	agccggcagt	tgagcagagt	960
agtgcggcct	ccgagctcgc	ggaggcctct	agcgaggagc	tcgcagaagc	acccacggaa	1020
gccccaaagg	cagaagccag	agatagcaaa	gaagacggga	ggaagtttga	ttttgacgct	1080
tgtaatgaag	tccctccggc	tcctaaagag	tcctcaacca	gtgagggcgc	tgatcagaaa	1140
atgagctctt	ttaaggaaga	aaaagatata	aagccaatca	ttaaagatga	aaaaggctcg	1200
gtcggcagcg	gttctggtcg	gaacctgtgg	gtcagcgggc	tgtcctccac	aacacgcgct	1260
acggatctca	agaacctttt	cagcaagtat	gggaagggtt	tcggggccaa	agtggtaacg	1320
aacgcccgca	gcccgggggc	tcgatgctat	ggattcgtca	ccatgtcgac	atctgacgag	1380
gcgaccaagt	gcatcagcca	tctccacaga	actgagctgc	atggacgaat	gatctccgta	1440
gagaaggcca	aaaatgagcc	tgctgggaaa	aagctttccg	acagaaaaga	gtgcgaagtg	1500
aagaaggaaa	aattatcgag	tgtcgacaga	catcattctg	tggagatcaa	aattgaaaaa	1560
actgtaatta	agaaggaaga	gaagattgag	aagaaggagg	aaaaaaagcc	tgaagacatt	1620
aagaaggaag	aaaaagacca	ggatgagctg	aaacccggac	ctacaaatcg	gtctagagtc	1680
accaaatacag	gaagcagagg	aatggagcgg	acggtcgtga	tggataaatc	gaaaggagag	1740
cccgtcatta	gcgtgaaaac	cacaagcagg	tccaaagaga	gaagctccaa	gagtcaggat	1800
cgcaagtcag	aaagcaaaga	aaagagagac	atcttgtcgt	ttgataaaat	caaagaacaa	1860
agggagagag	agcgccagag	gcagcgggaa	cgggagatcc	gcgaaacgga	gaggcggcgg	1920
gagcgcgagc	agcgggagcg	ggagcaacgc	ctcagggcct	tccatgagcg	gaaggagaag	1980
gcccggctac	agcgggaacg	cctgcagctc	gagtgccagc	gccagcggct	ggagcgggag	2040
cgcatggagc	gggagcggct	ggagcgcgag	cgcatgcgcg	tggagcgtga	gcgcaggaag	2100
gagcaggagc	gcatccaccg	cgagcgcgag	gagctgcggc	gccagcagga	gcagctgcgt	2160
tacgagcagg	agcggcggcc	cgggcggagg	ccctacgacc	tggaccgacg	agatgatgcc	2220
tattggccag	aaggaaagcg	tgtggcaatg	gaggaccgat	atcgtgcaga	ctttccccgg	2280
ccagaccacc	gctttcacga	cttcgatcat	cgagaccggg	gccagtacca	ggaccacgcc	2340
atcgacaggc	gggagggttc	gaggccaatg	atgggagacc	accgggatgg	gcagcactat	2400
ggagatgacc	gccatggcca	cggaggaccc	ccagagcgcc	acggccggga	ctcccgtgat	2460

ggctgggggg	gctacggctc	cgacaagagg	ctgagtgaag	gccgggggct	gccccctccc	2520
cccaggggtg	gccgtgactg	gggagagcac	aaccagcggc	tagaggagca	ccaggcacgc	2580
gcctggcagg	gtgccatgga	cgcaggcgcg	gctagccggg	agcacgccag	gtggcaaggt	2640
ggcgagaggg	gcctgtcttg	gccctcgggg	ccggggcaca	tggcaagccg	cggtggagtg	2700
gcggggcgag	gcggctttgc	acaaggtgga	cattcccagg	gccacgtggt	gccaggtggc	2760
ggactggaag	gtggcggagt	ggccagccag	gaccggggca	gcagagtccc	tcacccacac	2820
cctcatcccc	ccccgtaccc	ccacttcacc	cgccgctact	aa		2862

<210> 314
 <211> 2292
 <212> DNA
 <213> Homo sapiens

<400> 314						
atggatcatt	tgaacgaggc	aactcagggg	aaagaacatt	cagaaatgtc	taacaatgtg	60
agtgatccga	aggggtccacc	agccaagatt	gcccgcctgg	agcagaacgg	gagcccgcta	120
ggaagaggaa	ggcttgggag	tacaggtgca	aaaatgcagg	gagtgccttt	aaaacactcg	180
ggccatctga	tgaaaaccaa	ccttaggaaa	ggaaccatgc	tgccagtttt	ctgtgtggtg	240
gaacattatg	aaaacgccat	tgaatatgat	tgcaaggagg	agcatgcaga	atttgtgctg	300
gtgagaaagg	atatgctttt	caaccagctg	atcgaaatgg	cattgctgtc	tctaggttat	360
tcacatagct	ctgctgccca	ggccaaaggg	ctaattccagg	ttggaaagtg	gaatccagtt	420
ccactgtctt	acgtgacaga	tgcccctgat	gctacagtag	cagatatgct	tcaagatgtg	480
tatcatgtgg	tcacattgaa	aattcagtta	cacagttgcc	ccaaactaga	agacttgctt	540
cccgaacaat	ggtcgcacac	cacagtgagg	aatgctctga	aggacttact	gaaagatatg	600
aatcagagtt	cattggccaa	ggagtgcccc	ctttcacaga	gtatgatttc	ttccattgtg	660
aacagtactt	actatgcaaa	tgtctcagca	gcaaaatgtc	aagaatttgg	aagggtgtac	720
aaacatttca	agaagacaaa	agatatgatg	gttgaaatgg	atagtctttc	tgagctatcc	780
cagcaaggcg	ccaatcatgt	caattttggc	cagcaaccag	ttccagggaa	cacagccgag	840
cagcctccat	cccctgcgca	gctctcccat	ggcagccagc	cctctgtccg	gacacctctt	900
ccaaacctgc	accctgggct	cgtatcaaca	cctatcagtc	ctcaattggt	caaccagcag	960
ctggtgatgg	ctcagctgct	gaaccagcag	tatgcagtga	atagactttt	agcccagcag	1020
tccttaaacc	aacaatactt	gaaccaccct	ccccctgtca	gtagatctat	gaataagcct	1080
ttggagcaac	aggtttcgac	caacacagag	gtgtcttccg	aaatctacca	gtgggtacgc	1140
gatgaactga	aacgagcagg	aatctcccag	gcggtatttg	cacgtgtggc	ttttaacaga	1200
actcagggct	tgctttcaga	aatcctccga	aaggaagagg	acccaagac	tgcatcccag	1260
tctttgctgg	taaaccttcg	ggctatgcag	aatttcttgc	agttaccgga	agctgaaaga	1320
gaccgaatat	accaggacga	aagggaaggg	agcttgaatg	ctgcctcggc	catgggtcct	1380
gccccctca	tcagcacacc	accagccgt	cctccccagg	tgaaaacagc	tactattggc	1440

actgaaagga atgggaaacc agagaacaat accatgaaca ttaatgcttc catttatgat	1500
gagattcagc aggaaatgaa gcggtgctaaa gtgtctcaag cactgtttgc aaaggttgca	1560
gcaacaaaaa gccagggatg gttgtgagag ctgttacgct ggaaagaaga tccttctcca	1620
gaaaacagaa ccctgtggga gaacctctcc atgatccgaa ggttcctcag tcttcctcag	1680
ccagaacgtg atgccattta tgaacaggag agcaacgcgg tgcatacca tggcgacagg	1740
ccgccccaca ttatccatgt tccagcagag cagattcagc aacagcagca gcaacagcaa	1800
cagcagcagc agcagcagca ggcaccgccg cctccacagc cacagcagca gccacagaca	1860
ggccctcggc tccccccacg gcaaccacg gtggcctctc cagcagagtc agatgaggaa	1920
aaccgacaga agaccggcc acgaacaaaa atttcagtgg aagccttggg aatcctccag	1980
agtttcatac aagacgtggg cctgtaccct gacgaagagg ccatccagac tctgtctgcc	2040
cagctcgacc ttcccaagta caccatcatc aagttctttc agaaccagcg gtactatctc	2100
aagcaccacg gcaaaactgaa ggacaattcc ggtttagagg tcgatgtggc agaataataa	2160
gaagaggagc tgctgaagga tttggaagag agtgtccaag ataaaaatac taacaccctt	2220
ttttcagtga aactagaaga agagctgtca gtggaaggaa acacagacat taatactgat	2280
ttgaaagact ga	2292

<210> 315
 <211> 1200
 <212> DNA
 <213> Homo sapiens

<400> 315	
atggcggaac gcaggagaca caagaagcgg atccaggaag ttggtgaacc atctaaagaa	60
gagaaggctg tggccaagta tcttcgattc aactgtccaa caaagtccac caatatgatg	120
ggtcaccggg ttgattatct tattgcttca aaagcagtgg actgtctttt ggattcaaag	180
tgggcaaagg ccaagaaagg agaggaagct ttattttaca ccagggagtc tgtggttgac	240
tactgcaaca ggcttttaaa gaagcagttt tttcaccgag ccctaaaagt aatgaaaatg	300
aaatatgata aagacataaa gaaagaaaaa gataaaggaa aagctgaaag tggaaaagaa	360
gaagataaaa agagcaagaa agaaaatata aaggatgaga agacaaaaaa agaaaaagag	420
aaaaaaaaag atggtgaaaa ggaagaatcc aaaaaggagg aaactccagg aactcctaaa	480
aagaaggaaa ctaagaaaaa attcaaactt gagccacatg atgatcaggt ttttctggat	540
ggaaatgagg tgtatgtatg gatctatgac ccagttcact ttaaaacatt tgtcatggga	600
ttaattcttg tgattgcagt aatagcggcc accctcttcc ccctttggcc agcagaaatg	660
agagtaggtg tttattacct cagtgtgggt gcaggctgtt ttgtagccag tattcttctc	720
cttgctgttg ctcatgcat tctatttctc atcatttggc tcataactgg aggaaggcac	780
cacttttggg tcttgccaaa tctgactgct gatgtgggct tcattgactc cttcaggcct	840
ctgtacacac atgaatacaa aggacaaaaa gcagacttaa agaaagatga gaagtctgaa	900

accaaaaagc aacagaagtc cgacagtgcg gaaaagtcag acagtgcagaa aaaggaagat	960
gaggagggga aagtaggacc aggaaatcat ggaacagaag gctcgggggg agaacggcat	1020
tcagacacgg acagtgcag gaggaagat gatcgatccc agcacagtag tggaaatgga	1080
aatgattttg aaatgataac aaaagaggaa ctggaacagc aaacagatgg ggattgtgaa	1140
gaggatgagg aagaggaaaa tgatggagaa acacctaaat cttcacatga aaaatcataa	1200

<210> 316
 <211> 2589
 <212> DNA
 <213> Homo sapiens

<400> 316	
atgaggatgt gcaccccat tagggggctg ctcatggccc ttgcagtgcg gtttgggaca	60
gcgatggcat ttgcacccat acccggatc acctgggagc acagagaggt gcacctggtg	120
cagtttcatg agccagacat ctacaactac tcagccttgc tgctgagcga ggacaaggac	180
accttgtaca taggtgcccg ggaggcggtc ttcgctgtga acgcactcaa catctccgag	240
aagcagcatg aggtgtattg gaaggctcga gaagacaaaa aagcaaatg tgcagaaaag	300
gggaaatcaa aacagacaga gtgcctcaac tacatccggg tgctgcagcc actcagcgcc	360
acttcccttt acgtgtgtgg gaccaacgca ttccagccgg cctgtgacca cctgaactta	420
acatccttta agtttctggg gaaaaatgaa gatggcaaag gaagatgtcc ctttgaccca	480
gcacacagct acacatccgt catggttgat ggagaacttt attcggggac gtcgtataat	540
tttttgggaa gtgaacccat catctcccga aattcttccc acagtcctct gaggacagaa	600
tatgcaatcc cttggctgaa cgagcctagt ttcgtgtttg ctgacgtgat ccgaaaaagc	660
ccagacagcc ccgacggcga ggatgacagg gtctacttct tcttcacgga ggtgtctgtg	720
gagtatgagt ttgtgttcag ggtgctgac ccacggatag caagagtgtg caagggggac	780
cagggcggcc tgaggacctt gcagaagaaa tggacctcct tcctgaaagc ccgactcatc	840
tgctcccggc cagacagcgg cttggtcttc aatgtgtctg gggatgtctt cgtgtcagg	900
tccccgggcc tgaagggtgc tgtgttctat gactcttca cccacagct gaacaacgtg	960
gggctgtcgg cagtgtgcgc ctacaacctg tccacagccg aggaggtctt ctcccacggg	1020
aagtacatgc agagcaccac agtgagcag tccacacca agtgggtgcg ctataatggc	1080
ccggtaccca agccgcggcc tggagcgtgc atcgacagcg aggcacgggc cgccaactac	1140
accagctcct tgaatttgcc agacaagacg ctgcagttcg ttaaagacca ccctttgatg	1200
gatgactcgg taaccccaat agacaacagg cccaggttaa tcaagaaaga tgtgaactac	1260
accagatcg tgggtggacc gaccaggcc ctggatggga ctgtctatga tgtcatgttt	1320
gtcagcacag accgggggag tctgcacaaa gccatcagcc tcgagcacgc tgttcacatc	1380
atcgaggaga cccagctctt ccaggacttt gagccagtc agaccctgct gctgtcttca	1440
aagaagggca acaggtttgt ctatgctggc tctaactcgg gcgtggtcca ggccccgctg	1500
gccttctgtg ggaagcacgg cacctgcgag gactgtgtgc tggcgcgagg cccctactgc	1560

gcctggagcc	cgccacagc	gacctgcgtg	gctctgcacc	agaccgagag	ccccagcagg	1620
ggtttgattc	aggagatgag	cggcgatgct	tctgtgtgcc	cggataaaaag	taaaggaagt	1680
taccggcagc	atTTTTTcaa	gcacggtggc	acagcggaaac	tgaaatgctc	ccaaaaatcc	1740
aacctggccc	gggtcttttg	gaagttccag	aatggcgtgt	tgaaggccga	gagccccaag	1800
tacggtctta	tgggcagaaa	aaacttgctc	atcttcaact	tgtcagaagg	agacagtggg	1860
gtgtaccagt	gcctgtcaga	ggagagggtt	aagaacaaaa	cggctctcca	agtggtcgcc	1920
aagcacgtcc	tggaagtga	ggtggttcca	aagcccgtag	tggccccac	cttgtcagtt	1980
gttcagacag	aaggtagtag	gattgccacc	aaagtgttg	tggcatccac	ccaagggctt	2040
tctccccaa	ccccagccgt	gcaggccacc	tcctccgggg	ccatcacct	tcctcccaag	2100
cctgcgcca	ccggcacatc	ctgcgaacca	aagatcgta	tcaacacggt	ccccagctc	2160
cactcggaga	aaacctgta	tcttaagtcc	agcgacaacc	gcctcctcat	gtccctcttc	2220
ctcttcttct	ttgttctctt	cctctgcctc	tttttctaca	actgctataa	gggatacctg	2280
cccagacagt	gcttgaaatt	ccgctcggcc	ctactaattg	ggaagaagaa	gccaagtca	2340
gatttctgtg	accgtgagca	gagcctgaag	gagacgttag	tagagccagg	gagcttctcc	2400
cagcagaatg	gggagcacc	caagccagcc	ctggacaccg	gctatgagac	cgagcaagac	2460
accatcacca	gcaaagtccc	cacggatagg	gaggactcac	agaggatcga	cgacctttct	2520
gccagggaca	agccctttga	cgtcaagtgt	gagctgaagt	tcgctgactc	agacgcagat	2580
ggagactga						2589

<210> 317
 <211> 1422
 <212> DNA
 <213> Homo sapiens

<400> 317	
atgggggctg	tgctgggtgt cttctccctc gccagctggg ttccatgcct ctgcagcggg 60
gcctcatgtt	tgctgtgtag ttgctgtcct aacagtaaga attccacggg gactcgcctc 120
atttatgctt	tcattctcct cctgagcact gtcgtatcct atatcatgca gagaaaagag 180
atggaaactt	acttgaagaa gattcctgga ttttgtgaag ggggatttaa aatccatgag 240
gctgatataa	atgcagataa agatttgtat gtgctgggtg gttataaagc tgtgtatcgg 300
atcagctttg	ccatggccat ctttttcttt gtcttttctc tgctcatgtt caaagtaaaa 360
acaagtaaa	atctccgagc ggcagtacac aatgggtttt ggttcttcaa aattgctgcc 420
cttattggaa	tcattggttg ctctttctac atccctgggg gctatttcag ctcagtctgg 480
ttgtgtgtg	gcatgatagg ggccgcctc ttcacctca ttcagctggg gctgctggta 540
gattttgtc	attcttgaa tgaatcatgg gtaaatacga tggaagaagg aaaccaagg 600
ttgtggatg	ctgctttact gtctttcaca agcgctttt atatcctgtc aatcatctgt 660
gtcgggctgc	tctatacata ttacacaaa ccagatgggt gcacagaaaa caagttcttc 720

atcagtatta	acctgatcct	ttgcgttgtg	gcttctatta	tatcgatcca	cccaaaaatt	780
caggaacacc	agcctcgctc	cggcctcttg	cagtcctccc	tcatcacctc	ctacactatg	840
tacctcacct	ggtcagccat	gtccaatgaa	cctgatcggt	cctgcaatcc	caacctgatg	900
agctttatta	cacgcataac	tgcaccaacc	ctggctcctg	gaaattcaac	tgctgtggtc	960
cctaccccta	ctccaccatc	aaagagtggg	tctttactgg	attcagataa	ttttattgga	1020
ctgtttgtct	ttgttctctg	cctcttgtat	tctagcatcc	gcacttccac	taatagccaa	1080
gtagacaagc	tgacctgtc	agggagtgtg	agcgtcatcc	ttgggtgatac	aactaccagt	1140
ggtgccagt	atgaagaaga	tggacagcct	cggcgggctg	tggacaacga	gaaagaggga	1200
gtgcagtata	gctactcctt	attccacctc	atgctctgct	tggcttcctt	gtacatcatg	1260
atgacctga	ccagctggta	cagccctgat	gcaaagtttc	agagcatgac	cagcaagtgg	1320
ccagctgtgt	gggtcaagat	cagctccagc	tgggtctgcc	tcctgcttta	cgtctggacc	1380
cttgtggctc	cacttgcct	caccagtcgg	gacttcagct	ga		1422

<210> 318
 <211> 1371
 <212> DNA
 <213> Homo sapiens

<400> 318	
atgtcagctc	agtgtgtgc
ctctgtgtg	attgtgccc
ctctacttca	ttctggtcgt
aagatgaaag	agcacattcc
acctgtgaga	agctgggtgg
ttcttcttta	tcttctgtct
catattcaca	atggcttttg
gctttcttca	ttccagatca
ggaggcttcc	tcttcattgg
aacaagaact	ggacagcagg
gtgacgtca	tcatgtattc
acacagaaaag	acagctgcat
ctgcttatat	cattggtagc
ctcttacaat	caggggtcat
agcaaacctg	cagaagtaga
ggtcaagacc	tgtacagaga
ggatgtatct	tgtattcatg
gggcgatacg	cagctcctga
ggagaggaca	ctgaagagca
	ggccagctg
	gcctgctgct
	gtgggtctgc
	aggctgctct
	ctctgtgtg
	attgtgccc
	caggattcgg
	cagtcctcca
	gcacccgctt
	catgtacgcc
	ctctacttca
	ttctggtcgt
	cgtcctctgc
	tgcattcatga
	tgtcaacaac
	cgtggctcac
	aagatgaaag
	agcacattcc
	tttttttgaa
	gatattgtgta
	aaggcattaa
	agctgggtgac
	acctgtgaga
	agctgggtgg
	atattctgcc
	gtgtatagag
	tctgttttgg
	aatggcttgt
	ttcttcttta
	tcttctgtct
	actgaccttg
	aaaatcaaca
	acagcaaaaag
	ttgtagagct
	catattcaca
	atggcttttg
	gttcttttaa
	cttctgtgtg
	tggggggccat
	gtgctcagga
	gctttcttca
	ttccagatca
	ggacaccttt
	ctgaacgcct
	ggcgctatgt
	gggagccgtc
	ggaggcttcc
	tcttcattgg
	catccagctc
	ctcctgctcg
	tggagtttgc
	acataagtgg
	aacaagaact
	ggacagcagg
	cacagccagt
	aacaagctgt
	ggtacgcctc
	cctggccctg
	gtgacgtca
	tcatgtattc
	cattgccact
	ggaggcttgg
	ttttgatggc
	agtgttttat
	acacagaaaag
	acagctgcat
	ggaaaacaaa
	attctgctgg
	gagtaaattg
	aggcctgtgc
	ctgcttatat
	cattggtagc
	catctcacc
	tgggtccaaa
	atcgacagcc
	acactcgggg
	ctcttacaat
	caggggtcat
	aagctgctat
	gtcacctacc
	tcaccttctc
	agctctgtcc
	agcaaacctg
	cagaagtaga
	tgaacatggg
	aaaaatgtta
	caatctgtgt
	gcctgacttt
	ggtcaagacc
	tgtacagaga
	tgaaaacttg
	gtgactatac
	tgggggaccag
	cctcttaatc
	ggatgtatct
	tgtattcatg
	tttgacatca
	acaacaagat
	cgagttctga
	cgctctgcag
	gggcgatacg
	cagctcctga
	attggagata
	gctcgctgtt
	gtttttgctt
	cagtcctggt
	ggagaggaca
	ctgaagagca
	gcagccgggg
	aaggaggggac
	cacgggtcat
	ttatgacgag

aagaaaggca ccgtctacat ctactcctac ttccacttcg tgttcttcct agcttccttg	1200
tatgtgatga tgaccgtcac caactgggtc aaatggagtc ccactctgtt gccaggctg	1260
gagtacagtg gcatgatctt ggctcactgc aacctccacc tcccagatgt caagcgattc	1320
tcttgctca gcctcccaag tagctggggt tacaggcatg tgccaccatg a	1371

<210> 319
 <211> 945
 <212> DNA
 <213> Homo sapiens

<400> 319 atgttgggta aaggaggaaa acggaagttt gatgagcatg aagatgggct ggaaggcaaa	60
atcgtgtctc cctgtgacgg tccatccaag gtgtcttaca cttacagcg ccagactatc	120
ttcaacattt cccttatgaa actctataac cacaggcccc tgacagagcc cagcttgcaa	180
aagaccgttt taattaacaa catgttgagg cggatccagg aggaactcaa acaggaaggc	240
agcctgaggc ccatgttcac cccctcctcc cagcccacca ccgagcccag cgacagctac	300
cgagaggccc cgccggcctt cagccacctg gcgtccccgt cctcccaccc ctgcgacctc	360
ggaagcacta cgcccctgga ggccctgcctc accccggcct cactgctcga ggacgacgat	420
gacacgtttt gcacctcca ggccatgcag cccacggctc ccaccaaact gtcacctcca	480
gccctcttgc cagaaaagga cagtttctcc tctgccttgg acgagatcga ggagctctgt	540
cccacatcta cctccacaga ggcggccacg gctgcgactg acagtgtgaa agggacctcc	600
agcgaggctg gcaccagaa actcgacggc cctcaagaga gccgcgcaga tgactcaaaa	660
ctgatggact ctctgcctgg gaattttgaa ataacgacgt ccacgggttt cctgacagac	720
ttgaccctgg atgacatcct gtttgcctgac attgatacgt ccatgtatga ttttgacccc	780
tgcacttcct catcaggac agcctcaaaa atggcccctg tgtctgccga cgacctctc	840
aaaactctgg ctcttacag cagtcagcct gtcaccccaa gtcagccttt caaatggac	900
ctcacagagc tggaccacat catggagggt cttgttgggt cctaa	945

<210> 320
 <211> 1656
 <212> DNA
 <213> Homo sapiens

<400> 320 atggctgaag gagagaatga agtgagatgg gatggactct gcagcagaga ttcaactact	60
aggagacag cattggaaaa cattaggcaa accattttga ggaaaaccga gtatcttcgt	120
tcggtgaaag aaacacctca tcgtccatca gacgggcttt caaataccga gtcttcggat	180
gggttgaata agctacttgc tcactctgctt atgctttcta agagggtgtcc cttcaaagat	240
gtgagagaga aaagtgaagt tattctgaag agcatccagg aacttggcat tagaattcct	300
cgaccactag gacagggacc aagcagattc atcccagaaa aggagatcct ccaagtgggg	360
agtgaagacg cacagatgca tgctttatct gcagattctt ttgctgcttt gggccgtttg	420

gataacatta	cgttagtgat	ggttttccac	ccacaatatt	tagaaagttt	cttaaaaact	480
cagcactatc	tactgcaaat	ggatggggccg	ttaccacctac	attatcgtca	ctacattgga	540
ataatggctg	cggcaagaca	tcagtgtctcc	tacttagtga	acctgcatgt	aaatgatttc	600
cttcatgttg	gtggggaccc	caagtggctc	aatggtttag	agaatgctcc	tcaaaaacta	660
cagaatttag	gagaacttaa	caaagtgtta	gcccatagac	cttggcttat	taccaaagaa	720
cacattgagg	gacttttaaa	agctgaagag	cacagctggg	cccttgcgga	attggtacat	780
gcagtagttt	tactcacaca	ctatcattct	cttgccctcat	tcacattcgg	ctgtggaatc	840
agtccagaaa	ttcattgtga	tgggtggccac	acattcagac	ctccttctgt	tagcaactac	900
tgcactctgtg	acattacaaa	tggcaatcac	agtgtggatg	agatgccggt	caactcagca	960
gaaaatgttt	ctgtaagtga	ttctttcttt	gaggttgaag	ccctcatgga	aaagatgagg	1020
cagttacagg	aatgtcgaga	tgaagaagag	gcaagtcagg	aagagatggc	ttcacgtttt	1080
gaaatagaaa	aaagagagag	tatgtttgtc	ttctcttcag	atgatgaaga	agttacacca	1140
gcaagagctg	tatctcgtca	ttttgaggat	actagttatg	gctataaaga	tttctctaga	1200
catgggatgc	atgttccaac	atttcgtgtc	caggactatt	gctgggaaga	tcatggttat	1260
tctttggtaa	atcgccctta	tccagatgtg	ggacagttga	ttgatgaaaa	atttcacatt	1320
gcttacaatc	ttacttataa	tacaatggca	atgcacaaag	atgttgatac	ctcaatgctt	1380
agacgggcaa	tttggaacta	tattcactgc	atgtttggaa	taagatatga	tgattatgac	1440
tatggtgaaa	ttaaccagct	attggatcgt	agctttaaag	tttatatcaa	aactgttggt	1500
tgcactcctg	aaaagggtac	caaaagaatg	tatgatagct	tctggaggca	gttcaagcac	1560
tctgagaagg	ttcatgttaa	tctgcttctt	atagaagcta	ggatgcaagc	agaactcctt	1620
tatgctctga	gagccattac	ccgctatatg	acctga			1656

<210> 321
 <211> 7695
 <212> DNA
 <213> Homo sapiens

<400> 321	
atgaagcagc	tgcagccgca gccgcctccg aagatggggg atttctacga cccggagcac 60
ccgacccctg	aagaagaaga aaatgaggca aagattgaaa atgtgcagaa aacagggtttc 120
atcaaaggac	caatgttcaa aggtgttgct tctagtcgat ttttgcccaa aggcacacaaa 180
acaaaagtta	atttggaaga acagggacga cagaaggtgt cattcagctt cagccttaca 240
aagaaaactt	tgcagaatag gtttctcact gcacttggca atgaaaagca aagtgatact 300
ccaaaccctc	cagctgtacc tcttcaggta gactcgactc ctaaaatgaa aatggaaatt 360
ggtgatacct	tatctactgc agaagaatct tccccaccaa agtcaagggt ggaattgggc 420
aaaattcatt	ttaagaaaca tctgcttcat gtaacatcca ggccactgct ggctactacc 480
acagcagtag	catctccacc tactcatgca gcaccattac cagcagtgat agcagaatca 540

acaactgtag	actcaccgcc	ctcatctccg	cctccaccgc	ctccacctgc	ccaagccaca	600
acactctcat	caccagcacc	agtaacagag	ccagtggcct	tgccacatac	accaataaca	660
gttctaattg	cagcaccagt	acccttacca	gtagatgtag	cagttagatc	tctgaaagaa	720
ccaccaatta	taattgtacc	agaatcttta	gaagcagata	ctaagcagga	cactatatct	780
aatagtttag	aagaacacgt	aactcaaata	ttgaatgagc	aagcagatat	ttcctcaaaa	840
aaagaagatt	cccatattgg	gaaggatgaa	gaaattccag	atagttctaa	gattagtctg	900
agctgtaaaa	aaacaggttc	taagaagaaa	tcctcacaat	ctgaaggcat	ctttcttggt	960
tcagaatctg	atgaagattc	tgtacggact	tcttcaagtc	aaagatcaca	tgatttaaaa	1020
ttttcagcaa	gcattgaaaa	ggaaagagat	tttaaaaaga	gctcagcacc	tttaaaaagt	1080
gaggatctag	ggaaaccttc	acgatctaaa	acagacagag	atgataaata	ttttagctat	1140
tcaaaacttg	aaagagatac	tcggtatgta	tcttcccgat	gtagatcaga	aagagagcga	1200
cggcggagca	gatctcactc	taggtctgag	agaggctcta	gaactaattt	atcctattcc	1260
aggtcagaac	gatctcatta	ttatgactct	gatcgtcgct	accataggag	ctccccttat	1320
cgagagagga	cgcgctattc	tcggccatac	acagataaca	gagcacgaga	gagttctgac	1380
tcagaagaag	agtataagaa	gacatactca	aggcgtacct	catctcattc	ctcttcttac	1440
agagacctaa	ggacatcatc	ctattctaaa	tctgatcggg	actgtaaaac	tgagacctct	1500
tacttagaga	tggaaagaag	aggcaagtat	tcttcaaaac	tagaaagaga	atctaaaagg	1560
acttcagaaa	atgaagcaat	taaaagatgt	tgttctcccc	ctaatgaact	gggattccga	1620
cgaggggtcat	catattctaa	gcatgacagt	agtgttccc	gttataaatc	taccctttca	1680
aaacctatac	ccaagtctga	taaattttaa	aattctttct	gttgtagaga	attaaatgaa	1740
gaaatcaaac	agtctcattc	ttttagttta	cagacacctt	gttcaaaagg	tagtgaatta	1800
agaatgatta	ataaaaatcc	tgaaagagaa	aaggctgggt	ctccagctcc	atcaaatcga	1860
ttaaattgatt	cacctacttt	aaaaaagcta	gatgaattgc	ctatTTTTTaa	gtccgaattt	1920
ataacacatg	atagccatga	tagtattaag	gaattagact	ctttatctaa	agtgaagaat	1980
gatcaattaa	gaagtttttg	tcccatagaa	ttaaataata	atggatctcc	tggggcagaa	2040
tctgatttgg	caacattttg	cacttctaaa	actgatgctg	ttttaatgac	ttctgatgat	2100
agtgtgactg	gatcggaatt	atcccctttg	gtcaaagcat	gcatgctttc	atcaaattga	2160
tttcagaata	ttagtaggtg	caaagaaaaa	gacttgatg	atacctgcat	gctgcataag	2220
aagtcagaaa	gcccatthag	agaaacagaa	cctctggtgt	caccacacca	agataaactc	2280
atgtctatgc	cagttatgac	tgtggattat	tccaaaacag	tagttaaaga	accagttgat	2340
acgagggttt	cttgctgcaa	aaccaaagat	tcagacatat	actgtacttt	gaacgatagc	2400
aacccttctt	tgtgtaactc	tgaagctgaa	aatattgagc	cttcagttat	gaagatttct	2460
tcaaatagct	ttatgaatgt	gcatttggaa	tcaaaaccag	ttatatgtga	tagtagaaat	2520
ttgacagatc	actcaaaatt	tgcatgtgaa	gaatataagc	agagcatcgg	tagcactagt	2580

tcagcttctg	ttaatcattt	tgatgattta	tatcaaccta	ttgggagttc	aggtattgct	2640
tcatctcttc	agagtcttcc	accaggaata	aagggtggaca	gtctaactct	cttgaaatgc	2700
ggagagaaca	catctccagt	tctggatgca	gtgctaaaga	gtaaaaaaag	ttcagagttt	2760
ttaaagcatg	cagggaaaga	aacaatagta	gaagtaggta	gtgaccttcc	tgattcagga	2820
aagggatttg	cttccaggga	gaacaggcgt	aataatgggt	tatctgggaa	atgtttgcaa	2880
gaggctcaag	aagaagggaa	ttccatattg	cctgaaagaa	gaggaagacc	agaaatctct	2940
ttagatgaaa	gaggagaagg	aggacatgtg	catacttctg	atgactcaga	agttgtattt	3000
tcttcttgtg	atttgaattt	aaccatggaa	gacagtgatg	gtgtaactta	tgcattaaag	3060
tgtgacagta	gtggcatg	cccagaaatt	gtgtctacag	ttcatgaaga	ttattctggc	3120
tcttctgaaa	gttcaaatga	tgaaagtgat	tcagaagata	cagattcgga	tgatagcagt	3180
attccaagaa	accgtctcca	gtctgtttgtg	gttgtgccaa	agaattctac	tttgcccatg	3240
gaagaaacaa	gtccttgttc	ttctcggagc	agtcaaagtt	atagacacta	ttctgaccat	3300
tggaagatg	agagattgga	gtcaaggaga	catttgtatg	aggaaaaatt	tgaaagtata	3360
gcaagtaaag	cctgtcctca	aactgataag	tttttccttc	ataaaggaac	agagaagaat	3420
ccggaaattt	cttttacaca	gtccagtaga	aaacaaatag	ataatcgctt	gcctgaactt	3480
tctcatcctc	agagtgatgg	ggttgatagt	acaagtcata	cagatgtgaa	atctgaccct	3540
ctgggtcacc	caaattcaga	ggaaaccgtg	aaagccaaaa	taccttctag	gcagcaagaa	3600
gagctgccaa	tttattcttc	tgattttgaa	gatgtcccaa	ataagtcttg	gcaacagacc	3660
actttccaaa	acaggccaga	tagtagactg	ggaaaaacag	aattgagttt	ttcttcctct	3720
tgtgagatac	cacatgtgga	tggcttgcac	tcatcagaag	agctcagaaa	cttaggttgg	3780
gacttctctc	aagaaaagcc	ttctaccacg	tatcagcaac	ctgacagtag	ctatggagct	3840
tgtggtggac	acaagtatca	gcaaaatgca	gaacagtatg	gtgggacacg	tgattactgg	3900
caaggcaatg	gttactggga	tccaagatca	ggtagacctc	ctggaactgg	ggttgtgtat	3960
gatcgaactc	aaggacaagt	accagattcc	ctaacagatg	atcgtgaaga	agaggagaat	4020
tgggatcaac	aggatggatc	ccatttttca	gaccagtccg	ataaatttct	tctatccctt	4080
cagaaagaca	aggggtcagt	gcaagcacct	gaaataagca	gcaattccat	taaggacact	4140
ttagctgtga	atgaaaagaa	agatttttca	aaaaacttag	aaaaaaatga	tatcaaagat	4200
agagggcctc	ttaaaaaaag	gaggcaggaa	atagagagtg	attctgaaag	tgatggtgag	4260
cttcaggaca	gaaagaaagt	tagagtggag	gtagagcagg	gagagacatc	agtgccccca	4320
ggttcagcac	tggttggggc	ctcctgtgtc	atggatgact	tcagggaccc	acagcgatgg	4380
aaggaatgtg	ccaagcaagg	gaaaatgcca	tgttactttg	atcttattga	agaaaatgtt	4440
tatttaacag	aaagaaagaa	gaataaatct	catcgagata	ttaagcgaat	gcagtgtgag	4500
tgtacacctc	tttctaaaga	tgaaagagct	caaggtgaaa	tagcatgtgg	ggaagattgt	4560
cttaatcgtc	ttctcatgat	tgaatgttct	tctcgggtgtc	caaattgggga	ttattgttcc	4620

aatagacggt	ttcagagaaa	acagcatgca	gatgtggaag	tcatactcac	agaaaagaaa	4680
ggctggggct	tgagagctgc	caaagacctt	ccttcgaaca	cctttgtcct	agaatattgt	4740
ggagaggtag	tcgatcataa	agagtttaaa	gctcgagtga	aggagtatgc	acgaaacaaa	4800
aacatccatt	actatttcat	ggccctgaag	aatgatgaga	taatagatgc	cactcaaaaa	4860
ggaaattgct	ctcgtttcat	gaatcacagc	tgtgaaccaa	attgtgaaac	ccaaaaatgg	4920
actgtgaacg	gacaactgag	ggttgggttt	tttaccacca	aactggttcc	ttcagggtca	4980
gagttaacgt	ttgactatca	gttccagaga	tatggaaaag	aagcccagaa	atgtttctgc	5040
ggatcagcca	attgccgggg	ttacctggga	ggagaaaaca	gagtcagcat	cagagcagca	5100
ggagggaaaa	tgaagaagga	acgatctcgt	aagaaggatt	cagtggatgg	agagctagaa	5160
gctctgatgg	aaaatggtga	gggtctctct	gataaaaacc	aggtgctcag	cttatcccgg	5220
ctaattggtta	gaattgaaac	tttggagcag	aaacttacct	gtctggaact	catacagaac	5280
acacactcac	agtcctgcct	gaagtccttt	ctggaacgct	atgggctgtc	tttgttgtgg	5340
atctggatgg	cagagctagg	tgacggccgg	gaaagtaacc	agaagcttca	ggaagagatt	5400
ataaagactt	tggaacactt	gcccattcct	actaaaaata	tgttggagga	aagcaaagta	5460
cttccaatta	ttcaacgctg	gtctcagact	aagactgctg	tccctccggt	gagtgaagga	5520
gatgggtatt	ctagtgagaa	tacatcgctg	gctcatacac	cactcaacac	acctgatcct	5580
tccaccaagc	tgagcacaga	agctgacaca	gacactccca	agaaactaat	gtttcgcaga	5640
ctgaaaatta	taagtgaaaa	tagcatggac	agtgcaatct	ctgatgcaac	cagtgaagcta	5700
gaaggcaagg	atggcaaaga	ggatcttgat	caattagaaa	atgtccctgt	agaggaagag	5760
gaagaattgc	agtcacaaca	gctactccca	caacagctgc	ctgaatgcaa	agttgatagt	5820
gaaaccaaca	tagaagctag	taagctacct	acatctgaac	cagaagctga	cgctgaaata	5880
gagcccaaag	agagcaacgg	cacaaaacta	gaagaaccta	ttaatgaaga	aacaccatcc	5940
caagatgaag	aggaggggtg	gtctgatgtg	gagagtgaag	ggagccaaga	acagccagat	6000
aaaacagtgg	atataagtga	tttggccacc	aaactcctgg	acagttggaa	agacctaaag	6060
gaggtatatc	gaattccaaa	gaaaagtcaa	actgaaaagg	aaaacacaac	aactgaacga	6120
ggaaggggatg	ctgttggctt	cagagatcaa	acacctgccc	cgaagactcc	taatagggtca	6180
agagagagag	accagacaa	gcaaactcaa	aataaagaga	aaaggaaacg	aagaagctcc	6240
ctctcaccac	cctcttctgc	ctatgagcgg	ggaacaaaaa	ggccagatga	cagatatgat	6300
acaccaactt	ctaaaaagaa	agtacgaatt	aaagaccgca	ataaactttc	tacagaggaa	6360
cgccggaagt	tgtttgagca	agaggtggct	caacgggagg	ctcagaaaca	acagcaacag	6420
atgcagaacc	tgggaatgac	atcaccactg	ccctatgact	ctcttggtta	taatgccccg	6480
catcatccct	ttgctgggtta	cccaccaggt	tatcccatgc	aggcctatgt	ggatcccagc	6540
aaccctaattg	ctggaaaggt	gtcctgccc	acaccagca	tggaccaggt	gtgttctcct	6600
gctccttatg	atcatgctca	gcccttggtg	ggacattcta	cagaaccctt	ttctgcccct	6660

ccaccagtac	cagtgggtgcc	acatgtggca	gctcctgtgg	aagtttccag	ttcccagtat	6720
gtggcccaga	gtgatggtgt	agtacaccaa	gactccagcg	ttgctgtctt	gccagtgccg	6780
gccccgggcc	cagttcaggg	acagaattat	agtgtttggg	attcaaacca	acagtctgtc	6840
agtgtacagc	agcagtactc	tcctgcacag	tctcaagcaa	ccatatatta	tcaaggacag	6900
acatgtccaa	cagtctatgg	tgtgacatca	ccttattcac	agacaactcc	accaattgta	6960
cagagttatg	cccagccaag	tcttcagtat	atccaggggc	aacagatttt	cacagctcat	7020
ccacaaggag	tgggtgtaca	gccagccgca	gcagtgacta	caatagttgc	accagggcag	7080
cctcagccct	tgcagccatc	tgaaatggtt	gtgacaaata	atctcttgga	tctgccgccc	7140
ccctctcctc	ccaaaccaa	aaccattgtc	ttacctcca	actggaagac	agctcgagat	7200
ccagaaggga	agatttatta	ctaccatgtg	atcacaaggc	agactcagtg	ggatcctcct	7260
acttgggaaa	gcccaggaga	tgatgccagc	cttgagcatg	aagctgagat	ggacctggga	7320
actccaacat	atgatgaaaa	ccccatgaag	gcctcgaaaa	agcccaagac	agcagaagca	7380
gacacctcca	gtgaactagc	aaagaaaagc	aaagaagtat	tcagaaaaga	gatgtcccag	7440
ttcatcgtcc	agtgcctgaa	cccttaccgg	aaacctgact	gcaaagtggg	aagaattacc	7500
acaactgaag	actttaaaca	tctggctcgc	aagctgactc	acggtgttat	gaataaggag	7560
ctgaagtact	gtaagaatcc	tgaggacctg	gagtgcaatg	agaatgtgaa	acacaaaacc	7620
aaggagtaca	ttaagaagta	catgcagaag	tttggggctg	tttaciaaac	caaagaggac	7680
actgaattag	agtga					7695

<210> 322
 <211> 1728
 <212> DNA
 <213> Homo sapiens

<400> 322	
atgaacgggc	ctgccctgca gccctcctcg ccctcttccg cgccctcagc ctccccggcg 60
gcggccccgc	ggggctggag cgagttctgt gagttgcacg ccgtagcggc ggccccggag 120
ctggccccgc	agtactggct gttcgccccg gagcatccgc agcacgcgcc gctgcgcgcc 180
gagctggtgt	cgctgcagtt caccgacctc ttccagcgct acttctgccg cgaggtgcgc 240
gacggacggg	cgccggggccg cgactaccgg gacacaggcc gtggggcccc agccaaggcc 300
gaggcgtccc	cggagccagg ccccgggccc gccgcccctg gcctgcccga ggccccgcagc 360
tctgaggagc	tggccccgcc gcggccgccc gggccctgct ccttccagca ctttcgccgc 420
agcctccgcc	acatcttccg ccgccgctcg gccggggagc tgccagcggc ccacaccgct 480
gccgcccccg	ggacccccgg agaggctgct gagacccccg cccggcctgg cctggccaag 540
aagttcctgc	cctggagcct ggcccgggag ccgccacccg aggcgctgaa ggaggcgggtg 600
ctgcgctaca	gcctggccga cgaggcctcc atggacagcg gggcacgctg gcagcgcggg 660
aggctggcgc	tgcgccgggc cccgggcccc gatggccccg accgcgtgct ggagctcttc 720
gaccacacca	agagttcaag gcccaagcta caagcagctt gctccagcat ccaggaggtc 780

PCTAU2016050927-seql-000001-EN-20161013

cggtggtgca	cacggcttga	gatgcctgac	aacctttaca	cctttgtgct	gaaggtgaag	840
gaccggacag	acatcatctt	tgaggtggga	gacgagcagc	agctgaattc	atggatggct	900
gagctctcgg	agtgcacagg	ccgagggctg	gagagcacag	aagcagagat	gcatattccc	960
tcagccctag	agcctagcac	gtccagctcc	ccaaggggca	gcacagattc	ccttaaccaa	1020
ggtgcttctc	ctgggggggt	gctggaccgc	gcctgccaga	agacggacca	tttctgtgcc	1080
tgctaccctt	ggttccacgg	ccccatctcc	agagtgaag	cagctcagct	ggttcagctg	1140
cagggccctg	atgctcatgg	agtgttcctg	gtgcggcaga	gcgagacgcg	gcgtggggaa	1200
tacgtgctca	ctttcaactt	tcaggggata	gccaaagcacc	tgcgctgtgc	gctgacagag	1260
cggggccagt	gccgtgtgca	gcacctccac	tttccctcgg	tcgtggacat	gctccaccac	1320
ttccagcgct	cgcccatccc	actcagatgc	ggcgccgcct	gtgatgtccg	gctctccagc	1380
tacgtggtag	tcgtctccca	accaccaggt	tcctgcaaca	cggtcctctt	ccctttctcc	1440
cttcctcact	gggattcaga	gtcccttcct	cactgggggt	cagagttggg	ccttccccac	1500
cttagttctt	ctggctgtcc	ccgggggctc	agcccagagg	gtctcccagg	gcgatcctca	1560
ccccccgagc	agatcttcca	cctggtgcct	tcgcccgaag	aactggccaa	cagcctgcag	1620
cacctggagc	atgagcctgt	gaatcgagcc	cgggactcgg	actacgaaat	ggactcatcc	1680
tcccggagcc	acctgcgggc	catagacaat	cagtacacac	ctctctga		1728

<210> 323
 <211> 2112
 <212> DNA
 <213> Homo sapiens

<400> 323						
atgactgctg	tgggccgaag	gtgccccgcg	ctgggggtccc	gaggggctgc	tgagagagcca	60
gaggctggca	gcgactatgt	gaagttctcc	aaggagaagt	acatcctgga	ctcatcgcca	120
gagaaactcc	acaaggaatt	ggaggaggag	ctcaaactca	gcagcacgga	tctccgcagc	180
catgcctggt	accatggccg	catcccccca	gaggtctcgg	agaccttggt	acaacgcaac	240
ggcgacttcc	tcatccggga	ctcactcacc	agcctgggcg	actatgtgct	cacgtgccgc	300
tggcgcaacc	aggccttgca	cttcaagatc	aacaaggtgg	tgggtgaaggc	aggcgagagc	360
tacacacaca	tccagtacct	gtttgagcag	gagagctttg	accacgtgcc	cgccctcgtg	420
cgctatcatg	tgggcagccg	caaggctgtg	tcagagcaga	gtggtgccat	catctactgc	480
ccggtgaacc	gcaccttccc	actgcgctac	ctcagggccca	gctatggcct	gggacagggg	540
agtagcaagc	ctgctagccc	cgtcagcccc	tcaggcccca	agggcagcca	catgaagcgg	600
cgcagcgtca	ccatgaccga	tgggctcact	gctgacaagg	tcacccgcag	cgatggctgc	660
cccaccagta	cgtcgctgcc	ccgccctcgg	gactccatcc	gcagctgtgc	cctcagcatg	720
gaccagatcc	cagacctgca	ctcacccatg	tcgcccattct	ccgagagccc	tagctcccct	780
gcctacagca	ctgtaaccgc	tgtccatgcc	gccctgcag	ccccttctgc	cacagcattg	840

cctgcctccc	ctgtcgcccc	ccgttccagt	gagccccagc	tgtgtcccgg	aagtgcccc	900
aagacccatg	gggagtcaga	caagggcccc	cacaccagcc	cctcccacac	ccttggaag	960
gcctccccgt	caccatcact	cagcagctac	agtgaccgg	actctggcca	ctactgccag	1020
ctccagcctc	ccgtgcgtgg	cagccgagag	tgggcagcga	ctgagacctc	cagccagcag	1080
gccaggagct	atggggagag	gctaaaggaa	ctgtcagaaa	atggggcccc	tgaaggggac	1140
tgggggaaga	ccttcacagt	ccccatcgtg	gaagtcactt	cttccttcaa	cccggccacc	1200
ttccagtcac	tactgatccc	cagggataac	cggccactgg	aggtgggcct	tctgcgcaag	1260
gtcaaggagc	tgctggcaga	agtggatgcc	cggacgctgg	cccggcatgt	caccaagggtg	1320
gactgcctgg	ttgctaggat	actgggcgtt	accaaggaga	tgagaccct	aatgggagtc	1380
cgctggggca	tggaactgct	caccctcccc	catggccggc	agctacgcct	agacctgctg	1440
gaaagggttc	acaccatgtc	catcatgctg	gccgtggaca	tcctgggctg	caccggctct	1500
gcggaggagc	gggcagcgct	gctgcacaag	accattcagc	tggcgggcca	gctgcggggg	1560
actatgggca	acatgttcag	cttcgcggcg	gtcatgggtg	ccctggacat	ggcccagatt	1620
tctcggctgg	agcagacatg	ggtgaccctg	cggcagcgac	acacagaggg	tgccatcctg	1680
tacgagaaga	agctcaagcc	ttttctcaag	agcctcaacg	agggcaaaga	aggcccggcg	1740
ctgagcaaca	ccacgtttcc	tcatgtgctg	cccctcatca	ccctgctgga	gtgtgactcg	1800
gccccaccag	agggccctga	gccctggggc	agcacggagc	acggcgctgga	ggtggtgctg	1860
gctcacctgg	aggccgcccc	cacagtggca	caccacggag	gcctgtacca	caccaatgct	1920
gaagtcaagc	tgaggggtt	ccaggccccg	ccggagctcc	tggaggtgtt	cagcacggag	1980
ttccagatgc	gccttctctg	gggcagtcag	ggtgccagca	gcagccaggc	ccggcgctat	2040
gagaagttcg	acaaggtcct	cactgccctg	tcccacaagc	tggaacctgc	tgtccgctcc	2100
agcgagctgt	ga					2112

<210> 324
 <211> 1515
 <212> DNA
 <213> Homo sapiens

<400> 324	
atggagcccc	ccggccccgc ccccgccgc ctcggggccgc tgctctgcct gctgctcgcc 60
gcgtcctgcg	cctggtcagg agtggcgggt gaggaggagc tgcaggtgat tcagcctgac 120
aagtccgtgt	tggttgcagc tggagagaca gccactctgc gctgcactgc gacctctctg 180
atccctgtgg	ggcccatcca gtggttcaga ggagctggac caggccggga attaatctac 240
aatcaaaaag	aaggccactt ccccgggta acaactgttt cagacctcac aaagagaaac 300
aacatggact	tttccatccg catcggtaac atcacccag cagatgccgg cacctactac 360
tgtgtgaagt	tccggaaagg gagccccgat gacgtggagt ttaagtctgg agcaggcact 420
gagctgtctg	tgcgcgccaa accctctgcc cccgtggtat cgggccctgc ggcgagggcc 480
acacctcagc	acacagttag cttcacctgc gagtcccacg gcttctcacc cagagacatc 540

PCTAU2016050927-seql-000001-EN-20161013

accctgaaat ggttcaaaaa tgggaatgag ctctcagact tccagaccaa cgtggacccc	600
gtaggagaga gcgtgtccta cagcatccac agcacagcca aggtggtgct gacccgagag	660
gacgttcact ctcaagtcac ctgagaggtg gcccacgtca ccttgagagg ggaccctctt	720
cgtgggactg ccaacttgct tgagaccatc cgagttccac ccaccttgga ggttactcaa	780
cagcccgtga gggcagagaa ccaggtgaat gtcacctgcc aggtgaggaa gttctacccc	840
cagagactac agctgacctg gttggagaat ggaaacgtgt cccggacaga aacggcctca	900
accgttacag agaacaagga tggtagctac aactggatga gctggctcct ggtgaatgta	960
tctgcccaca gggatgatgt gaagctcacc tgccaggtgg agcatgacgg gcagccagcg	1020
gtcagcaaaa gccatgacct gaaggtctca gcccacccga aggagcaggg ctcaaatacc	1080
gccgctgaga aacttgatc taatgaacgg aacatctata ttgtggtggg tgtggtgtgc	1140
acctgtctgg tggccctact gatggcgagg ctctacctcg tccgaatcag acagaagaaa	1200
gcccagggct ccacttcttc tacaagggtg catgagcccc agaagaatgc cagagaaata	1260
acacaggaca caaatgatat cacatatgca gacctgaacc tgcccaaggg gaagaagcct	1320
gctccccagg ctgaggagcc caacaaccac acggagtatg ccagcattca gaccagcccc	1380
cagcccgcgt cggaggacac cctcacctat gctgacctgg acatggtcca cctcaaccgg	1440
acccccaagc agccggcccc caagcctgag ccgtccttct cagagtagcg cagcgtccag	1500
gtcccaggga agtga	1515

<210> 325
 <211> 1197
 <212> DNA
 <213> Homo sapiens

<400> 325	
atgcccgtgc cagcctcctg gcccacctt cctagtcctt tcctgctgat gacgctactg	60
ctggggagac tcacaggagt ggcaggtgag gacgagctac aggtgattca gcctgaaaag	120
tccgtatcag ttgcagctgg agagtcggcc actctgcgct gtgctatgac gtccctgatc	180
cctgtggggc ccatcatgtg gtttagagga gctggagcag gccgggaatt aatctacaat	240
cagaaagaag gccacttccc acgggtaaca actgtttcag aactcacaaa gagaaacaac	300
ctggactttt ccatcagcat cagtaacatc accccagcag acgccggcac ctactactgt	360
gtgaagtcc ggaaaggag ccctgacgac gtggagttta agtctggagc aggactgag	420
ctgtctgtgc gcgcaaacc ctctgcccc gtggtatcgg gccctgcggt gagggccaca	480
cctgagcaca cagttagctt cacctgcgag tcccatggct tctctcccag agacatcacc	540
ctgaaatggt tcaaaaatgg gaatgagctc tcagacttcc agaccaacgt ggaccccgca	600
ggagacagtg tgtcctacag catccacagc acagccaggg tgggtgctgac ccgtggggac	660
gttactctc aagtcactct cgagatagcc cacatcacct tgcaggggga ccctcttcgt	720
gggactgcca acttgtctga ggccatccga gttccacca ccttgagggt tactcaacag	780

cccatgaggg	cagagaacca	ggcaaacgtc	acctgccagg	tgagcaattt	ctacccccgg	840
ggactacagc	tgacctgggt	ggagaatgga	aatgtgtccc	ggacagaaac	agcttcgacc	900
ctcatagaga	acaaggatgg	cacctacaac	tggatgagct	ggctcctggt	gaacacctgt	960
gcccacaggg	acgatgtggt	gctcacctgt	caggtggagc	atgatgggca	gcaagcagtc	1020
agcaaaagct	atgccctgga	gatctcagcg	caccagaagg	agcacggctc	agatatcacc	1080
catgaagcag	cgctggctcc	tactgtctca	ctcctcgtag	ctctcctcct	gggccccaa	1140
ctgctactgg	tggttggtgt	ctctgccatc	tacatctgct	ggaaacagaa	ggcctga	1197

<210> 326
 <211> 2133
 <212> DNA
 <213> Homo sapiens

<400> 326	
atgcagggga	agaagccggg cggttcgtcg ggcggcggcc ggagcggcga gctgcagggg 60
gacgaggcgc	agaggaacaa gaaaaagaaa aagaaggtgt cctgcttttc caacatcaag 120
atcttcctgg	tgtccgagtg cgccctgatg ctggcgcagg gcacgggtggg cgcctacctg 180
gtgagcgtcc	tgaccacctt ggagcgtagg ttcaacctgc agagcgtga cgtgggtgtg 240
atcgctagca	gcttcgagat cgggaacctg gcgctcatcc tcttcgtgag ctacttcggg 300
gcacgcgggc	accggccgcg cctgatcggc tgcggcggca tcgtcatggc gctgggcgcg 360
ctgctgtcgg	cgctgcccga gttcctgacc caccagtaca agtacgaggc gggcgagatc 420
cgctggggcg	ccgagggccg cgacgtctgc gcagccaacg gctcggggcg cgacgagggg 480
cccgaccccg	acctcatctg ccgcaaccgg acggctacca acatgatgta cttgctgctc 540
attggggccc	aggtgtcctt gggcatcggg gctacccttg tgcagcccct gggcgctctc 600
tacatcgacg	accacgtgcg gaggaaggac tcctcgctct atataggaat cctgttcacg 660
atgctggtat	ttggaccagc ctgcgggttt atcctgggct ctttctgtac caaaatctac 720
gtggatgcgg	tcttcattga cacaagtaac ctggacatca ctccggacga cccccgtgg 780
atcggagcct	ggtgggggtg ctttctgctc tgcggtgcct tactcttctt ctcttcctc 840
ttgatgtttg	ggtttccaca gtccctgccc ccgcactcag agcccgccat ggaaagcgag 900
caggccatgc	tctccgaaag agaatacgag agaccaagc ccagcaacgg ggtcctgagg 960
caccccttgg	agccagacag cagtgcctcc tgtttccagc agctgagagt gatcccgaag 1020
gtcaccaagc	acctgctctc aaacctgtg ttacactgca tcacctggc cgcctgcatg 1080
gagattgcag	tgggtggctgg cttcgtgcc tttttgggga agtacctgga gcagcagttt 1140
aacctcacca	cctcttctgc caaccagctg cttgggatga ctgcgatccc gtgtgcttgt 1200
ctgggtatct	tcctgggagg tcttttgggtg aagaagctca gcctgtctgc cctggggggc 1260
attcggatgg	ccatgctcgt caacctggtg tccactgctt gctacgtctc cttcctcttc 1320
ctgggctgcg	acactggccc tgtggctggg gttactgttc cctatggaaa cagcacagca 1380
cctggctcag	ccctggaccc ctactcgccc tgcaataata actgtgaatg ccaaaccgat 1440

tccttcactc	cagtgtgtgg	ggcagatggc	atcacctacc	tgtctgcctg	ctttgctggc	1500
tgcaacagca	cgaatctcac	gggctgtgcg	tgccctacca	ccgtccctgc	tgagaacgca	1560
accgtgggtc	ctggaaaatg	ccccagtcct	gggtgccaaag	aggccttcct	cactttcctc	1620
tgtgtgatgt	gtatctgcag	cctgatcggt	gccatggcac	agacaccctc	agtcatcatc	1680
ctcatcagga	cagtcagccc	tgaactcaag	tcttacgctt	tgggagttct	ttttctcctc	1740
cttcgtttgt	tgggcttcat	ccctccaccc	ctcatcttcg	gggctggcat	cgactccacc	1800
tgctgtttct	ggagcacgtt	ctgtggggag	caaggcgcct	gcgtcctcta	cgacaatgtg	1860
gtctaccgat	acctgtatgt	cagcatcgcc	atcgcgctca	aatccttcgc	cttcattcctg	1920
tacaccacca	cgtggcagtg	cctgaggaaa	aactataaac	gctacatcaa	aaaccacgag	1980
ggcgggctga	gcaccagtga	gttctttgcc	tctactctga	ccctagacaa	cctggggagg	2040
gacctgtgc	ccgcaaacca	gacacatagg	aaaagtttta	tctataacct	ggaagaccat	2100
gagtgggtgtg	aaaacatgga	gtccgtttta	tag			2133

<210> 327
 <211> 1659
 <212> DNA
 <213> Homo sapiens

<400> 327						
atggacaata	tgtctattac	gaatacacca	acaagtaatg	atgcctgtct	gagcattgtg	60
catagtttga	tgtgccatag	acaagggtgga	gagagtgaaa	catttgcaaa	aagagcaatt	120
gaaagtttgg	taaagaagct	gaaggagaaa	aaagatgaat	tggattcttt	aataacagct	180
ataactacaa	atggagctca	tcctagtaaa	tgtgttacca	tacagagAAC	attggatggg	240
aggcttcagg	tggctggctg	gaaaggattt	cctcatgtga	tctatgcccg	tctctggagg	300
tggcctgatc	ttcacaaaaa	tgaactaaaa	catgttaaat	attgtcagta	tgcgtttgac	360
ttaaaatgtg	atagtgtctg	tgtgaatcca	tatcactacg	aacgagttgt	atcacctgga	420
attgatctct	caggattaac	actgcagagt	aatgctccat	caagtatgat	ggatgaaggat	480
gaatatgtgc	atgactttga	gggacagcca	tcgttgtcca	ctgaaggaca	ttcaattcaa	540
accatccagc	atccaccaag	taatcgtgca	tcgacagaga	catacagcac	cccagctctg	600
ttagcccat	ctgagtctaa	tgctaccagc	actgccaaact	ttcccaacat	tcctgtggct	660
tccacaagtc	agcctgccag	tatactgggg	ggcagccata	gtgaaggact	gttgacagata	720
gcatcagggc	ctcagccagg	acagcagcag	aatggattta	ctgggtcagcc	agctacttac	780
catcataaca	gcactaccac	ctggactgga	agtaggactg	caccatacac	acctaatttg	840
cctcaccacc	aaaacggcca	tcttcagcac	caccgccta	tgccgccccca	tcccggacat	900
tactggcctg	ttcacaatga	gcttgcatte	cagcctccca	tttccaatca	tcctgtctct	960
gagtattggg	gttccattgc	ttactttgaa	atggatgttc	aggtaggaga	gacatttaag	1020
gttccttcaa	gctgccctat	tgttactgtt	gatggatacg	tggacccttc	tggaggagat	1080

PCTAU2016050927-seq1-000001-EN-20161013

cgcttttgtt tgggtcaact ctccaatgtc cacaggacag aagccattga gagagcaagg	1140
ttgcacatag gcaaagggtg gcagttggaa tgtaaagggtg aagggtgatgt ttgggtcagg	1200
tgcttagtg accacgcggt ctttgtacag agttactact tagacagaga agctgggcgt	1260
gcacctggag atgctgttca taagatctac ccaagtgc atataaagggt ctttgatttg	1320
cgtcagtgtc atcgacagat gcagcagcag gcggctactg cacaagctgc agcagctgcc	1380
caggcagcag ccgtggcagg aaacatccct ggcccaggat cagtaggtgg aatagctcca	1440
gctatcagtc tgtcagctgc tgctggaatt ggtgttgatg accttcgtcg cttatgcata	1500
ctcaggatga gttttgtgaa aggctgggga ccggattacc caagacagag catcaaagaa	1560
acaccttgct ggattgaaat tcacttacac cgggccctcc agtcctaga cgaagtactt	1620
cataccatgc cgattgcaga cccacaacct ttagactga	1659

<210> 328
 <211> 267
 <212> DNA
 <213> Homo sapiens

<400> 328	
atgtctatta tggaccacag cccaccacg ggcgtggtca cagtcacgt catcctcatt	60
gccatcgcg ccctgggggc cttgatcctg ggctgctggt gctacctgcg gctgcagcgc	120
atcagccagt cagaggacga ggagagcatc gtgggggatg gggagaccaa ggaacccttc	180
ctgctggtgc agtattcggc caagggaccg tgcgtggaga gaaaggccaa gctgatgact	240
cccaacggcc cggaagtcca cggctga	267

<210> 329
 <211> 2298
 <212> DNA
 <213> Homo sapiens

<400> 329	
atggcaggat ttaagcgagg gtatgatgga aagattgctg gattatatga tctggataaa	60
accttgggtc gaggccattt tgccgtggtt aaacttgcca ggcattgtctt tacgggtgaa	120
aagggtggcag taaaagttat tgacaagaca aaactggaca ctctagctac tggatcatctt	180
ttccaggaag tgagatgcat gaaactagt cagcatccta acatcgccg cttttatgaa	240
gttattgaca cccagaccaa actatatctt attctagaac ttgggggatg aggagatatg	300
tttgattata taatgaaaca tgaggagggt cttaatgaag acttgccaa gaagtatttt	360
gctcagatag ttcatgctat atcttattgc cataaactcc atgtggttca cagagactta	420
aaaccagaga atgtagtctt ctttgaaaaa caaggctctg taaagttgac agactttggg	480
ttcagcaaca aatttcaacc aggaagaag ctactacaa gctgtggatc tcttgcatat	540
tccgtccag aaattctgct tgggtgatgag tatgatgcac ctgcagtaga tatttgaggt	600
ctgggagtga tccttttcat gttggtgtgt gggcagccgc cttttcaaga agccaatgac	660
agtgaacac tgacaatgat catggattgc aaatatacag taccatccca tgtgtctaaa	720

gagtgtaaag	acctaatac	acggatgcta	cagagagatc	ccaagagaag	ggcttcttta	780
gaagagattg	aaaatcatcc	ttggcttcag	ggagtggacc	cttcaccagc	tacaaagtat	840
aacattcccc	tttgtgcata	caaaaatctc	tcggaagagg	agcacaacag	catcattcag	900
cgcattggtgc	ttggggacat	agcggatcga	gacgccattg	tagaagccct	ggaaaccaac	960
aggtataacc	atatcacagc	cacatacttc	ctgctggctg	aaaggatcct	gagagaaaag	1020
caagagaaaag	aaatacagac	cagatctgca	agcccagagca	atatcaaggc	ccagtttagg	1080
cagtcattggc	caacccaaat	tgatgtacct	caggaccttg	aggatgacct	cacggccact	1140
cctttgtccc	acgcgactgt	ccctcagtct	cctgctcggg	ctgctgacag	tgtcctcaat	1200
ggccacagga	gcaaaggcct	gtgtgactca	gctaagaaag	atgacctccc	tgagttggct	1260
ggaccagcac	tctctacggt	gccacccgca	agcttaaaac	ccacagccag	tgggcggaag	1320
tgtctgttca	gggtggaaga	agatgaagag	gaagatgagg	aggacaagaa	acccatgtcc	1380
ctctcaacac	aagtggtttt	gcgccggaag	ccatctgtaa	ccaaccgcct	gacatccagg	1440
aagagtgcgc	ccgtcctcaa	ccagatcttt	gaggaagggg	aatctgacga	tgagtttgac	1500
atggatgaga	atctgcctcc	caagttgagc	aggttaaaga	tgaatatagc	ttctccaggt	1560
acagttcaca	aacgctacca	ccggaggaaa	agtcagggcc	ggggctccag	ctgcagtagt	1620
tcggagacca	gtgatgatga	ttctgaaagc	cggcggcggc	tcgataaaga	tagcgggttc	1680
acctactcct	ggcaccgacg	ggatagcagc	gaggggcccc	ctggcagtga	gggggatggc	1740
gggggcccaga	gcaagccaag	caatgccagt	ggaggggtgg	acaaggccag	ccccagtgag	1800
aacaatgctg	gtgggggcag	tccctccagc	ggctcgggtg	gcaacccac	caatacatcg	1860
ggtaccacac	gccgtgtgc	cggccccagc	aactccatgc	agctggcctc	tcgcagtgt	1920
ggggagctcg	ttgagagcct	caaactcatg	agcctctgcc	tcggctccca	gcttcatggg	1980
agcaccaagt	acattattga	tccacagaat	ggcttgtcat	tttccagtgt	gaaagtccaa	2040
gagaaatcta	cgtggaaaat	gtgcattagc	tccacagga	atgcagggca	ggtccctgca	2100
gtgggcggca	taaagttttt	ctctgaccac	atggcagata	ccaccactga	attggaacgg	2160
ataaagagca	agaacctgaa	aaataacgtg	ctgcagctac	ctctgtgcga	aaagaccatc	2220
tctgtgaaca	tccagcgga	ccctaaggag	gggctgtgt	gcgcatccag	cccagccagc	2280
tgttgccatg	tcattctga					2298

<210> 330
 <211> 1587
 <212> DNA
 <213> Homo sapiens

<400> 330	atggcgggacg	aggacgggga	agggattcat	ccctcagccc	ctcacaggaa	cggagggtggc	60
	ggcggcggcg	gggggtctgg	gctccactgc	gccgggaacg	gcggcggggg	aggcggcggc	120
	ccgcggtctg	tgcgcatcgt	caagtccgag	tccggctacg	gcttcaacgt	gcggggccaa	180
	gtgagcgagg	gcgggcaact	gcggagcatc	aacggggagc	tgtacgcgcc	gctgcagcat	240

gtgagcgccg	tgctgcccgg	gggggcgggc	gatcggggccg	gggtgcgcaa	gggggaccgc	300
atcctggagg	tgaaccacgt	gaatgttgag	ggggcgacac	acaagcaggt	ggtggacctg	360
attcgagcag	gcgagaagga	attgatcttg	acagtgttat	ctgtacctcc	tcatgaggca	420
gataacctag	atcccagtga	cgactcgttg	ggacaatcat	tttatgatta	cacagaaaag	480
caagcagtgc	ccatatcggt	ccccagatac	aaacatgttg	agcagaatgg	tgagaagttt	540
gtggtatata	atgtttacat	ggcagggagg	cagctgtggt	ctaagcggta	ccgggagttt	600
gctatcctac	accagaacct	gaagagagag	tttgccaact	ttacatttcc	tcgactccca	660
gggaagtggc	cattttcatt	atcagaacaa	caattagatg	cccgacgtcg	gggattggaa	720
gaatatctag	aaaaagtgtg	ttcaatacga	gtaattggtg	agagtgacat	catgcaggaa	780
ttcctatcag	aatccgatga	gaactacaat	ggtgtgtccg	acgtagagct	gagagtagca	840
ttaccagatg	gaacaacggt	tacagtcagg	gttaaaaaga	acagtactac	agaccaagta	900
tatcaggcta	tcgcagcaaa	ggttggcatg	gacagtacga	cagtgaatta	ctttgcctta	960
tttgaagtga	tcagtcactc	ctttgtacgt	aaattggcac	ctaattgagtt	tcctcacaaa	1020
ctctacattc	agaattatac	atcagctgtg	ccaggcacct	gcttgaccat	tcgaaagtgg	1080
ctttttacaa	cagaagaaga	aattctctta	aatgacaatg	accttgctgt	tacctacttc	1140
tttcatcagg	cagtcgatga	tgtgaagaaa	ggttacatca	aagcagaaga	aaagtcctat	1200
caattacaga	agctatacga	acaaagaaaa	atggtcatgt	acctcaacat	gctaaggact	1260
tgtgagggct	acaatgaaat	catctttccc	cactgtgcct	gtgactccag	gaggaagggg	1320
cacgttatca	cagccatcag	catcacgcac	tttaaactgc	atgcctgcac	tgaagaagga	1380
cagctggaga	accaggtaat	tgcatttgaa	tgggatgaga	tgcagcgatg	ggacacagat	1440
gaagaagggg	tggccttctg	tttcgaatat	gcacgaggag	agaagaagcc	ccgatggggt	1500
aaaatcttca	cgccatattt	caattacatg	catgagtgtc	tcgagagggg	gttctgcgag	1560
ctcaagtgga	gaaaagagga	atattag				1587

<210> 331
 <211> 1653
 <212> DNA
 <213> Homo sapiens

<400> 331						
atggtgggtg	aagagaagat	gtctctaaga	aaccggctgt	caaagtccag	ggaaaatcct	60
gaggaagatg	aagaccagag	aaaccctgca	aaggagtccc	tagagacacc	tagtaatggt	120
cgaattgaca	taaaacagtt	gatagcaaag	aagataaagt	tgacagcaga	ggcagaggaa	180
ttgaagccat	tttttatgaa	ggaagttggc	agtcactttg	atgattttgt	gaccaatctc	240
attgaaaagt	cagcatcatt	agataatggt	gggtgcgctc	tcacaacctt	ttctgttctt	300
gaaggagaga	aaaacaacca	tagagcgaag	gatttgagag	cacctccaga	acaaggaaag	360
atttttattg	caaggcgctc	tctcttagat	gaactgcttg	aagtggacca	catcagaaca	420

atatatcaca	tgttttattgc	cctcctcatt	ctcttttatcc	tcagcacact	tgtagtagat	480
tacattgatg	aaggaaggct	ggtgcttgag	ttcagcctcc	tgtcttatgc	ttttggcaaa	540
tttcctaccg	ttgtttggac	ctggtggatc	atgttcctgt	ctacattttc	agttccctat	600
tttctgtttc	aacattgggc	cactggctat	agcaagagtt	ctcatccgct	gatccgttct	660
ctcttccatg	gctttctttt	catgatcttc	cagattggag	ttctagggtt	tggaccaaca	720
tatgttgtgt	tagcatatac	actgccacca	gcttcccgtt	tcattcattat	attcgagcag	780
attcgttttg	taatgaaggc	ccactcattt	gtcagagaga	acgtgcctcg	ggtactaaat	840
tcagctaagg	agaaatcaag	cactgttcca	atacctacag	tcaaccagta	tttgtacttc	900
ttatttgctc	ctacccttat	ctaccgtgac	agctatccca	ggaatcccac	tgtaagatgg	960
ggttatgtcg	ctatgaagtt	tgcacaggtc	tttggttgct	ttttctatgt	gtactacatc	1020
tttgaaaggc	tttgtgcccc	cttgtttcgg	aatatcaaac	aggagccctt	cagcgctcgt	1080
gttctgggtc	tatgtgtatt	taactccatc	ttgccagggt	tgctgattct	cttccttact	1140
ttttttgcct	ttttgactg	ctggctcaat	gcctttgctg	agatgttacg	ctttggtgac	1200
aggatgttct	ataaggattg	gtggaactcc	acgtcatact	ccaactatta	tagaacctgg	1260
aatgtgggtg	tccatgactg	gctatattac	tatgcttaca	aggactttct	ctgggttttc	1320
tccaagagat	tcaaactctg	tgccatgtta	gctgtctttg	ctgtatctgc	tgtagtacac	1380
gaatatgcct	tggtgttttg	cttgagcttt	ttctatcccg	tgctcttcgt	gctcttcatg	1440
ttctttggaa	tggttttcaa	cttcattgtc	aatgatagtc	ggaaaaagcc	gatttggaat	1500
gttctgatgt	ggacttctct	tttcttgggc	aatggagtct	tactctgctt	ttattctcaa	1560
gaatggtatg	cacgtcagca	ctgtcctctg	aaaaatccca	cattttttgga	ttatgtccgg	1620
ccacgttcct	ggacttgtcg	ttacgtgttt	tag			1653

<210> 332
 <211> 6645
 <212> DNA
 <213> Homo sapiens

<400> 332	
atggcgacac	ggagcagcag
gagggagtcg	cgactcccgt
tcctattcac	cctgggtcgca
60	
ctgctgccgc	ccggagctct
ctgcgaagtc	tggacgcaga
ggctgcacgg	cggcagcgcg
120	
cccttgcccc	aggaccgggg
cttcctcgtg	gtgcagggcg
acccgcgcga	gctgcggtg
180	
tgggcgcgcg	gggatgccag
gggggcgagc	cgcgcggtacg
agaagccgct	ccggaggaaa
240	
cggagcgctg	ccctgcagcc
cgagcccatc	aaggtgtacg
gacaggttag	tctgaatgat
300	
tcccacaatc	agatggtggt
gcactgggct	ggagagaaaa
gcaacgtgat	cgtggccttg
360	
gcccagata	gcctggcatt
ggcgaggccc	aagagcagtg
atgtgtacgt	gtcttacgac
420	
tatggaaaat	cattcaagaa
aatttcagac	aagttaaact
ttggcttggg	aaataggagt
480	
gaagctgtta	tcgcccagtt
ctaccacagc	cctgcggaca
acaagcggtg	catctttgca
540	
gacgcttatg	cccagtacct
ctggatcacg	tttgacttct
gcaacactct	tcaaggcttt
600	

tccatcccat	ttcgggcagc	tgatctcctc	ctacacagta	aggcctccaa	ccttctcttg	660
ggctttgaca	gggtccaccc	caacaagcag	ctgtggaagt	cagatgactt	tggccagacc	720
tggatcatga	ttcaggaaca	tgtcaagtcc	ttttcttggg	gaattgatcc	ctatgacaaa	780
ccaaatacca	tctacattga	acgacatgaa	ccctctggct	actccactgt	cttccgaagt	840
acagatttct	tccagtcccg	ggaaaaccag	gaagtgatcc	ttgaggaagt	gagagatttt	900
cagcttcggg	acaagtacat	gtttgctaca	aaggtggtgc	atctcttggg	cagtgaacag	960
cagtcttctg	tccagctctg	ggtctccttt	ggccggaagc	ccatgagagc	agcccagttt	1020
gtcacaagac	atcctattaa	tgaatattac	atcgcagatg	cctccgagga	ccaggtgttt	1080
gtgtgtgtca	gccacagtaa	caaccgcacc	aatttataca	tctcagaggc	agaggggctg	1140
aagttctccc	tgtccttggg	gaacgtgctc	tattacagcc	caggaggggc	cggcagtgac	1200
accttggtga	ggtattttgc	aatgaacca	tttgtgact	tccaccgagt	ggaaggattg	1260
caaggagtct	acattgctac	tctgattaat	ggttctatga	atgaggagaa	catgagatcg	1320
gtcatcacct	ttgacaaagg	gggaacctgg	gagtttcttc	aggctccagc	cttcacggga	1380
tatggagaga	aaatcaattg	tgagctttcc	cagggctgtt	cccttcatct	ggctcagcgc	1440
ctcagtcagc	tcctcaacct	ccagctccgg	agaatgccca	tcctgtccaa	ggagtcggct	1500
ccaggcctca	tcacgcccac	tggctcagtg	ggaaagaact	tggctagcaa	gacaaacgtg	1560
tacatctcta	gcagtgtctg	agccaggtgg	cgagaggcac	ttcctggacc	tcactactac	1620
acatggggag	accacggcgg	aatcatcacg	gccattgccc	agggcatgga	aaccaacgag	1680
ctaaaataca	gtaccaatga	aggggagacc	tggaaaacat	tcactttctc	tgagaagcca	1740
gtgtttgtgt	atggcctcct	cacagaacct	ggggagaaga	gcactgtctt	caccatcttt	1800
ggctcgaaca	aagagaatgt	ccacagctgg	ctgatcctcc	aggtcaatgc	cacggatgcc	1860
ttgggagttc	cctgcacaga	gaatgactac	aagctgtggt	caccatctga	tgagcggggg	1920
aatgagtgtt	tgctgggaca	caagactgtt	ttcaaacggc	ggacccccca	tgccacatgc	1980
ttcaatggag	aggactttga	caggccggtg	gtcgtgtcca	actgctcctg	caccggggag	2040
gactatgagt	gtgacttcgg	tttcaagatg	agtgaagatt	tgtcattaga	ggtttgtgtt	2100
ccagatccgg	aattttctgg	aaagtcatac	tcccctcctg	tgccttgccc	tgtgggttct	2160
acttacagga	gaacgagagg	ctaccggaag	atttctgggg	acacttgtag	cggaggagat	2220
gttgaagcgc	gactggaagg	agagctggtc	ccctgtcccc	tggcagaaga	gaacgagttc	2280
attctgtatg	ctgtgaggaa	atccatctac	cgctatgacc	tggcctcggg	agccaccgag	2340
cagttgcctc	tcaccgggct	acgggcagca	gtggccctgg	actttgacta	tgagcacaac	2400
tgtttgtatt	gggtccgacct	ggccttggac	gtcatccagc	gcctctgttt	gaatggaagc	2460
acagggcaag	aggtgatcat	caattctggc	ctggagacag	tagaagcttt	ggcttttgaa	2520
cccctcagcc	agctgcttta	ctgggtagat	gcaggcttca	aaaagattga	ggtagctaata	2580
ccagatggcg	acttccgact	cacaatcgtc	aattcctctg	tgcttgatcg	tcccagggct	2640

ctggtcctcg	tgccccaaga	gggggtgatg	ttctggacag	actggggaga	cctgaagcct	2700
gggatttatc	ggagcaatat	ggatggttct	gctgcctatc	acctggtgtc	tgaggatgtg	2760
aagtggccca	atggcatctc	tgtggacgac	cagtggattt	actggacgga	tgcttacctg	2820
gagtgcatag	agcggatcac	gttcagtggc	cagcagcgct	ctgtcattct	ggacaacctc	2880
ccgcacccct	atgccattgc	tgtctttaag	aatgaaatct	actgggatga	ctggtcacag	2940
ctcagcatat	tccgagcttc	caaatacagt	gggtcccaga	tggagattct	ggcaaaccag	3000
ctcacggggc	tcatggacat	gaagattttc	tacaagggga	agaacactgg	aagcaatgcc	3060
tgtgtgcca	ggccatgcag	cctgctgtgc	ctgccaagg	ccaacaacag	tagaagctgc	3120
aggtgtccag	aggatgtgtc	cagcagtgtg	cttccatcag	gggacctgat	gtgtgactgc	3180
cctcagggtc	atcagctcaa	gaacaatacc	tgtgtcaaac	aagagaacac	ctgtcttcgc	3240
aaccagtatc	gctgcagcaa	cgggaactgt	atcaacagca	tttggtggtg	tgactttgac	3300
aacgactgtg	gagacatgag	cgatgagaga	aactgcccta	ccaccatctg	tgacctggac	3360
accagtttc	gttgccagga	gtctgggact	tgtatccac	tgtcctataa	atgtgacctt	3420
gaggatgact	gtggagacaa	cagtgatgaa	agtcattgtg	aaatgcacca	gtgccggagt	3480
gacgagtaca	actgcagttc	cggcatgtgc	atccgctcct	cctgggtatg	tgacggggac	3540
aacgactgca	gggactggtc	tgatgaagcc	aactgtaccg	ccatctatca	cacctgtgag	3600
gcctccaact	tccagtgccg	aaacgggcac	tgcatccccc	agcgggtgggc	gtgtgacggg	3660
gatacggact	gccaggatgg	ttccgatgag	gatccagtca	actgtgagaa	gaagtgcaat	3720
ggattccgct	gccc aaacgg	cacttgcata	ccatccagca	aacattgtga	tggctctgcgt	3780
gattgctctg	atggctccga	tgaacagcac	tgcgagcccc	tctgtacgca	cttcatggac	3840
tttgtgtgta	agaaccgcca	gcagtgcctg	ttccactcca	tggctctgtga	cggaatcatc	3900
cagtgccgcg	acgggtccga	tgaggatgcg	gcgtttgcag	gatgctccca	agatcctgag	3960
ttccacaagg	tatgtgatga	gttcggtttc	cagtgtcaga	atggagtgtg	catcagtttg	4020
atttggaagt	gcgacgggat	ggatgattgc	ggcgattatt	ctgatgaagc	caactgcgaa	4080
aacccacacag	aagccccaaa	ctgctccgcg	tacttccagt	ttcgggtgtga	gaatggccac	4140
tgcatcccca	acagatggaa	atgtgacagg	gagaacgact	gtggggactg	gtctgatgag	4200
aaggattgtg	gagattcaca	tattcttccc	ttctcgactc	ctgggccctc	cacgtgtctg	4260
cccaattact	accgctgcag	cagtgggacc	tgctgtatgg	acacctgggt	gtgcgacggg	4320
taccgagatt	gtgcagatgg	ctctgacgag	gaagcctgcc	ccttgcttgc	aaacgtcact	4380
gctgcctcca	ctcccacca	acttgggcga	tgtgaccgat	ttgagttcga	atgccaccaa	4440
ccgaagacgt	gtattcccaa	ctggaagcgc	tgtgacggcc	accaagattg	ccaggatggc	4500
cgggacgagg	ccaattgccc	cacacacagc	accttgactt	gcatgagcag	ggagttccag	4560
tgcgaggacg	gggaggcctg	cattgtgtct	tcggagcgct	gcgacggctt	cctggactgc	4620
tcggacgaga	gcgatgaaaa	ggcctgcagt	gatgagttga	ctgtgtacaa	agtacagaat	4680

cttcagtgga	cagctgactt	ctctggggat	gtgactttga	cctggatgag	gccccaaaaa	4740
atgccctctg	cttcttgtgt	atataatgtc	tactacaggg	tggttggaga	gagcatatgg	4800
aagactctgg	agaccacag	caataagaca	aacactgtat	taaaagtctt	gaaaccagat	4860
accacgtatc	aggttaaagt	acaggttcag	tgtctcagca	aggcacacaa	caccaatgac	4920
tttgtgaccc	tgaggacccc	agagggattg	ccagatgccc	ctcgaaatct	ccagctgtca	4980
ctccccaggg	aagcagaagg	tgtgattgta	ggccactggg	ctcctcccat	ccacacccat	5040
ggcctcatcc	gtgagtacat	tgtagaatac	agcaggagtg	gttccaagat	gtgggcctcc	5100
cagagggctg	ctagtaactt	tacagaaatc	aagaacttat	tgggtcaacac	tctatacacc	5160
gtcagagtgg	ctgcggtgac	tagtcgtgga	ataggaaact	ggagcgattc	taaatccatt	5220
accaccataa	aaggaaaagt	gatcccacca	ccagatatcc	acattgacag	ctatggtgaa	5280
aattatctaa	gcttcaccct	gaccatggag	agtgatatca	aggtgaatgg	ctatgtggtg	5340
aaccttttct	gggcatttga	caccacaag	caagagagga	gaactttgaa	cttccgagga	5400
agcatattgt	cacacaaagt	tggcaatctg	acagctcata	catcctatga	gatttctgcc	5460
tgggccaaga	ctgacttggg	ggatagccct	ctggcatttg	agcatgttat	gaccagaggg	5520
gttcgcccac	ctgcacctag	cctcaaggcc	aaagccatca	accagactgc	agtggaatgt	5580
acctggaccg	gcccccgaa	tgtggtttat	ggtattttct	atgccacgtc	ctttcttgac	5640
ctctatcgca	accgaagag	cttgactact	tcactccaca	acaagacggt	cattgtcagt	5700
aaggatgagc	agtatttgtt	tctggtccgt	gtagtggtag	cctaccaggg	gccatcctct	5760
gactacgttg	tagtgaagat	gatcccggac	agcaggcttc	caccccgta	cctgcatgtg	5820
gttcatacgg	gaaaaacctc	cgtggtcata	aagtgggaat	caccgtatga	ctctcctgac	5880
caggacttgt	tgtatgcagt	tgcagtcaaa	gatctcataa	gaaagactga	caggagctac	5940
aaagtaaaat	cccgtaacag	actgtgggaa	tacaccctta	acaagttgga	gcctggcggg	6000
aaataccaca	tcattgtcca	actggggaac	atgagcaaag	attccagcat	aaaaattacc	6060
acagtttcat	tatcagcacc	tgatgcctta	aaaatcataa	cagaaaatga	tcatgttctt	6120
ctgttttggg	aaagcctggc	tttaaaggaa	aagcatttta	atgaaagcag	gggctatgag	6180
atacacatgt	ttgatagtgc	catgaatatc	acagcttacc	ttgggaatac	tactgacaat	6240
ttcttttaaa	tttccaacct	gaagatgggt	cataattaca	cgttcacctg	ccaagcaaga	6300
tgcctttttg	gcaaccagat	ctgtggggag	cctgccatcc	tgctgtacga	tgagctgggg	6360
tctggtgcag	atgcatctgc	aacgcaggct	gccagatcta	cggatgttgc	tgctgtggtg	6420
gtgcccattc	tattcctgat	actgctgagc	ctgggggtgg	ggtttgccat	cctgtacacg	6480
aagcaccgga	ggctgcagag	cagcttcacc	gccttcgcca	acagccacta	cagctccagg	6540
ctgggggtccg	caatcttctc	ctctggggat	gacctggggg	aagatgatga	agatgccctt	6600
atgataactg	gattttcaga	tgacgtcccc	atggtgatag	cctga		6645

<210> 333
 <211> 3999
 <212> DNA
 <213> Homo sapiens

<400> 333
 atgcagcagg cgccgcagcc ttacgagttc ttcagcgagg agaacagtcc gaaatggcgg 60
 ggactgttgg tctcggccct gcggaagggt caggaacaag tgcattccac tctctcagct 120
 aatgaagagt ctctctatta tattgaagag ctgatttttc agctgcttaa taaattatgc 180
 atggcccagc caaggactgt tcaagatgta gaggagcgag ttcagaagac ctttcctcac 240
 ccaattgata aatggggccat tgctgatgca caatctgcta tagaaaaacg aaaacgaaga 300
 aatcctcttt tactgcctgt ggacaaaatc catccttcgt tgaaggaagt attagggtag 360
 aaagtggact accatgtatc cctatatatt gtggctgtac tagagtatat ctcagctgat 420
 attttaaaat tggctggtaa ttatgttttt aatatccggc attatgaaat atctcagcag 480
 gacattaaag tgtcaatgtg tgcggataag gttttgatgg acatgtttga tcaggatgac 540
 ataggtttgg tttctctctg tgaagatgaa cctagttctt ctggtgaatt aaactactat 600
 gatcttgtca gaactgaaat cgcagaagaa agacagtatc tacgggaatt aaatatgac 660
 ataaaagtgt ttcgagaagc ctttctttct gatagaaagc tgtttaaac tcttgatatc 720
 gaaaagattt ttagtaacat ttcagatata catgaattga ctgtgaaact tttaggtttg 780
 attgaagaca cagttgaaat gactgatgaa agcagtcctc atcccttagc tggcagctgt 840
 tttgaagatt tggcagaaga gcaagcattt gatccttatg aaacattatc acaggacatt 900
 ctttcaccag agtttcatga acatttcaat aaattgatgg ccagacctgc agttgctcta 960
 cactttcagt ccattgctga tggtttttaa gaggcagttc gttatgtcct tccacgtctt 1020
 atgctgggtc cagtgtatca ctggtggcac tactttgagt tactaaagca attgaaagca 1080
 ttagtggaag aacaagaaga cagagaatgt ttgaaccaag ctattactgc tctcatgaat 1140
 ctccaaggta gcatggaccg aatttacaag cagtattcac ctagacgtcg acctggagat 1200
 cctgtttgcc ctttttatag tcaccaatta agaagcaaac acctggctat caaaaaaatg 1260
 aatgaaattc agaaaaatat cgatggatgg gaaggcaaag atattggaca gtgttgtaat 1320
 gaattcatta tggagggacc attgacaaga atcggtgcca aacatgaacg gcatattttt 1380
 ctgtttgatg gcttaatgat cagttgtaaa cctaatactg gccagactcg gcttccaggt 1440
 tacagtagtg cagaatacag gttaaaagaa aaatttgtca tgaggaaaat acaaatttgt 1500
 gataaagaag atacttgtga gcacaagcat gcatttgaat tagtatccaa agatgagaac 1560
 agcataatat ttgctgctaa gtctgctgaa gaaaaaaaca actggatggc agcccttatt 1620
 tctcttcatt atcgtagtac tctagatcga atgttagatt cagtattatt gaaagaagaa 1680
 aatgagcaac cactgagatt accaagtcct gaagtatatc gttttgtagt aaaagactct 1740
 gaggaaaaca ttgtttttga agacaacttg caaagtagaa gtggcatccc cattattaaa 1800
 ggaggaactg tagtgaaatt aattgaaagg ttaacatatc atatgtatgc agatcccaat 1860

tttgttcgta	cttttcttac	cacatatcgt	tcatttttgta	aaccacagga	attgctgagc	1920
ttactgattg	aacggtttga	aattccagag	ccagaaccta	ctgacgcaga	caaattggca	1980
atagagaaag	gcgagcagcc	aatcagtgca	gaccttaaaa	gatttcgcaa	ggaatatgtc	2040
caaccagtac	aacttaggat	cttaaatgta	tttcggcatt	gggttgaaca	tcatttttat	2100
gactttgaaa	gagacttgga	attgcttgaa	agactagaat	ccttcatttc	aagtgtgaaga	2160
gggaaagcta	tgaaaaaatg	ggtagagtca	attgctaaga	tcacaggag	gaagaagcaa	2220
gctcaggcaa	acggagtaag	ccataatatt	acctttgaaa	gtccacctcc	accaattgaa	2280
tggcatatca	gcaaaccagg	acagtttgaa	acatttgatc	tcatgacact	tcatccaata	2340
gaaattgcac	gtcagctgac	acttttgagg	tctgatcttt	acaggaaagt	tcaaccgtct	2400
gaacttgtag	ggagtgtgtg	gaccaaagaa	gataaagaaa	taaattctcc	aaatttatta	2460
aaaatgattc	gccataccac	aaatctcacc	ctctggtttg	aaaaatgcat	tgtggaagca	2520
gaaaattttg	aagaacgggt	ggcagtacta	agtagaatta	tagaaattct	gcaagttttt	2580
caagatttga	ataatttcaa	tggcgtattg	gagatagtca	gtgcagtaaa	ttcagtgta	2640
gtatacagac	tagaccatac	ctttgaggca	ctgcaggaaa	ggaaaaggaa	aattttggac	2700
gaagctgtgg	aattaagtca	agatcacttt	aaaaaatacc	tagtaaaact	taagtcaatc	2760
aatccacctt	gtgtgccttt	ttttggaata	tatttaacaa	atattctgaa	gaccgaagaa	2820
gggaataatg	attttttaaa	aaagaaagg	aaagatttaa	tcaatttcag	taagaggagg	2880
aaagtagctg	aaattactgg	agaaattcag	cagtatcaga	atcagcctta	ctgtttacgg	2940
atagaaccag	atatgaggag	attctttgaa	aaccttaacc	ccatgggaag	tgcattctgaa	3000
aaagagttta	cagattattt	gttcaacaag	tcactagaaa	ttgaacctcg	aaactgcaaa	3060
cagccacctc	gatttcctag	gaaatcaact	ttttccttaa	aatctcctgg	aataaggcct	3120
aacacaggcc	gacatggctc	tacctcaggt	actttacgag	gtcacccaac	accattagaa	3180
agagaaccat	gtaaaataag	ctttagtcgg	attgctgaaa	ctgagctgga	atcaacagtg	3240
tcagcaccaa	cctctccaaa	tacaccatct	actccaccag	tatctgcttc	ttcagacctt	3300
agtgtatttt	tagatgtgga	tctcaacagc	tcctgtggca	gcaatagcat	ctttgctcca	3360
gtgcttttgc	cacattcaaa	gtctttcttt	agttcatgtg	gtagtttaca	taaactaagt	3420
gaagagcccc	tgattcctcc	tcctcttcct	cctcgaaaaa	agtttgatca	tgatgcttca	3480
aattccaagg	gaaatatgaa	atctgatgat	gatcctcctg	ctattccacc	gagacagcct	3540
cctcctccaa	aggtaaaacc	cagagttcct	gttcctactg	gtgcatttga	tgggcctctg	3600
catagtccac	ctccgccacc	accaagagat	cctcttcctg	ataccctcc	accagttccc	3660
cttcggcctc	cagaacactt	tataaactgt	ccatttaatc	ttcagccacc	tccactgggg	3720
catcttcaca	gagattcaga	ctggctcaga	gacattagta	cgtgtccaaa	ttcgccaagc	3780
actcctccta	gcacaccctc	tccaagggta	ccgcgtcgat	gctatgtgct	cagttctagt	3840
cagaataatc	ttgctcatcc	tccagctccc	cctgttcac	caaggcagaa	ttcaagccct	3900

catctgccaa aactgccacc aaagacttac aaacgggagc ttctgcaccc cccattgtac 3960
agactgcctt tgctagaaaa tgcagaaact ccccaatga 3999

<210> 334
<211> 2346
<212> DNA
<213> Homo sapiens

<400> 334
atgaccgctc ccgaaaagcc cgtgaaacaa gaggaatgg ctgccttga cgtggatagc 60
ggcggcggcg gtggcggcgg cggcggccac ggcgagtatc tgcagcagca gcaacagcac 120
ggaaacggtg cgggtggcggc ggcagcggcg gccaggaca ctacagccgtc accgctcgct 180
ctgctggccg ctacctgcag caagataggg ccgccatcgc cgggcgacga cgaggaggag 240
gcggccgccc cagccggggc ccccgccgcc gccggagcga caggtgattt ggcttctgca 300
cagttaggag gagcaccaa ccgatgggag gttttgtcag ccacacctac aactataaaa 360
gatgaagctg gtaatctagt ccagattcca agtgtctgcta cttcaagtgg gcagtatgtt 420
cttccccttc agaatttga gaatcaacaa atattttccg ttgcaccagg atcagattca 480
tcaaattgta cagtgtccag tgttcaatat caagtgtac cacagatcca gtcagcagat 540
ggtcagcagg ttcaaattgg tttcacaggc tcttcagata atgggggtat aaatcaagaa 600
agcagtcaaa ttcagatcat tcctggctct aatcaaacct tacttgccctc tggaacacct 660
tctgctaaca tccagaatct cataccacag actggtcaag tccaggttca gggagttgca 720
attggtgggt catcttttcc tgggtcaaacc caagtagttg ctaatgtgcc tcttgggtctg 780
ccaggaaata ttacgtttgt accaatcaat agtgtcgatc tagattcttt gggactctcg 840
ggcagttctc agacaatgac tgcaggcatt aatgccgacg gacatttgat aaacacagga 900
caagctatgg atagttcaga caattcagaa aggactggtg agcgggtttc tcctgatatt 960
aatgaaacta atactgatac agatttattt gtgccaacat cctcttcac acagttgcct 1020
gttacgatag atagtacagg tatattacaa caaaacacaa atagcttgac tacatctagt 1080
gggcaggttc attcttcaga tcttcaggga aattatatcc agtcgcctgt ttctgaagag 1140
acacaggcac agaatttca ggtttctaca gcacagcctg ttgtacagca tctacaactt 1200
caagagtctc agcagccaac cagtcaagcc caaattgtgc aaggtattac accacagaca 1260
atccatggtg tgcaagccag tgggtcaaat atatcacaac aggctttgca aaatcttcag 1320
ttgcagctga atcctggaac ctttttaatt caggcacaga cagtgacccc ttctggacag 1380
gtaacttggc aaacgtttca agtacaaggg gtccagaact tgcagaattt gcaatacag 1440
aatactgctg cccaacaaat aactttgacg cctgttcaaa ccctcacact tgggtcaagtt 1500
gcggcagggt gagccttcac ttcaactcca gttagtctaa gcactgggtca gttgccaat 1560
ctacaaacag ttacagtga ctctatagat tctgtctggt tacagctaca tccaggagag 1620
aatgctgaca gtctgcaga tattaggatc aaggaagaag aacctgatcc tgaagagtgg 1680
cagctcagtg gtgattctac cttgaatacc aatgacctaa cacacttaag agtacagggtg 1740

gtagatgaag aaggggacca acaacatcaa gaaggaaaaa gacttcggag ggtagcttgc	1800
acctgtccca actgtaaaga aggtggtgga agaggtacca atcttgggaa aaagaagcaa	1860
cacatttgtc atataccagg atgtggtaaa gtctatggga agacctcaca tctgagagct	1920
catctgcgtt ggcatctctg agaacgccct tttgtttgta actggatgta ctgtggtaaa	1980
agatttactc gaagtgatga attacagagg cacagaagaa cacatacagg tgagaagaaa	2040
tttgtttgtc cagaatgttc aaaacgcttt atgagaagtg accaccttgc caaacatatt	2100
aaaacacacc agaataaaaa aggtattcac tctagcagta cagtgtctggc atctgtggaa	2160
gctgcgcgag atgatacttt gattactgca ggaggaacaa cgcttatcct tgcaaattatt	2220
caacaagggt ctgtttcagg gataggaact gttaatactt cgcgccaccag caatcaagat	2280
atccttacca acactgaaat acctttacag cttgtcacag tttctggaaa tgagacaatg	2340
gagtaa	2346

<210> 335
 <211> 1086
 <212> DNA
 <213> Homo sapiens

<400> 335	
atgtacggca aaggcaagag taacagcagc gccgtcccgt ccgacagcca ggcccgggag	60
aagtttagcac tctacgtata tgaatatctg ctccatgtag gagctcagaa atcagctcaa	120
acatttttat cagagataag atgggaaaaa aacatcacat tgggggaacc accaggattc	180
ttacattctt ggtggtgtgt attttgggat ctctactgtg cagctccaga gagacgtgaa	240
acatgtgaac actcaagtga agcaaaagcc ttccatgatt acagtgtctgc agcagctccc	300
agtccagtgc taggaaacat tccccagga gatggcatgc cagtaggtcc tgtaccacca	360
gggttctttc agccttttat gtcacctcggt taccctggag gtccaaggcc cccattgagg	420
atacctaadc aggcacttgg aggtgtccca ggaagtcagc cattactccc cagtggaatg	480
gatccaactc gacaacaagg acatccaaat atgggtgggc caatgcagag aatgactcct	540
ccaagaggaa tgggtgccctt aggaccacag aactatggag gtgcaatgag acccccactg	600
aatgcttttag gtggcccttg aatgcctgga atgaacatgg gtccagggtg tggtagacct	660
tggccaaacc caacaaatgc caattcaata ccatactcct cagcatctcc tgggaattat	720
gtaggtcctc caggaggtgg agggccacca ggaacacca tcatgcctag tccagcagat	780
tcaaccaact ctggtgataa catgtatact ttaatgaatg cagtacctcc tggacctaac	840
agacctaat ttccaatggg tcctgggtca gatggtccca tgggtggatt aggaggaatg	900
gagtcacatc acatgaatgg ctcttttaggc tcaggagata tggacagtat ttccaagaat	960
tctcccaata atatgagcct gagtaatcaa ccgggcactc caagggatga tggcgaaatg	1020
gggggaaatt tcttaaatcc ttttcagagt gagagttact cccctagcat gacaatgagc	1080
gtgtga	1086

<210> 336
 <211> 3771
 <212> DNA
 <213> Homo sapiens

<400> 336
 atggaccggc ccctgtcgtc gtcggcggag gcggaggagg aactggagtg gcaagtggcg 60
 agtcgcagga ggaaggcctg ggccaagtgc cgcagctcct ggcaagcgtc ggagacggag 120
 gatctgtcca cagaagcgac gacgcaggac gaggaggagg acgaggagga ggacctcccc 180
 ggcgcgcagc tgccggcagc ggggggaaga ggaaacgtgc ccaacgagaa gatcgcgata 240
 tggctcaagg actgccgtac acctttggga gcctcactgg atgaacaaag cagtagtaca 300
 ctcaaggggtg tgcttgtgag aaatggagga agttttgaag atgatttgtc attgggagct 360
 gaagccaacc acctccatga aagtgatgct caaattgaaa actgcaataa tatcttggcc 420
 aaagagagaa gattacagtt tcatcagaaa gggagaagta tgaattccac tggatctggg 480
 aaaagtagtg ggacagtttc aagtgtttca gaattgttgg aactttatga ggaagatcct 540
 gaagaaattc ttataaatct tggatttggg cgtgatgaac cagatattgc ttctaaaatt 600
 ccttccagat tttttaattc atcatccttt gccaaagga tagatattaa agtatttttg 660
 agtgctcaga tgcaacggat ggaagtagaa aacccaaatt atgctttaac aagccgtttt 720
 cgtcaaattg aagtgcctac tactgtggcc aatgcgtttt cttctttata ttctcaagtc 780
 tccgggacgc ccctgcagag aattggaagt atgtcctcag tgacctctaa caaggagaca 840
 gaccacctc cacctttaac tcgaagtaac actgcaaadc gtttaatgaa aacactctca 900
 aaactgaatt tatgtgttga taaaacagag aaaggagaaa gtagtagtcc ttctccatca 960
 gctgaaaaag gaaagattct aaatgtttca gtgattgaag aaagtggcaa taaaaacgat 1020
 caaaagtctc aaaaaattat gaagaagaaa gagtcatctt ctatgttggc tacagttaaa 1080
 gaagaagtct ctggtagtct agcagctgtt acggagaatg ctgatagtga tagaatttct 1140
 gatgaagcaa atagtaattt taaccaagga actgaaaatg aacaaagtaa agaaactcaa 1200
 agtcatgaga gtaaaactggg tgaggaatct ggtattgtag aatccaaatt agatagtgat 1260
 ttcaacatat ccagccacag tgagctggaa aatagcagtg agctgaaaag tgtccatata 1320
 tccacacctg aaaaagagcc ttgtgcacca ctgacaatac catccataag aaatataatg 1380
 acacagcaga aggactcctt cgaaatggaa gaggttcaaa gtacggaggg agaagctcct 1440
 catgttccag ccacttacca gctaggtcctt acgaagtcga aaagagatca tctgttacgt 1500
 actgcaagtc agcattccga tagcagtggg tttgctgaag attctacaga ctgcctatcc 1560
 cttaatcatc ttcaggttca ggagtccttg caggctatgg ggagtagtgc tgatagtgtg 1620
 gacagtgaga caacagttac gtcacttggg gaagaccttg ccacaccaac agcacaagac 1680
 cagccttatt ttaatgaatc agaggaggag tctcttgtcc ctcttcagaa gggactagag 1740
 aaggcagcag cagttgcaga caaaagaaaa tcaggtagcc aggatttccc tcagtgaac 1800
 accattgaga atacaggaac taaacagtcc acctgtagtc caggggatca tatcattgaa 1860

attactgaag	tggaagagga	tttgtttcca	gcagagacag	tagagctact	gaggggaagca	1920
agtgtctgaaa	gtgatgtggg	taaaagcagt	gaaagtgaat	ttactcagta	taccacacac	1980
catattctga	aatcattggc	ttctattgaa	gctaaatgca	gtgatatgag	ctctgaaaat	2040
acaactgggc	ctccctcttc	catggacaga	gttaatacag	ctttgcaaag	agctcaaatg	2100
aaggtttgca	gtctgtctaa	tcaaaggatg	gggcgtagcc	tgctaaaatc	aaaagatttg	2160
ttaaaacaaa	ggtacttatt	tgcaaaagct	ggctatcctc	taagaaggtc	tcagtcttta	2220
ccaaccacct	tattgagccc	agtaaggggt	gtgtcctctg	tcaatgttcg	attatctcca	2280
ggaaaagaga	ccagatgcag	cccaccttcc	ttcacctata	agtacacacc	tgaagaggag	2340
caggaattgg	aaaagcgggt	gatggaacat	gatggtcagt	ctttagttaa	atcgaccatt	2400
ttcatctctc	catcatctgt	gaagaaagaa	gaagccccc	agagtgaggc	gccgcgggtg	2460
gaggaatgcc	atcatggaag	gactcctacc	tgttcacggc	ttgctccacc	accaatgtct	2520
cagtctacct	gttcccttca	ttccatccac	tctgagtggc	aagaaaggcc	cctgtgtgag	2580
cacacaagaa	ctctgagcac	tcacagtgtt	ccaacatat	caggggctac	ttgtagtgcc	2640
ttcgcttccc	ctttcgggtg	tccttactca	catagacatg	ccacctaccc	ttaccgagtg	2700
tgctctgtga	atcctccttc	agccatagaa	atgcagttgc	gaagagtatt	acatgatatt	2760
agaaactcac	tgcagaatct	ttcacagtac	cctatgatga	gaggacctga	tcctgctgct	2820
gctccatata	gtactcagaa	atcatctgtt	ctacctcttt	atgaaaatac	ttttcaggag	2880
ctccaggtaa	tgaggcggag	cctgaatttg	tttagaacac	aatgatgga	tttagaattg	2940
gcaatgctgc	gtcagcaaac	catggtttat	catcatatga	ctgaggagga	gaggtttgaa	3000
gttgatcagc	tccaggggtt	gagaaattca	gtccgaatgg	aacttcagga	cctggaactg	3060
cagctggagg	agcgctgct	gggcctggag	gagcagcttc	gtgctgtgcg	catgccttca	3120
cccttccgct	cctccgcact	catgggaatg	tgtggcagta	gaagcgctga	taacttgtca	3180
tgcccttctc	cattgaatgt	aatggaacca	gtcactgaac	tgatgcagga	gcagtcatac	3240
ctgaagtctg	aattgggcct	gggacttgga	gaaatgggat	ttgaaattcc	tcctggagaa	3300
agctcagaat	ctgttttttc	ccaagcaaca	tcagaatcat	cttctgtatg	ttctgggtccc	3360
tctcatgcta	acagaagaac	tggagtacct	tctactgcct	cagtgggcaa	atccaaaacc	3420
ccattagtgg	caaggaagaa	agtgttccga	gcacggtgg	ctctaacgcc	aacagctcct	3480
tctagaacag	gctctgtgca	gacacctcca	gatttgga	gttctgagga	agttgatgca	3540
gctgaaggag	cccagaagt	tgtaggacct	aaatctgaag	tggagaagg	gcatggaaaa	3600
ctcccatcaa	tgccagctgc	tgaggaaatg	cataaaaatg	tggagcaaga	tgagttgcag	3660
caagtcatac	gggaggttgg	catggatcct	attagctgtg	taatactgga	attatcaatg	3720
atatgcactg	gtggaggtgt	tatttgtgct	ttagaagata	cttgctgttg	a	3771

<210> 337
<211> 1110

<212> DNA
 <213> Homo sapiens

<400> 337
 atggaccccc gcaaagtga c gagcttcgg gcctttgtga aaatgtgtaa gcaggatccg 60
 agcgttctgc acaccgagga aatgcgcttc ctgagggagt ggggtggagag catgggtggt 120
 aaagtaccac ctgctactca gaaagctaaa tcagaagaaa ataccaagga agaaaaacct 180
 gatagtaaga aggtggagga agacttaaag gcagacgaac catcaagtga ggaaagtgat 240
 ctagaaattg ataaagaagg tgtgattgaa ccagacactg atgctcctca agaaatggga 300
 gatgaaaatg cggagataac ggaggagatg atggatcagg caaatgataa aaaagtggct 360
 gctattgaag ccctaaatga tggatgaactc cagaaagcca ttgacttatt cacagatgcc 420
 atcaagctga atcctcgctt ggccattttg tatgccaaga gggccagtgt cttcgtcaaa 480
 ttacagaagc caaatgctgc catccgagac tgtgacagag ccattgaaat aaatcctgat 540
 tcagctcagc cttacaagtgc gcgggggaaa gcacacagac ttctaggcca ctgggaagaa 600
 gcagcccatg atcttgccct tgcctgtaaa ttggattatg atgaagatgc tagtgcaatg 660
 ctgaaagaag ttcaacctag ggcacagaaa attgcagAAC atcggagaaa gtatgagcga 720
 aaacgtgaag agcgagagat caaagaaaga atagaacgag ttaagaaggc tcgagaagag 780
 catgagagag cccagagggg ggaagaagcc agacgacagt caggagctca gtatggctct 840
 tttccagggtg gctttcctgg gggaatgcct ggtaattttc ccggaggaat gcctggaatg 900
 ggaggggggca tgcctggaat ggctggaatg cctggactca atgaaattct tagtgatcca 960
 gaggttcttg cagccatgca ggatccagaa gttatggtgg ctttccagga tgtggctcag 1020
 aaccagcaa atatgtcaaa ataccagagc aaccCAAagg ttatgaatct catcagtaaa 1080
 ttgtcagcca aatttggagg tcaagcgtaa 1110

<210> 338
 <211> 1023
 <212> DNA
 <213> Homo sapiens

<400> 338
 atggtgacc tgcggaagag gaccctgaaa gtgctcacct tcctcgtgct cttcatcttc 60
 ctcacctcct tcttcctgaa ctactccac accatggtgg ccaccacctg gttccccaa 120
 cagatggtcc tggagctctc cgagaacctg aagagactga tcaagcacag gccttgacc 180
 tgcacccact gcatcgggca gcgcaagctc tcggcctggt tcgatgagag gttcaaccag 240
 accatgcagc cgctgctgac cgcccagaac gcgctcttgg aggacgacac ctaccgatgg 300
 tggctgaggc tccagcggga gaagaagccc aataacttga atgacaccat caaggagctg 360
 ttcagagtgg tgcctgggaa tgtggaccct atgctggaga agaggtcggt gggctgccgg 420
 cgctgcgccg ttgtgggcaa ctcgggcaac ctgagggagt cttcttatgg gcctgagata 480
 gacagtcacg actttgtcct caggatgaac aaggcgccca cggcaggggt tgaagctgat 540
 gttgggacca agaccacca ccatctggtg taccctgaga gcttccggga gctgggagat 600

PCTAU2016050927-seql-000001-EN-20161013

aatgtcagca tgatcctggt gcccttcaag accatcgact tggagtgggt ggtgagcgcc	660
atcaccacgg gcaccatttc ccacacctac atcccggttc ctgcaaagat cagagtgaaa	720
caggataaga tcctgatcta ccaccagcc ttcataagat atgtctttga caactggctg	780
caagggcacg ggcgataccc atctaccggc atcctctcgg tcattcttctc aatgcatgtc	840
tgcgatgagg tggacttgta cggcttcggg gcagacagca aaggggaactg gcaccactac	900
tgggagaaca acccatccgc gggggctttt cgcaagacgg ggggtgcacga tgcagacttt	960
gagtctaacg tgacggccac cttggcctcc atcaataaaa tccggatctt caaggggaga	1020
tga	1023

<210> 339
 <211> 1578
 <212> DNA
 <213> Homo sapiens

<400> 339 atgcctttgt tcaccgcaa ccccttcgag caagacgtgg aaaaagccac gaatgagtac	60
aacactacag aagattggag tcttattatg gacatatgtg acaaagttgg aagtactcct	120
aatggagcga aagattgcct aaaagccata atgaaaaggg taaatcataa gggtccacat	180
gttgctctgc aagcactaac tcttcttggg gcttggtgtg caaactgtgg aaagatatct	240
catttagaag tatgttcccg tgattttgca acagaagtac gtgctgtgat taaaaataag	300
gcacatccta aagtatgtga aaaactgaaa tctttaatgg tggagtgggc agaagaatct	360
cagaaggacc ctgagtttag tctgatatct gcaactatta aatctatgaa agaagaagga	420
attacttttc ctccagcagg ttctcagact gtctcagctg ctgccaagaa tggtagctca	480
tcgaacaaaa acaaagagga tgaagacata gctaaagcta ttgaattatc gctgcaagaa	540
cagaaacagc aacacacaga acaaaaatcc ttatatccat cttcagaaat tcagttaaat	600
aataagggtg cacggaaagt gagagcttta tatgattttg aagctgttga ggacaatgaa	660
ctcaccttta aacatggtga aataattatt gttttggatg acagtgtatc caattgggtg	720
aaaggagaaa atcacagagg aataggactt ttcccatcca attttgtaac aactaattta	780
aacatagaga ctgaggcagc ggctgtggac aaattgaatg taattgatga tgatgtggag	840
gaaattaaga aatcagagcc tgagcctgtt tatatagatg aggataagat ggatagagcc	900
ctgcaggtac ttcagagtat agatccaaca gattcaaac cagactcca agaccttttg	960
gatttagaag atatctgcca acagatgggt ccaatgatag atgaaaaact tgaagaaatt	1020
gataggaagc attcagaatt gtctgaattg aatgttaaag tcctggaagc tctggaacta	1080
tataacaaat tggatgaatga agcaccagtg tactcagtct attcaaagct ccaccctcca	1140
gcacattacc cacctgcatc atctggggtt ccaatgcaga catatccagt tcaatcacat	1200
ggtggaaact atatgggtca gagcattcac caagtaactg ttgcccacaa ctatagccta	1260
ggacccgatc aaattgggtc actgagatct ctgcctccaa atgtgaattc ctgagtgaca	1320

gcacagcctg	ctcaaacttc	atattttaagc	actggacaag	acactgtttc	caatcctact	1380
tatatgaacc	agaactctaa	cctacagtca	gctactggta	caactgctta	cacacagcaa	1440
atgggggatgt	ctgtggatat	gtcatcttat	cagaacacta	cttccaattt	gcctcaactg	1500
gcaggctttc	cggtgacagt	tccagctcat	ccagttgcac	agcagcacac	aaattaccat	1560
cagcagcctc	tccttttag					1578

<210> 340
 <211> 2253
 <212> DNA
 <213> Homo sapiens

<400> 340	
atgtctcagt	60
gggtacgaact	
tcagcagctt	
gactcaaaat	
tcctggagca	
ggttcaccag	
ctttatgatg	120
acagttttcc	
catggaaatc	
agacagtacc	
tggcacagtg	
gtagaaaaag	
caagactggg	180
agcacgctgc	
caatgatgtt	
tcatttgcca	
ccatccgttt	
tcatgacctc	
ctgtcacagc	240
tggatgatca	
atatagtcgc	
ttttctttgg	
agaataactt	
cttgctacag	
cataacataa	300
ggaaaagcaa	
gcgtaatctt	
caggataatt	
ttcaggaaga	
cccaatccag	
atgtctatga	360
tcatttacag	
ctgtctgaag	
gaagaaagga	
aaattctgga	
aaacgcccag	
agatttaatc	420
aggctcagtc	
ggggaatatt	
cagagcacag	
tgatgttaga	
caaacagaaa	
gagcttgaca	480
gtaaagtcag	
aaatgtgaag	
gacaaggtta	
tgtgtataga	
gcatgaaatc	
aagagcctgg	540
aagatttaca	
agatgaatat	
gacttcaaat	
gcaaaacctt	
gcagaacaga	
gaacacgaga	600
ccaatggtgt	
ggcaaagagt	
gatcagaaac	
aagaacagct	
gttactcaag	
aagatgtatt	660
taatgcttga	
caataagaga	
aaggaagtag	
ttcacaaaat	
aatagagttg	
ctgaatgtca	720
ctgaacttac	
ccagaatgcc	
ctgattaatg	
atgaactagt	
ggagtgggaag	
cggagacagc	780
agagcgcttg	
tattgggggg	
ccgccaatg	
cttgcttgga	
tcagctgcag	
aactggttca	840
ctatagttgc	
ggagagtctg	
cagcaagttc	
ggcagcagct	
taaaaagttg	
gaggaattgg	900
aacagaaata	
cacctacgaa	
catgacccta	
tcacaaaaaa	
caaacaagtg	
ttatgggacc	960
gcaccttcag	
tcttttccag	
cagctcattc	
agagctcggt	
tgtggtggaa	
agacagccct	1020
gcatgccaac	
gcaccctcag	
aggccgctgg	
tcttgaagac	
aggggtccag	
ttcactgtga	1080
agttgagact	
gttggtgaaa	
ttgcaagagc	
tgaattataa	
tttgaaagtc	
aaagtcttat	1140
ttgataaaga	
tgtgaatgag	
agaaatacag	
taaaaggatt	
taggaagttc	
aacatttttg	1200
gcacgcacac	
aaaagtgatg	
aacatggagg	
agtccaccaa	
tggcagtcctg	
gcggctgaat	1260
ttcggcacct	
gcaattgaaa	
gaacagaaaa	
atgctggcac	
cagaacgaat	
gagggtcctc	1320
tcatcgttac	
tgaagagctt	
cactccctta	
gttttgaaac	
ccaattgtgc	
cagcctgggt	1380
tggtaattga	
cctcgagacg	
acctctctgc	
ccgttggtgt	
gatctccaac	
gtcagccagc	1440
tcccagacgg	
ttgggcctcc	
atcctttggt	
acaacatgct	
ggtggcggaa	
cccaggaatc	1500
tgtccttctt	
cctgactcca	
ccatgtgcac	
gatgggctca	
gctttcagaa	
gtgctgagtt	1560
ggcagttttc	
ttctgtcacc	
aaaagaggtc	
tcaatgtgga	
ccagctgaac	

atgttgggag	agaagcttct	tggtcctaac	gccagccccc	atggtctcat	tccgtggacg	1620
aggttttgta	aggaaaatat	aatgataaaa	aattttccct	tctggctttg	gattgaaagc	1680
atcctagaac	tcattaaaaa	acacctgctc	cctctctgga	atgatgggtg	catcatgggc	1740
ttcatcagca	aggagcgaga	gcgtgccctg	ttgaaggacc	agcagccggg	gaccttcctg	1800
ctgcgggttca	gtgagagctc	ccgggaaggg	gccatcacat	tcacatgggt	ggagcgggtcc	1860
cagaacggag	gcgaacctga	cttccatgcg	gttgaaccct	acacgaagaa	agaactttct	1920
gctgttactt	tccctgacat	cattcgcaat	tacaaagtca	tggttgctga	gaatattcct	1980
gagaatcccc	tgaagtatct	gtatccaaat	attgacaaag	accatgcctt	tggaaagtat	2040
tactccaggc	caaaggaagc	accagagcca	atggaacttg	atggccctaa	aggaactgga	2100
tatatcaaga	ctgagttgat	ttctgtgtct	gaagttcacc	cttctagact	tcagaccaca	2160
gacaacctgc	tccccatgtc	tcctgaggag	tttgacgagg	tgtctcggat	agtgggctct	2220
gtagaattcg	acagtatgat	gaacacagta	tag			2253

<210> 341
 <211> 2385
 <212> DNA
 <213> Homo sapiens

<400> 341	
atggcggggct	ggatccaggc ccagcagctg cagggagacg cgctgcgcca gatgcagggtg 60
ctgtacggcc	agcacttccc catcgaggtc cggcactact tggcccagtg gattgagagc 120
cagccatggg	atgccattga cttggacaat ccccaggaca gagcccaagc caccagctc 180
ctggagggcc	tgggtgcagga gctgcagaag aaggcggagc accaggtggg ggaagatggg 240
tttttactga	agatcaagct ggggcactac gccacgcagc tccagaaaac atatgaccgc 300
tgccccctgg	agctggtccg ctgcatccgg cacattctgt acaatgaaca gaggttggtc 360
cgagaagcca	acaattgcag ctctccggct gggatcctgg ttgacgccat gtcccagaag 420
caccttcaga	tcaaccagac atttgaggag ctgcgactgg tcacgcagga cacagagaat 480
gagctgaaga	aactgcagca gactcaggag tacttcatca tccagtacca ggagagcctg 540
aggatccaag	ctcagtttgc ccagctggcc cagctgagcc cccaggagcg tctgagccgg 600
gagacggccc	tccagcagaa gcaggtgtct ctggaggcct ggttgcagcg tgaggcacag 660
acactgcagc	agtaccgcgt ggagctggcc gagaagcacc agaagaccct gcagctgctg 720
cggaagcagc	agaccatcat cctggatgac gagctgatcc agtggaagcg gcggcagcag 780
ctggccggga	acggcggggc ccccaggggc agcctggacg tgctacagtc ctggtgtgag 840
aagttggccg	agatcatctg gcagaaccgg cagcagatcc gcagggctga gcacctctgc 900
cagcagctgc	ccatccccgg cccagtggag gagatgctgg ccgagggtcaa cgccaccatc 960
acggacatta	tctcagccct ggtgaccagc acattcatca ttgagaagca gcctcctcag 1020
gtcctgaaga	cccagaccaa gtttgcagcc accgtacgcc tgctggtggg cgggaagctg 1080

PCTAU2016050927-seql-000001-EN-20161013

aacgtgcaca tgaatcccc ccaggtgaag gccaccatca tcagttagca gcaggccaag	1140
tctctgctta aaaatgagaa caccgcgaac gagtgcagtg gtgagatcct gaacaactgc	1200
tgctgatgg agtaccacca agccacgggc accctcagtg ccacttcag gaacatgtca	1260
ctgaagagga tcaagcgtgc tgaccggcgg ggtgcagagt ccgtgacaga ggagaagttc	1320
acagtcctgt ttgagtctca gttcagtggt ggcagcaatg agcttggtt ccaggtgaag	1380
actctgtccc tacctgtggt tgtcatcgtc caccgcagcc aggaccacaa tgccacggct	1440
actgtgctgt gggacaatgc ctttgctgag ccgggcaggg tgccatttgc cgtgcctgac	1500
aaagtgtgtt ggccgcagct gtgtgaggcg ctcaacatga aattcaaggc cgaagtgcag	1560
agcaaccggg gcctgaccaa ggagaacctc gtgttccttg cgcagaaact gttcaacaac	1620
agcagcagcc acctggagga ctacagtggc ctgtccgtgt cctgggtcca gttcaacagg	1680
gagaacttgc cgggctggaa ctacaccttc tggcagtggt ttgacggggt gatggaggtg	1740
ttgaagaagc accacaagcc cacttggaat gatggggcca tcctagggtt tgtgaataag	1800
caacaggccc acgacctgct catcaacaag ccgcagggga cttcttgtt gcgctttagt	1860
gactcagaaa tcggggggcat caccatcgcc tggaagtttg actccccgga acgcaacctg	1920
tggaacctga aaccattcac cagcggggat ttctccatca ggtccctggc tgaccggctg	1980
ggggacctga gctatctcat ctatgtgtt cctgaccgcc ccaaggatga ggtcttctcc	2040
aagtactaca ctctgtgtt ggctaaagct gttgatggat atgtgaaacc acagatcaag	2100
caagtggctc ctgagtttgt gaatgcatct gcagatgctg ggggcagcag cgccacgtac	2160
atggaccagg cccctcccc agctgtgtgc cccaggtc cctataacat gtaccacag	2220
aacctgacc atgtactcga tcaggatgga gaattcgacc tggatgagac catggatgtg	2280
gccaggcacg tggaggaact cttacgccga ccaatggaca gtcttgactc ccgcctctcg	2340
ccccctgccg gtcttttcac ctctgccaga ggctccctct catga	2385

<210> 342
 <211> 2364
 <212> DNA
 <213> Homo sapiens

<400> 342	
atggctgtgt ggatacaagc tcagcagctc caaggagaag cccttcatca gatgcaagcg	60
ttatatggcc agcattttcc cattgaggtg cggcattatt tatcccagtg gattgaaagc	120
caagcatggg actcagtaga tcttgataat ccacaggaga acattaaggc caccagctc	180
ctggagggcc tggcagga gctgcagaag aaggcagagc accaggtggg ggaagatggg	240
tttttactga agatcaagct ggggcactat gccacacagc tccagaacac gtatgaccgc	300
tgcccatgg agctgggtccg ctgcatccgc catatattgt acaatgaaca gaggttggtc	360
cgagaagcca acaatgtag ctctccagct ggaagccttg ctgatgccat gtcccagaaa	420
cacctccaga tcaaccagac gtttgaggag ctgcgactgg tcacgcagga cacagagaat	480
gagttaaaaa agctgcagca gactcaggag tacttcatca tccagtagga ggagagcctg	540

aggatccaag	ctcagtttgg	cccgttgcc	cagctgagcc	cccaggagcg	tctgagccgg	600
gagacggccc	tccagcagaa	gcaggtgtct	ctggaggcct	ggttgacagc	tgaggcacag	660
acactgcagc	agtaccgcgt	ggagctggcc	gagaagcacc	agaagaccct	gcagctgctg	720
cgaagcagc	agaccatcat	cctggatgac	gagctgatcc	agtggaagcg	gcggcagcag	780
ctggccggga	acggcgggccc	ccccgagggc	agcctggacg	tgctacagtc	ctggtgtgag	840
aagttggccg	agatcatctg	gcagaaccgg	cagcagatcc	gcagggctga	gcacctctgc	900
cagcagctgc	ccatccccgg	cccagtggag	gagatgctgg	ccgaggtcaa	cgccaccatc	960
acggacatta	tctcagccct	ggtgaccagc	acgttcatca	ttgagaagca	gcctcctcag	1020
gtcctgaaga	cccagaccaa	gtttgcagcc	actgtgccc	tgctggtggg	cgggaagctg	1080
aacgtgcaca	tgaaccccc	ccaggtgaag	gccaccatca	tcagtgcagc	gcaggccaag	1140
tctctgtca	agaacgagaa	cacccgcaat	gattacagtg	gcgagatctt	gaacaactgc	1200
tgcgatcatg	agtaccacca	agccacaggc	acccttagtg	cccacttcag	gaatatgtcc	1260
ctgaaacgaa	ttaagaggtc	agaccgtcgt	ggggcagagt	cggtgacaga	agaaaaattt	1320
acaatcctgt	ttgaatccca	gttcagtgtt	ggtggaaatg	agctggtttt	tcaagtcaag	1380
accctgtccc	tgccagtggg	ggtgatcggt	catggcagcc	aggacaacaa	tgcgacggcc	1440
actgttctct	gggacaatgc	ttttgcagag	cctggcaggg	tgccatttgc	cgtgcctgac	1500
aaagtgtgtg	ggccacagct	gtgtgaggcg	ctcaacatga	aattcaaggc	cgaagtgcag	1560
agcaaccggg	gcctgaccaa	ggagaacctc	gtgttcctgg	cgcagaaact	gttcaacaac	1620
agcagcagcc	acctggagga	ctacagtggc	ctgtctgtgt	cctgggtcca	gttcaacagg	1680
gagaatttac	caggacggaa	ttacactttc	tggaatggt	ttgacgggtg	gatggaagtg	1740
ttaaaaaaac	atctcaagcc	tcattggaat	gatggggcca	ttttgggggt	tgtaaacaag	1800
caacaggccc	atgacctact	cattaacaag	ccagatggga	ccttcctcct	gagattcagt	1860
gactcagaaa	ttggcggcat	caccattgct	tggaagtttg	attctcagga	agaatgttt	1920
tggaatctga	tgctttttac	caccagagac	ttctccattc	ggtccctagc	cgaccgcttg	1980
ggagacttga	attaccttat	ctacgtgttt	cctgatcggc	caaaagatga	agtatactcc	2040
aaatactaca	caccagttcc	ctgcgagtct	gctactgcta	aagctgttga	tggtacgtg	2100
aagccacaga	tcaagcaagt	ggtccctgag	tttgtgaacg	catctgcaga	tgccgggggc	2160
ggcagcgcca	cgtacatgga	ccaggcccc	tcccagctg	tgtgtcccca	ggctcactat	2220
aacatgtacc	cacagaacct	tgactcagtc	cttgacaccg	atggggactt	cgatctggag	2280
gacacaatgg	acgtagcgcg	gcgtgtggag	gagctcctgg	gccggccaat	ggacagtcag	2340
tggtatccgc	acgcacaatc	gtga				2364

<210> 343
 <211> 1395
 <212> DNA
 <213> Homo sapiens

<400> 343
 atggcaatga cggcaggac tacaacaacc tttcctatga gcaaccatac ccgggaaaga 60
 gtgactgtag ccaagctcac attggagaat ttttatagca acctaatttt acagcatgaa 120
 gagagagaaa ccaggcagaa gaaattagaa gtggccatgg aagaagaagg attagcagat 180
 gaagagaaaa agttacgtcg atcacaacac gctcgcaaag aaacagagtt cttacggctc 240
 aaaaggacca gacttggctt ggatgacttt gagtctctga aagttatagg aagaggagct 300
 tttggagagg tgcggttggg ccagaagaaa gatacaggcc atatctatgc aatgaagata 360
 ttgagaaagt ctgatatgct tgaaaaagag caggtggccc atatccgagc agaaagagat 420
 attttggtag aagcagatgg tgcctgggtg gtgaagatgt tttacagttt tcaggataag 480
 aggaatcttt atctaatac ggaatttctc cctggagggtg acatgatgac attgctaata 540
 aagaaagaca cttgacaga agaggaaaca cagttctaca tttcagagac tgttctggca 600
 atagatgcga tccaccagtt gggtttcatc catcgggata ttaagccaga caacctttta 660
 ttggatgcca agggatcatgt aaaattatct gattttgggt tatgtacggg attaaagaaa 720
 gctcacagga ctgaatttta tagaaatctc acacacaacc caccaagtga cttctcattt 780
 cagaacatga actcaaagag gaaagcagaa acttggaaga agaacaggag acaactggca 840
 tattccacag ttgggacacc agattacatt gctccagaag tattcatgca gactgggttac 900
 aacaaattgt gtgactgggt gtctttggga gtgattatgt atgaaatgct aataggatat 960
 ccacctttct gctctgaaac acctcaagaa acgtacagaa aagtgatgaa ctggaaagaa 1020
 actctggtat ttcctccaga ggtacctata tctgagaaag ccaaggactt aattctcaga 1080
 ttttgtattg attctgaaaa cagaattgga aatagtggag tagaagaaat aaaagggtcat 1140
 cccttttttg aagggtgtcg ctgggagcac ataagggaaa ggccagcagc aatccctata 1200
 gaaatcaaaa gcattgatga tacttcaaat tttgatgact tccctgaatc tgatatttta 1260
 caaccagtgc caaataccac agaaccggac tacaatcca aagactgggt ttttctcaat 1320
 tataacctata aaaggtttga agggttgact caacgtggct ctatccccac ctacatgaaa 1380
 gctgggaagt tatga 1395

<210> 344
 <211> 750
 <212> DNA
 <213> Homo sapiens

<400> 344
 atgtctctcg aagaccctt tttttagtc cgaggcgagg tgcagaaggc ggtgaacacg 60
 gccgcgggc tgtaccagcg ctggtgcgag ctctgcagg aaagcgcggc ggtcggacgc 120
 gaggagctgg actggacgac caatgagctg cggaatggcc tgcgcagcat cgagtgggac 180
 ctgaggacc tggaagagac catcggata gtggaagcca acccaggcaa gttcaagctc 240
 ccagccgggg acctgcagga gagaaaggtg ttcgtggagc ggatgcgaga ggcagtcag 300
 gaaatgaagg accatatggt cagcccaaca gccgtagcat ttttggagag gaataacaga 360

gagatactcg	caggcaagcc	agctgcccag	aagtcaccca	gcgacctgct	ggatgccagc	420
gcagtctcgg	ccacatctcg	ctacatcgag	gagcagcagg	ccacacagca	gctgatcatg	480
gatgaacagg	atcaacagct	ggagatgggtg	tctgggagca	tccaggttct	gaagcacatg	540
tccggccgcg	ttggagaaga	gctggacgag	cagggcatca	tgctggatgc	cttcgcccaa	600
gagatggacc	acacccagtc	ccgcatggac	ggggctctca	ggaagttggc	caaagtatcc	660
cacatgacga	gtgaccgccg	acagtgggtg	gccatcgccg	tgctagtggg	ggtgcttctc	720
ctcgttctca	tcttactatt	ctctctctga				750

<210> 345
 <211> 870
 <212> DNA
 <213> Homo sapiens

<400> 345	
atgaaggacc	gtctggagca gctgaaggcc aagcagctga cacaggatga tgatactgat 60
gcggttgaga	ttgctatcga caacacggct tttatggacg agttcttttc tgagattgag 120
gaaactcggc	ttaacattga caagatctca gaacatgtag aggaggctaa gaaactctac 180
agtatcattc	tctctgcacc gattccagag ccaaaaacca aggatgacct agagcagctc 240
acgactgaga	ttaagaaaag ggccaacaac gtccggaaca aactgaagag catggagaag 300
catattgaag	aagatgaggt caggtcatcg gcagaccttc ggattcggaa atcccagcac 360
tctgtccttt	ctcgggaagtt tgtggaggtg atgaccaaata acaatgaagc tcaagtggac 420
ttccgagAAC	gcagcaaagg gcgaatccag cggcagctcg aaattactgg caaaaagaca 480
accgatgagg	agctggagga gatgttgagg agtggcaacc cggccatctt cacttctggg 540
atcattgact	cacagatttc caagcaagcc ctcaagtgaga ttgaggagc acacaaggac 600
attgtgaggc	tggagagcag catcaaggag cttcacgaca tgtttatgga catcgccatg 660
ctggtggaga	atcaggttga gatgttagat aacatagagt tgaatgtcat gcacacagtg 720
gaccacgtgg	agaaggcacg agatgaaacg aaaaaagctg tgaaatacca gagtcaggcc 780
cggagaaaat	tgataattat cattgtgcta gtagttgtgt tgctgggcat tttagcattg 840
attattggac	tttccgttgg gctgaattaa 870

<210> 346
 <211> 768
 <212> DNA
 <213> Homo sapiens

<400> 346	
atgtccatgg	aggaccctt ctttgtggtg aaaggagagg tacagaaagc agtcaacact 60
gccaggggat	tgtttcagag atggacagag ctctctccagg acccctccac agcaacaagg 120
gaagaaatcg	actggaccac caacgagctg agaaataacc tccggagcat agagtgggat 180
ctagaggacc	ttgatgaaac catcagcata gttgaagcaa atcctagaaa atttaacctt 240
gatgcaactg	aattgagtat aagaaaagcc ttcatataca gtactcggca agttgtcagg 300

PCTAU2016050927-seql-000001-EN-20161013

gacatgaaag atcagatgtc aacttcatct gtgcaggcat tagctgaaag aaaaaataga	360
caggcactgc tgggagacag tggcagccag aactggagca ctggaacaac agataaatat	420
gggcgtcttg accgagagct ccagagagcc aattctcatt tcattgagga gcagcaggca	480
cagcagcagt tgatcgtgga acagcaggat gagcagttgg agctgggtctc tggcagcatc	540
ggggtgctga agaacatgtc ccagcgcacg ggaggggagc tggaggaaca ggcagttatg	600
ttggaagatt tctctcacga attggagagc actcagtcct ggctggacaa tgtgatgaag	660
aaacttgcaa aagtatctca tatgaccagt gatcggcgcc aatgggtgtgc catagccatc	720
ctctttgcag tcctgttggg tgtgctcatc ctcttcttag tgctgtga	768

<210> 347
 <211> 780
 <212> DNA
 <213> Homo sapiens

<400> 347	
atggcgccca acatctactt ggttcgccag cggatcagtc gactcggcca gaggatgtcc	60
ggcttccaga tcaacctcaa cccgctcaag gagccactcg gcttcatcaa ggtcctcagag	120
tggattgctt ctatctttgc ttttgccacc tgtggaggtt ttaagggccca aacagaaatt	180
caagtgaatt gtcctcctgc agttactgag aataaaactg ttacagctac ttttggttat	240
ccattcaggt tgaatgaggc atcatttcag ccacctccag gtgtaaacat atgtgatgta	300
aattggaaaag attacgtcct cataggcgat tactcttctt ctgcacaatt ctatgttacc	360
tttgcagtct ttgtgttcct gtactgcatt gctgcccttc tgctttatgt tggctacacg	420
agtctgtatc tggatagtcg taaacttcct atgatagact ttgttggttac acttggtgcc	480
acttttttgt gggtggtgag cacttcagcc tgggctaaag ctctgacaga tattaataa	540
gctactggtc acaatattat tgatgaactt ccgccttgta agaagaaagc agtactgtgt	600
tactttggct ctgtgaccag tatgggatcc ctaaagtat ctgtgatatt tggctttcta	660
aatatgatac tctggggagg aaatgcttgg tttgtgtaca aggagaccag cctacacagt	720
ccatcaaata catctgcccc tcatagccaa ggaggtattc cacctcctac cggaatataa	780

<210> 348
 <211> 2427
 <212> DNA
 <213> Homo sapiens

<400> 348	
atggctgagc ttctcgccag cgcaggatca gcctgttcct gggactttcc gagagccccg	60
ccctcgttcc ctccccagc cgccagtagg ggaggactcg gcggtacctg gagcttcagg	120
ccccaccggg gcgcggagag tcccaggccc ggccgggacc gggacggcgt ccgagtgcc	180
atggctagct ctaggtgtcc cgctccccgc gggtgccgct gcctccccgg agcttctctc	240
gcatggctgg ggacagtact gctacttctc gccgactggg tgctgctccg gaccgcgctg	300
ccccgcatat tctccctgct ggtgcccacc gcgctgccac tgctccgggt ctgggcgggtg	360

ggcctgagcc gctggggccgt gctctggctg ggggcctgcg gggtcctcag ggcaacgggt	420
ggctccaaga gcgaaaacgc aggtgcccag ggctggctgg ctgctttgaa gccattagct	480
gcggcactgg gcttggccct gccgggactt gccttgttcc gagagctgat ctcatgggga	540
gccccgggt ccgcggatag caccaggcta ctgactggg gaagtcaccc taccgccttc	600
gttgtcagtt atgcagcggc actgcccgca gcagccctgt ggcacaaact cgggagcctc	660
tgggtgcccg gcggtcaggg cggctctgga aaccctgtgc gtcggcttct aggctgcctg	720
ggctcggaga cgcgccgcct ctgctgttcc ctggctctgg tggtcctctc ctctcttggg	780
gagatggcca ttccattctt tacggggccgc ctactgact ggattctaca agatggctca	840
gccgatacct tcaactgaaa cttactctc atgtccattc tcaccatagc cagtgcagtg	900
ctggagtctg tgggtgacgg gatctataac aacacatgg gccacgtgca cagccacttg	960
caggagagg tgtttggggc tgtcctgccc caggagacgg agtttttcca acagaaccag	1020
acaggtaaca tcatgtctcg ggtaacagag gacacgtcca ccctgagtga ttctctgagt	1080
gagaatctga gcttatttct gtggtacctg gtgagaggcc tatgtctctt ggggatcatg	1140
ctctggggat cagtgtccct caccatggc accctgatca ccctgcctct gcttttcctt	1200
ctgccaaga aggtgggaaa atggtaccag ttgctggaag tgcagggtgcg ggaatctctg	1260
gcaaagtcca gccagggtggc cattgaggct ctgtcggcca tgcctacagt tcgaagcttt	1320
gccaacgagg agggcgaagc ccagaagttt agggaaaagc tgcaagaaat aaagacactc	1380
aaccagaagg aggctgtggc ctatgcagtc aactcctgga ccactagtat ttcaggatatg	1440
ctgctgaaag tgggaatcct ctacattggg gggcagctgg tgaccagtgg ggctgtaagc	1500
agtgggaacc ttgtcacatt tgttctctac cagatgcagt tcaccaggc tgtggaggta	1560
ctgctctcca tctaccccag agtacagaag gctgtgggct cctcagagaa aatatttgag	1620
tacctggacc gcacccctcg ctgccaccc agtgggtctgt tgactccctt acacttggag	1680
ggccttgtcc agttccaaga tgtctccttt gcctacccaa accgccaga tgtcttagtg	1740
ctacaggggc tgacattcac cctacgccct ggcgaggatga cggcgctggg gggacccaat	1800
gggtctggga agagcacagt ggctgccctg ctgcagaatc tgtaccagcc caccggggga	1860
cagctgctgt tggatgggaa gcccttccc caatatgagc accgctacct gcacaggcag	1920
gtggctgcag tgggacaaga gccacaggta tttggaagaa gtcttcaaga aaatattgcc	1980
tatggcctga ccagaagcc aactatggag gaaatcacag ctgctgcagt aaagtctggg	2040
gcccatagtt tcatctctgg actccctcag ggctatgaca cagaggtaga cgaggctggg	2100
agccagctgt caggggtca gcgacaggca gtggcgttgg cccgagcatt gatccgaaa	2160
ccgtgtgtac ttatcctgga tgatgccacc agtgccctgg atgcaaacag ccagttacag	2220
gtggagcagc tcctgtacga aagccctgag cggctactcc gctcagtgtc tctcatcacc	2280
cagcacctca gcctgggtgga gcaggctgac cacatcctct ttctggaagg aggcgctatc	2340
cgggaggggg gaaccacca gcagctcatg gagaaaaagg ggtgctactg ggccatgggtg	2400

caggctcctg cagatgctcc agaatga

2427

<210> 349
 <211> 1728
 <212> DNA
 <213> Homo sapiens

<400> 349
 atgtctcatg cggccgaacc agctcgggat ggcgtagagg ccagcgcgga gggccctcga 60
 gccgtgttcg tgctgttgga ggagcgcagg ccggccgact cggctcagct gctcagcctg 120
 aactctttgc ttccggaatc cgggattgtt gctgacatag aattagaaaa cgtccttgat 180
 cctgacagct tctacgagct caaaagccaa cccttaccct ttcgctcaag cctcccaata 240
 tctactgcagg ccacaccagc caccctcagct acactctctg catcgtcttc tgcagggggc 300
 tccaggaccc ctgccatgtc gtcactcttct tcatcgaggg tcttgctgcg gcagcagcta 360
 atgcggggccc aggcgcagga gcaggagagg cgtgagcgtc gggaacaggc cgccgcggct 420
 cccttcccca gtctgcacc tgcctctcct gccatctctg tggttggcgt ctctgctggg 480
 ggccacacat tgagccgtcc acccctgct caggtgcccc gggaggtgct caaggtgcag 540
 acccatctgg agaaccacac gcgctaccac ctgcagcagg cgcgccggca gcaggtgaaa 600
 cagtacctgt ccaccacact cgggcccag ctggcttccc aggcctcac cccaccgccg 660
 gggcccgcga gtgcccagcc actgcctgcc cctgaggctg cccacactac cggccccaca 720
 ggagtgctgc ccaacagccc catggcgctg ctcaccatcg ggtccagctc agagaaggag 780
 attgatgatg tcattgatga gatcatcagc ctggagtcca gttacaatga tgaaatgctc 840
 agctatctgc ccggaggcac cacaggactg cagctcccca gcacgctgcc tgtgtcaggg 900
 aatctgcttg atgtgtacag tagtcaaggc gtggccacac cagccatcac tgtcagcaac 960
 tcctgcccag ctgagctgcc caacatcaaa cgggagatct ctgagaccga ggcaaaggcc 1020
 cttttgaagg aacggcagaa gaaagacaat cacaacctaa ttgagcgtcg caggcgattc 1080
 aacattaacg acaggatcaa ggaactgggc actctcatcc ctaagtccag tgaccggag 1140
 atgcgctgga acaaggcac catcctgaag gcctctgtgg attatatccg caagctgcag 1200
 aaggagcagc agcgtccaa agacctggag agccggcagc gatccctgga gcaggccaac 1260
 cgcagcctgc agctccgaat tcaggaacta gaactgcagg cccagatcca tggcctgcca 1320
 gtacctcca ctccagggt gctttccttg gccacgactt cggcttctga cagcctcaag 1380
 ccagagcagc tggacattga ggaggaggc aggccaggcg cagcaacgtt ccatgtaggg 1440
 gggggacctg cccagaatgc tccccatcag cagccccctg caccgccctc agatgccctt 1500
 ctggacctgc actttccag cgaccacctg ggggacctgg gagaccctt ccacctgggg 1560
 ctggaggaca ttctgatgga ggaggaggag ggggtgtgtg gaggactgtc ggggggtgcc 1620
 ctgtccccac tgcgggctgc ctccgatccc ctgctctctt cagtgtcccc tgctgtctcc 1680
 aaggccagca gccgccgag cagcttcagc atggaagagg agtcctga 1728

<210> 350
 <211> 1431
 <212> DNA
 <213> Homo sapiens

<400> 350
 atggcggtcac gcatagggtt gcgcatgcag ctcatgcggg agcaggcgca gcaggaggag 60
 cagcgggagc gcatgcagca acaggctgtc atgcattaca tgcagcagca gcagcagcag 120
 caacagcagc agctcggagg gccgcccacc ccggccatca atacccccgt ccacttccag 180
 tcgccaccac ctgtgcctgg ggaggtgttg aagggtgcagt cctacctgga gaatcccaca 240
 tcctaccatc tgcagcagtc gcagcatcag aagggtgcggg agtacctgtc cgagacctat 300
 gggaacaagt ttgctgcccc catcagcccc gcccagggtc ctccgaaacc cccaccagcc 360
 gcctccccag ggggtgcgagc tggacacgtg ctgtcctcct ccgctggcaa cagtgtctcc 420
 aatagcccca tggccatgct gcacattggc tccaaccctg agagggagtt ggatgatgtc 480
 attgacaaca ttatgcgtct ggacgatgtc cttggctaca tcaatcctga aatgcagatg 540
 cccaacacgc taccctgtc cagcagccac ctgaatgtgt acagcagcga ccccagggtc 600
 acagcctccc tgggtgggct caccagcagc tcctgccctg cggacctgac ccagaagcga 660
 gagctcacag atgctgagag cagggccctg gccaaaggagc ggcagaagaa agacaatcac 720
 aacttaattg aaaggagacg aaggttcaac atcaatgacc gcatcaagga gttgggaatg 780
 ctgatcccca aggccaatga cctggacgtg cgctggaaca agggcaccat cctcaaggcc 840
 tctgtggatt acatccggag gatgcagaag gacctgcaaa agtccaggga gctggagaac 900
 cactctcgcc gcctggagat gaccaacaag cagctctggc tccgtatcca ggagctggag 960
 atgcaggctc gagtgcacgg cctccctacc acctccccgt ccggcatgaa catggctgag 1020
 ctggcccagc aggtggtgaa gcaggagctg cctagcgaag agggcccagg ggaggccctg 1080
 atgctggggg ctgaggtccc tgaccctgag ccactgccag ctctgcccc gcaagccccg 1140
 ctgcccctgc ccaccagcc accatcccca ttccatcacc tggacttcag ccacagcctg 1200
 agctttgggg gcaggaggga cgagggtccc ccgggctacc ccgaaccctt ggcgccgggg 1260
 catggctccc cattccccag cctgtccaag aaggatctgg acctcatgct cctggacgac 1320
 tcatgctac cgctggcctc tgatccactt ctgtccacca tgtccccga ggcctccaag 1380
 gccagcagcc gccggagcag cttcagcatg gaggagggcg atgtgctgtg a 1431

<210> 351
 <211> 2052
 <212> DNA
 <213> Homo sapiens

<400> 351
 atggcgctct tcgtgcggct gctggctctc gccctggctc tggccctggg ccccgccgcg 60
 accctggcgg gtcccgccaa gtcgccctac cagctggtgc tgcagcacag caggctccgg 120
 ggccgccagc acggccccaa cgtgtgtgct gtgcagaagg ttattggcac taataggaag 180

tacttcacca	actgcaagca	gtggtaccaa	aggaaaatct	gtggcaaadc	aacagtcac	240
agctacgagt	gctgtcctgg	atatgaaaag	gtccctgggg	agaagggctg	tccagcagcc	300
ctaccactct	caaaccttta	cgagaccctg	ggagtcgttg	gatccaccac	cactcagctg	360
tacacggacc	gcacggagaa	gctgaggcct	gagatggagg	ggcccggcag	cttcaccatc	420
ttcgccccta	gcaacgaggc	ctgggcctcc	ttgccagctg	aagtgctgga	ctccctggtc	480
agcaatgtca	acattgagct	gctcaatgcc	ctccgctacc	atatggtggg	caggcgagtc	540
ctgactgatg	agctgaaaca	cggcatgacc	ctcacctcta	tgtaccagaa	ttccaacatc	600
cagatccacc	actatcctaa	tgggattgta	actgtgaact	gtgcccggct	gctgaaagcc	660
gaccaccatg	caaccaacgg	ggtggtgcac	ctcatcgata	aggtcatctc	caccatcacc	720
aacaacatcc	agcagatcat	tgagatcgag	gacacctttg	agacccttcg	ggctgctgtg	780
gctgcatcag	ggctcaacac	gatgcttgaa	ggtaacggcc	agtacacgct	tttggccccg	840
accaatgagg	ccttcgagaa	gatccctagt	gagactttga	accgtatcct	gggcgaccca	900
gaagccctga	gagacctgct	gaacaaccac	atcttgaagt	cagctatgtg	tgctgaagcc	960
atcgttgcgg	ggctgtctgt	agagaccctg	gagggcacga	cactggaggt	gggctgcagc	1020
ggggacatgc	tcactatcaa	cgggaaggcg	atcatctcca	ataaagacat	cctagccacc	1080
aacgggggtga	tccactacat	tgatgagcta	ctcatcccag	actcagccaa	gacactatct	1140
gaattggctg	cagagtctga	tgtgtccaca	gccattgacc	ttttcagaca	agccggcctc	1200
ggcaatcatc	tctctggaag	tgagcggttg	accctcctgg	ctcccctgaa	ttctgtattc	1260
aaagatggaa	cccctccaat	tgatgcccat	acaaggaatt	tgcttcggaa	ccacataatt	1320
aaagaccagc	tggcctctaa	gtatctgtac	catggacaga	ccctggaaac	tctgggcggc	1380
aaaaaactga	gagtttttgt	ttatcgtaat	agcctctgca	ttgagaacag	ctgcatcgcg	1440
gcccacgaca	agagggggag	gtacgggacc	ctgttcacga	tggaccgggt	gctgaccccc	1500
ccaatgggga	ctgtcatgga	tgtcctgaag	ggagacaatc	gcttttagcat	gctggtagct	1560
gcatccagt	ctgcaggact	gacggagacc	ctcaaccggg	aaggagtcta	cacagtcttt	1620
gctcccacaa	atgaagcctt	ccgagccctg	ccaccaagag	aacggagcag	actcttggga	1680
gatgccaaag	aacttgccaa	catcctgaaa	taccacattg	gtgatgaaat	cctgggttagc	1740
ggaggcatcg	gggccctggg	gcggctaaag	tctctccaag	gtgacaagct	ggaagtcagc	1800
ttgaaaaaca	atgtggtgag	tgtcaacaag	gagcctgttg	ccgagcctga	catcatggcc	1860
acaaatggcg	tggtccatgt	catcaccaat	gttctgcagc	ctccagccaa	cagacctcag	1920
gaaagagggg	atgaacttgc	agactctgcg	cttgagatct	tcaaacaagc	atcagcgttt	1980
tccagggtct	cccagaggtc	tgtgcgacta	gccctgtctt	atcaaaagtt	attagagagg	2040
atgaagcatt	ag					2052

<210> 352
 <211> 1704
 <212> DNA

<213> Homo sapiens

<400> 352

atgggtcggg	ggctgctcag	gggcctgtgg	ccgctgcaca	tcgtcctgtg	gacgcgtatc	60
gccagcacga	tcccaccgca	cgttcagaag	tcggttaata	acgacatgat	agtcactgac	120
aacaacggtg	cagtcaagtt	tccacaactg	tgtaaatttt	gtgatgtgag	attttccacc	180
tgtgacaacc	agaaatcctg	catgagcaac	tgcagcatca	cctccatctg	tgagaagcca	240
caggaagtct	gtgtggctgt	atggagaaaag	aatgacgaga	acataacact	agagacagtt	300
tgccatgacc	ccaagctccc	ctaccatgac	tttattctgg	aagatgctgc	ttctccaaag	360
tgcattatga	agggaaaaaa	aaagcctggg	gagactttct	tcattgtgttc	ctgtagctct	420
gatgagtgca	atgacaacat	catctttctca	gaagaatata	acaccagcaa	tcctgacttg	480
ttgctagtca	tatttcaagt	gacaggcatc	agcctcctgc	caccactggg	agttgccata	540
tctgtcatca	tcattcttcta	ctgctaccgc	gttaaccggc	agcagaagct	gagttcaacc	600
tgggaaaccg	gcaagacgcg	gaagctcatg	gagttcagcg	agcactgtgc	catcatcctg	660
gaagatgacc	gctctgacat	cagctccacg	tgtgccaaca	acatcaacca	caacacagag	720
ctgctgcccc	ttgagctgga	caccctgggt	gggaaagggtc	gctttgctga	ggctctataag	780
gccaagctga	agcagaacac	ttcagagcag	tttgagacag	tggcagtcaa	gatctttccc	840
tatgaggagt	atgcctcttg	gaagacagag	aaggacatct	tctcagacat	caatctgaag	900
catgagaaca	tactccagtt	cctgacgggt	gaggagcgga	agacggagtt	ggggaaacaa	960
tactggctga	tcaccgcctt	ccacgccaag	ggcaacctac	aggagtacct	gacgcggcat	1020
gtcatcagct	gggaggacct	gcgcaagctg	ggcagctccc	tcgcccgggg	gattgctcac	1080
ctccacagtg	atcacactcc	atgtgggagg	cccaagatgc	ccatcgtgca	cagggacctc	1140
aagagctcca	atatcctcgt	gaagaacgac	ctaacctgct	gcctgtgtga	ctttgggctt	1200
tccctgcgtc	tggaccctac	tctgtctgtg	gatgacctgg	ctaacagtgg	gcaggtggga	1260
actgcaagat	acatggctcc	agaagtccta	gaatccagga	tgaatttgga	gaatgttgag	1320
tccttcaagc	agaccgatgt	ctactccatg	gctctggtgc	tctgggaaat	gacatctcgc	1380
tgtaatgcag	tgggagaagt	aaaagattat	gagcctccat	ttggttccaa	gggtcgggag	1440
caccctgtg	tcgaaagcat	gaaggacaac	gtgttgagag	atcgagggcg	accagaaatt	1500
cccagcttct	ggctcaacca	ccagggcatc	cagatggtgt	gtgagacgtt	gactgagtgc	1560
tgggaccacg	accagaggc	ccgtctcaca	gccagtggtg	tggcagaacg	cttcagttag	1620
ctggagcatc	tggacaggct	ctcggggagg	agctgctcgg	aggagaagat	tcctgaagac	1680
ggctccctaa	acactaccaa	atag				1704

<210> 353

<211> 1314

<212> DNA

<213> Homo sapiens

<400> 353

atgcggttcg	tgggtgcctt	ggtcctcctg	aacgtcgcag	cggcgggagc	cgtagccgctc	60
ttggccaccg	aaagcgtcaa	gcaagaagaa	gctggagtag	ggccttctgc	aggaaacgtc	120
tccaccacc	ccagcttgag	ccaacggcct	ggaggctcta	ccaagtcgca	tccggagccg	180
cagactccaa	aagacagccc	tagcaagtcg	agtgcggagg	cgcagacccc	agaagacacc	240
cccaacaagt	cgggtgcgga	ggcaaagacc	caaaaagaca	gctccaacaa	gtcgggtgcg	300
gaggcaaaga	cccaaaaagg	cagcactagc	aagtcgggtt	cggaggcgca	gaccacaaaa	360
gacagcacta	gtaagtcgca	tccggagctg	cagactccaa	aagacagcac	tggcaaatcg	420
ggtgcggagg	cgcagacccc	agaagacagc	cccaacaggt	cgggtgcgga	ggcaaagacc	480
caaaaagaca	gccctagcaa	gtcaggttcg	gaggcgagca	ccacaaaaga	tgtccctaata	540
aagtcgggtg	cggacggcca	gaccccaaaa	gacggctcca	gcaagtcggg	tgcggaggat	600
cagaccccaa	aagacgtccc	taacaagtcg	ggtgcggaga	agcagactcc	aaaagacggc	660
tctaacaagt	ccggtgcaga	ggagcagggc	ccaatagacg	ggcccagcaa	gtcgggtgcg	720
gaggagcaga	cctcaaaaaga	cagccctaac	aaggtggttc	cagagcagcc	ttcccggaaa	780
gaccattcca	agcccatctc	caacccttct	gataacaagg	agctcccaa	ggctgacaca	840
aaccagcttg	ctgacaaaagg	gaagctttct	cctcatgctt	tcaaaaccga	atctggggag	900
gaaactgacc	tcatttctcc	cccgcaggag	gaagttaagt	cttcagagcc	tactgaggat	960
gtggagccca	aagaggctga	agatgatgat	acaggacccg	aggagggtc	accgccccaa	1020
gaagagaaaag	aaaagatgtc	cggttctgcc	tccagtgaga	accgtgaagg	gacactttcg	1080
gattccacgg	gtagcgagaa	ggatgacctt	tatccgaacg	gttctggaaa	tggcagcgcg	1140
gagagcagcc	acttctttgc	atatctggtg	actgcagcca	ttcttggtgc	tgtcctctat	1200
atcgctcatc	acaacaagcg	gaagatcatt	gcttttgtcc	tggaaggaaa	aagatctaaa	1260
gtcaccggc	ggccaaaggc	cagtgactac	caacgtttgg	accagaagtc	ctaa	1314

<210> 354
 <211> 4776
 <212> DNA
 <213> Homo sapiens

<400> 354						
atgggaaacg	cagaaagtca	acatgtagag	cacgagtttt	atggagaaaa	gcatgccagc	60
ctggggcgca	agcacacttc	ccgtccctg	cgctctctgc	acaagacgcg	gaggaccagg	120
cacgcttcct	cggggaaggt	gatccacagg	aactccgaag	tgagcacccg	atccagcagc	180
acccccagca	tccccagtc	cctggctgaa	aatggcctgg	agcccttctc	ccaagatggt	240
accctagaag	acttcgggag	ccccatctgg	gtggaccgag	tggacatggg	cttgagacct	300
gtgtcttaca	ctgactcttc	tgtcactccc	agcgtagaca	gcagcatcgt	cctcacagca	360
gcctctgtgc	agagcatgcc	agacactgag	gagagcaggc	tttacgggga	tgacgctaca	420
tatttggtg	agggaggcag	gaggcagcat	tcctatacat	ccaatgggcc	cactttcatg	480
gagacggcga	gctttaagaa	gaaacgctcc	aaatctgcag	acatctggcg	ggaggacagc	540

ctggaattct	cactctctga	tctgagccaa	gaacatttaa	caagcaacga	agaaatcttg	600
ggttccgccg	aagagaagga	ctgcgaggag	gctcggggga	tggaaacgcg	ggcgagtccg	660
cggcagctca	gcacctgtca	gagagccaat	tccttggggtg	acttgatatgc	tcagaaaaac	720
tctggagtga	cagcaaacgg	ggggccgggg	agcaaatttg	caggctactg	tcggaatttg	780
gtgtctgata	ttcccaatct	tgcaaaccat	aagatgccac	cagctgctgc	tgaagagact	840
cctccgtaca	gtaattataa	cacacttccc	tgtaggaaat	ctcactgtct	ctctgaaggt	900
gccaccaacc	cacaaattag	ccatagcaac	agcatgcaag	gcagaagagc	taaaacaact	960
caggatgtta	atgcaggcga	gggcagtga	tttgagaca	gtgggattga	agggggccact	1020
accgacacgg	acctcctgtc	caggcgatct	aatgccacca	actccagcta	ctcaccacc	1080
acaggccggg	cctttgtggg	cagcgacagc	ggcagcagct	ccaccgggga	tgcggctcgt	1140
caggggggtg	acgagaactt	ccggcgggag	ctggagatga	gcaccaccaa	cagcgagagc	1200
ctggaggagg	ccggctcggc	gcacagcgat	gagcagagca	gcggcaccct	gagctctccg	1260
ggccagtcgg	acatcctgct	gaccgccgca	cagggcacgg	tgcgcaaggc	cggcgccctg	1320
gccgtcaaga	acttcctggt	gcacaagaag	aacaagaagg	tggagtcagc	caccgggagg	1380
aagtggaagc	actactgggt	gtccctgaaa	ggatgcacgc	tatttttcta	cgagagcgac	1440
ggcaggctctg	ggatagacca	caacagcatc	cccaaacacg	ccgtctgggt	ggagaacagc	1500
attgtgcagg	cgggtgcctga	gcaccccaag	aaggactttg	tcttctgcct	cagcaattcc	1560
ctgggtgatg	ccttcctttt	tcagaccact	agccagacgg	agcttgaaaa	ctggatcacc	1620
gccatccact	ctgcctgcgc	cactgcggtc	gcgaggcacc	accacaagga	agacacgctc	1680
cgactcctga	aatcagagat	caaaaaactg	gaacagaaga	ttgacatgga	tgaaaagatg	1740
aagaaaatgg	gtgaaatgca	gctgtcttca	gtcactgact	caaagaaaaa	gaaaacaata	1800
ttagatcaga	tctttgtctg	ggagcaaaat	ctcgagcagt	tccaaatgga	cctgtttcgt	1860
ttccgctgtt	atttagccag	ccttcagggt	ggggagctgc	caaaccceaa	aaggcttctc	1920
gcttttgcaa	gtcgaccaac	gaaagtggcc	atgggccgcc	ttggaatctt	ttcggtatca	1980
tcgtttcatg	ccctgggtggc	agcacgcact	ggtgaaactg	gagtgagaag	acgtactcag	2040
gccatgtcca	gatccgcgag	caagcgaagg	agcaggtttt	cttctctgtg	gggtctggat	2100
actacctcca	aaaagaagca	gggacggcca	agcatcaatc	aggtgttttg	agaggggaacc	2160
gaagctgtaa	agaaatcttt	agagggaata	tttgatgaca	ttgttccaga	tggcaagagg	2220
gagaaagaag	tggtcttacc	taacgttcac	cagcacaacc	ctgactgcga	catttggggtc	2280
cacgagtatt	tactccatc	ctggttctgt	ctgccaata	atcagcctgc	cctgacggtc	2340
gtccggccag	gcgacactgc	acgggacacc	ctggagctga	tttgcaagac	acatcaactg	2400
gatcattctg	ctcattacct	gcgcctgaaa	tttctaatag	aaaacaaaat	gcagctctat	2460
gtccacagc	ccgaggaaga	catctatgag	ctgctgtaca	aagaaattga	aatctgtcca	2520
aaagtcactc	agagcatcca	cattgagaag	tcagatacag	ctgctgatac	ttacgggttt	2580

tcactttctt	ctgtggaaga	agatggtatt	cgaaggctgt	acgtgaatag	tgtgaaggaa	2640
accggtttag	cttccaagaa	aggcctgaaa	gcaggagatg	agattcttga	gatcaataat	2700
cgtgctgctg	acgccctgaa	ctcttctatg	ctcaaagatt	tcctctcaca	gccctcgctg	2760
ggcctcctgg	tgaggaccta	ccccgagctg	gaggaaggag	tggagctgct	ggaaagcccg	2820
ccccaccgag	tggacggccc	tgccgacctt	ggcgagagcc	ccctcgccctt	tctcaccagc	2880
aaccagggc	acagcctttg	cagcgagcag	ggcagcagtg	ctgagaccgc	tccagaggag	2940
accgaggggc	cagacttgga	atcctcagat	gagactgatc	acagcagcaa	gagtacagaa	3000
caggtggccg	cattttgccg	cagtttgcat	gagatgaacc	cctctgacca	gagcccatct	3060
cctcaggact	ccacggggcc	tcagctggcg	accatgagac	aactctcgga	tgcagataag	3120
ctgcgcaagg	tgatctgca	gctcctggag	acggagcgca	cctacgtgaa	ggatttaaac	3180
tgtcttatgg	agagatacct	aaagcctctt	caaaaagaaa	cttttctcac	ccaggatgag	3240
cttgacgtgc	tttttgaaa	tttaacggaa	atggtagagt	ttcaagtaga	attccttaaa	3300
actctagaag	atggagttag	actggtacct	gatttgaaa	agcttgagaa	ggttgatcaa	3360
tttaagaaag	tgctgttctc	tctgggggga	tcattcctgt	attatgctga	ccgcttcaag	3420
ctctacagtg	ccttctgctc	cagccacaca	aaagttccca	aggtcctggg	gaaagccaag	3480
acagacacgg	ctttcaaggc	attcttggat	gccagaacc	cgaagcagca	gcactcatcc	3540
acgctggagt	cgtacctcat	caagcccatc	cagaggatcc	tcaagtaccc	acttctgctc	3600
agggagctgt	tcgccctgac	cgatgcggag	agcgaggagc	actaccacct	ggacgtggcc	3660
atcaagacca	tgaacaaggt	tgccagtcac	atcaatgaga	tgcaaaaaat	ccatgaagag	3720
tttggggctg	tgtttgacca	gctgattgct	gaacagactg	gtgagaaaaa	agaggttgca	3780
gatctgagca	tgggagacct	gcttttgcac	actaccgtga	tctggctgaa	cccgccggcc	3840
tcgctgggca	agtggaaaaa	ggaaccagag	ttggcagcat	tcgtcttcaa	aactgctgtg	3900
gtccttgtgt	ataaagatgg	ttccaaacag	aagaagaaac	ttgtaggatc	tcacaggctt	3960
tccatttatg	aggactggga	ccccttcaga	tttcgacaca	tgatccccac	ggaagcgctg	4020
caggttcgag	ctttggcgag	tgcatatgca	gaggcaaattg	ccgtgtgtga	aattgtccat	4080
gtaaaaatccg	agtctgaagg	gaggccggag	agggctcttc	acttgtgctg	cagctcccca	4140
gagagccgaa	aggatttcct	aaaggctgtg	cattcaatcc	tgctgataa	gcacagaaga	4200
cagctcctca	aaaccgagag	ccttccctca	tcccagcaat	atgtcccttt	tggaggcaaa	4260
agattgtgtg	caactgaagg	ggccaggccg	gccatgagca	gggcagtgtc	tgccccaagc	4320
aagtctcttg	ggaggaggag	gcggcggtg	gctcgaaaca	ggtttaccat	tgattctgat	4380
gccgtctccg	caagcagccc	ggagaaagag	tcccagcagc	ccccgggtgg	tggggacact	4440
gaccgatggg	tagaggagca	gtttgatctt	gctcagtatg	aggagcaaga	tgacatcaag	4500
gagacagaca	tcctcagtga	cgatgatgag	ttctgtgagt	ccgtgaaggg	tgctcagtg	4560
gacagagacc	tgcaggagcg	gcttcaggcc	acctccatca	gtcagcggga	aagaggccgg	4620

aaaaccctgg atagtcacgc gtcccgcatg gcacagctca agaagcaagc tgccctgtcg	4680
gggatcaatg gaggcctgga gagcgcaagc gaggaagtca tttgggttag gcgtgaagac	4740
tttgccccct ccaggaaact gaacactgag atctga	4776

<210> 355
 <211> 2319
 <212> DNA
 <213> Homo sapiens

<400> 355	
atgtatccgc agggcagaca tccggctccc catcaacccg ggcagccggg atttaaattc	60
acggtggctg agtcttgtga caggatcaaa gacgaattcc agttcctgca agctcagtat	120
cacagcctca aagtggagta cgacaagctg gcaaacgaga agacggagat gcagcgccat	180
tatgtgatgt actatgagat gtcctatggc ttgaacattg aaatgcacaa gcagacagag	240
attgcgaaga gactgaacac aatttttagca cagatcatgc ctttcctgtc acaagagcac	300
cagcagcagg tggcgcaggc agtggagcgc gccaaagcagg tcaccatgac ggagctgaac	360
gccatcatcg ggcagcagca gctccaggcg cagcacctct cccatgccac acacggcccc	420
ccggtccagt tgccacccca cccgtcaggt ctccagcctc caggaatccc cccagtgaca	480
gggagcagct ccgggctgct ggcaactggc gccctgggca gccaggccca tctgacggtg	540
aaggatgaga agaaccacca tgaactcgat cacagagaga gagaatccag tgcgaataac	600
tctgtgtcac cctcgaaag cctccggggc agtgagaagc accggggctc tgcggactac	660
agcatggaag ccaagaagcg gaaggcggag gagaaggaca gcttgagccg atacgacagt	720
gatggagaca agagtgatga tctggtggtg gatgtttcca atgaggacc cgaacgccc	780
cgggtcagcc cggcacactc ccctcctgaa aatgggctgg acaaggccc tagcctgaaa	840
aaagatgccc ccaccagccc tgcctcggtg gcctcttcca gtagcacacc ttcctccaag	900
accaaagacc ttggtcataa cgacaaatcc tccaccctg ggctcaagtc caacacacca	960
acccaagga acgacgcccc aactccaggc accagcacga cccagggtc caggctgatg	1020
ccgggtaaac ctccgggcat ggacccgata ggtataatgg cctcggctct gcgcacgccc	1080
atctccatca ccagctccta tgcggcgccc ttcgccatga tgagccacca tgagatgaac	1140
ggctccctca ccagtcctgg cgcctacgcc ggcctccaca acatcccacc ccagatgagc	1200
gccgccgccc ctgctgcagc cgctgcctat ggccgatcgc caatggtgag ctttgagct	1260
gttggttttg accctcacc cccgatgcgg gccacaggcc tcccctcaag cctggcctcc	1320
attcctggag gaaaaccagc gtactcattc catgtgagtg ctgatgggca gatgcagccc	1380
gtgcccttcc cccacgacgc cctggcaggc cccggcatcc cgaggcacgc ccggcagatc	1440
aacacactca gccacgggga ggtggtgtgt gccgtgacca tcagcaaccc cagcaggcac	1500
gtctacacag gtggcaaggg ctgctgaag atctgggaca tcagccagcc aggcagcaag	1560
agccccatct cccagctgga ctgcctgaac agggacaatt acatccgctc ctgcaagctg	1620

ctccctgatg	ggcgcacgct	catcgtgggc	ggcgaggcca	gcacgctcac	catctgggac	1680
ctggcctcgc	ccacgccccg	catcaaggcc	gagctgacgt	cctcggctcc	cgctgttat	1740
gccctggcca	ttagccctga	cgccaaagtc	tgtttctct	gctgcagcga	tgggaacatt	1800
gctgtctggg	acctgcacaa	ccagaccctg	gtcaggcagt	tccagggcca	cacagatggg	1860
gccagctgca	tagacatctc	ccatgatggc	accaaactgt	ggacaggggg	cctggacaac	1920
acggtgcgct	cctgggacct	gcgggagggc	cgacagctac	agcagcatga	cttcacttcc	1980
cagatcttct	cgctgggcta	ctgccccact	ggggagtggc	tggctgtggg	catggagagc	2040
agcaacgtgg	aggtgctgca	ccacaccaag	cctgacaagt	accagctgca	cctgcacgag	2100
agctgcgtgc	tctccctcaa	gttcgcctac	tgcggcaagt	ggttcgtgag	cactgggaaa	2160
gataaccttc	tcaacgcctg	gaggacgcct	tatggagcca	gcatattcca	gtctaaagaa	2220
tcctcgtctg	tcttgagttg	tgacatttca	gcggatgaca	aatacattgt	aacaggctct	2280
ggtgacaaga	aggccacagt	ttatgaggtc	atctactaa			2319

<210> 356
 <211> 2322
 <212> DNA
 <213> Homo sapiens

<400> 356	
atgattcgcg	acctgagcaa gatgtacccg cagaccagac acccagcacc gcatcagcct 60
gctcaaccct	ttaaattttac aatttccgaa tcctgtgata ggattaagga agagtttcag 120
tttttacagg	ctcaatacca cagtctgaag ctggaatgtg agaaactcgc cagtgagaag 180
acagagatgc	agcggcatta tgtcatgtat tatgaaatgt cctatgggtt gaatatagaa 240
atgcacaagc	aggcagagat tgtcaagagg ctgaatgcta tctgtgcaca agtcatttct 300
ttcctgtccc	aagagcacca gcaacaagtg gtgcaggctg tggaacgggc caagcagggtg 360
accatggcag	aactgaacgc catcattggg caacaactcc aggccagca tttatcacat 420
ggacatggtc	tccccgtacc tctgactcca cacccttcag ggctccagcc ccctgccatt 480
ccacccatcg	gtagcagtgc cgggcttctg gccctctcca gtgctctagg aggtcagtc 540
catcttccaa	ttaaagatga gaagaagcac catgacaatg atcaccaaag agacagagac 600
tccatcaaga	gctcttcagt atcccatca gccagtttcc gaggtgctga gaagcacaga 660
aactccgcag	actactcctc agagagcaaa aagcagaaaa ctgaagaaaa ggaaattgca 720
gctcgttatg	acagcgatgg tgagaaaagt gatgacaact tgggtggttg cgtttccaat 780
gaggatccat	cttcccctcg agggagccca gcacattccc ccagagagaa tggcctagac 840
aagacacgcc	tgctcaagaa agatgccccg attagtccag cctctattgc atcttccagc 900
agtactccct	cctccaaatc caaagaactt agccttaatg aaaaatctac tactcccgtc 960
tcaaagtcca	atacccttac tccacgaact gatgcgccca cccagggcag taactctact 1020
cccggattga	ggcctgtacc tggaaaacca ccaggagttg accctttggc ctcaagccta 1080
aggaccccaa	tggcagttacc ttgtccatat ccaactccat ttgggattgt gccccatgct 1140

ggaatgaacg	gagagctgac	cagccccgga	gcggcctacg	ctgggctcca	caacatctcc	1200
cctcagatga	gcgcagctgc	tgccgccgcc	gctgctgctg	ctgcctatgg	gagatcacca	1260
gtggtgggat	ttgatccaca	ccatcacatg	cgtgtgccag	caatacctcc	aaacctgaca	1320
ggcattccag	gaggaaaacc	agcatactcc	ttccatgtta	gcgcagatgg	tcagatgcag	1380
cctgtccctt	ttccaccgga	cgccctcatc	ggacctggaa	tccccggca	tgctcgccag	1440
atcaacaccc	tcaaccacgg	ggaggtggtg	tgcgcggtga	ccatcagcaa	ccccacgaga	1500
cacgtgtaca	cgggtgggaa	gggctgcgtc	aaggtctggg	acatcagcca	cccaggcaat	1560
aagagtcctg	tctcccagct	cgactgtctg	aacagggata	actacatccg	ttcctgcaga	1620
ttgctccctg	atggtcgcac	cctaattgtt	ggaggggaag	ccagtacttt	gtccatttgg	1680
gacctggcgg	ctccaacccc	acgcatcaag	gcagagctga	catcctcggc	ccccgcctgc	1740
tatgccctgg	ccatcagccc	cgattccaag	gtctgcttct	catgctgcag	cgacggcaac	1800
atcgctgtgt	gggatctgca	caaccagacc	ttggtgaggc	aattccaggg	ccacacagat	1860
ggagccagct	gtattgacat	ttctaattgat	ggcaccaagc	tctggacagg	tggtttggac	1920
aacacggtca	ggtcctggga	cctgcgcgag	gggcggcagc	tgacgcagca	cgacttcacc	1980
tcccagatct	tttctctggg	ctactgccc	actggagagt	ggcttgcagt	ggggatggag	2040
aacagcaatg	tggaagtttt	gcatgtcacc	aagccagaca	aataccaact	acatcttcat	2100
gagagctgtg	tgctgtcgtc	caagtttgcc	cattgtggca	aatggtttgt	aagcactgga	2160
aaggacaacc	ttctgaatgc	ctggagaaca	ccttatgggg	ccagtatatt	ccagtccaaa	2220
gaatcctcat	cggtgcttag	ctgtgacatc	tccgtggacg	acaaatacat	tgctactggc	2280
tctggggata	agaaggccac	agtttatgaa	gttattttatt	aa		2322

<210> 357
 <211> 2355
 <212> DNA
 <213> Homo sapiens

<400> 357	
atgccacata	ctttgtggat ggtgtgggtc ttgggggtca tcatcagcct ctccaaggaa 60
gaatcctcca	atcaggcttc tctgtcttgt gaccgcaatg gtatctgcaa gggcagctca 120
ggatctttta	actccattcc ctcagggctc acagaagctg taaaaagcct tgacctgtcc 180
aacaacagga	tcacctacat tagcaacagt gacctacaga ggtgtgtgaa cctccaggct 240
ctgggtgctga	catccaatgg aattaacaca atagaggaag attctttttc ttccctgggc 300
agtcttgaac	atttagactt atcctataat tacttatcta atttatcgtc ttcttggttc 360
aagccccttt	cttctttaac attcttaaac ttactgggaa atccttacia aaccctaggg 420
gaaacatctc	ttttttctca tctcacaaaa ttgcaaatcc tgagagtggg aaatatggac 480
accttcacta	agattcaaag aaaagatttt gctggactta ccttccttga ggaacttgag 540
attgatgctt	cagatctaca gagctatgag ccaaaaagtt tgaagtcaat tcagaatgta 600

agtcacatctga	tccttcataat	gaagcagcat	atcttactgc	tggagatttt	tgtagatggt	660
acaagttccg	tggaaatgtt	ggaactgcga	gatactgatt	tggacacttt	ccattttttca	720
gaactatcca	ctgggtgaaac	aaattcattg	attaaaaagt	ttacatttag	aaatgtgaaa	780
atcacccgatg	aaagtttgtt	tcaggttatg	aaacttttga	atcagatttc	tggattgtta	840
gaattagagt	ttgatgactg	tacccttaat	ggagttggta	atcttagagc	atctgataat	900
gacagagtta	tagatccagg	taaagtggaa	acgttaacaa	tccggagggt	gcatattcca	960
aggttttact	tattttatga	tctgagcact	ttatattcac	ttacagaaaag	agttaaaaga	1020
atcacagtag	aaaacagtaa	agtttttctg	gttccttggt	tactttcaca	acattttaaaa	1080
tcattagaat	acttgatct	cagtgaata	ttgatgggtg	aagaatactt	gaaaaattca	1140
gcctgtgagg	atgcctggcc	ctctctacaa	actttaattt	taaggcaaaa	tcatttggca	1200
tcattggaaa	aaaccggaga	gactttgctc	actctgaaaa	acttgactaa	cattgatatc	1260
agtaagaata	gttttcattc	tatgcctgaa	acttgctcagt	ggccagaaaa	gatgaaatat	1320
ttgaacttat	ccagcacacg	aatacacagt	gtaacagggt	gcattcccaa	gacactggaa	1380
atcttagatg	ttagcaacaa	caatctcaat	ttattttctt	tgaatttgcc	gcaactcaaa	1440
gaactttata	tttccagaaa	taagttgatg	actctaccag	atgcctccct	cttaccatg	1500
ttactagtat	tgaataatcag	taggaatgca	ataactacgt	tttctaagga	gcaacttgac	1560
tcatttcaca	cactgaagac	tttgggaagct	gggtggcaata	acttcatttg	ctcctgtgaa	1620
ttcctctcct	tcactcagga	gcagcaagca	ctggccaaag	tcttgattga	ttggccagca	1680
aattacctgt	gtgactctcc	atcccatgtg	cgtggccagc	aggttcagga	tgtccgcctc	1740
tcggtgtcgg	aatgtcacag	gacagcactg	gtgtctggca	tgtgctgtgc	tctgttcctg	1800
ctgatcctgc	tcacgggggt	cctgtgccac	cgtttccatg	gcctgtggta	tatgaaaatg	1860
atgtgggcct	ggctccaggc	caaaaggaag	cccaggaaag	ctcccagcag	gaacatctgc	1920
tatgatgcat	ttgtttctta	cagtgaagcg	gatgcctact	gggtggagaa	ccttatggtc	1980
caggagctgg	agaacttcaa	tcccccttc	aagttgtgtc	ttcataagcg	ggacttcatt	2040
cctggcaagt	ggatcattga	caatatcatt	gactccattg	aaaagagcca	caaaactgtc	2100
tttgtgcttt	ctgaaaactt	tgtgaagagt	gagtgggtgca	agtatgaact	ggacttctcc	2160
catttccgtc	tttttgatga	gaacaatgat	gctgccattc	tcattcttct	ggagcccatt	2220
gagaaaaaag	ccattcccca	gcgcttctgc	aagctgcgga	agataatgaa	caccaagacc	2280
tacctggagt	ggcccatgga	cgaggctcag	cggaaggat	tttgggtaaa	tctgagagct	2340
gcgataaagt	cctag					2355

<210> 358
 <211> 666
 <212> DNA
 <213> Homo sapiens

<400> 358	
atggcgggag	gggtgctccc gctgaggggc ctccgcgcct tgtgtcgcgt gctgctcttc 60

ctctcgcagt tctgcattct gtcgggcggt gaaagtactg aaatcccacc ttatgtgatg	120
aagtgtccga gcaatgggtt gtgtagcagg cttcctgcag actgtataga ctgcacaaca	180
aatttctcct gtacctatgg gaagcctgtc acttttgact gtgcagtga accatctgtt	240
acctgtgttg atcaagactt caaatcccaa aagaacttca tcattaacat gacttgcaga	300
ttttgctggc agcttcctga aacagattac gagtgtacca actccaccag ctgcatgacg	360
gtgtcctgtc ctcggcagcg ctaccctgcc aactgcacgg tgcgggacca cgtccactgc	420
ttgggtaacc gtacttttcc caaaatgcta tattgcaatt ggactggagg ctataagtgg	480
tctacggctc tggctctaag catcacctc ggtgggtttg gagcagaccg tttctacctg	540
ggccagtggc gggaaggcct cggcaagctc ttcagcttcg gtggcctggg aatatggacg	600
ctgatagacg tcctgctcat tggagttggc tatgttggac cagcagatgg ctctttgtac	660
atttag	666

<210> 359
 <211> 936
 <212> DNA
 <213> Homo sapiens

<400> 359	
atgtccaacc ccagcgcccc accaccatat gaagaccgca acccctgta cccaggccct	60
ccgccccctg ggggctatgg gcagccatct gtcttgccag gagggtatcc tgcctaccct	120
ggctacccgc agcctggcta cggtcaccct gctggctacc cacagcccat gccccccacc	180
cacccgatgc ccatgaacta cggcccaggc catggctatg atggggagga gagagcagtg	240
agtgatagct tcgggcctgg agagtgggat gaccggaaag tgcgacacac ttttatccga	300
aaggtttact ccatcatctc cgtgcagctg ctcatcactg tggccatcat tgctatcttc	360
acctttgtgg aacctgtcag cgcctttgtg aggagaaatg tggctgtcta ctacgtgtcc	420
tatgctgtct tcgttgtcac ctacctgatc cttgcctgct gccagggacc cagacgccgt	480
ttcccatgga acatcattct gctgaccctt tttacttttg ccatgggctt catgacgggc	540
accatttcca gtatgtacca aaccaaagcc gtcattcatt caatgatcat cactgcggtg	600
gtatccattt cagtcacat cttctgcttt cagaccaagg tggacttcac ctctgtcaca	660
ggcctcttct gtgtcctggg aattgtgctc ctggtgactg ggattgtcac tagcattgtg	720
ctctacttcc aatacgttta ctggctccac atgctctatg ctgctctggg ggccatttgt	780
ttcacctgt tcctggctta cgacacacag ctggtcctgg ggaaccggaa gcacaccatc	840
agccccgagg actacatcac tggcgccctg cagatttaca cagacatcat ctacatcttc	900
acctttgtgc tgcagctgat gggggatcgc aattaa	936

<210> 360
 <211> 717
 <212> DNA
 <213> Homo sapiens

<400> 360
 atgtacgccc ccggaggcgc agggctgccc ggcgggccc ggcggaggag cccgggaggc 60
 agcgtctctgc ccaagcagcc ggagcgtagc ctggcctcgg ccctgcctgg cgccctgtct 120
 atcacggcgc tgtgactgc cctcgccgag cccgcctggt tgcacatcca cggaggcacc 180
 tgttcgcgcc aggagctggg ggtctccgac gtgttgggct atgtgcaccc ggacctgctg 240
 aaagatttct gcatgaatcc ccagacagtg ctgctcctgc gggtcacgc cgccttctgt 300
 ttcctgggca tcctgtgtag tctctccgct ttccttctgg atgtctttgg gccgaagcat 360
 cctgctctga agatcactcg tcgctatgcc ttcgccata tcctaacggt tctgcagtgt 420
 gccaccgtca ttggcttttc ttattgggct tctgaactca tcttggccca gcagcagcag 480
 cataagaagt accatggatc ccaggtctat gtcaccttcg ccgttagctt ctacctggtg 540
 gcaggagctg gtggagcctc aatcctggcc acggcagcca acctcctgcg cactacccc 600
 acagaggaag aggagcaggc gctggagctg ctctcagaga tggaagagaa cgagccctac 660
 ccggcggaat atgaggtcat caaccagttc cagccacccc ctgcttacac accctaa 717

<210> 361
 <211> 681
 <212> DNA
 <213> Homo sapiens

<400> 361
 atgaccgtgc agagactcgt ggccgcggcc gtgctggtgg ccctgggtctc actcatcctc 60
 aacaacgtgg cggccttcac ctccaactgg gtgtgccaga cgctggagga tgggcgcagg 120
 cgagcgtgg ggctgtggag gtcctgctgg ctggtggaca ggaccgggg agggccgagc 180
 cctggggcca gagccggcca ggtggacgca catgactgtg aggcgctggg ctggggctcc 240
 gaggcagccg gcttccagga gtcccgaggc accgtcaaac tgcagttcga catgatgcgc 300
 gcctgcaacc tgggtggccac ggccgcgctc accgcaggcc agctcacctt cctcctgggg 360
 ctggtggggc tgccctgct gtcacccgac gcccgtgct gggaggaggc catggccgct 420
 gcattccaac tggcgagttt tgtcctggtc atcgggctcg tgactttcta cagaattggc 480
 ccatacacca acctgtcctg gtcctgctac ctgaacattg gcgcctgcct tctggccacg 540
 ctggcgagcag ccatgtcat ctggaacatt ctccacaaga gggaggactg catggccccc 600
 cgggtgattg tcatcagccg ctccctgaca gcgcgctttc gccgtgggct ggacaatgac 660
 tacgtggagt caccatgctg a 681

<210> 362
 <211> 1368
 <212> DNA
 <213> Homo sapiens

<400> 362
 atgggcctct ccaccgtgcc tgacctgctg ctgccactgg tgctcctgga gctgttggtg 60
 ggaatatacc cctcaggggt tattggactg gtccctcacc taggggacag ggagaagaga 120
 gatagtgtgt gtccccaagg aaaatatatc caccctcaaa ataattcgat ttgctgtacc 180

aagtgccaca aaggaaccta cttgtacaat gactgtccag gcccggggca ggatacggac	240
tgcagggagt gtgagagcgg ctccttcacc gcttcagaaa accacctcag acactgcctc	300
agctgctcca aatgccgaaa ggaaatgggt caggtggaga tctcttcttg cacagtggac	360
cgggacaccg tgtgtggctg caggaagaac cagtaccggc attattggag tgaaaacctt	420
ttccagtgtc tcaattgcag cctctgcctc aatgggaccg tgcacctctc ctgccaggag	480
aaacagaaca ccgtgtgcac ctgccatgca ggtttctttc taagagaaaa cgagtgtgtc	540
tcctgtagta actgtaagaa aagcctggag tgcacgaagt tgtgcctacc ccagattgag	600
aatgttaagg gcactgagga ctcaggcacc acagtgtgtg tgcccctggg cattttcttt	660
ggtctttgcc ttttatccct cctcttcatt ggtttaatgt atcgctacca acggtggaag	720
tccaagctct actccattgt ttgtgggaaa tcgacacctg aaaaagaggg ggagcttgaa	780
ggaactacta ctaagcccct ggcccaaac ccaagcttca gtccactcc aggccttcacc	840
cccaccctgg gcttcagtcc cgtgcccagt tccaccttca cctccagctc cacctatacc	900
cccggtgact gtcccaactt tgcggctccc cgcagagagg tggcaccacc ctatcagggg	960
gctgaccca tccttgcgac agccctcgcc tccgaccca tcccaaccc ccttcagaag	1020
tgggaggaca gcgccacaa gccacagagc ctagacactg atgacccgc gacgctgtac	1080
gccgtgggtg agaacgtgcc cccgttgcg tggaaaggaat tcgtgcggcg cctagggctg	1140
agcgaccacg agatcgatcg gctggagctg cagaacgggc gctgcctgcg cgaggcgcaa	1200
tacagcatgc tggcgacctg gaggcggcg acgccgggc gcgaggccac gctggagctg	1260
ctgggacgcg tgctccgca catggacctg ctgggctgcc tggaggacat cgaggaggcg	1320
ctttgcgggc ccgcccctt cccgcccgcg cccagtcttc tcagatga	1368

<210> 363
 <211> 753
 <212> DNA
 <213> Homo sapiens

<400> 363	
atgccagcct catctccttt cttgctagcc cccaaagggc ctccaggcaa catggggggc	60
ccagtcagag agccggcact ctcagttgcc ctctggttga gttggggggc agctctgggg	120
gccgtggctt gtgccatggc tctgctgacc caacaaacag agctgcagag cctcaggaga	180
gaggtgagcc ggctgcaggg gacaggaggc ccctcccaga atggggaagg gtatccctgg	240
cagagtctcc cggagcagag ttccgatgcc ctggaagcct gggagaatgg ggagagatcc	300
cggaaaagga gagcagtgtc cacccaaaaa cagaagaagc agcactctgt cctgcacctg	360
gttcccatta acgccacctc caaggatgac tccgatgtga cagaggatgat gtggcaacca	420
gctcttaggc gtgggagagg cctacaggcc caaggatatg gtgtccgaat ccaggatgct	480
ggagtttatc tgctgtatag ccaggctctg tttcaagacg tgactttcac catgggtcag	540
gtggtgtctc gagaaggcca aggaaggcag gagactctat tccgatgtat aagaagtatg	600

ccctcccacc	cggaccgggc	ctacaacagc	tgctatagcg	caggtgtctt	ccatttacac	660
caaggggata	ttctgagtgt	cataattccc	cgggcaaggg	cgaaacttaa	cctctctcca	720
catggaacct	tcctgggggtt	tgtgaaactg	tga			753

<210> 364
 <211> 1911
 <212> DNA
 <213> Homo sapiens

<400> 364						
atggaaggga	gaggaccgta	ccggatctac	gaccctgggg	gcagcgtgcc	ctcaggagag	60
gcacccgcag	cttttgagcg	cctagtgaag	gagaattccc	ggctgaagga	aaaaatgcaa	120
gggataaaga	tgtagggga	gcttttgaa	gagtcccaga	tggaagcgac	caggctccgg	180
cagaaggcag	aggagctagt	gaaggacaac	gagctgctcc	caccaccttc	tccctccttg	240
ggctccttcg	acccctggc	tgagctcac	ggaaaggact	caaatgtcac	agcatctccc	300
acagcccctg	catgccccag	tgacaagcca	gcaccagtcc	agaagcctcc	atccagtggc	360
acctcctctg	aatttgaagt	ggtcactcct	gaggagcaga	attcaccaga	gagcagcagc	420
catgccaatg	cgatggcgct	gggccccctg	ccccgtgagg	acggcaacct	gatgctgcac	480
ctgcagcgcc	tggagaccac	gctgagtgtg	tgtgccgagg	agccggacca	cggccagctc	540
ttcaccacc	tgggccgcat	ggccctggag	ttcaaccgac	tggcatcaa	ggtgcacaag	600
aatgagcagc	gcacctccat	tctgcagacc	ctgtgtgagc	agcttcggaa	ggagaacgag	660
gctctgaagg	ccaagttgga	taagggcctg	gaacagcggg	atcaggctgc	cgagaggctg	720
cgggaggaaa	atttgagct	caagaagttg	ttgatgagca	atggcaacaa	agagggtgcg	780
tctgggcggc	caggctcacc	gaagatggaa	gggacaggca	agaaggcagt	ggctggacag	840
cagcaggcta	gtgtgacggc	aggtaaggtc	ccagaggctg	tggccttggg	cgcagccgag	900
aagaagggtga	agatgctgga	gcagcagcgc	agtgaagctgc	tggaagtga	caagcagtgg	960
gaccagcatt	tccggtccat	gaagcagcag	tatgagcaga	agatcactga	gctgcgtcag	1020
aagctggctg	atttgcagaa	gcaggtgact	gacctggagg	ccgagcggga	gcagaagcag	1080
cgtgactttg	accgcaagct	cctcctggcc	aagtccaaga	ttgaaatgga	ggagaccgac	1140
aaggagcagc	tgacagcaga	ggccaaggag	ctgcgccaaa	aggtcaagta	cctgcaggat	1200
cagctgagcc	cactcaccg	acagcgtgag	taccaggaaa	aggagatcca	gcggctcaac	1260
aaggccctgg	aggaagcact	gagcatccaa	accccgccat	catctccacc	aacagcattt	1320
gggagcccag	aaggagcagg	ggccctccta	aggaaacagg	agctgggtcac	gcagaatgag	1380
ttgctgaaac	agcaggtgaa	gatcttcgag	gaggacttcc	agagggagcg	cagtgatcgt	1440
gagcgcagta	atgaggagaa	ggaagagctg	aagaagcaag	tggagaagct	gcaggcccag	1500
gtcacctgt	caaagtccca	gctaaaagca	ttcaaagatg	aggagaaggc	aagagaagcc	1560
ctcagacagc	agaagaggaa	agcaaaggcc	tcaggagagc	gttaccatgt	ggagccccac	1620
ccagaacatc	tctgcggggc	ctaccctac	gcctaccgc	ccatgccagc	catggtgcc	1680

PCTAU2016050927-seql-000001-EN-20161013

caccatggct	tcgaggactg	gtcccagatc	cgctaccccc	ctccccccat	ggccatggag	1740
cacccgcccc	cactcccca	ctcgcgctc	ttccatctgc	cgggaatacac	ctggcgtcta	1800
ccctgtggag	gggttcgaaa	tccaaatcag	agctcccaag	tgatggaccc	tcccacagcc	1860
aggcctacag	aaccagagtc	tccaaaaaat	gaccgtgagg	ggcctcagt	a	1911

<210> 365
 <211> 3117
 <212> DNA
 <213> Homo sapiens

<400> 365	
atgcagccag	aggagggcac
aggctggctg	ctggagctgc
tgtccgaggt	gcagctgcaa
	60
cagtacttcc	tgcggctccg
agatgacctc	aacgtcaccc
gcctgtccca	ctttgagtac
	120
gtcaagaatg	aggacctgga
gaagatcggc	atgggtcggc
ctggccagcg	gcggctgtgg
	180
gaggctgtga	agaggaggaa
ggccttgtgc	aaacgcaagt
cgtggatgag	taaggtgttc
	240
agtggaaagc	gactggaggc
tgagttccca	cctcatcact
ctcagagcac	cttccggaag
	300
acctcgcccc	cccctggggg
cccagcaggg	gaggggcccc
tgcagagcct	cacctgcctc
	360
attggggaga	aggacctgcg
cctcctggag	aagctgggtg
atgggttcctt	tggcgtggtg
	420
cgcaggggcg	agtgggacgc
gccctcaggg	aagacggtga
gtgtggctgt	gaagtgcctg
	480
aagcccgatg	tcctgagcca
gccagaagcc	atggacgact
tcacccggga	ggtcaatgcc
	540
atgcactcgc	tcgaccaccg
aaacctcatc	cgcctctacg
gggtggtgct	cacgccgccc
	600
atgaagatgg	tgacagagct
ggcacctctg	ggatcgttgt
tggaccggct	acgtaagcac
	660
cagggccact	tcctcctggg
gactctgagc	cgctacgctg
tgcaggtggc	tgagggcatg
	720
ggctacctgg	agtccaagcg
ctttattcac	cgtgacctgg
ctgcccgcaa	tctgctgttg
	780
gctacccgcg	acctggtcaa
gatcggggac	tttgggctga
tgcgagcact	acctcagaat
	840
gacgaccatt	acgtcatgca
ggaacatcgc	aaggtgccct
tcgcctgggtg	tgcccccgag
	900
agcctgaaga	cacgcacctt
ctcccatgcc	agcgacacct
ggatgttcgg	ggtgacactg
	960
tgggaaatgt	tcacctacgg
ccaggagccc	tggatcggcc
tcaacggcag	tcagatcctg
	1020
cataagatcg	acaaggaggg
ggagcggctg	ccccggcccc
aggactgtcc	ccaggacatc
	1080
tacaacgtca	tgggtccagt
ctgggctcac	aagccagagg
acagaccac	gtttgtggcc
	1140
ctgcgggact	tcctgctgga
ggcccagccc	acagacatgc
gggcccttca	ggactttgag
	1200
gaaccggaca	agctgcacat
ccagatgaat	gatgtcatca
ccgtcatcga	gggaagggcc
	1260
gagaactact	ggtggcgtgg
ccagaacaca	cggacgctgt
gtgtggggcc	cttccctcgc
	1320
aacgtggtga	cctccgtggc
cggcctgtcg	gcccaggaca
tcagccagcc	cctgcagaac
	1380
agcttcatcc	acacagggca
tggcgacagt	gacccccgcc
actgctgggg	cttccccggac
	1440
aggattgacg	aactgtatct
gggaaacccc	atggaccccc
ccgacctcct	gagcgtggaa
	1500
ctgagcacct	cccggcccc
ccagcatcta	ggaggggtga
aaaaaccaac	ctatgaccct
	1560

gtgagcgagg	accaagaccc	cttgtccagc	gacttcaaga	ggctgggcct	gcggaagcca	1620
ggcctgcccc	gagggctgtg	gctggcgaag	ccctcggcgc	gggtgccggg	caccaaggcc	1680
agccgaggca	gcggggctga	ggtcacgctc	atcgacttcg	gtgaggagcc	cgtggtcccc	1740
gccctacggc	cctgcgcgcc	ctccctggcg	cagctggcca	tggacgcctg	ctccctgctg	1800
gacgagaccc	cgcctcagag	ccccacgcgg	gactgcccc	ggcccctgca	ccccacgcct	1860
gtggtggact	gggacgcacg	cccgtgccc	ccccgcccc	cctatgacga	cgtggcccag	1920
gatgaggatg	actttgagat	ctgctccatc	aacagcaccc	tcgtgggcgc	gggggtccct	1980
gccggggcca	gccagggcca	gaccaactac	gcctttgtgc	ctgagcaggc	gcggccgccc	2040
cctcccctgg	aggacaacct	gttcctccc	ccccagggtg	ggggcaagcc	gccagctcc	2100
gcacagaccg	cagagatctt	ccaggcgcta	cagcaggagt	gcatgaggca	actgcaggct	2160
ccggccggct	ccccggcccc	ctctcccagc	ccgggggggtg	acgacaagcc	ccagggtgcct	2220
cctcgggtac	ccatcccccc	tcggcccacg	cgcccacacg	tccagctgtc	tccagcccc	2280
ccgggcgagg	aggagaccag	ccagtggcct	ggacctgctt	cccctccccg	ggtgcctccg	2340
cgggagcccc	tgtcccctca	aggctcgagg	acaccagcc	ccctggtacc	acctggcagc	2400
tccccgctgc	caccccggct	ctcaagctca	cctgggaaga	ccatgcccac	caccagagc	2460
tttgcctcag	acccaagta	cgccaccccc	caggtgatcc	aggcccctgg	cccgcgggct	2520
ggtccctgca	tcctgcccct	cgtccgggat	ggcaagaagg	tcagcagcac	ccactattac	2580
ttgctgccc	agcgaccatc	ctacctggag	cgctaccagc	gcttcctgcg	tgaggcccag	2640
agccccgagg	agcctacccc	cctgcctgtg	cctctgtgtc	tgccccacc	cagcacccca	2700
gcccccgccg	ccccacggc	caccgtgcgg	ccgatgcccc	aggctgcctt	ggaccccaag	2760
gccaacttct	ccaccaacaa	cagcaaccca	ggggcccggc	caccaccccc	gagggccact	2820
gctcggctgc	cacagagggg	ctgccctggc	gatgggccag	aggcgggccg	gccagcagac	2880
aagatccaga	tggccatggt	gcatgggggtg	accacagagg	agtgccaggc	ggccctgcag	2940
tgccacggct	ggagcgtgca	gagggctgcc	cagtatctga	aggtggagca	gctcttcggg	3000
ctgggtctgc	ggcccagagg	ggagtgccac	aaagtgtgtg	agatgttcga	ctggaacctg	3060
gagcaggccg	gctgccacct	tctgggctcc	tggggccctg	cccaccacaa	gcgctga	3117

<210> 366

<211> 5172

<212> DNA

<213> Homo sapiens

<400> 366

atgagagaga	aggagcaaga	aagggaagaa	cagttaatgg	aagacaagaa	aaggaagaaa	60

gaggataaaa	agaaaaaaga	agccactcag	aagggtcacgg	aacaaaaaac	caaagtgtccc	120

gaagtgcga	aaccaagttt	aagccaacca	acggccgcca	gcccaattgg	cagctctcca	180

tcgccaccag	tcaatggtgg	caacaatgcc	aaaagggtgg	cagtgccgaa	cggacaaccg	240

ccaagcgccg	cccgtacat	gcctcgggag	gtgccgcgc	gattccgttg	ccagcaggac	300

cacaaagtgt	tactaaaacg	tgggcagccc	cctccaccgt	cctgcatgct	ccttgggggt	360
ggggcagggc	ctcctccctg	cacagcacct	ggagcaaacc	caaacaacgc	acaagtgaca	420
ggagcgctgc	tgagagtgta	gagtgggact	gcgccagact	caacccttgg	aggtgctgct	480
gcttcaaatt	atgcaaattc	cacttggggc	tcgggagcct	cctccaacaa	cggcacctcc	540
cccaacccaa	ttcacatctg	ggacaagggt	attgtagacg	ggctctgacat	ggaagagtgg	600
ccttgtattg	ccagcaaaga	cactgaatct	tcttccgaaa	acaccaccga	taacaacagt	660
gcctcgaacc	ctggctctga	gaagagcact	ctgccaggaa	gcaccactag	taacaaagga	720
aaagggagcc	agtgccagtc	tgcaagttct	gggaacgaat	gtaatcttgg	ggctctggaaa	780
tctgacccta	aggctaaatc	tgttcaatct	tccaactcta	ctacagagaa	caacaatgga	840
ctaggaaatt	ggaggaatgt	gagtggtcag	gatagaattg	gacctggctc	tggcttcagc	900
aactttaacc	caaatagcaa	cccattctgc	tggccagcac	tggctcaaga	aggaacttct	960
aggaaagggg	cattggaaac	agataatagt	aattccagtg	cacaggttag	cacagtaggt	1020
cagacatcca	gggaacagca	gtcaaagatg	gaaaatgcgg	gtgttaattt	tgttgtctct	1080
ggcagagaac	aggctcaaat	tcataacact	gatggaccaa	aaaatggaaa	cactaactcc	1140
ttgaacttaa	gttcaccaa	ccccatggag	aataagggaa	tgccctttgg	aatgggcttg	1200
gggaacacct	ccaggagcac	tgatgccctt	tcacaaagca	ctggagatcg	aaagactggg	1260
agtgttggtg	cttgggggtg	agctaggggg	ccttctggaa	ctgacacagt	ctctggacaa	1320
agcaattctg	gaaacaatgg	gaacaatgga	aaagagagag	aggactcctg	gaaaggagct	1380
tctgttcaga	aatcaactgg	gtcaaaaaat	gactcttggg	acaacaataa	caggtctacg	1440
gggtgggtcct	ggaacttttg	ccccaggac	tctaattgaca	acaaatgggg	tgaagggaac	1500
aaaatgacat	ctgggggtct	tcaggggagaa	tggaaacagc	cgactgggtc	tgatgagttg	1560
aaaattggag	aatggagtgg	tccaaaccaa	caaatttcta	gcactggagc	atgggacaat	1620
caaaagggcc	acccctctcc	tgaaaaccaa	ggcaatgccc	aggctccctg	ttgggggaaga	1680
tcttccagct	ccacaggaag	tgaagttgga	ggtcaaagca	ctggaagcaa	ccacaaagca	1740
ggaagtagtg	acagtcataa	ctctggccgt	cggctgtaca	ggcccacaca	tcctgattgt	1800
caggctgtct	tgagactctt	tttgagccga	actgattttg	acccaggggt	gctctcaaac	1860
actggctggg	gccaaactca	aattaagcag	gacacagtgt	gggacattga	agaggtgcca	1920
aggcctgagg	ggaaatctga	caaaggaact	gaggggtggg	agagcgctgc	cacacagacc	1980
aagaactcag	ggggctgggg	agatgcaccc	agccaaagca	atcaaatgaa	gtctggatgg	2040
ggggagctct	cagcctctac	agagtggaaa	gacccaaga	acacaggagg	ctggaatgac	2100
tacaagaaca	acaactcttc	caactgggga	ggaggacgac	ctgatgaaaa	gacaccttcc	2160
tcttggaatg	agaatcccag	caaggatcag	gggtggggag	gtggacgcca	gcccaatcaa	2220
ggatggtctt	ctggaaagaa	tggttggggg	gaggaagtcg	atcagacaaa	aaacagcaat	2280
tgggaaagtt	ctgcaagtaa	acctgtgtct	gggtgggggtg	aaggagggca	gaatgaaatc	2340

gggacttggg	gtaatggtgg	caatgcaagc	ctagcttcaa	aaggtgggtg	ggaggattgc	2400
aaaagatccc	cagcatggaa	tgagacgggc	cgacagccca	attcctggaa	taaacaacac	2460
caacagcagc	agccccaca	gcagccgccg	ccaccacaac	cagaggcttc	tggttcgtgg	2520
ggaggcccac	ccccaccacc	tccaggcaac	gttcgacctt	ccaattccag	ctggagcagc	2580
gggccacagc	ctgcaacacc	taaggatgag	gaaccagtg	gttggaaga	gccatcccca	2640
cagtcaatta	gtcggaaaat	ggacattgat	gatggcactt	cagcatgggg	agaccctaac	2700
agttataact	acaagaatgt	gaatctgtgg	gataagaatt	ccaaggggg	cccagcacct	2760
cgagaaccaa	acctgccac	cccaatgacc	agtaaatcgg	catcagattc	caaattctatg	2820
caagacggct	ggggggagag	tgacgggcca	gtcacaggag	ctcgccatcc	cagctgggaa	2880
gaggaggagg	atggaggagt	ctggaacacc	actggctctc	agggcagtg	ttcctccac	2940
aactcagcaa	gctggggaca	aggaggaaag	aaacaaatga	agtgtcact	caaaggagga	3000
aacaatgatt	catggatgaa	tcctcttgcc	aaacagtttt	caaatatggg	attgctgagt	3060
cagactgaag	ataatccaag	cagcaaaatg	gatttgtctg	taggaagcct	ttcagataaa	3120
aaatttgatg	tggacaagcg	agcgatgaat	ctcggggatt	ttaatgatat	catgaggaag	3180
gatcgatctg	ggttccgtcc	acctaattcc	aaagacatgg	gaaccacaga	tagtgggcct	3240
tattttgaga	agggcggtag	tcattggttg	tttggaacaa	gcacagcaca	atcgagaggt	3300
ctgcacacac	ccgtgcagcc	actaaattct	tctcccagtc	tccgggcgca	agtgcctccc	3360
cagtttattt	ccccccaggt	ttctgcctca	atgctcaagc	agtttcccaa	cagtggcctg	3420
agtccaggtc	ttttcaatgt	ggggccccag	ttatctcctc	aacaaattgc	catgctgagc	3480
cagcttccac	aaattcccca	gtttcagttg	gcatgtcagc	ttctcttgca	gcagcagcaa	3540
cagcagcagt	tgttacagaa	ccagagaaag	atttctcaag	ctgtacgcca	acagcaagag	3600
cagcagctgg	ctcgaatggt	gagtgcactg	cagcagcagc	agcagcagca	gcagaggcag	3660
ccaggcatga	agcactcgcc	ctctcatcct	gttgggcccc	agccgcatct	ggacaacatg	3720
gtaccaaacg	cattgaatgt	ggggctccca	gaccttcaaa	ccaaagggcc	aatacctgga	3780
tatggttctg	gcttcagctc	tggcggcatg	gactatggca	tggttggtgg	gaaggaggct	3840
ggaaccgagt	ctcgctttaa	acagtggacc	tccatgatgg	aggggctgcc	ctctgtagcc	3900
acacaggaag	ccaatatgca	caaaaatggc	gctatagtgg	cccctggtaa	aaccggggga	3960
gggtcaccgt	acaaccagtt	tgatatcatc	cctggtgaca	cactgggtgg	ccatacgggt	4020
cctgctggtg	atagctggtt	acctgccaaa	tctccaccaa	caaataaaat	cggaagtaaa	4080
tccagcaatg	ccagttggcc	tccagaattc	caaccaggag	tgccatggaa	aggtatccaa	4140
aacattgacc	ctgaatctga	cccctatgtc	accccaggaa	gtgtgctggg	gggtacagcc	4200
acatctccca	ttgtagatac	tgaccaccaa	ctgctgcggg	ataacaccac	agggctctaat	4260
tcttccctca	acacctcgct	gccttcacct	ggtgcctggc	cctacagtgc	ctctgacaac	4320
tcctttacca	acgttcatag	cacttcagca	aagttccctg	attacaaatc	aacatggtcc	4380

ccagatccca	taggacacaa	ccccactcat	ctctccaaca	agatgtggaa	aaaccatatt	4440
tcctccagga	acactacacc	gctgccccgc	ccacctcctg	gtctgaccaa	cccaaacca	4500
tcattctcct	ggagcagcac	agcacccccga	tcagtcaggg	ggtgggggac	acaggactca	4560
cggctcgcct	cggcctctac	ctggagtgat	ggtggctcag	ttcgtcctag	ttactggctg	4620
gttcttcaca	atctcacccc	acagattgat	gggtcaacct	tgagaacgat	ctgcatgcag	4680
catggcccac	tgctgacatt	ccatctgaat	ctaaccagg	gcactgcct	gatccgatac	4740
agcaccaaac	aggaggcggc	caaggcccaa	actgcactgc	acatgtgtgt	gttgggaaac	4800
actaccatcc	ttgctgagtt	tgccactgat	gatgaagtca	gccgctttct	ggcacaagct	4860
cagcccccta	cacctgcagc	aacccaagt	gcgccagctg	cgggggtggca	gtcgtggag	4920
accggccaga	accagtcaga	tcccgtggga	cctgctctga	atcttttttg	tgggtccact	4980
gggctcgggc	agtggagcag	cagcgctggg	ggcagcagcg	gggccgatct	tgctggcgct	5040
tcattgtggg	ggccccaaa	ctattcttct	agcttatggg	gagtcccaac	ggtggaagat	5100
ccccatagga	tgggcagccc	tgctccttta	ctacctggtg	accttctggg	aggagggctg	5160
gattcaatct	ga					5172

<210> 367
 <211> 3138
 <212> DNA
 <213> Homo sapiens

<400> 367	
atggggtcgc	agccgccgct ggggtctccg ctgtctcgcg aggaggggtga agcgcccccg 60
cctgtctccg	cttcggaggg taggcggaga agtcgccggg tacgccttcg cggatcctgc 120
cgacaccgac	ctagctttct gggctgccgg gagctcgcgg cgagcgcccc agccaggcct 180
gcgccggcat	cctccgagat aatggcatca gctgctaagg aatttaaaat ggacaacttt 240
tcacctaaag	ctggcactag caaattgcaa cagacagtac cagctgatgc atctcctgat 300
tctaagtgtc	ctatatgctt ggatagattt gataatgtgt cttacttaga tcgctgctta 360
cataagtctt	gttttcgctg tgtacaggag tggtaaaaa acaaagctga atgcccacta 420
tgtaaacagc	cctttgatcc tattttccat tctgtgaggg cagaagatga cttcaaggag 480
tatgtcctaa	ggccttcgta taatggttct tttgtcaccg ctgatcgacg atttcgctac 540
cgtacaactc	tgacaaggga acgaaatgct tctgtgtatt cacctagtgg tcctgtgaac 600
agaagaacaa	caactccacc ggatagtggg gtactgtttg aagggttagg catttcaaca 660
agacctagag	atgttgaaat tcctcagttt atgagacaga ttgcagtaag gaggccaact 720
acggcagatg	aaagatcttt gcggaaaatt caagaacaag atattattaa ttttagacga 780
actctttatc	gtgctggtgc tcgagttaga aatattgaag atggtggccg ctacagggat 840
atttcagctg	aatttttccg tagaaatcca gcttgccctc acagattagt cccctggtta 900
aaacgtgaac	ttacagttct ttttgagct catggatctt tagtgaatat tgtccagcat 960

attatcatga gtaatgttac tcgctatgac ttggagagtc aggcatttgt gtctgattta	1020
agaccatttt tacttaatcg aactgagcat ttatacatg aatttatcag ttttgcccga	1080
tctcctttta acatggcagc ctttgaccag catgccaaatt atgattgccc tgctccttca	1140
tacgaagaag gcagccattc tgattcttca gtcataacaa tatctccaga tgaggctgag	1200
acccaagagc tggatattaa tgtagccact gttagtcagg caccatggga tgatgaaact	1260
ccaggacat cttactcaag ctcagagcag gtacacgtta ctatgtcttc tcttttaaat	1320
acttctgaca gttcagatga agaacttgtc acaggaggag ccacgtctca gatacaagga	1380
gtacaaacca atgacgacct aaataatgac agtgatgatt cttcagataa ttgtgtcatt	1440
gttggttttg ttaaaccact agctgagagg accccagaac ttgttgaact gtcctctgat	1500
tctgaggact taggttctta tgagaaaatg gagacagtga agacacaaga acaggagcaa	1560
tcttacagtt ctggtgatag cgatgttagt agatgtctcat ctccacactc tgtccttgga	1620
aaggatgaac aaataaataa aggtcattgt gattctagta caagaatcaa atcaaagaag	1680
gaagagaaac gatctacatc attgtcatct cccagaaacc tgaactcatc tgtaagagga	1740
gacagagtat attctccata taaccataga cacagaaaga ggggaagatc aagaagttca	1800
gattcacgtt ctacagtag aagtgggcat gatcagaaga atcatagaaa gcatcatggg	1860
aagaaaagaa tgaaaagtaa acgatccaga agcagggaaa gtagcagacc tagagggaga	1920
agagacaaaa agagatcaag aactagagat agcagttggt ccagaagaag ccaactctg	1980
tctctaagta gtgaaagcac aagcagatca aggtctcgta gcagtgatca tggtaaaaga	2040
agatcacgga gcagaaatag agatcgttat tatttaagaa ataattatgg aagcagatac	2100
aatggggagt atacttatta cagtagaaac aaggacaggg atgggtacga atcatcttac	2160
aggaggagga ctctgtccag agtcattat tctagacagt cttcaagtcc agaatttaga	2220
gttcagtcct tttctgaaag aacaaatgct agggaaaaaa ataatcacag tgagaggaag	2280
tattactact atgaaaggca cagatcaagg agcctgtcta gtaacagatc aaggactgca	2340
tctaccgga ctgaccgggt gagaaatgaa aagcctggag ggaaacgaaa atacaaaaca	2400
cggcatttgg aggtactaa cgaagtggct cagccatctc gtgaatttgc ttctaaagca	2460
aaggacagtc attacaaaa atcttcatca aaattggatg gaaactacaa aaatgagagt	2520
gatacctttt cagacagccg atcatcagac agagagacaa aacacaaaag gagaaaaagg	2580
aagaccgga gcctaagtgt agagatagtt tatgaaggaa aagctactga tacaactaaa	2640
caccataaaa agaaaaagaa gaaacataag aagaagcata agaaacacca tggagataat	2700
gcttcacgtt cccagttgt aattaccatt gacagtgaca gtgataagga ttctgaagta	2760
aaggaggata cagaatgtga caatagtggc cctcaagacc ctctacaaaa tgagtttttg	2820
gctccttcct tggaaccatt tgaaactaaa gatgtagtta caatagaagc tgaatttggc	2880
gtgctggaca aggaatgtga tattgccaca cttagtaaca acttgaataa tgccaacaaa	2940
actgtagata atattccacc tctggcagct tcagttgaac aaactctcga tgtaagagaa	3000

gagagcacct ttgtttctga tttggagaac cagcccagta acattgtgtc tcttcaaact	3060
gagccatcaa ggcaattgcc atcgccacgg acatcattaa tgtcagtatg tcttggtaga	3120
gactgtgata tgtcttaa	3138

<210> 368
 <211> 2061
 <212> DNA
 <213> Homo sapiens

<400> 368	
atgtccctgc gagacaaggg cggggaagaa gaatgttttg aatacgactg ccaggatgaa	60
gagaggaagc caaccacag gcagcatgac acccaggacc tcttggaaga ggttttatgt	120
gctgaaagag ttggccagat gactaagaca tataatgaca tagatgctgt cactcggctt	180
cttgaggaga aagagcggga tttagaattg gccgctcgca tcggccagtc gttgttgaag	240
aagaacaaga ccctaaccga gaggaacgag ctgctggagg agcaggtgga acacatcagg	300
gaggaggtgt ctcagctccg gcatgagctg tccatgaagg atgagctgct tcagttctac	360
accagcgtg cggaggagag tgagcccgag tccgtttgct caaccccggt gaagaggaat	420
gagtcgtcct cctcagtcca gaattacttt catttggtt ctcttcaaaa gaagctgaaa	480
gaccttgaag aggagaatgt tgtacttcga tccgaggcca gccagctgaa gacagagacc	540
atcacctatg aggagaagga gcagcagctg gtcaatgact gcgtgaagga gctgagggat	600
gccaatgtcc agattgctag tatctcagag gaactggcca agaagacgga agatgctgcc	660
cgccagcaag aggagatcac acacctgcta tcgcaaatag ttgatttgca gaaaaaggca	720
aaagcttgcg cagtggaaaa tgaagaactt gtccagcatc tgggggctgc taaggatgcc	780
cagcggcagc tcacagccga gctgcgtgag ctggaggaca agtacgcaga gtgcatggag	840
atgctgcatg aggcgcagga ggagctgaag aacctccgga acaaaaccat gcccaatacc	900
acgtctcggc gctaccactc actgggcctg tttcccatgg attccttggc agcagagatt	960
gaggaacga tgcgaagga gctgcagttg gaagaggccg agtctccaga catcactcac	1020
cagaagcgtg tctttgagac agtaagaaac atcaaccagg ttgtcaagca gagatctctg	1080
accccttctc ccatgaacat ccccggtcc aaccagtcct cggccatgaa ctccctcctg	1140
tccagctgcg tcagaccccc ccggtccagc ttctacggca gcgacatagg caacgtcgtc	1200
ctcgacaaca agaccaacag catcattctg gaaacagagg cagccgacct gggaaacgat	1260
gagcggagta agaagccggg gacgccgggc accccaggct cccacgacct ggagacggcg	1320
ctgaggcggc tgtccctgcg ccgggagaac tacctctcgg agaggagggt ctttgaggag	1380
gagcaagaga ggaagctcca ggagctggcg gagaagggcg agctgcgcag cggctccctc	1440
acaccactg agagcatcat gtccctgggc acgcactccc gcttctccga gttcaccggc	1500
ttctctggca tgtccttcag cagccgctcc tacctgcctg agaagctcca gatcgtgaag	1560
ccgctggaag gttccgccac acttcaccac tggcagcagt tggcccaacc tcaccttggg	1620
ggcatcctgg acccccggcc cgggtgtggtc accaagggtc tccggacgct ggatgttgac	1680

PCTAU2016050927-seq1-000001-EN-20161013

ctggacgaag tgtactgcct taacgacttt gaagaagatg acacaggtga ccacatttct	1740
ctcccacgcc tagctacctc cactccagtt cagcacccag agacctcagg tgagagggtcc	1800
caagcacgtg tgactgtctc aggcagcaga agttaccga gccggcctca ggcttcccca	1860
gaggagatgc aggagccgcc agcggccacg gaggaggagg aggaggagga ggaggaggag	1920
gggtctggtg agggcaccac gataagtcct gtaaacttgg cacctttccc ggaggcagag	1980
ttttgggcca ttctcacctc tgttccaggc accatccgta gtggttctct gtctgtagct	2040
tccgctcgtc tgtgtgggtg a	2061

<210> 369
 <211> 705
 <212> DNA
 <213> Homo sapiens

<400> 369	
atgaggaaga ccaggctctg ggggctgctg tggatgctct ttgtctcaga actccgagct	60
gcaactaaat taactgagga aaagtatgaa ctgaaagagg ggcagaccct ggatgtgaaa	120
tgtgactaca cgctagagaa gtttgccagc agccagaaag cttggcagat aataaggagc	180
ggagagatgc ccaagaccct ggcatgcaca gagaggcctt caaagaattc ccatccagtc	240
caagtgggga ggatcatact agaagactac catgatcatg gtttactgcg cgtccgaatg	300
gtcaaccttc aagtggaaga ttctggactg tatcagtgtg tgatctacca gcctcccaag	360
gagcctcaca tgctgttcga tcgcatccgc ttggtggtga ccaagggttt ttcagggacc	420
cctggctcca atgagaattc taccagaat gtgtataaga ttctcctac caccactaag	480
gccttgtgcc cactctatac cagccccaga actgtgacct aagctccacc caagtcaact	540
gccgatgtct ccactcctga ctctgaaatc aaccttaca atgtgacaga tatcatcagg	600
gttccggtgt tcaacattgt cattctcctg gctggtggat tcctgagtaa gagcctggtc	660
ttctctgtcc tgtttctgtg cacgctgagg tcatttgtac cctag	705

<210> 370
 <211> 1032
 <212> DNA
 <213> Homo sapiens

<400> 370	
atgaacatac acaggctctac ccccatcaca atagcgagat atgggagatc gcggaacaaa	60
acccaggatt tcgaagagtt gtcgtctata aggtccgcgg agcccagcca gagtttcagc	120
ccgaacctcg gtcctccgag ccgccccgag actccgaact tgtcgcattg cgtttcttgt	180
atcgggaaat acttattgtt ggaacctctg gaggagacc acgtttttcg tgccgtgcat	240
ctgcacagcg gagaggagct ggtgtgcaag gtgtttgata tcagctgcta ccaggaatcc	300
ctggcaccgt gcttttgctt gtctgtcat agtaacatca accaaatcac tgaaattatc	360
ctgggtgaga ccaaagccta tgtgttcttt gagcgaagct atggggacat gcattccttc	420
gtccgcacct gcaagaagct gagagaggag gaggcagcca gactgttcta ccagattgcc	480

PCTAU2016050927-seql-000001-EN-20161013

tcggcagtgg	cccactgcca	tgacgggggg	ctggtgctgc	gggacctcaa	gctgcggaaa	540
ttcatcttta	aggacgaaga	gaggactcgg	gtcaagctgg	aaagcctgga	agacgcctac	600
attctgcggg	gagatgatga	ttccctctcc	gacaagcatg	gctgcccggc	ttacgtaagc	660
ccagagatct	tgaacaccag	tggcagctac	tcgggcaaag	cagccgacgt	gtggagcctg	720
ggggtgatgc	tgtacaccat	gttgggtggg	cggtagccctt	tccatgacat	tgaacccagc	780
tccctcttca	gcaagatccg	gcgtggccag	ttcaacattc	cagagactct	gtcgcccaag	840
gccaagtgcc	tcatccgaag	cattctgcgt	cgggagccct	cagagcggct	gacctcgcag	900
gaaattctgg	accatccttg	gttttctaca	gatttttagcg	tctcgaattc	agcatatggt	960
gctaaggaag	tgtctgacca	gctggtgccg	gacgtcaaca	tggaagagaa	cttggaccct	1020
ttctttaact	ga					1032

<210> 371
 <211> 1656
 <212> DNA
 <213> Homo sapiens

<400> 371						
atggcggaga	attggaagaa	ctgcttcgag	gaggagctca	tctgccctat	ctgcctgcac	60
gttttcgtgg	agccagtga	gctgccgtgc	aaacacaact	tctgccgggg	ctgcatcggc	120
gaggcgtggg	ccaaggacag	cggcctcgta	cgctgcccag	agtgaacca	ggcctacaac	180
cagaagccgg	gcctggagaa	gaacctgaag	ctcaccaaca	tcgtggagaa	gttcaatgcc	240
ctgcacgtgg	agaagccgcc	ggcggcgctg	cactgcgtgt	tctgccgccg	cggccccccg	300
ctgcccgcgc	agaaggtctg	cctgcgctgc	gaggcgccct	gctgccagtc	ccacgtgcag	360
acgcacctgc	agcagccctc	caccgcccgc	gggcacctcc	tgggtggaggc	ggacgacgtg	420
cgggcctgga	gctgcccga	gcacaacgcc	taccgcctct	accactgcga	ggccgagcag	480
gtggccgtgt	gccagtactg	ctgctactac	agcggcgcgc	atcagggaca	ctcgggtgtgc	540
gacgtggaga	tccgaaggaa	tgaatccgg	aagatgtctca	tgaagcagca	ggaccggctg	600
gaggagcgag	agcaggacat	tgaggaccag	ctgtacaaac	tcgagtcaga	caagcgcctg	660
gtggaggaga	aagtgaacca	actgaaggag	gaagttcggc	tgcagtacga	gaagctgcac	720
cagctgctgg	acgaggacct	gcggcagaca	gtggagggtcc	tagacaaggc	ccaggccaag	780
ttctgcagcg	agaacgcagc	gcaggcgctg	cacctcgggg	agcgcattga	ggaggccaag	840
aagctgctgg	gtcccttga	gctgctcttt	gataagacgg	aggatgtcag	cttcatgaag	900
aacaccaagt	ctgtgaaaat	cctgatggac	aggaccaga	cctgcacgag	cagcagcctt	960
tccccacta	agatcggcca	cctgaactcc	aagctcttcc	tgaacgaagt	ggccaagaag	1020
gagaagcagc	tgcggaaaat	gctagaaggc	cccttcagca	cgccggtgcc	cttctcgcag	1080
agtgtcccc	tgtacccttg	cggcgtgagc	agctctgggg	cggaaaagcg	caagcactca	1140
acggccttcc	cagaggccag	tttcctagag	acgtcgtcgg	gccctgtggg	cggccagtac	1200

ggggcgggcg	gcacagccag	cgggtgagggc	cagtctgggc	agcccctggg	gccctgcagc	1260
tccacgcagc	acttgggtggc	cctgccgggc	ggcgcccaac	cagtgcactc	aagccccgtg	1320
ttccccccat	cgcagtatcc	caatggctcc	gccgcccagc	agcccatgct	cccccagtat	1380
ggcggccgca	agattctctgt	ctgttctgtg	gacaactgtt	actgtttctt	cgtggccaac	1440
catggcggcc	accagcccta	cccccgctcc	ggccactttc	cctggacagt	gccctcgcag	1500
gagtactcac	accgcctccc	gccacaccc	tccgtcccc	agtccttcc	cagcctggcg	1560
gtcagagact	ggcttgacgc	ctcccagcag	ccgggccacc	aggatttcta	caggggtgtat	1620
gggcagccgt	ccaccaaaca	ctacgtgacg	agctaa			1656

<210> 372
 <211> 1959
 <212> DNA
 <213> Homo sapiens

<400> 372	
atgggcggat	ggaaggggccc
ggggcagcgt	cggggaaagg
aagggccgga	ggcgcgggcg
60	
cgggcgggcg	agaggggagg
cgggcgggcg	ggcggggggg
ttcccgcgcc	gcggagcccg
120	
gcccagagagc	cgcgtccacg
ttcctgcctc	ctgctcccg
cgccctgggg	cgccgccatg
180	
acgcccgatc	tgctcaactt
caagaaggga	tggatgtcga
tcttgagcga	gcctggagag
240	
cctccctccc	cctcgctcac
caccacctct	acttcgcagt
ggaagaaaca	ttggtttgtg
300	
ctgacagatt	caagtctcaa
atattacaga	gactccactg
ctgaggaggc	agatgagctg
360	
gatggtgaga	tcgacctg
ttcctgcacg	gatgtcactg
agtacgcggt	gcagcgcaac
420	
tatggcttcc	agatccacac
caaggatgct	gtctatacct
tgtcggccat	gacctcaggc
480	
atccggcgga	actggatcga
ggctctgaga	aagaccgtac
gtccaacttc	agccccagat
540	
gtcaccaagc	tctcggactc
taacaaggag	aacgcgctgc
acagctacag	caccacagaag
600	
ggccccctga	aggcagggga
gcagcggggc	ggctctgagg
tcatcagccg	gggtggccct
660	
cggaaggcgg	acgggcagcg
tcaggccttg	gactacgtgg
agctctcgcc	gctgacctag
720	
gcttccccgc	agcggggccc
caccacagcc	cgcactcctg
accgcctggc	caagcaggag
780	
gagctggagc	gggacctggc
ccagcgctcc	gaggagcggc
gcaagtgggt	tgaggccaca
840	
gacagcagga	ccccagaggt
gcctgctggg	gagggggccc
gccggggcct	gggtgcccc
900	
ctgactgagg	accagcaaaa
ccggcttagt	gaggagatcg
agaagaagtg	gcaggagctg
960	
gagaagctgc	ccctgcggga
gaataagcgg	gtgcccctca
ctgccctgct	caaccaaagc
1020	
cgcgagagagc	gccgagggcc
cccaagtac	ggccacgagg
cactggagaa	ggaggttcag
1080	
gctcttcggg	cccagctgga
ggcgtggcgt	ctccaagggg
aggctcctca	gagtgcactg
1140	
agatcccagg	aggatggcca
catccccccg	ggctacatct
cacaggaggc	atgtgagcgc
1200	
agcctggcag	agatggagtc
ctcgcaccag	caggtgatgg
aggagctgca	gcggcaccac
1260	
gagcgggagc	tgcagcgctt
gcagcaggag	aaggagtggc
tcctggctga	ggagacggca
1320	
gccacggcct	cagccattga
agccatgaag	aaggcctacc
aggaagagct	gagccgagag
1380	

PCTAU2016050927-seql-000001-EN-20161013

ctgagcaaaa	cacggagtct	ccagcagggc	ccggatggcc	tccggaagca	gcaccagtca	1440
gatgtggagg	cactgaagcg	agagctgcag	gtgctatcgg	agcagtactc	gcagaagtgc	1500
ctggagattg	gggcactcat	gcggcaggct	gaggagcgcg	agcacacgct	gcgccgctgc	1560
cagcaggagg	gccaggagct	gctgcgccac	aaccaggagc	tgcattggccg	cctgtcagag	1620
gagatagacc	agctgcgcgg	cttcattgcc	tcgcagggca	tgggcaatgg	ctgcggggcg	1680
agcaacgagc	ggagttcctg	cgagctagag	gtgctgcttc	gcgtaaaaga	aaacgaactc	1740
cagtacctaa	agaaggaggt	gcagtgcctc	cgggacgagc	tccagatgat	gcagaaggac	1800
aagcgcttca	cctcgggaaa	gtaccaggac	gtctatgtgg	agctgagcca	catcaagaca	1860
cggctctgagc	gggagatcga	gcagctgaag	gagcacctgc	gtcttgccat	ggccgccctc	1920
caggagaagg	agtcgatgcg	caacagcctg	gctgagtag			1959

<210> 373
 <211> 405
 <212> DNA
 <213> Homo sapiens

<400> 373						
atgaacaccg	aaatgtatca	gacccccatg	gaggtggcgg	tctaccagct	gcacaatttc	60
tccatctcct	tcttctcttc	tctgcttgga	ggggatgtgg	tttccgttaa	gctggacaac	120
agtgcctccg	gagccagcgt	ggtggccata	gacaacaaga	tcgaacaggc	catggatctg	180
gtgaagaatc	atctgatgta	tgctgtgaga	gaggaggtgg	agatcctgaa	ggagcagatc	240
cgagagctgg	tggagaagaa	ctcccagcta	gagcgtgaga	acaccctggt	gaagaccctg	300
gcaagcccag	agcagctgga	gaagttccag	tcctgtctga	gccctgaaga	gccagctccc	360
gaatccccac	aagtgcccga	ggcccctggt	ggttctgcgg	tgtaa		405

<210> 374
 <211> 3564
 <212> DNA
 <213> Homo sapiens

<400> 374						
atgcctctgc	gccactgggg	gatggccagg	ggcagtaagc	ccgttgggga	tggagcccag	60
cccatggctg	ccatgggagg	cctgaagggtg	cttctgcact	gggctgggtcc	aggcggcggg	120
gagccctggg	tcactttcag	tgagtcacg	ctgacagctg	aggaagtctg	catccacatt	180
gcacataaag	ttggtatcac	tcctccttgc	ttcaatctct	ttgccctctt	cgatgctcag	240
gccaagtct	ggttgcccc	aaaccacatc	ctagagatcc	ccagagatgc	aagcctgatg	300
ctatatattcc	gcataagggtt	ttatttccgg	aactggcatg	gcatgaatcc	tcgggaaccg	360
gctgtgtacc	gttgtggggc	cccaggaacc	gaggcatcct	cagatcagac	agcacagggg	420
atgcaactcc	tggaccagc	ctcatttgag	tacctctttg	agcagggcaa	gcatgagttt	480
gtgaatgacg	tggcatcact	gtgggagctg	tcgaccgagg	aggagatcca	ccactttaag	540
aatgagagcc	tgggcatggc	ctttctgcac	ctctgtcacc	tcgctctccg	ccatggcatc	600

cccctggagg	aggtggccaa	gaagaccagc	ttcaaggact	gcatcccgcg	ctccttccgc	660
cggcatatcc	ggcagcacag	cgccctgacc	cggctgcgcc	ttcggaacgt	cttccgcagg	720
ttcctgcggg	acttccagcc	gggccgactc	tcccagcaga	tggatcatggt	caaataccta	780
gccacactcg	agcggctggc	accccgcttc	ggcacagagc	gtgtgcccgt	gtgccacctg	840
aggctgctgg	cccaggccga	gggggagccc	tgctacatcc	gggacagtgg	ggtggcccct	900
acagaccctg	gccctgagtc	tgctgctggg	cccccaaccc	acgaggtgct	ggtgacaggc	960
actggtggca	tccagtgggt	gccagtagag	gaggaggtga	acaaggagga	gggttctagt	1020
ggcagcagtg	gcaggaaccc	ccaagccagc	ctgtttggga	agaaggccaa	ggctcacaag	1080
gcagtgcggc	agccggcaga	caggccgcgg	gagccactgt	gggcctactt	ctgtgacttc	1140
cgggacatca	cccacgtggt	gctgaaagag	caactgtgtca	gcatccaccg	gcaggacaac	1200
aagtgcctgg	agctgagctt	gccttcccgg	gctgcggcgc	tgtccttcgt	gtcgtggtg	1260
gacggctatt	tccgcctgac	ggccgactcc	agccactacc	tgtgccacga	ggtggctccc	1320
ccacggctgg	tgatgagcat	ccgggatggg	atccacggac	ccctgctgga	gccatttgtg	1380
caggccaagc	tgcgggccga	ggacggcctg	tacctcattc	actggagcac	cagccacccc	1440
taccgcctga	tcctcacagt	ggcccagcgt	agccaggcac	cagacggcat	gcagagcttg	1500
cggctccgaa	agttcccat	tgagcagcag	gacggggcct	tcgtgctgga	gggctggggc	1560
cggtccttcc	ccagcgcttcg	ggaacttggg	gctgccttgc	agggctgctt	gctgagggcc	1620
ggggatgact	gcttctctct	gcgtcgtgtg	tgcttgcctc	aaccaggaga	aacctccaat	1680
ctcatcatca	tgcggggggc	tcggggccagc	cccaggacac	tcaacctcag	ccagctcagc	1740
ttccaccggg	ttgaccagaa	ggagatcacc	cagctgtccc	acttggggcca	gggcacaagg	1800
accaacgtgt	atgagggccg	cctgcgagtg	gagggcagcg	gggaccctga	ggagggcaag	1860
atggatgacg	aggacccctt	cgtgcctggc	agggaccgtg	ggcaggagct	acgagtgggtg	1920
ctcaaagtgc	tggaccctag	tcaccatgac	atcgccctgg	ccttctacga	gacagccagc	1980
ctcatgagcc	aggtctccca	cacgcacctg	gccttcgtgc	atggcgtctg	tgtgcgcggc	2040
cctgaaaata	tcatggtgac	agagtacgtg	gagcacggac	ccctggatgt	gtggctgcgg	2100
agggagcggg	gcatgtgccc	catggcttgg	aagatggtgg	tggcccagca	gctggccagc	2160
gccctcagct	acctggagaa	caagaacctg	gttcatggta	atgtgtgtgg	ccggaacatc	2220
ctgctggccc	ggctgggggtt	ggcagagggc	accagcccct	tcatcaagct	gagtgatcct	2280
ggcgtggggc	tgggcgccct	ctccagggag	gagcgggtgg	agaggatccc	ctggctggcc	2340
cccgaatgcc	taccaggtgg	ggccaacagc	ctaagcaccg	ccatggacaa	gtgggggttt	2400
ggcgccaccc	tcctggagat	ctgctttgac	ggagaggccc	ctctgcagag	ccgcagtccc	2460
tccgagaagg	agcatttcta	ccagaggcag	caccggctgc	ccgagccctc	ctgcccacag	2520
ctggccacac	tcaccagcca	gtgtctgacc	tatgagccaa	cccagaggcc	atcattccgc	2580
accatcctgc	gtgacctcac	ccggctgcag	ccccacaatc	ttgctgacgt	cttgactgtg	2640

PCTAU2016050927-seq1-000001-EN-20161013

aacccggact	caccggcgtc	ggaccctacg	gttttccaca	agcgctat	ttt gaaaaagatc	2700
cgagatctgg	gcgaggggtca	cttcggcaag	gtcagcttgt	actgctacga	tccgaccaac	2760
gacggcactg	gcgagatggg	ggcgggtgaaa	gccctcaagg	cagactgcgg	ccccagcac	2820
cgctcgggct	ggaagcagga	gattgacatt	ctgcgcacgc	tctaccacga	gcacatcatc	2880
aagtacaagg	gctgctgcga	ggaccaaggc	gagaagtcgc	tgcagctggg	catggagtac	2940
gtgcccctgg	gcagcctccg	agactacctg	ccccggcaca	gcatcgggct	ggcccagctg	3000
ctgctcttcg	cccagcagat	ctgcgagggc	atggcctatc	tgcacgcgca	gcactacatc	3060
caccgagacc	tagccgcgcg	caacgtgctg	ctggacaacg	acaggctggg	caagatcggg	3120
gactttggcc	tagccaaggc	cgtgcccga	ggccacgagt	actaccgcgt	gcgcgaggat	3180
ggggacagcc	ccgtgttctg	gtatgcccc	gagtgcctga	aggagtataa	gttctactat	3240
gcgtcagatg	tctggtcctt	cggggtgacc	ctgtatgagc	tgctgacgca	ctgtgactcc	3300
agccagagcc	ccccacgaa	attccttgag	ctcataggca	ttgctcaggg	tcagatgaca	3360
gttctgagac	tactgagtt	gctggaacga	ggggagaggc	tgccacggcc	cgacaaatgt	3420
ccctgtgagg	tctatcatct	catgaagaac	tgctgggaga	cagaggcgtc	ctttcgccca	3480
accttcgaga	acctcatacc	cattctgaag	acagtccatg	agaagtacca	aggccaggcc	3540
ccttcagtgt	tcagcgtgtg	ctga				3564

<210> 375
 <211> 342
 <212> DNA
 <213> Homo sapiens

<400> 375	
atgggggggac	ttgaaccctg cagcaggctc ctgctcctgc ctctcctgct ggctgtaagt 60
ggctctccgtc	ctgtccaggc ccaggcccag agcgattgca gttgctctac ggtgagcccg 120
ggcgtgctgg	cagggatcgt gatgggagac ctgggtgctga cagtgtcat tgccctggcc 180
gtgtacttcc	tgggccggct ggtccctcgg gggcgagggg ctgcggaggc agcgacccgg 240
aaacagcgta	tactgagac cgagtcgcct tatcaggagc tccaggggtca gaggtcggat 300
gtctacagcg	acctcaacac acagaggccg tattacaaat ga 342

<210> 376
 <211> 444
 <212> DNA
 <213> Homo sapiens

<400> 376			
atgggtctga	agagaatcca caaggaattg aatgatctgg cacgggaccc tccagcacag 60		
tggtcagcag	gtcctgttgg agatgatatg ttccattggc aagctacaat aatggggcca 120		
aatgacagtc	cctatcaggg tggagtat	ttcttgacaa ttcatttccc aacagattac 180	
cccttcaaac	cacctaaggt tgcatttaca	acaagaat	ttt atcatccaaa tattaacagt 240
aatggcagca	tttgtcttga tattctacga	tcacagtggg	ctccagcact aactatttca 300

aaagtactct tgtccatctg ttctctgttg tgtgatccca atccagatga tccttttagtg	360
cctgagattg ctcggatcta caaacagat agagaaaagt acaacagaat agctcgggaa	420
tggactcaga agtatgcat gtaa	444

<210> 377
 <211> 462
 <212> DNA
 <213> Homo sapiens

<400> 377	
atgatggcga gcatgagat ggtgaaggag ctggaggatc ttcagaagaa gcctcccca	60
tacctgcgga acctgtccag cgatgatgcc aatgtcctgg tgtggcacgc tctcctccta	120
cccgaccaac ctccctacca cctgaaagcc ttcaacctgc gcatcagctt cccgccggag	180
tatccgttca agcctcccat gatcaaattc acaaccaaga tctaccaccc caacgtggac	240
gagaacggac agatttgctt gccatcatc agcagtgaga actggaagcc ttgcaccaag	300
acttgccaag tcctggaggc cctcaatgtg ctggtgaata gaccgaatat cagggagccc	360
ctgcggatgg acctcgctga cctgctgaca cagaatccgg agctgttcag aaagaatgcc	420
gaagagttca ccctccgatt cggagtggac cggccctcct aa	462

<210> 378
 <211> 3405
 <212> DNA
 <213> Homo sapiens

<400> 378	
atgtcggagc cccacagggc ccagttcacc tctctccag gttccctgaa tcctgcgttt	60
ttgaagaagt cccggaagga ggaggctggg gcaggagaac agcatcagga ctgtgagccg	120
gctgcagcag ctgttcggat tacactcacc ctctttgaac cagatcacaac acgctgcccc	180
gagttcttct acccagagct ggtgaagaat atccgagggg aggtaaaagg ccttcagcct	240
ggagataaga agaaagatct gtcagatcct ttcaatgacg aagaaaagga aaggcataaa	300
gtagaggccc ttgcccgaac atttgaagaa aaatacgggtg gaaagaaacg tagaaaagac	360
cgaatacagg acttgatcga tatgggggtat ggttatgatg aatccgactc cttcatcgat	420
aactctgagg cgtatgatga gcttgcttct gcttctttga ctacgaagta tggaggattt	480
tacattaact cgggaaccct gcagtttaga caagcatcag agtctgaaga tgacttcatt	540
aaagaaaaga agaaaaaatc tccaaagaag cggaagttga aggaagggtg tgagaagata	600
aagaagaaga aaaaagatga cacttatgac aaggagaaga aatcgaaaaa gtccaagttt	660
tccaaagccg gcttcacagc cctcaatgcc agtaaggaga agaagaagaa gaaatattct	720
ggggctttta gcgttaaaga gatgctaaag aaatttcaga aagagaaaga ggctcagaaa	780
aaaagggagg aggagcataa gcctgttgcg gtcccatcag cggaagctca gggcctgcgg	840
gaactggagg gtgcctctga ccccttgctc tcaactcttg gctctacttc tgacaacgac	900
ttgctccagg cggccactgc catggactcg ctgacggatt tggacttgga gcatctgctc	960

agtgagtctc	cagaaggaag	tcccttccga	gatatggatg	atggaagtga	ttcccttggg	1020
gtgggattgg	accaggaatt	caggcagccc	tcttctctcc	ccgaaggcct	gccagcaccc	1080
ctggagaagc	gcgttaagga	gctggctcag	gctgccagag	ctgctgaggg	ggagagcaga	1140
cagaagttct	tcaccagga	tattaatgga	atcctattag	acatagaggc	gcagactcgg	1200
gagctgagca	gtcagggtccg	ctctgggggtg	tatgcctatc	ttgcgtcatt	cctgccctgc	1260
agcaaggatg	ccctgctcaa	gcgtgctcgg	aaacttcacc	tctatgaaca	ggggggccgt	1320
ctgaaggagc	ctctccagaa	gctcaaggaa	gccattggca	gggcgatgcc	agagcagatg	1380
gccaagtacc	aggacgaatg	ccaggcacac	acgcaggcaa	aggttgccaa	gatgctggaa	1440
gaggagaaaag	acaaggagca	gagggaccgg	atttgttcgg	atgaggaaga	agatgaagaa	1500
aaagggggca	ggaggataat	gggacctcgg	aagaagttcc	aatggaatga	tgagatcagg	1560
gagctactgt	gccagggtgt	gaagatcaaa	ctggagagcc	aggacctgga	gaggaacaac	1620
aaagcccagg	cttgggagga	ctgtgtgaag	ggctttctgg	atgcggaagt	caagcccctc	1680
tggcccaaag	gctggatgca	ggccagaact	ctgtttaagg	agagcagacg	aggccatggg	1740
cacctgactt	caatcctggc	caagaagaaa	gttatggccc	cttctaaaat	caaggtgaag	1800
gaatcgtcta	cgaagcctga	taaaaagggt	tctgtcccat	caggacagat	tgggtggcccc	1860
attgctttgc	cctcagatca	ccaaacagga	ggcctgagta	ttggggcctc	gagcagggag	1920
ctcccatccc	aggcatcggg	cggccttgct	aaccctcctc	ctgtcaacct	ggaggactca	1980
ttggatgaag	acttgatccg	caatccagcc	tcctcgggtg	aagccgtgtc	caaggaattg	2040
gctgcattga	atagcagagc	agctgggaac	tctgaattca	cactgcctgc	accctcaaaa	2100
gcacctgcag	aaaaagttgg	aggcgtttta	tgtacagaag	aaaaaaggaa	ctttgcgaag	2160
cctagtcctt	ctgtccacc	accagctagc	tctctgcagt	caccctcaa	ttttctggca	2220
gaacaggctc	tggcactggg	gcagtcctct	caggagaaaa	aaccagagag	ttctggctac	2280
aaagagctgt	cctgccaggc	tcccctcaat	aagggcctgc	cagaagtaca	tcagtccaaa	2340
gctaagcacc	acagcttgcc	acggacgtct	cacgggcccc	aagtggcagt	tcctgtgcct	2400
ggcccccagg	tcaaagtctt	tcatgccggc	actcagcagc	agaaaaactt	cacgccccca	2460
tctccatttg	ccaataagct	ccaaggccca	aaggcttctc	ccacacagtg	tcatcgttcc	2520
ctcctgcagt	tagtgaagac	agcggccaaa	ggccagggtc	tccatccctc	tgcaccagcc	2580
acctcaggag	gcctgtcagc	ctccagcagc	agctctcaca	agaccccagc	ctcgtcctct	2640
tctgccctga	gccatccagc	aaagccacat	tcagtcagct	ctgcaggctc	atcttacaag	2700
aataatccct	ttgccagctc	aatctccaaa	catgggggtt	cttctggcag	ctcttcctcg	2760
ggaggaacac	cagtccagag	ttctgtttct	gggagcctgg	tccctggcat	acagcctccc	2820
tccgtgggac	aggccaccag	ccgacccgtc	ccaagttcag	cagggaaaaa	aatgcctggt	2880
tcccagaagt	tgactctggt	agcccctcca	ggcggtccaa	acggagattc	cagtgggtggg	2940
accaggggag	tggcaaagtt	gctgacctcg	ccgtccctaa	agccctctgc	agttagtagt	3000

gtgacatcgt ctacctcctt gtcaaaagga gcgagtggga ctgtgctgct ggccggctcc	3060
tctttgatgg cttcaccccta caaatccagc agcccaaagc tgtctggggc catgagctcg	3120
aactccttgg gaattataac ccctgtccct attcctgtcc atgtgctctc cttcagcgct	3180
gactcctctg ccaaagcagg ggtctccaag gatgccatcg tcacaggccc tgccccggg	3240
tccttccacc atggccttgg ccacagtctt ctggctggct tgcactccag cccgccccat	3300
gcagcgcctc tcccacacgc tgcggtgccc acccatatcc cgcagagtct gccaggtgct	3360
tctcagcttc acgggaaagg gcctgctgta ccacggaaat tgtga	3405

<210> 379
 <211> 1875
 <212> DNA
 <213> Homo sapiens

<400> 379 atggctgaga atggcgagag cagcggcccc ccgcgcccct cccgcggccc tgctgcggcc	60
caaggctcgg ctgctgcccc ggctgagcct aaaatcatca aagtcacggg gaagactccc	120
aaagagaaaag aggagttcgc ggtgcccag aacagctcgg ttcagcagtt taaggaagcg	180
atttcgaaac gcttcaaac ccaaaccgat cagctagtgc tgatttttgc cggaaaaatc	240
ttaaaagatc aagatacctt gatccagcat ggcatccatg atgggctgac tgttcacctt	300
gtcatcaaaa gccagaaccg acctcagggc cagtccacgc agcctagcaa tgccgcggga	360
actaacacta cctcggcgct gactcccagg agtaactcca cacctatttc cacaaatagc	420
aacccgtttg ggttggggag cctgggagga cttgcaggcc ttagcagcct gggcttgagc	480
tcgaccaact tctctgagct ccagagccag atgcagcagc agcttatggc cagccctgag	540
atgatgatcc aaataatgga aaatcccttt gttcagagca tgctttcgaa tcccgatctg	600
atgaggcagc tcattatggc taatccacag atgcagcaat tgattcagag aaaccagaa	660
atcagtcacc tgctcaaaa cccagacata atgaggcaga cactcgaaat tgccaggaat	720
ccagccatga tgcaagagat gatgagaaat caagacctgg ctcttagcaa tctagaaagc	780
atcccagggtg gctataatgc ttacggcg atgtacactg acattcaaga gccgatgctg	840
aatgccgcac aagagcagtt tgggggtaat ccatttgctt ccgtggggag tagttcctcc	900
tctggggaag gtacgcagcc ttcccgcaca gaaaatcgcg atccactacc caatccatgg	960
gcaccaccgc cagctaccca gagttctgca actaccagca cgaccacaag cactggtagt	1020
gggtctggca atagttccag caatgctact gggaacaccg ttgctgccgc taattatgtc	1080
gccagcatct ttagtacccc aggcattgag agcctgctgc aacagataac tgaaaacccc	1140
cagctgattc agaatatgct gtcggcgccc tacatgagaa gcatgatgca gtcgctgagc	1200
cagaatccag atttggtgac acagatgatg ctgaatagcc cgctgtttac tgcaaactct	1260
cagctgcagg agcagatgag gccacagctc ccagccttcc tgcagcagat gcagaatcca	1320
gacacactat cagccatgtc aaaccaaga gcaatgcagg ctttaatgca gatccagcag	1380

gggctacaga cattagccac tgaagcacct ggcctgattc cgagcttcac tccaggtgtg	1440
ggggtggggg tgctgggaac cgctataggc cctgtaggcc cagtcacccc cataggcccc	1500
ataggcccta tagtcccttt taccgccata ggccccattg ggcccatagg acccactggc	1560
cctgcagccc cccctggctc caccggctct ggtggcccca cggggcctac tgtgtccagc	1620
gctgcaccta gtgaaaccac gagtcctaca tcagaatctg gaccaacca gcagttcatt	1680
cagcaaattg tgcaggccct ggctggagca aatgctccac agctgccgaa tccagaagtc	1740
agatttcagc aacaactgga acagctcaac gcaatggggg tcttaaaccg tgaagcaaac	1800
ttgcaggccc taatagcaac aggaggcgac atcaatgcag ccattgaaag gctgctgggc	1860
tcccagccat cgtaa	1875

<210> 380
 <211> 996
 <212> DNA
 <213> Homo sapiens

<400> 380	
atggcggagg gcggaggccc tgagcccggc gagcaggaga ggaggtcttc cgggccgcgg	60
cctccgagcg cgcgggattt gcagttggcc ttggcagaat tgtatgaaga tgaagtgaag	120
tgcaaatctt ccaagtctaa tagacctaaa gccacagtct tcaagagccc acggacacca	180
cctcaacggt tttactcaag tgaacatgaa tacagtggat taaatatagt tcgaccttca	240
actgggaaaa ttgtgaatga acttttcaaa gaggcaaggg aacatggggc tgtccctctg	300
aatgaagcca caagagcttc aggtgatgat aaatctaagt catttacagg tggaggatac	360
agattgggta gttctttttg taagcggctc gaatatatct atggagaaaa tcagctgcaa	420
gatgttcaga ttttgcttaa actgtggagc aatggtttca gtttagatga tggagaattg	480
agaccttaca atgaaccaac aaatgctcaa tttctggagt ctgttaagag aggagagatt	540
cccctggagc ttcagcgcct tgttcatggg ggccaagtga atttggatat ggaggatcat	600
caggatcaag aatacataaa acctagattg aggttcaagg ctttttagtg agaagggcaa	660
aaacttgga gccttacacc tgaaatagtc agtacacctt cctctccaga agaggaggat	720
aaatcaatac ttaatgcagt tgttcttatt gatgattcag tgccaacaac aaaaattcaa	780
atcaggttag cagatgggag tcgtttgata caaagattca atagtacaca caggatcctg	840
gatgtccgga actttattgt acagtctcgt cctgaatttg cggctcttga ctttattctt	900
gtgacttcat ttccgaataa agagctaaca gatgaaagcc tgacactgct agaagcagat	960
attcttaaca ctgtgttact ccagcaacta aaataa	996

<210> 381
 <211> 2397
 <212> DNA
 <213> Homo sapiens

<400> 381	
atggccctcc acagcccga gtatatTTTT ggagatttta gccctgatga attcaatcaa	60

ttctttgtga	ctcctcgatc	ttcagttgag	cttcctccat	acagtggAAC	agttctgtgt	120
ggcacacagg	ctgtggataa	actacctgat	ggacaagaat	atcagagaat	tgagtttggt	180
gtcgatgaag	tcattgaacc	cagtgcact	ttgccgagaa	ccccagcta	cagtatttca	240
agcacactga	accctcaggc	ccctgaattt	attctcggtt	gtacagcttc	caaaataacc	300
cctgatggta	tcactaaaga	agcaagctat	ggctccatcg	actgccagta	cccaggctct	360
gccctcgctt	tggatggaag	ttctaattgtg	gaggcggaag	ttttggaaaa	tgatgggtgtc	420
tcaggtgggtc	ttggacaaag	ggagcgtaaa	aagaagaaaa	agcggccacc	tggatattac	480
agctatttga	aagatgggtg	cgatgatagt	atctccacag	aagccctggg	caatggccat	540
gccaatcag	cagtcccga	cagtgtcagt	gcagaggatg	cagaatttat	gggtgacatg	600
cccccgtcag	ttacgcccag	gacttgtaac	agccccaga	actccacaga	ctctgtcagt	660
gacattgtgc	ctgacagtcc	tttccccgga	gcactcggca	gtgacaccag	gactgcaggg	720
cagccagagg	ggggccccgg	ggctgatttt	ggtcagtcct	gcttccctgc	agaggctggc	780
agagacaccc	tgtcaaggac	agctggggct	cagccctgcg	ttggtaccga	tactactgaa	840
aaccttggag	ttgctaattg	acaaataactt	gaatcctcgg	gtgagggcac	agctaccaac	900
ggggtggagt	tgacaccac	ggaaagcata	gacttggacc	caaccaaacc	cgagagtgca	960
tcacctctg	ctgacggcac	gggtcttgca	tcaggcaccc	ttcctgtcag	ccagcccaag	1020
tcctgggcca	gcctctttca	tgattctaag	ccctcttctt	cctcgccggg	ggcctatgtg	1080
gaaactaagt	attccccctc	cgccatatct	cccctggttt	ctgaaaagca	ggttgaagtc	1140
aaagaagggc	ttgttccggg	ttcagaggat	cctgtagcca	taaagattgc	agagttgctg	1200
gagaatgtaa	ccctaattca	taaaccagtg	tcgttgcaac	cccgtgggct	gatcaataaa	1260
gggaactggg	gctacattaa	tgctacactg	caggcattgg	ttgcttgccc	gccgatgtac	1320
cacctgatga	agttcattcc	tctgtattcc	aaagtgcaaa	ggccttgtag	gtcaacaccc	1380
atgatagaca	gctttgttcg	gctaataaat	gagttcacta	atatgccagt	acctcaaaaa	1440
ccccgacaag	ctcttgagga	taaaatcgtg	agggatattc	gccctggagc	tgcccttgag	1500
cccacatata	tttacagact	cctgacagtt	aacaagtcaa	gcctgtctga	aaagggctga	1560
caagaagatg	ctgaggaata	cttaggcttc	attctaaatg	gacttcatga	ggaaatgttg	1620
aacctaaaga	agcttctctc	accaagtaat	gaaaaactta	cgatttccaa	cggccccaaa	1680
aaccactcgg	tcaatgaaga	agagcaggaa	gaacaagggtg	aaggaagcga	ggatgaatgg	1740
gaacaagtgg	gcccccgga	caagacttcc	gtcaccgcgc	aggcggattt	tgttcagact	1800
ccaatcaccg	gcatttttgg	tggacacatc	aggctctgtg	tttaccagca	gagttcaaaa	1860
gaatctgcca	ctttgcagcc	atttttcacg	ttgcagttgg	atatccagtc	agacaagata	1920
cgcacagtcc	aggatgcact	ggagagcttg	gtggcaagag	aatctgtcca	aggttatacc	1980
acaaaaacca	aacaagaggt	tgagataagt	cgaagagtga	ctctggaaaa	actccctcct	2040
gtcctcgtgc	tgacactgaa	acgattcgtt	tatgagaaga	ctgggtgggtg	ccagaagctt	2100

atcaaaaata ttgaatatcc tgtggacttg gaaattagta aagaactgct ttctccaggg	2160
gttaaaaata agaattttaa atgccaccga acctatcggc tctttgcagt ggtctacat	2220
cacggcaaca gtgcgacggg cggccattac actacagacg tcttccagat cggctctgaat	2280
ggctggctgc gcatcgatga ccagacagtc aagggtgatca accagtacca ggtggtgaaa	2340
ccaactgctg aacgcacagc ctacctcctg tattaccgcc gagtggacct gctgtaa	2397

<210> 382
 <211> 2859
 <212> DNA
 <213> Homo sapiens

<400> 382	
atggcgggaag gcggagcggc ggatctggac acccagcggg ctgacatcgc gacgctgctc	60
aaaacctcgc tccggaaagg ggacacctgg tacctagtcg atagtcgctg gttcaaacag	120
tggaaaaaat atgttggctt tgacagttgg gacaaatacc agatgggaga tcaaatgtg	180
tatcctggac ccattgataa ctctggactt ctcaaagatg gtgatgccca gtcacttaag	240
gaacacctta ttgatgaatt ggattacata ctgttgccaa ctgaaggttg gaataaactt	300
gtcagctggg acacattgat ggaaggtcaa gagccaatag cacgaaagggt ggttgaacag	360
ggatatgtttg taaagcactg caaagtagaa gtatatctca cagaattgaa gctatgtgaa	420
aatggaaaca tgaataatgt tgtaactcga agatttagca aagctgacac aatagataca	480
attgaaaagg aaataagaaa aatcttcagt attccagatg aaaaggagac cagattgtgg	540
aacaaataca tgagtaacac atttgaacca ctgaataaac cagacagcac cattcaggat	600
gctggtttat accaaggaca ggtattagtg atagaacaga aaaatgaaga tggaacatgg	660
ccaaggggtc cttctactcc taatgtgaaa aactcaaatt actgtcttcc atcatatacc	720
gcttataaga actatgatta ttcggaacct ggaagaaaca atgaacagcc aggccctctgt	780
ggcctaagta acttgggaaa tacgtgtttc atgaactcag ctattcagtg tttgagcaac	840
acacctccac ttactgagta tttcctcaat gataagtatc aagaagaact gaattttgac	900
aatcccttag gaatgagagg tgaaatagct aaatcttatg ccgaactgat caagcaaattg	960
tggctctggaa agtttagcta cgtcacccca agagccttta agacacaggt aggacgtttt	1020
gcacctcagt tctctggata tcagcagcaa gactgtcaag aactgttagc tttcctatta	1080
gatggattac atgaggattt gaatagaatt agggaaaaac catatataca attaaaagat	1140
gcagatggaa ggccagataa ggtggttgcc gaagaagcct gggaaaacca tttaaaacga	1200
aatgattcta tcatagtaga tatatttcat ggccttttca aatcaacttt agtttgcct	1260
gagtgtgcta agatttcagt aacatttgat cttttttgtt acttgacact tccattgccc	1320
atgaaaaaag aacgcacctt ggaagtttac ttagttagaa tggatccact taccaaacct	1380
atgcagtaca aagtggttgt ccccaaaatt ggaaacatat tagatctttg tacagcattg	1440
tctgctttgt caggaatacc tgcagataag atgatagtta ctgatatata caatcataga	1500
tttcacagaa tattcgctat ggatgaaaac cttagtagta ttatggaacg ggatgatatt	1560

tatgtgtttg	aaattaacat	caataggaca	gaagatacag	agcacgtgat	tattcctggt	1620
tgcctaagag	aaaaattcag	acactcgagt	tatacccacc	atactggttc	ttcacttttt	1680
ggtcagccct	ttcttatggc	tgtaccacga	aacaatactg	aagacaaact	ttataatctc	1740
ctgctcttga	gaatgtgccg	atatgtcaaa	atatctactg	aaactgaaga	aactgaagga	1800
tccctacact	gctgtaagga	ccaaaatatt	aatgggaatg	gccc aaatgg	catacatgaa	1860
gaaggctcac	caagtgaat	ggaaacagat	gagccagatg	atgaatccag	ccaggatcaa	1920
gaacttcct	cagagaatga	aaacagtcag	tctgaagatt	cagttggagg	agataatgat	1980
tctgaaaatg	gattatgtac	tgaggatact	tgcaaaggtc	aactcacggg	acacaaaaaa	2040
cgattgttta	cattccagtt	caacaactta	ggcaatactg	atatcaacta	catcaaagat	2100
gataccaggc	atataagatt	tgatgatagg	cagcttaggc	tagatgaaag	atcttttctt	2160
gctttggatt	gggatcctga	tttgaaaaaa	agatatTTTTg	atgaaaatgc	tgctgaggac	2220
tttgaaaaac	atgaaagtgt	ggagtataaa	cctcctaaaa	aaccctttgt	gaaattaaaa	2280
gattgcattg	aactttttac	aacaaaagaa	aagctaggtg	ctgaagatcc	ctggtattgt	2340
ccgaattgta	aagaacatca	gcaagccaca	aagaaattgg	atttatggtc	cctgcctcca	2400
gtacttgtag	tacatctcaa	gcgattttct	tacagtcgat	acatgagaga	caagttggat	2460
accttagttg	attttcctat	caatgacttg	gatatgtcgg	aattcttaat	taatccaaat	2520
gcaggtcctt	gccgctataa	tctgattgct	gtttccaacc	actatggagg	gatgggagga	2580
ggacactata	ctgcttttgc	aaaaaataaa	gatgatggaa	aatggtacta	ttttgatgac	2640
agtagtgtct	ccactgcatc	tgaagaccaa	atttgttcca	aagcagcata	tgtactcttc	2700
taccagagac	aagacacttt	cagtggaact	ggcttttttc	ctcttgaccg	agaaactaaa	2760
ggtgcttcag	ctgccactgg	catcccatta	gaaagtgatg	aagatagcaa	tgataatgac	2820
aatgatatag	aaaatgaaaa	ctgtatgcac	actaactaa			2859

<210> 383
 <211> 1119
 <212> DNA
 <213> Homo sapiens

<400> 383						
atgagcaagg	cgtttgggct	cctgaggcaa	atctgtcagt	ccatcctggc	tgagtcctcg	60
cagtccccgg	cagatcttga	agaaaagaag	gaagaagaca	gcaacatgaa	gagagagcag	120
cccagagagc	gtcccagggc	ctgggactac	cctcatggcc	tggttggttt	acacaacatt	180
ggacagacct	gctgccttaa	ctccttgatt	caggtgttcg	taatgaatgt	ggacttcacc	240
aggatattga	agaggatcac	ggtgcccagg	ggagctgacg	agcagaggag	aagcgtccct	300
ttccagatgc	ttctgctgct	ggagaagatg	caggacagcc	ggcagaaagc	agtgcggccc	360
ctggagctgg	cctactgcct	gcagaagtgc	aacgtgccct	tgtttgtcca	acatgatgct	420
gccc aactgt	acctcaaact	ctggaacctg	attaaggacc	agatcactga	tgtgcacttg	480

PCTAU2016050927-seql-000001-EN-20161013

gtggagagac tgcaggccct gtatacgatc cgggtgaagg actccttgat ttgcgttgac	540
tgtgccatgg agagtagcag aaacagcagc atgctcaccc tcccactttc tctttttgat	600
gtggactcaa agcccctgaa gacactggag gacgccctgc actgcttctt ccagcccagg	660
gagttatcaa gcaaaagcaa gtgcttctgt gagaactgtg ggaagaagac ccgtgggaaa	720
caggctctga agctgaccca ttgccccag accctgacaa tccacctcat gcgattctcc	780
atcaggaatt cacagacgag aaagatctgc cactccctgt acttccccca gagcttggat	840
ttcagccaga tccttccaat gaagcgagag tcttgtgatg ctgaggagca gtctggaggg	900
cagtatgagc tttttgctgt gattgcgcac gtgggaatgg cagactccgg tcattactgt	960
gtctacatcc ggaatgctgt ggatggaaaa tggttctgct tcaatgactc caatatttgc	1020
ttggtgtcct gggaagacat ccagtgtacc tacggaaatc ctaactacca ctggcaggaa	1080
actgcatatc ttctggttta catgaagatg gagtgctaa	1119

<210> 384
 <211> 2892
 <212> DNA
 <213> Homo sapiens

<400> 384	
atggcggaag gtggaggctg ccgtgagcga ccggatgcgg agactcagaa gtccgagctt	60
ggacccttaa tgaggaccac actccaacgc ggggcgagc ggtatcttat tgacagccgg	120
tggttcaagc agtgaagaa gtatgtgggc ttgacagct gggacatgta caatgtgggt	180
gaacataacc tatttcctgg cccaatagac aactctgggc tattttcaga tcctgagagt	240
cagaccttga aagaacactt aattgatgaa ttggactatg tattggtccc taccgaggcg	300
tggaataaac tactaaactg gtacggctgt gtagaaggcc agcaacccat cgtcagaaaa	360
gttgtggagc atggcctgtt tgtcaagcac tgcaaagtcg aggtgtatit gctggaactg	420
aagctctgtg agaacagtga cccaccaat gtgctgagtt gccatttcag caaggcagac	480
accattgcaa ccatcgagaa agagatgcgg aagctattca acatccctgc ggagcgtgaa	540
acacggctct ggaacaaata catgagcaac acctacgagc agttgagcaa gctagacaac	600
actgtccagg atgctgggct ataccagggt cagggtgctag taattgagcc tcaaaatgaa	660
gatggcacat ggcccaggca gaccttgag tcaaaatcaa gcaactgcgc tagcagaaat	720
tttactacct ctccaaaatc atcagcaagt ccctattcct cagtgtctgc ctctctcatt	780
gcaaagtgtg atagcactag cacctgtggg atgcacagtt ccggtgtcag caggggtgga	840
tctggctttt ctgcttcgta taattgtcag gagccacat cctctcatat acaacctggg	900
ctctgtggac ttggaaacct gggaaacacc tgcttcatga actccgcttt gcagtgtttg	960
agcaacactg caccactgac tgactacttt ctcaaagatg agtatgaagc cgaaatcaac	1020
agagacaacc ctctggggat gaaaggggaa attgcagaag cctatgctga actcattaag	1080
cagatgtggc ctggaaggga cgcccatgtg gcacctcgca tgttcaaaac tcaagtagga	1140
cgttttgtct ctcaattttc tggctaccag caacaagatt ctcaggagct gctggccttt	1200

cttctagatg gattgcatga agatctgaac cgggtaaaga aaaagcccta cttggagctg	1260
aaggatgcca atgggcgcc agatgcggtg gtggcaaagg aagcctggga gaatcacagg	1320
ttgaggaatg attctgtgat tgtggatact ttccatggcc tcttcaaatc tactttggtt	1380
tgcccagaat gtgctaaggt ttctgtgacc tttgacccat tttgctatct aacgctgcca	1440
ctgcccttga agaaagatcg agttatggag gttttcctgg ttctgtctga ccctcactgc	1500
agacctactc agtaccgtgt gactgtgccg ctgatggggg ctgtgtccga cctgtgagag	1560
gctctctcca ggctgtctgg cattgtctga gaaaatatgg tggtcgcaga tgtgtataat	1620
caccgattcc acaaaatctt ccaaattgat gaaggtttta accacatcat gcctcgggat	1680
gacattttcg tgtacgaggt ctgcagcact tccgtggatg gctcggaatg tgtcacgctt	1740
ccagtctact tcaggagag gaagtccagg ccatcaagca cttcctccgc atcagcgcta	1800
tatgggcagc cactattgct ttctgtcccc aagcacaagt taacccttga gtctttgtac	1860
caggctgttt gtgatcgtat cagccgctat gtgaaacagc ctttacctga tgagtttggc	1920
agctcacctt tggagccagg ggcttgaat ggctccagga acagctgtga aggagaagat	1980
gaggaagaaa tggagcatca ggaagaaggc aaagagcagc tttcagaaac agaaggcagt	2040
ggggaagatg agccaggaaa tgacccagc gagaccacc aaaagaagat caaaggccag	2100
ccctgcccaa aaaggctttt taccttcagt cttgtgaact cctatggaac agctgacata	2160
aattcacttg cagctgatgg aaaactactt aaactcaact ctcgatctac actggccatg	2220
gattgggaca gtgaaactcg gagactttac tatgatgagc aagaatctga ggcctacgag	2280
aagcatgtga gcatgttgca gcctcagaag aagaagaaga ccacagtggc cctgagagac	2340
tgcacgagc tcttcaccac catggagacc cttggggagc atgaccctg gtactgtccc	2400
aactgtaaga agcatcaaca ggccacaaaa aagtttgacc tatggtcctt gcccaagatc	2460
ctggtggtcc acctcaaacg tttctcctac aacagatact ggagggataa gctcgacaca	2520
gtcgtagaat tccaatcag agggctgaac atgtccgagt ttgtctgtaa cctgtcagca	2580
aggccttatg tgtacgacct cattgccgtg tccaatcatt atggagccat gggggttggc	2640
cactacactg catatgcgaa gaacaaactg aatggtaaat ggtattactt tgatgatagc	2700
aacgtgtccc tggcctctga ggatcagata gtgactaaag cagcttatgt gctattttac	2760
caacgtcgag atgatgaatt ttataagaca ctttactta gcagttctgg ttcctctgat	2820
ggagggacac gaccaagcag ctctcagcag ggctttgggg atgatgaggc ttgcagcatg	2880
gacaccaact aa	2892

<210> 385
 <211> 2316
 <212> DNA
 <213> Homo sapiens

<400> 385	
atgactgcga accggcttgc agagagcctt ctggctttga gccaacagga agaactagcg	60

gatttgccaa aagactacct cttgagtgag agtgaagatg aggggggacaa tgatggagag	120
agaaagcatc aaaagcttct ggaagcaatc agttcccttg atggaaagaa taggcggaaa	180
ttggctgaga ggtctgaggc tagtctgaag gtgtcagagt tcaatgtcag ttctgaagga	240
tcaggagaaa agctggtcct tgcagatctg cttgagcctg ttaaaacttc atcttctttg	300
gccactgtga aaaagcaact gagtagagtc aaatcaaaga agacagtgga gttacctctg	360
aacaaagaag agattgaacg gatccacaga gaagtagcat tcaataaaac cgcacaagtc	420
ctctccaaat gggaccctgt cgtcctgaag aaccggcagg cagagcagct ggTTTTTccc	480
ctggagaaaag aggagccagc cattgctccc attgaacatg tgctcagtgg ctggaaggca	540
agaactcccc tggagcagga aattttcaac ctctccata agaacaagca gccagtgaca	600
gaccctttac tgaccctgt ggaaaaggcc tctctccgag ccatgagcct agaagaggca	660
aagatgcgac gagcagagct tcagagggct cgggctctgc agtcctacta tgaggccaag	720
gctcgaagag agaagaaaat caaaagtaaa aagtatcaca aagtcgtgaa gaaaggaaaag	780
gccaagaaaag ccctaaaaga gtttgagcag ctgcggaagg ttaatccagc tgcagcacta	840
gaagaactgg aaaaaattga aaaggccaga atgatggaaa gaatgagcct taagcaccaa	900
aacagtggga aatgggcaa gtcaaaggca attatggcca aatatgacct ggaggctcgc	960
caagctatgc aggaacagtt gtctaagaac aaagaactga cacagaaact ccaggtagcc	1020
tctgagagtg aggaagagga gggaggcaca gaagatgtgg aagaactcct tgtccctgat	1080
gtagtgaatg aagtgcagat gaatgcagat gggccgaatc cctggatgct caggagctgc	1140
accagtgaca ccaaagaggc tgcaaccag gaggaccctg agcaactgcc agagcttgag	1200
gcccattggag tttctgaaag tgagggagaa gaaagaccag tggcagaaga agaaatTTTtg	1260
ttgagagaat ttgaggaaaag gcgatccctt agaaaaagat ctgagctcag ccaagatgct	1320
gagccagcag gcagtcaaga aacaaaagat tctggcagcc aggaggtgct gtctgaattg	1380
agagtactat ctcaaaaatt gaaggaaaac catcagtcca ggaagcaaaa agcaagttca	1440
gaggggacta ttccccaggt ccagagagag gaacctgccc cagaagaaga ggagcccctg	1500
ttgctacaga gaccagagag agtacagacg ctggaagagc tagaagagct gggaaaagaa	1560
gaatgttttc aaaataagga gcttccaga cctgtgttag aagggcagca gtcagagagg	1620
accccaaata atcgccctga tgcccctaag gagaagaaaa agaaggagca aatgatcgac	1680
ctacagaacc tcctaaccac acaatctccc tccgtgaagt ctttggcagt tcccacaata	1740
gaggagctgg aagatgaaga ggagagaaac cataggcaga tgataaagga agcttttgct	1800
ggggatgatg tcatcagaga tttcttgaag gagaagaggg aagctgtgga ggcgagtaag	1860
ccaaaggacg tggacctgac actacctggc tggggcgagt ggggtggtgt gggcctaaag	1920
cccagtgcc aaaaaagacg ccggtttctc attaaagccc ctgaggggtcc tccaagaaaa	1980
gataagaatt tgccaaatgt gattatcaat gagaagcgca acatccacgc agctgctcat	2040
caggtagcag tgcttcata tccatttacc caccattggc aatttgaaag gaccatccag	2100

acccccatag gatccacatg gaacacccag agggctttcc aaaagctgac tactcccaag	2160
gtcgtcacca agccaggcca tatcattaac cccataaaag cagaagacgt gggctaccgg	2220
tcttcctcaa ggtcggacct gtctgtcata cagaggaatc caaaacgaat caccacacgt	2280
cacaaaaaac agctgaagaa atgctctgta gattga	2316

<210> 386
 <211> 303
 <212> DNA
 <213> Homo sapiens

<400> 386	
atgtctacag gtccaactgc tgccactggc agtaatcgaa gacttcagca gacacaaaat	60
caagtagatg aggtggtgga cataatgcga gttaacgtgg acaaggttct ggaaagagac	120
cagaagctct ctgagttaga cgaccgtgca gacgcactgc aggcaggcgc ttctcaattt	180
gaaacgagcg cagccaagtt gaagaggaaa tattggtgga agaattgcaa gatgtgggca	240
atcgggatta ctgttctggt tatcttcata atcatcatca tcgtgtgggt tgtctcttca	300
tga	303

<210> 387
 <211> 2544
 <212> DNA
 <213> Homo sapiens

<400> 387	
atggagccgt ggaagcagtg cgcgcagtggt ctcatccatt gcaaggtgct gccaccaaac	60
caccgggtga cctgggactc ggctcaggtg ttcgaccttg cgcagaccct ccgcgatgga	120
gtcctgctct gccagctgct taacaacctc cgggcgcact ccatcaacct gaaggagatc	180
aacctgaggc cgcagatgtc ccagtttctc tgtttgaaga acataaggac atttctcacg	240
gcctgttttg agacgttttg aatgaggaaa agtgaacttt tcgaggcatt tgacttgttt	300
gatgttcgtg actttggaaa gggtatagaa acattatcac gactttctcg aacacctata	360
gcattggcca caggaatcag gcccttccca acagaagaaa gcattaatga tgaagacatc	420
tacaaaggcc ttcttgattt aatagatgaa acccttgtgg aagatgaaga agatctctat	480
gactgtgttt atggggaaga tgaaggtgga gaagtctatg aggacttaat gaaggcagag	540
gaagcacatc agcccaaagt tccagaaaat gatatacgaa gttgttgtct agcagaaatt	600
aagcagacag aagaaaaata tacagaaact ttggagtcaa tagaaaagta tttcatggca	660
ccactaaaaa gatttctgac agcagcagaa tttgattcag tattcatcaa cattcctgaa	720
cttgtaaaac ttcatcggaa cctaattgaa gagattcatg attccattgt aaataaaaat	780
gaccagaact tgtaccaagt ttttattaac tacaaggaaa gattggttat ttacgggcag	840
tactgcagtg gagtggagtc agccatctct agtttagact acatttctaa gacaaaagaa	900
gatgtcaaac tgaaattaga ggaatgttcc aaaagagcaa ataatgggaa atttactctt	960
cgagacttgc ttgtggttcc tatgcaacgt gttttaaagt accaccttct cctccaggaa	1020

ctggtcaaac ataccactga tccgactgag aaggcaaadc tgaaactggc tcttgatgcc	1080
atgaaggact tggcacaata tgtgaatgaa gtgaaaagag ataatgagac ccttcgtgaa	1140
attaaacagt ttcagctatc tatagagaat ttgaaccaac cagttttgct ttttggacga	1200
cctcagggag atggtgaaat tcgaataacc actctagaca agcataccaa acaagaaagg	1260
catatcttct tatttgattt ggcagtgatc gtatgtaaga gaaaagggtga taactatgaa	1320
atgaaggaaa taatagatct tcagcagtac aagatagcca ataatcctac aaccgataaa	1380
gaaaacaaaa agtgggtctta tggcttctac ctcatccata cccaaggaca aaatgggtta	1440
gaatttttatt gcaaaacaaa agatttaaag aagaaatggc tagaacagtt tgaaatggct	1500
ttgtctaaca taagaccaga ctatgcagac tccaatttcc acgacttcaa gatgcatacc	1560
ttcactcgag tcacatcctg caaagtctgc cagatgctcc tgaggggaac attttatcaa	1620
ggctatttat gttttaagtg tggagcgaga gcacacaaag aatgtttggg aagagtagac	1680
aattgtggca gagttaattc tggatgaaca gggacactca aactaccaga gaaacggacc	1740
aatggactgc gaagaactcc taaacaggtg gatccagggt taccaaagat gcaggtcatt	1800
aggaactatt ctggaacacc acccccagct ctgcatgaag gacccccttt acagctccag	1860
gccggggata ccgttgaact tctgaaagga gatgcacaca gtctgttttg gcagggcaga	1920
aatttagcat ctggagaggt tggatttttt ccaagtgatg cagtcaagcc ttgccatgt	1980
gtgcccacac cagtagatta ttcttgccaa ccctgggatg ctggagcaat ggaaagattg	2040
caagcagaga ccgaacttat taatagggta aatagtactt acctgtgtgag gcacaggacc	2100
aaagagtcag gagaatatgc aattagcatt aagtacaata atgaagcaaa gcacatcaag	2160
attttaacaa gagatggctt ttttcacatt gcagaaaata gaaaatttaa aagtttaatg	2220
gaacttgtgg agtactacaa gcatcattct ctcaaggaag ggttcagaac cttagatata	2280
actctgcagt ttccatacaa ggagccagaa cattcagctg gacagagggg taatagagca	2340
ggcaacagct tgttaagtcc aaaagtgtg ggcattgcc tgcctcggtg tgacttctgt	2400
gcaagagata tgagagagtt gtccttgttg aaaggagatg tggatgaagat ttacacaaag	2460
atgagtgcac atggctgggt gagaggagaa gtaaatggca ggggtgggctg gtttccatcc	2520
acatatgtgg aagaggatga ataa	2544

<210> 388
 <211> 1566
 <212> DNA
 <213> Homo sapiens

<400> 388	
atggaggcca actggaccgc gttcctgttc caggcccatg aagcttccca tcaccaacag	60
caggcagcac agaacagctt gctgccctc ctgagctctg ccgtggagcc ccctgatcag	120
aaaccattgc ttccaatacc aataactcag aaacctcagg gtgcaccaga aacattaaag	180
gatgccattg ggattaaaaa agaaaaacc aaaacttcat ttgtgtgcac ttactgcagt	240
aaagctttca gggacagcta tcacctgagg cgccacgaat cctgccacac agggatcaag	300

PCTAU2016050927-seq1-000001-EN-20161013

ttggtgtccc	ggccaaagaa	aacccccacc	acggtggttc	cccttatctc	taccatcgct	360
ggggacagca	gccgaacttc	gttggtctcg	accattgcag	gcattctgtc	aacagtcact	420
acatcttcct	cgggcaccaa	ccccagtagc	agtgccagca	ccacagctat	gccagtgacc	480
cagtctgtca	agaaaccag	taagcctgtc	aagaagaacc	atgcttgtga	gatgtgtggg	540
aaggccttcc	gagatgtgta	ccatctcaat	cgacacaagc	tctccatttc	agatgagaaa	600
ccctttgagt	gtcctatttg	taatcagcgc	ttcaagagga	aggaccggat	gacttaccat	660
gtgaggcttc	atgaaggagg	catcaccaa	ccctatactt	gcagtgtttg	tgggaaaggc	720
ttctcaaggc	ctgaccactt	aagctgtcat	gtaaaacatg	tccattcaac	agaaagaccc	780
ttcaaatgcc	aaacgtgcac	tgctgccttt	gccaccaaag	acagactgcg	gacacacatg	840
gtgcgcatg	aaggcaaggt	atcatgtaac	atctgtggga	agctcctgag	tgcagcatac	900
atcaccagcc	acttaaagac	tcatgggcag	agccaaagta	tcaactgtaa	tacatgtaaa	960
caaggcatca	gtaaaacatg	catgagtga	gagaccagta	acaaaagca	gcagcagcag	1020
cagcagcagc	agcagcagca	gcagcaacaa	caacaacaac	aacatgtgac	aagctggcca	1080
gggaagcaag	tagaaacact	gagactgtgg	gaagaagctg	ttaaagcaag	gaagaaagaa	1140
gctgctaacc	tgtgccaaac	ctccacggct	gctacgacac	ctgtgactct	cactactcca	1200
ttcagtataa	catcctctgt	gtcgtctggg	actatgtcaa	accagtcac	agtggcagct	1260
gcaatgagca	tgagaagtcc	agtaaattgt	tcaagtgcag	ttaacataac	cagcccaatg	1320
aacatagggc	atcctgtaac	tataaccagt	ccattatcca	tgacctctcc	tttaacactc	1380
actaccccag	tcaacctccc	cacccccgtc	actgccccag	tgaatatagc	acacctgtc	1440
accatcacat	ctccaatgaa	tctaccaca	cctatgacat	tagccgcccc	tctcaatata	1500
gcaatgagac	ctgtagagag	catgcctttc	ttgcccgaag	ctttgcctac	atcaccgcct	1560
tggtaa						1566

<210> 389
 <211> 4281
 <212> DNA
 <213> Homo sapiens

<400> 389						
atggaaaatg	aaccagacca	tgaaaatgtg	gaacagagcc	tctgtgccaa	gacgagcgaa	60
gaagagctga	ataagtcttt	caatctagaa	gcttcacttt	caaaattctc	ttacatagat	120
atggacaagg	aactggagtt	caaaaatgat	ctgattgatg	acaaggagtt	tgatattcct	180
caagttgata	ctcctccaac	actggaaagc	atactaaatg	agactgatga	tgaagatgag	240
tcttttattc	ttgaggatcc	tacattgtta	aacattgata	ctattgattc	tcactcctat	300
gatacttcat	ctgtggcaag	ctcagatagt	ggtgacagga	ccaacttaaa	aaggaagaag	360
aaattacctg	attctttttc	acttcatgga	tcagttatgc	gccattcact	tttgaaggga	420
atttctgccc	agatagtgtc	tgcagctgac	aaagtagatg	ctggcttgcc	tacagcaatt	480

gcagtatcca	gtctgatagc	agtgggtaca	tctcatggat	tggctttaat	atttgatcag	540
aatcaagctt	tgcgactctg	tctgggtagc	actagtgttg	gaggtcagta	tggcgctatc	600
tctgccctca	gtatcaacaa	tgattgctca	agacttcttt	gtggctttgc	taaaggacag	660
atcaccatgt	gggatttggc	cagtggaaaa	cttctaagat	caataacaga	tgctcatcct	720
ccaggaacag	caatattgca	tatcaagttt	acagatgac	caactcttgc	aatttgcaac	780
gacagcggag	gctctgtttt	tgaattgaca	tttaagagag	tgatgggagt	gagaacctgt	840
gaatctagat	gtctgttcag	tggttccaag	ggtgaagtct	gctgtattga	gcctctgcat	900
tctaagcctg	agttgaaaga	tcatcccatc	acacagtttt	cattattggc	catggcatcc	960
ttgacaaaaa	tactggatcat	tggattgaaa	ccatccttga	aagtatggat	gacttttccc	1020
tatggccgga	tggatccttc	cagtgtgcca	ctgctggcct	ggcactttgt	agcagtacaa	1080
aattacgtga	atcccatgct	tgccttctgc	agaggagatg	ttgttcattt	tctattggta	1140
aagagagatg	aatctggagc	aatacatgtt	actaagcaaa	agcatcttca	cctatactat	1200
gacctcatca	actttacctg	gataaattca	cgcacagttg	tgctcttaga	cagcgtagag	1260
aagttgcatg	tgattgatcg	gcaaacacaa	gaggaattgg	agacagtgga	gatctcagaa	1320
gttcagctgg	tctacaatag	cagccatttc	aaatcactag	ccactggagg	aaatgttagc	1380
caggcactgg	ctttggttgg	agagaaggct	tgttatcaat	ccatcagtag	ctatggtggt	1440
cagatctttt	atttggggac	aaaatctgtt	tatgtgatga	tgctgaggag	ctggagagag	1500
agagtggatc	atctcctgaa	acaagattgt	cttacagaag	cgttggctct	tgcgtggtct	1560
ttccatgaag	gaaaagcaaa	agcagtagtg	ggattatcag	gggatgccag	taagcgaaag	1620
gctattgttg	cagaccggat	ggtagaaatc	ctattccatt	atgcagatcg	agctctgaaa	1680
aagtgccag	accaaggaaa	aatccaagtg	atggagcagc	attttcagga	tatggtgcct	1740
gtcatagtgt	attactgcct	tctgctgcag	cgaaaggatc	ttttatttag	tcagatgtat	1800
gataaattaa	gtgagaattc	agtggccaaa	ggagtatttt	tggagtgcct	tgagccatat	1860
attttaagtg	ataaattggt	gggaatcaca	ccccaagtaa	tgaaagactt	gattgttcat	1920
ttccaagata	aaaaattaat	ggaaaatgtg	gaagcgctca	ttgtacatat	ggatatcacc	1980
agcctagata	ttcagcaggt	agttctcatg	tgttgggaaa	atcgtttata	tgatgctatg	2040
atctatgtct	acaacagagg	catgaatgaa	tttattagtc	caatggagaa	acttttcaga	2100
gtcattgctc	ctcctctgaa	tgcaggaaaa	acactaacag	atgaacaagt	tgttatgggc	2160
aataagctcc	ttgtatatat	tagctgttgt	ctagcaggtc	gtgcctatcc	ccttgggtgac	2220
atccctgaag	atctggttcc	cttgggttaa	aaccaggttt	ttgaatttct	aattcgcttg	2280
cattcagcag	aggcttctcc	tgaggaagaa	atctatcctt	acattcggac	tttgctacat	2340
tttgacacaa	gagaatttct	aaatgtattg	gactgactt	ttgaagattt	taaaaatgac	2400
aagcaagctg	tggaatatca	acagcgaatt	gtggatat	ttgtgaaagt	tatggtggag	2460
aattcagact	ttaccccctc	acaagtagga	tgtctcttta	ccttccttgc	tcggcagctt	2520

gcaaagcctg acaacacctt gtttgtaaag agaacacttt ttgatcaggt ctttgaattc	2580
ctttgtagtc ctgacgatga ctcccgacac tctgaaagac agcaggtcct tttagaattg	2640
ctgcaggctg gaggcatagt tcaatttgaa gagagtcgac tcatccggat ggcagaaaaa	2700
gctgagttct atcaaatttg tgaatttatg tatgaaagag aacaccaata tgataaaatt	2760
attgattgct acttacgtga ccctctgcga gaggaagaag tctttaatta cattcacaat	2820
atcttatcca ttcccgga cagtgcagag gagaagcagt ctgtatggca gaaagcaatg	2880
gatcatattg aggaactcgt gtccctgaag ctttgtaaag ctgcggagct ggttgccacc	2940
cacttttctg gacatattga aacggtcatt aaaaaacttc agaaccaggt tttgcttttc	3000
aaatttttga ggagtcctct tgaccaagg gaaggtattc atgtaaatca agaattactg	3060
caaatatctc cttgtatcac agagcagttc attgagctgt tgtgtcagtt caaccaacc	3120
caagttatag agactctgca agtccttgag tgctaccgtc tggaagaaac tattcagatt	3180
actcagaagt atcaacttca tgaagtcacc gcttatctat tggaaaagaa aggagatatt	3240
catggtgcct tcctaataat gttagagaga ctacaaagca aacttcaaga ggtaacacat	3300
caaggtgaaa ataccaaaga ggatccctca ttgaaggatg ttgaagatac tatggtggag	3360
accattgctc tttgccagag aaattcacat aatttgaacc agcagcaacg tgaggcactt	3420
tggtttccgt tattggaggc aatgatggc cctcagaagc tgtccagttc agccattcct	3480
catctacact ctgaagctct gaagtctttg accatgcaag ttttaaatag catggcagca	3540
tttattgccc ttccatcaat cttgcaaaga atcttacagg atccagttta tggaaaagga	3600
aaacttgag aaatccaggg acttatcttg ggaatgttag ataccttta ctatgaacaa	3660
accctgctgg aaacaacaac cagccttcta aaccaagatc tccattggtc attgtgtaac	3720
ctgagagctt cggtcaccag aggactgaat cccaaacaag attactgctc tatatgtttg	3780
cagcagtaca agagacgcca agaaatggct gatgaaataa ttgtcttttag ctgtggccat	3840
ttgtatcact cattctgcct acaaaacaaa gaatgcactg tggaatttga gggccaaaca	3900
agatggacat gctacaaatg cagttcaagt aacaaagtag gaaaactcag tgaaaattca	3960
tctgaaatta aaaaggaag gataaccca tcacaggtaa aaatgtctcc atcgtatcat	4020
cagtccaaag gggatccac tgctaaaaag ggaacctcag aacctgttct ggatccacag	4080
caaatccaag catttgatca gctttgccgt ctctaccgag gaagctccag gctggctctc	4140
ctcacggaac tctccagaa tcgcagcagc gagagctata ggccattcag tggctcgcag	4200
agtgtcctg ctttcaacag catcttccag aatgagaact tccagctgca gctcattcct	4260
ccacctgtga ctgaggattg a	4281

<210> 390
 <211> 1497
 <212> DNA
 <213> Homo sapiens

<400> 390
 atgccgttag taacgaggaa catcgagcca aggcacctgt gccgtcagac gttgcctagc 60

gttagaagcg agctggaatg cgtgaccaac atcaccttg ccaatgtcat ccgacagctg	120
ggcagcctga gtaaataatgc agaggacatt tttggagagc tctttactca ggcaaatacc	180
tttgcctctc gggtaagctc ccttgctgag agggctcgacc gactacaggt taaagtcact	240
cagctggatc ccaaggaaga agaagtgtca ctgcaaggaa tcaacacccg aaaagccttc	300
agaagttcca ccattcaaga ccagaagctt tttgacagaa actctctccc agtgccctgtc	360
ttagaaacat acaataacctg tgatactcct cccctctca acaatcttac cccttacagg	420
gacgatggaa aagaggcact caaattctac acagaccctt catacttctt tgatctttgg	480
aaggagaaga tgctgcagga caccaaggat atcatgaaag agaagagaaa gcataggaaa	540
gaaaagaaaag ataatccaaa tcgagggaat gtaaaccac gtaaaatcaa gacacgtaag	600
gaagagtggg agaaaatgaa gatggggcaa gaatttgtgg agtccaaaga aaagctgggg	660
acttctgggt atccaccac tttggtgtac cagaatggca gcattggctg tgttgaaaac	720
gtggatgcaa gtagctatcc gccaccacca cagtcagact ctgcttcttc accttctcct	780
tccttctccg aggacaactt gcctcctcca ccagcagaat tcagttaccc agtggacaac	840
caaagaggat ctggtttggc tggacccaaa agatccagtg tggtcagccc aagccatcca	900
ccaccagctc ctctctagg ctctccacca ggccctaaac ccgggtttgc tccaccacct	960
gcccctccgc cacctccgcc tccaatgata ggcatccac ctccaccacc gcctgtagga	1020
tttgggtctc caggagcgc tccaccacc tcaccccat ctttccacc tcaccctgat	1080
tttgctgccc ctccacctc tcctccacca ccagcagctg actaccaac tctgccacca	1140
cctcccttgt cccagccaac aggaggagca cctcctcctc cccctcctc tcctcctccg	1200
gggccccctc ctccccctt cactggtgca gatggccagc ctgctatacc accaccgctt	1260
tctgatacca ccaagcccaa gtccctcctt cctgccgtga gcgatgccg tagcgacctg	1320
ctttcagcca tccgtcaagg ttttcagctg cgcagggttg aggagcagcg ggaacaagag	1380
aagcgggatg ttgtgggcaa tgacgtggc accatcttgt ctcgtcgcac tgctgttgag	1440
tacagtgact cagaagatga ctctctgaa tttgatgagg acgactggc cgattaa	1497

<210> 391
 <211> 786
 <212> DNA
 <213> Homo sapiens

<400> 391	
atggcgctca acaagaatca ctcggagggc ggcggagtga tcgtcaataa caccgagagc	60
atcctaattgt cctatgatca cgtggaactc acattcaatg acatgaagaa cgtgccagaa	120
gccttcaaag ggaccaagaa aggcactgtc taccttacct cttaccgggt catctttctg	180
tccaagggca aggatgccat gcagtccttc atgatgccat tttatctcat gaaagactgt	240
gagatcaagc agcccgtatt tgggtgaaac tacatcaagg gaacagtga ggcggaagcg	300
ggaggtggct gggaaggctc tgcttcctac aagttgactt tcacggcagg gggcgccatt	360

gagttcggac agcggatgct ccaggtggca tctcaagcct ccagaggtga agtccccagt	420
ggagcctatg gctactctta catgcccagc ggggcctatg tctatcccc gccagtcgcc	480
aatggaatgt acccctgccc tcctggctac ccctatccac cgccccacc tgagttctat	540
ccaggacccc ccatgatgga cggggccatg ggatacgtgc agccccacc accgccctac	600
cctgggcccga tggaaacctc ggtcagcggc ccgatgtcc cctccactcc tgcagccgaa	660
gccaaggccg cagaagcagc cgccagcgcc tattacaacc caggcaatcc tcacaacgtc	720
tacatgcccga cgagccagcc gccgccacct ccctactacc caccggaaga taagaagacc	780
cagtag	786

<210> 392
 <211> 1485
 <212> DNA
 <213> Homo sapiens

<400> 392	
atgcccacag aaagcgcaag ttgttcgact gctcgccaaa caaaacagaa gcgcaaattcc	60
catagccttt ctatacgaag aactaacagc tcggagcagg agaggacggg actgccaaga	120
gacatgttag aaggacaaga ttctaaactg ctttcctcgg ttcgcagtac acttctggaa	180
ctgtttggtc aaatagaaag agaatttgaa aacctttata tcgaaaactt agaattacgt	240
agagaaatcg acactcttaa tgaacgttta gctgctgaag gacaagcgat tgatggagca	300
gagctgagta agggccaact caaaacaaaa gccagtcaca gcaccagcca gctctccag	360
aaactgaaga ccacttaca ggcttcacc agcaagattg tctccagctt taagaccacg	420
acatcgagag ctgcctgcc gctcgtgaag gactacatcg gccaccggga cggcatctgg	480
gatgtcagcg tggccaagac acagccagtg gtgctcggga ctgcatcagc cgatcacacg	540
gctttgctgt ggagcataga gacaggaag tgcctagtca agtacgcagg ccacgtgggc	600
tcagtaaatt ctatcaaatt tcatccctca gagcagttgg ctctcactgc ttctggagat	660
cagactgctc atatctggag atacgcggtg cagctgccga caccagcc tggtgctgac	720
actagtatat ctggggaaga tgaagtagag tgctctgaca aggacgagcc cgacctgat	780
ggggatgtgt ccagcgactg cccaccatc cgcgtccac tgacatccct caagagccac	840
cagggcgtgg tcatcgctc cgactggctg gttggggga agcaggctgt gactgcctcc	900
tgggaccgga cggcaaacct gtacgacgtg gagacgtccg agctcgttca ctctctgaca	960
gggcacgacc aggagttgac gactgctgc acacaccca cccagcggct cgtggtgacc	1020
tcctcccgtg acacgacttt ccgcctctgg gatttcaggg acccctccat cactcggtg	1080
aatgttttcc aggacacac ggacactgtg acttctgccg tgttcaccgt gggagacaac	1140
gtggtttcag gcagcgatga ccgcacggtg aaagtctggg acttgaaaaa tatgagatcc	1200
cccattgcaa ctattcgac ggactctgcc attaacagga tcaatgtatg tgctcgccaa	1260
aaaatcatag ccctcccca tgacaaccga caagtgagac tgtttgatat gtcaggagtg	1320
cgcctggcgc ggcttccccg gagcagccga cagggccaca ggagaatggg atgctgctcg	1380

gcatggagtg aagaccaccc cgtgtgcaat ctgttcacct gtgggtttga ccggcaagcc	1440
attggttggga acatcaacat ccctgcattg ctacaagaaa aataa	1485

<210> 393
 <211> 2763
 <212> DNA
 <213> Homo sapiens

<400> 393	
atgacggctg aagaaacagt gaatgtaaaa gaggttgaaa tcattaagct aattttggac	60
ttcctgaatt caaagaagct tcacattagt atgctggccc tggagaagga aagtggagtc	120
ataaatggcc tgttttcaga tgatatgctt ttcctgaggc agctaatact tgatgggtcaa	180
tgggatgaag ttcttcagtt cattcagcct ctagaatgta tggaaaaatt tgacaaaaaa	240
aggtttcgtt atattatcct gaagcagaag tttttagaag ctttatgtgt taacaacgcg	300
atgtcagcag aagatgagcc ccagcatctg gaatttacca tgcaagaagc tgtgcaatgt	360
ttacatgctc tagaagaata ctgtccttct aaagatgact atagtaagct ctgtttgctt	420
ttgactttgc ctctgtctgac caatcatgcc gagtttaagg actggaatcc cagcaccgca	480
cgagttcact gttttgaaga ggcttgtgtc atgggttcag aattcatccc tgctgatagg	540
aagctaagtg aagctggttt taaggctagt aacaatcgtt tatttcagct tgtaatgaaa	600
ggcctgcttt atgaatgctg tgtagaattt tgtcagagta aagcaactgg agaagaaatt	660
acagaaagcg aagtgcctct tggcatcgac ctcttatgtg gtaatggttg tgatgatttg	720
gatctgagtt tactgtcatg gcttcagaat cttccatctt ctgtcttctc ttgtgctttt	780
gaacagaaaa tgcttaatat tcatgttgac aaacttctga aacctacaaa agctgcatat	840
gctgatcttt tgactcctct tatcagcaaa ctctctccct atccatcatc cccaatgaga	900
agacctcaat cagctgatgc ctatatgacc cgctctctga atcctgcttt agatggcctc	960
acctgtggac taaccagtca tgataagaga atttcagacc ttggaaacaa aacttctcca	1020
atgtcacact cttttgctaa cttccattat ccaggggtac aaaacctcag tagaagtctc	1080
atgcttgaga atacagaatg tcacagtatt tacgaagaat cccctgagcg aagtgataca	1140
cctgttgatg cacagaggcc tatcggcagt gaaatcttgg gccagagttc agtttcagaa	1200
aaagagcctg caaatggagc acagaatcca ggaccagcta aacaagaaaa aaatgagctt	1260
cgagattcaa cagaacaatt tcaagaatat tataggcaaa gattacgcta tcaacagcat	1320
ttagaacaga aggagcaaca gcggcagata taccaacaga tgttgcttga aggaggcgtg	1380
aatcaggagg atggctctga tcagcagcag aatcttactg aacagttcct taataggtcc	1440
attcaaaagc ttggtgaatt aaatattgga atggatggcc ttggtaatga ggtatcagca	1500
ctcaaccagc aatgtaatgg gagcaaaggc aatggatcta atgggttcttc tgtgactagt	1560
tttactacac caccccaaga ctctagtcag agattaacac atgatgcttc aaatattcat	1620
acaagcactc ctctgaatcc tggatcaaca aatcacatac cttttctgga ggaatcacct	1680

tgtggaagcc	aaatctcttc	agaacattcg	gtcattaagc	cacctcttgg	agattctcca	1740
gggagtcitt	caaggctcga	aggggaagag	gatgacaaat	caaaaaagca	gtttgtttgt	1800
attaatatcc	tagaagacac	acaagctgtt	agagcagtgg	cttttcatcc	agctggaggt	1860
ttatatgctg	ttgggttcaa	ttcaaaaact	ctgagagtat	gtgcctatcc	agatgtaatt	1920
gatccaagtg	cacatgagac	tcctaagcag	ccgggtgtac	gttttaaaag	gaataaacat	1980
cataaaggat	ccatttactg	tgtggcctgg	agtccttgtg	ggcagttatt	agcaacagga	2040
tcaaatgaca	aatacgtcaa	agtgtctgcc	ttcaatgcag	agacttgtaa	cgcaacagga	2100
ccagatctgg	aatttagtat	gcatgatgga	acaattagag	acttggcatt	tatggaaggc	2160
ccagaaagcg	gaggagctat	tttaataagt	gctggagcag	gggattgtaa	catttataca	2220
accgattgtc	aaagaggaca	gggcctccat	gctttgagtg	gacatactgg	gcatatttta	2280
gcactttata	cctggagtgg	ctggatgatt	gcatctgggt	ccaagataa	gactgttaga	2340
ttttgggatc	ttcgagtacc	aagttgtgtt	cgtgttgttg	gcacaacatt	tcatggaact	2400
ggcagtgcag	tggcatctgt	agctgtagat	cccagtggtc	gtctcttagc	cacagggtcaa	2460
gaagattcta	gctgcatgtt	gtatgacata	agaggaggaa	gaatggtaca	aagttatcat	2520
cctcattcca	gtgatgttcg	ctctgttcga	ttctcccctg	gagctcacta	cttgctaaca	2580
ggctcttatg	atatgaaaat	aaaggtgaca	gacctacaag	gggacctcac	caagcagctt	2640
cctatcatgg	tgggtggggga	gcacaaggac	aaagtgattc	agtgcagatg	gcacacccag	2700
gatctttcct	tcctgtcatc	ctctgcagat	agaactgtca	ccctctggac	ttacaatggg	2760
tag						2763

<210> 394
 <211> 906
 <212> DNA
 <213> Homo sapiens

<400> 394	
atggaaggag	acttctcggt
gtgcaggaac	tgtaaaagac
atgtagtctc	tgccaacttc
	60
accctccatg	aggcttactg
cctgcggttc	ctggctcctgt
gtccggagtg	tgaggagcct
	120
gtccccaagg	aaaccatgga
ggagcactgc	aagcttgagc
accagcaggt	tggtgttacg
	180
atgtgtcagc	agagcatgca
gaagtcctcg	ctggagtttc
ataaggccaa	tgagtgccag
	240
gagcgccctg	ttgagtgtaa
gttctgcaaa	ctggacatgc
agctcagcaa	gctggagctc
	300
cacgagtcct	actgtggcag
ccggacagag	ctctgccaaag
gctgtggcca	gttcatcatg
	360
caccgcatgc	tcgcccagca
cagagatgtc	tgtcgcagtg
aacaggccca	gctcgggaaa
	420
ggggaaagaa	tttcagctcc
tgaaaggga	atctactgtc
attattgcaa	ccaaatgatt
	480
ccagaaaata	agtatttcca
ccatatgggt	aaatgttgtc
cagactcaga	gtttaagaaa
	540
cactttcctg	ttggaaatcc
agaaattctt	ccttcatctc
ttccaagtca	agctgctgaa
	600
aatcaaactt	ccacgatgga
gaaagatgtt	cgtccaaaga
caagaagtat	aaacagattt
	660
cctcttcatt	ctgaaagttc
atcaaagaaa	gcaccaagaa
gcaaaaaaca	aaccttggat
	720

ccacttttga tgtcagagcc caagcccagg accagctccc ctagaggaga taaagcagcc	780
tatgacattc tgaggagatg ttctcagtgt ggcacctcgc ttcccctgcc gatcctaaat	840
caacatcagg agaaatgccg gtgggttagct tcatcaaaag gaaaacaagt gagaaatttc	900
agctag	906

<210> 395
 <211> 2823
 <212> DNA
 <213> Homo sapiens

<400> 395	
atggctcgga aacgcgcggc cggcggggag ccgcggggac gcgaactgcg cagccagaaa	60
tccaaggcca agagcaaggc ccggcgtgag gaggaggagg aggatgcctt tgaagatgag	120
aaacccccaa agaagagcct tctctccaaa gtttcacaag gaaagaggaa aagaggctgc	180
agtcaccttg ggggttcagc agatggtcca gcaaaaaaga aagtggccaa ggtgactgtt	240
aaatctgaaa acctcaaggt tataaaggat gaagccctca gcgatgggga tgacctcagg	300
gactttccaa gtgacctcaa gaaggcacac catctgaaga gaggggctac catgaatgaa	360
gacagcaatg aagaagagga agaaagttaa aatgattggg aagagggtga agaacttagt	420
gagcctgtgc tgggtgacgt gagagaaagt acagccttct ctcgatctct tctgcctgtg	480
aagccagtgg agatagagat tgaaacgcca gagcaggcga agacaagaga aagaagttaa	540
aagataaaac tggagtttga gacatatctt cggagggcga tgaaacgttt caataaaggg	600
gtccatgagg acacacacaa ggttcacctt ctctgcctgc tagcaaattg cttctatcga	660
aataacatct gcagccagcc agatctgcat gctattggcc tgtccatcat cccagccgc	720
tttaccagag tgctgcctcg agatgtggac acctactacc tctcaaacct ggtgaagtgg	780
ttcattggaa catttacagt taatgcagaa ctttcagcca gtgaacaaga taacctgcag	840
actacattgg aaaggagatt tgctatttac tctgctcgag atgatgagga attggtccat	900
atattcttac tgattctccg ggctctgcag ctcttgacct ggctgggtatt gtctctacag	960
ccaattcctc tgaagtcagc aacagcaaag ggaaagaaac cttccaagga aagattgact	1020
gcggatccag gaggtcctc agaaacttcc agccaagttc tagaaaacca caccaaacca	1080
aagaccagca aaggaaccaa acaagaggaa acctttgcta agggcacctg caggccaagt	1140
gccaaaggga agaggaacaa gggaggcaga aagaaacgga gcaagccctc ctccagcgag	1200
gaagatgagg gccaggaga caagcaggag aaggcaaccc agcgacgtcc gcatggccgg	1260
gagcggcggg tggcctccag ggtgtcttat aaagaggaga gtgggagtga tgaggctggc	1320
agcggctctg attttgagct ctccagtgga gaagcctctg atccctctga tgaggattcc	1380
gaacctggcc ctccaaagca gaggaagcc cccgtcctc agaggacaaa ggctgggtcc	1440
aagagtgcct ccaggacca tcgtgggagc catcgtaagg acccaagctt gccagcggca	1500
tcctcaagct cttcaagcag taaaagaggc aagaaaatgt gcagcgatgg tgagaaggca	1560

gaaaaaagaa gcatagctgg tatagaccag tggctagagg tgttctgtga gcaggaggaa	1620
aagtgggtat gtgtagactg tgtgcacggt gtgggtgggcc agcctctgac ctgttacaag	1680
tacgccacca agcccatgac ctatgtggtg ggcattgaca gtgacggctg ggtccgagat	1740
gtcacacaga ggtacgaccc agtctggatg acagtgaccc gcaagtgccg ggttgatgct	1800
gagtgggtggg ccgagacctt gagaccatac cagagcccat ttatggacag ggagaagaaa	1860
gaagacttgg agtttcaggc taaacacatg gaccagcctt tgcccactgc cattggctta	1920
tataagaacc accctctgta tgccctgaag cggcatctcc tgaaatatga ggccatctat	1980
cccgagacag ctgccatcct tgggtattgt cgtggagaag cggctctactc cagggattgt	2040
gtgcacactc tgcatccag ggacacgtgg ctgaagaaag caagagtggg gaggcttgga	2100
gaagtaccct acaagatggg gaaaggcttt tctaaccgtg ctcggaaagc ccgacttgct	2160
gagccccagc tgcgggaaga aaatgacctg ggcctgtttg gctactggca gacagaggag	2220
tatcagcccc cagtggccgt ggacgggaag gtgccccgga acgagtttgg gaatgtgtac	2280
ctcttcctgc ccagcatgat gcctattggc tgtgtccagc tgaacctgcc caatctacac	2340
cgcgtggccc gcaagctgga catcgactgt gtccaggcca tcaactggctt tgatttccat	2400
ggcggctact cccatcccgt gactgatgga tacatcgtct gcgaggaatt caaagacgtg	2460
ctcctgactg cctgggaaaa tgagcaggca gtcattgaaa ggaaggagaa ggagaaaaag	2520
gagaagcggg ctctagggaa ctggaagtgt ctggccaaag gtctgtcat cagggagagg	2580
ctgaagcgtc gctacgggcc caagagttag gcagcagctc cccacacaga tgcaggaggt	2640
ggactctctt ctgatgaaga ggaggggacc agctctcaag cagaagcggc caggatactg	2700
gctgcctcct ggctcaaaa ccgagaagat gaagaaaagc agaagctgaa ggggtgggccc	2760
aagaagacca aaagggaaaa gaaagcagca gcttcccacc tgttcccatt tgagcagctg	2820
tga	2823

<210> 396
 <211> 3378
 <212> DNA
 <213> Homo sapiens

<400> 396	
atggcatctg aagaagcctc tctcagggca ttggaaagtc tgatgacaga attttttcac	60
gattgtacaa ccaatgaaag aaaacgtgag atagaggagc ttcttaataa ctttgcccag	120
caaataggag cctggagatt ctgcctgtac tttctctcca gcactaggaa tgactatgta	180
atgatgtaca gttaacagt ttttgagaat ctgatcaata aaatgtggct tgggggtccca	240
tctcaggata agatggaaat ccgtagctgt ctgcccacac tccttttggc tcaccataaa	300
accttacctt actttatccg gaacaagctc tgcaaagtta ttgttgatat tggacgtcag	360
gattggccca tgttctacca cgactttttt actaacatct tacagttgat ccagtcacct	420
gtgacaaccc cccttgggct gatcatgttg aagacaactt cagaagagct ggcttgtccc	480
cgtgaggacc tcagtgtggc tcggaaggag gagttgcgga agctgtact ggaccagggtg	540

cagacagtgc	ttgggctact	gacaggtatc	ttggagactg	tctgggacaa	acacagtgtt	600
actgctgcca	ctccaccacc	atccccgacc	tcaggagaaa	gtggtgactt	actgagtaac	660
ctgttgacga	gtcccagttc	agccaaactg	ttgaatcagc	caattcccat	ccttgatgtg	720
gagagtgagt	atatctgttc	cctggctttg	gagtgcctgg	cccatctctt	cagttggatt	780
cctctgtctg	ccagcatcac	cccatccctc	cttaccacca	tcttccactt	tgcacgattt	840
ggctgtgaca	tccggggccag	aaagatggcg	tcagttaacg	gcagcagcca	gaactgtgtc	900
tcgggtcagg	agcgcggccg	gctgggggtc	ctggccatgt	cctgcatcaa	tgaactcatg	960
tccaagaact	gtgtgcctat	ggaatttgag	gagtattttac	tgcgtatgtt	ccagcagact	1020
ttctacctcc	tgcagaaaat	caccaaggat	aacaatgccc	acacagtga	gagcaggcta	1080
gaagagctcg	atgagagcta	tatcgagaag	tttactgact	ttcttcggct	ctttgtgagt	1140
gttcacctaa	gaagaatcga	gtcttactcc	cagttccctg	tggtggagtt	tttgacactt	1200
ttgttcaagt	acacatttca	tcagcctact	catgaagggt	acttctcttg	tttgatatac	1260
tggacgctgt	ttttggacta	tctgacaagt	aaaattaaaa	gtcgtcttgg	agacaaggaa	1320
gcagttctca	acaggtacga	agatgccctg	gtgctcctgc	tcacagaggt	gttgaatcga	1380
atccagttca	gatacaacca	agcccagctg	gaggagttgg	atgatgagac	tctggatgac	1440
gatcagcaga	cggagtggca	gcggtactta	cggcagagct	tggaggtggg	ggccaaagtg	1500
atggagctcc	tgcccacgca	cgccttctcc	acactgttcc	ctgttcttca	ggacaattta	1560
gaagtttatt	tgggattaca	acagtttata	gtcacttcag	ggtcaggaca	caggttgaac	1620
atcacggcgg	agaacgactg	ccggcggctg	cactgctccc	tgagagactt	gagctccctg	1680
ctgcaggccg	tgggccgcct	ggccgagtac	tttatcgggg	atgtgtttgc	tgcacggttc	1740
aatgatgccc	tcacagtcgt	ggaaagggtg	gtcaaagtca	ctctgtacgg	atctcagata	1800
aaattgtaca	acattgaaac	tgctgtgcca	tcagtattga	aacctgacct	cattgatgtg	1860
catgctcagt	ccctggctgc	gctgcaggct	tactctcact	ggttagcaca	gtattgcagt	1920
gaagttcacc	ggcagaacac	gcagcagttc	gtgacactca	tctctactac	catggatgca	1980
atcacacctc	taatcagcac	caagggtccaa	gacaagctgc	tgctatctgc	gtgccactta	2040
ctggtctcac	tggccaccac	cgtgcggccc	gtctttctga	tcagcatccc	tgcagtgcag	2100
aaagtattca	acagaatcac	tgatgcctct	gccctgcgac	ttgtcgataa	ggcccagggtg	2160
ttggtgtgcc	gagccctctc	taacatcttg	ctgcttccgt	ggccaaacct	tccagagaat	2220
gagcagcagt	ggcccgtgcg	ctccatcaac	cacgccagcc	tcattctctgc	actctcccgg	2280
gactatcgca	acctgaagcc	cagtgtgtgt	gccccacaga	gaaagatgcc	actggatgac	2340
accaaactga	ttatccacca	gacactcagc	gtcttagaag	atattgtgga	gaatatctcg	2400
ggggagtcca	ccaagtctcg	acagatttgc	taccagtcgc	tgcaggaatc	tgttcaggtc	2460
tccctggccc	tctttccagc	ttttatccat	cagtcagatg	tgactgatga	gatgctgagc	2520
ttcttcctca	ctctgtttcg	aggccttaga	gtacagatgg	gtgtgccttt	cactgagcaa	2580

atcatacaga ctttcctcaa catgtttacc agagagcagt tagccgagag catcctccac	2640
gagggcagca caggctgccg ggtggtggag aagtttctga agatcctgca ggtggtggtc	2700
caggagccag gccaggtgtt caagcccttc ctccccagca tcatcgccct gtgcatggag	2760
caagtgtatc ccatcattgc cgagcgtccc tcccctgatg tgaaggccga gctgtttgag	2820
ctccttttcc ggacgttcca tcacaactgg aggtacttct tcaagtccac cgtgctggcc	2880
agtgtccaga gggggatcgc tgaggagcag atggagaatg agccccagtt cagtgccatc	2940
atgcaggctt tcggacagtc ctttctccag cccgacatcc acctttttaa acaaaatctc	3000
ttctacttgg agactctcaa caccaagcag aagctgtacc acaagaagat cttccggact	3060
gccatgctgt tccagtttgt gaacgtgctg ctccaggctc tgggtccacaa gtcccatgat	3120
cttctgcagg aggagattgg catcgccatc tacaacatgg cctcagtcga ctttgatggc	3180
ttctttgccg ccttctctcc agagttcctg accagctgtg atggtgtgga tgccaaccag	3240
aaaagtgtgc tggggcgga tttcaagatg gatcgggacc tgccctcatt caccagaat	3300
gtgcacaggc tggtaacga cctgcgctac tacagactct gcaacgacag cctgccccct	3360
ggcactgtga agctctag	3378

<210> 397
 <211> 366
 <212> DNA
 <213> Homo sapiens

<400> 397	
atgggcagaa ttttccttga tcatatcggg ggtaccgctc tgttttcttg tgcaaactgt	60
gatacgatcc tgaccaaccg ctcagaactc atctccactc gtttcacagg cgccactggc	120
agagcatttc tttttaacaa ggtagttaac ctgcagtaca gtgaagttca agatcgggtc	180
atgctcactg gccgccacat ggttcgagat gtgagctgca aaaactgcaa tagcaaactg	240
ggatggatct atgagtttgc cactgaagac agccagcgat ataaggaagg ccgctgcatc	300
ctggaacgtg ctctagttcg agagagttag ggctttgagg agcatgtacc atctgataac	360
tcttga	366

<210> 398
 <211> 1758
 <212> DNA
 <213> Homo sapiens

<400> 398	
atgtcagcca ctagcgtgga tcagagacct aaagggcaag gaaataaagt ttcagtacaa	60
aacggttcga ttcacaaaa agatgctgta aatgatgatg attttgagcc atacttaagt	120
agccagacaa atcagagtaa cagctatcca ccaatgtcag atccatacat gcctagttaa	180
tatgctccat ccattggatt tccatattct cttggggaag cagcgtggtc cacagctgga	240
gaccagccta tgccatatct gacaacctat ggacaaatga gtaatggaga acatcactat	300
ataccagatg gtgtatttag tcaacctggg gcattaggaa ataccctcc atttcttggg	360

caacatggat ttaacttttt tcctggtaat gctgatttct ctacatgggg gacaagtgga	420
tctcagggac aatcaacaca aagttctgct tatagtagca gttatggcta tccacctagt	480
tctcttggga gagctattac tgatggacag gctggatttg gcaatgatac tttgagtaag	540
gtgcctggca ttagcagtat tgagcaaggc atgactggac tgaaaattgg tggtgacctg	600
acagctgcag tgacaaaaac thtaggtaca gctttgagca gcagtgggat gactagcatt	660
gcaaccaata gtgtgcccc agttagcagt gcagcaccta aaccaacctc ctgggctgcc	720
attgccagaa agcctgccaa acctcaaccg aaacttaaac ccaagggcaa tgtgggaatt	780
gggggttctg ctgtaccacc acctcctata aaacacaaca tgaatattgg aacttgggat	840
gaaaaagggc cagtggtaaa ggctccacca acccaaccag ttctgcctcc tcaaactata	900
atccagcagc ctgagccatt aattcaacca ccaccattgg tgcaaagcca actgcctcaa	960
cagcagcctc aaccaccaca accacagcag caacaaggac ctgagccaca ggcccagcct	1020
caccaagtgc agcctcaaca gcagcagctg cagaatcgct gggtagctcc tcgtaacagg	1080
ggagcaggct tcaaccagaa caatggagcg ggcagtgaac actttggttt aggtgttgta	1140
cctgtcagtg cttcaccttc tagtgtagaa gtgcatcccg tgctggaaaa gctaaaggcc	1200
ataaacaact ataatcccaa agactttgat tggaatctga agaattggacg tgtgtttata	1260
attaaaagct actctgagga tgacatacat cgttccatta aatactctat ctggtgtagt	1320
actgagcatg gtaataagcg tttggatgca gcttaccgtt ccctgaatgg gaaaggccca	1380
ctctatttac tcttcagtgt gaatggcagt ggacattttt gtggagtggc tgaaatgaag	1440
tctgttggg actataatgc gtatgctggg gtctgggtctc aggataagtg gaagggcaaa	1500
tttgaagtta aatggatctt tgtcaaagat gttcccaata accaattacg gcatattcgc	1560
ttagaaaata atgacaacaa accggttacc aattcaaggg acactcaaga ggtaccctta	1620
gaaaaagcta agcaagtgt taaaataatt gctactttca agcataccac ctcaatcttt	1680
gatgactttg cacattatga aaagcgtcaa gaagaggagg aagccatgcg tagggagaga	1740
aatagaaaca aacaataa	1758

<210> 399
 <211> 1290
 <212> DNA
 <213> Homo sapiens

<400> 399	
atggcccagg ctctgctga cccgggcaga gaaggccacc ttgaacaaag aatcctgcag	60
gtgctgacag aggctggctc cccgggtgaaa cttgccacgc tgggtgaagga atgccaagca	120
ccaagaggg agtcaacca agtcctctac cgaatgaaaa aggagtgtgaa agtctccctc	180
acatcccctg ccacctggtg cttgggcggg actgatcctg aaggcgaggg tcctgcagag	240
ctggccttgt ccagccctgc cgagaggccc cagcaacatg cagctacaat tccagagacc	300
cctggccctc agttcagcca acaacgggag gaagacatct acaggtttct caaagacaat	360

ggtccccaga	gggccctggt	catcgcccaa	gcactgggaa	tgaggacagc	aaaagatgtg	420
aaccgagact	tgtacaggat	gaagagcagg	caccttcttg	acatggatga	gcagtccaaa	480
gcatggacga	tttaccgccc	agaagattct	ggaagaagag	caaagtcagc	ctcaattatt	540
taccagcaca	atccaatcaa	catgatctgc	cagaatggac	ccaacagctg	gattttccatt	600
gcaaactccg	aagccatcca	gattggacac	gggaacatca	ttacaagaca	gacagtctcc	660
agggaggacg	gttccgccgg	tccacgccac	ctcccttcaa	tggcaccagg	tgattcctca	720
acttggggga	ccctagttag	tccctggggg	ccccaggaca	tccacatgga	gcagtccata	780
ctgagacggg	tgcagctggg	acacagcaat	gagatgaggc	tccacggcgt	cccgtccgag	840
ggccctgccc	acatcccccc	tggcagcccc	ccagtctctg	ccactgctgc	cgggccagaa	900
gcttcgtttg	aagcaagaat	tcccagtcca	ggaactcacc	ctgaggggga	agccgcccag	960
agaatccaca	tgaaatcgtg	ctttctcgag	gacgccacca	tgggcaacag	caacaaaatg	1020
tctatcagcc	caggggtggc	tggcccagga	ggagtcgcag	ggtctggaga	gggggagcca	1080
ggggaggacg	caggtcgtcg	tcccgcagac	acacaatcca	gaagtcactt	tcctcgagac	1140
attggtcagc	ccatcactcc	cagccactcg	aagctcacc	ccaagctgga	aactatgact	1200
cttggaaca	ggagtcacaa	agctgcagaa	ggcagccact	atgtggatga	agcctcacac	1260
gaggggagct	ggtggggagg	tgggatttag				1290

<210> 400
 <211> 1569
 <212> DNA
 <213> Homo sapiens

<400> 400						
atggagtttc	cagaccatag	tagacatttg	ctacagtgtc	tgagcgagca	gagacaccag	60
ggttttcttt	gtgactgcac	tgttctggtg	ggagatgccc	agttccgagc	gcaccgagct	120
gtactggctt	catgcagcat	gtattttcac	ctcttttaca	aggaccagct	ggacaaaaga	180
gacattgttc	atctgaacag	cgacattgtt	acagcccccg	ctttcgctct	cctgcttgaa	240
ttcatgtatg	aagggaaact	ccagttcaaa	gacttgccca	ttgaagacgt	gctagcagct	300
gccagttatc	tccacatgta	tgacattgtc	aaagtctgca	aaaagaagct	gaaagagaaa	360
gccaccacgg	aggcagacag	caccaaaaag	gaagaagatg	cttcaagttg	ttcggacaaa	420
gtcgagagtc	tctccgatgg	cagcagccac	atagcaggcg	atttgcccag	tgatgaagat	480
gaaggagaag	atgaaaaatt	gaacatcctg	cccagcaaaa	gggacttggc	ggccgagcct	540
gggaacatgt	ggatgcgatt	gccctcagac	tcagcaggca	tccccaggc	tggcggagag	600
gcagagccac	acgccacagc	agctggaaaa	acagtagcca	gcccctgcag	ctcaacagag	660
tctttgtccc	agaggtctgt	cacctccgtg	agggattcgg	cagatgttga	ctgtgtgctg	720
gacctgtctg	tcaagtccag	cctttcagga	gttgaaaatc	tgaacagctc	ttattttctct	780
tcacaggacg	tgctgagaag	caacctggtg	caggtgaagg	tggagaaaga	ggcttcctgt	840
gatgagagtg	atgttggcac	taatgactat	gacatggaac	atagcactgt	gaaagaaagt	900

gtgagcacta	ataacaggg	acagtatgag	ccggcccatc	tggctcccct	gagggaggac	960
tcggtcttga	gggagctgga	ccgggaggac	aaagccagt	atgatgagat	gatgacccca	1020
gagagcgagc	gtgtccaggt	ggagggaggc	atggagagca	gtctgctccc	ctacgtctcc	1080
aacatcctga	gccccgcggg	ccagatcttc	atgtgcccc	tgtgcaacaa	ggtcttcccc	1140
agccccaca	tcctgcagat	ccacctgagc	acgcacttcc	gcgagcagga	cggcatccgc	1200
agcaagcccg	ccgccgatgt	caacgtgccc	acgtgctcgc	tgtgtgggaa	gactttctct	1260
tgcatgtaca	ccctcaagcg	ccacgagagg	actcactcgg	gggagaagcc	ctacacatgc	1320
acccagtgcg	gcaagagctt	ccagtactcg	cacaacctga	gccgccatgc	cgtggtgcac	1380
acccgcgaga	agccgcacgc	ctgcaagtgg	tgcgagcgca	ggttcacgca	gtccggggac	1440
ctgtacagac	acattcgcaa	gttccactgt	gagttggtga	actccttgtc	ggtcaaaagc	1500
gaagcactga	gcttgccctac	tgtcagagac	tggaccttag	aagatagctc	tcaagaactt	1560
tggaataa						1569

<210> 401
 <211> 2709
 <212> DNA
 <213> Homo sapiens

<400> 401	
atggcggacc	60
cggaggtgtg	
ctgcttcac	
acaaaaatcc	
tgtgcgcca	
cgggggcccgc	
atggccctgg	120
acgcgctgct	
ccaggagatc	
gcgctgtctg	
agccgcagct	
ctgtgaggtg	
ctgcaggtgg	180
ccgggcccga	
ccgctttgtg	
gtgttgagga	
ccggcggcga	
ggccgggatc	
acccgatcgg	240
tgggtggccac	
cactcgagcc	
cgggtctgcc	
gtcgcaagta	
ctgccagaga	
ccctgcgata	300
acctgcatct	
ctgcaaactc	
aacttgctgg	
gccggtgcaa	
ctattcgag	
tccgagcgga	360
atttatgcaa	
atattctcat	
gaggttctct	
cagaagagaa	
cttcaaagtc	
ctgaaaaatc	420
acgaactctc	
tggactgaac	
aaagaggaat	
tagcagtgtc	
cctcctccaa	
agtgatcctt	480
tttttatgcc	
cgagatatgc	
aaaagttata	
agggagaggg	
tcggcagcag	
atttgaacc	540
agcagccacc	
gtgttcaaga	
ctccacatct	
gtgaccactt	
cacccgaggg	
aactgtcggt	600
ttcccaactg	
cctccgggtc	
cataacctga	
tggacagaaa	
ggtgctggcc	
atcatgaggg	660
agcacgggct	
gaaccccgac	
gtggtccaga	
acatccagga	
catctgcaac	
agcaagcaca	720
tgcagaagaa	
tccccaggg	
cccagagctc	
cttcttcaca	
tcgtagaaac	
atggcatata	780
gggctagaag	
caagagtaga	
gatcggttct	
ttcagggcag	
ccaagaattt	
cttgctgtctg	840
cttcagcgtc	
tgctgagagg	
tcctgcacac	
ctagtccaga	
tcagatcagc	
cacagggctt	900
ccctggagga	
cgcgctgtg	
gacgatctca	
cccgaagtt	
cacgtatctg	
gggagtcagg	960
atcgcgctcg	
gcctccctca	
ggctcgtcca	
aggctactga	
tcttgagga	
acaagtcagg	1020
ccgggacaag	
ccagaggttt	
ttagagaacg	
gcagtcaaga	
ggacctcttg	
catggaaatc	1080
caggcagcac	
ttaccttgct	
tccaattcaa	
catcagcccc	
caactggaag	

agcctcacat cctggacgaa tgaccaaggc gccaggagaa agactgtgtt ttctcccacg	1140
ctacctgccg cccgctcttc tcttggctct ctgcaaacac ctgaagctgt gaccaccaga	1200
aagggcacag gcttgctttc ctcagactac aggatcatca atggcaaaag tggaactcag	1260
gacatccagc ctggccctct ttttaataat aatgctgatg gagtggccac agatataact	1320
tctaccagat ccttaaatta caaaagcact agcagcggtc acagagaaat atcatcacct	1380
aggattcagg atgctggacc tgcttcccga gatgtccagg cacttggcag aatcgcat	1440
gatgtgacc caagagtagc acttggttaac gattctttat ctgatgtcac aagtaccaca	1500
tcttctaggg tggatgatca tgactcagag gaaatttgct ttgaccatct gtgtaaggg	1560
tgtccgctta atggtagctg cagcaaagtc cacttccatc tgccttaccg gtggcagatg	1620
cttattggta aaacctggac ggactttgag cacatggaga cgatcgagaa aggctactgt	1680
aaccccgga tccacctctg ttctgtagga agttatacaa tcaattttcg ggtaatgagt	1740
tgtgattcct ttcccatccg acgcctctcc actccttctt ctgtcaccaa gccagccaat	1800
tctgtcttca ccaccaaag gatttggtat tggaagaatg aatctggcac atggattcag	1860
tatggagaag agaaagacaa acggaaaaat tcaaacgtcg actcttcata cctggagtct	1920
ctctatcaat cctgtccgag gggagttgtg ccatttcagg cgggctcacg gaactatgag	1980
ctgagtttcc aagggatgat tcagacaaac atagcttcca aaactcaaaa ggatgtcatc	2040
agaagaccaa catttgtgcc tcagtgggtat gtgcagcaga tgaagagagg gccagaccat	2100
cagccagcaa agacctcgtc agtgtcttta actgcgacct ttcgtcctca ggaggacttt	2160
tgcttcctat cctcaaagaa atataagttg tcagagatcc atcacctaca tccagaatat	2220
gtcagagtaa gtgagcattt taaagcttcc atgaaaaatt tcaagattga aaagataaag	2280
aagatcgaga actcagagct cctggataaa ttacatgga agaaatcgca gatgaaggaa	2340
gaaggaaaac tcctatttta tgcgacaagc cgtgcctatg tggaatctat ctgttcgaat	2400
aattttgaca gtttcctaca tgaaactcat gaaaacaaat acggaaaagg aattttacttt	2460
gcaaaagatg ccatctattc ccacaaaaat tgcccgtatg atgccaaaaa cgtcgttatg	2520
ttttagacc aagtctggt tggaagttt actgaaggaa atataacgta cagagccct	2580
cctccacagt tcgacagctg tgtggatacc agatcgaatc cctccgtttt tgtcatcttt	2640
cagaaagatc aggtttacc acaatatgtg attgaatata ctgaagacaa agcctgcgtg	2700
attagttag	2709

<210> 402
 <211> 1899
 <212> DNA
 <213> Homo sapiens

<400> 402	
atgcagcggg aggagggatt taacaccaag atggcggacg gcccgatga gtacgatacc	60
gaagcgggct gtgtgccct tctccacca gaggaatca aaccccaaag ccattataac	120
catggatatg gtgaacctct tggacggaaa actcatattg atgattacag cacatgggac	180

atagtcaagg	ctacacaata	tggaatatat	gaacgctgtc	gagaattggt	ggaagcaggt	240
tatgatgtac	ggcaaccgga	caaagaaaat	gttaccctcc	tccattgggc	tgccatcaat	300
aacagaatag	atttagtcaa	atactatatt	tcgaaagggt	ctattgtgga	tcaacttgga	360
ggggacctga	attcaactcc	attgcaactg	gccacaagac	aaggccatct	atccatgggt	420
gtgcaactaa	tgaaatatgg	tgcagatcct	tcattaattg	atggagaagg	atgtagctgt	480
attcatctgg	ctgctcagtt	cggacatacc	tcaattgttg	cttatctcat	agcaaaagga	540
caggatgtag	atatgatgga	tcagaatgga	atgacgcctt	taatgtgggc	agcatataga	600
acacatagtg	tggaatccac	tagattgctt	ttaacattca	atgtttcagt	taaccttggt	660
gacaagtatc	acaaaaacac	tgctctgcat	tgggcagtg	tagcagggaa	taccacagtc	720
attagccttc	ttctggaagc	tggagcta	gttgatgcc	agaatatcaa	gggcgaatca	780
gcgcttgatt	tggcaaaaca	gagaaaaaat	gtgtggatga	tcaaccactt	acaagaggca	840
aggcaagcaa	aaggatatga	caatccgtcc	ttccttagaa	agctgaaagc	tgataaggaa	900
tttcggcaga	aagtaatgtt	aggaactcct	ttcctagtta	tttggtggt	tgggtttata	960
gcagacctaa	atattgattc	ttggctcatt	aaagggctaa	tgtatggtgg	tgtttgggct	1020
acagtacagt	ttctttcaaa	atcctttttc	gatcattcaa	tgcatagtgc	attgcccctt	1080
gggatataatt	tggcaaccaa	attctggatg	tatgtgacgt	ggttcttctg	gttttggaat	1140
gatctcaact	ttttatttat	ccatcttcca	ttccttgcca	atagtgttgc	acttttctac	1200
aattttggaa	aatcttggaa	atcagatcca	gggattatta	aagcaacaga	agagcaaaag	1260
aaaaagacaa	tagttgaact	tgcagagaca	ggaagtctgg	acctcagtat	attctgcagt	1320
acctgtttga	tacgaaaacc	ggtgaggtcc	aaacattgtg	gtgtgtgcaa	ccgctgtata	1380
gcaaaatttg	atcatcattg	cccatgggtg	ggtaactgtg	taggtgcagg	caaccataga	1440
tattttatgg	gctacctatt	cttcttgctt	tttatgatct	gctggatgat	ttatggttgt	1500
atatcttact	ggggactcca	ctgtgagacc	acttacacca	aggatggatt	ttggacatac	1560
attactcaga	ttgccacgtg	ttcaccttgg	atgttttgga	tgttcctgaa	cagtgttttc	1620
cacttcatgt	gggtggctgt	attactcatg	tgtcagatgt	accagatatc	atgttttaggt	1680
attactacaa	atgaaagaat	gaatgccagg	agatacaagc	actttaaggt	cacaacaacg	1740
tctattgaaa	gccatttcaa	ccatggatgt	gtaagaaata	ttatagactt	ctttgaattt	1800
cgatgctgtg	gcctctttcg	tcctgttatc	gtggactgga	ccaggcagta	tacaatagaa	1860
tatgaccaa	tatcaggatc	tgggtaccag	ctggtgtag			1899

<210> 403
 <211> 1167
 <212> DNA
 <213> Homo sapiens

<400>	403	
atgaaggact	gcgagtacca	gcagatcagc cccggggccg ccccgtgcc cgcctccccg 60

PCTAU2016050927-seql-000001-EN-20161013

ggggcgcgcc	gtccccggccc	cgccgcgtcc	ccgactccgg	gccccggggc	cgcgccgccc	120
gccgcccccg	ccccgccgcg	ctggagcagc	agcggcagcg	gcagcggcag	cgggagcggg	180
agcctcggcc	gccgcccacg	gcgcaagtgg	gaggtgttcc	cgggtcgcaa	tcgcttctac	240
tgcggcggcc	gcctcatgct	ggccggccac	ggcggcgtct	tcgcgctcac	gctgctgctc	300
atcctcacca	ccaccggcct	cttcttcgtc	tttgactgtc	cctacctggc	tcgcaagctg	360
acccttgcca	tccccatcat	cgctgccatc	ctcttcttct	tcgtcatgag	ctgcctgctg	420
cagacaagct	tcaccgaccc	tgggatcctg	ccccggggcca	ctgtctgtga	agcagccgcc	480
ctggagaaaac	agatcgacaa	cacaggcagt	tctacatacc	ggccaccccc	tcggacccgg	540
gaggtgctga	tcaacgggca	gatggtgaag	ctgaagtact	gcttcacctg	caagatgttc	600
cggccacccc	gaacctcaca	ctgcagtgtc	tgcgacaact	gtgtggaacg	atttgaccat	660
cactgcccct	gggtgggcaa	ctgtgtgggg	agacgggaact	atcgcttctt	ctacgcgttt	720
attctctccc	tctcatcct	gacggccttc	atcttcgcct	gtgtgggtcac	ccacctgacg	780
ttgcgcgtc	aggaagcaa	cttcctctcc	actctgaagg	agacaccagc	aagcgtgctg	840
gagttggtga	tctgcttctt	ctccatctgg	tccattctgg	gcctctcagg	gtttcacacg	900
tacctgctg	cctccaacct	gactactaat	gaagacatca	aaggctcgtg	gtccagcaag	960
aggggcggtg	aggcctctgt	caaccctac	agccataaaa	gtattatcac	caactgctgt	1020
gctgtgctct	gtggccccct	acctcccagc	ctaattgacc	ggaggggatt	tgtgcagtcc	1080
gacaccgtgt	tgccctcacc	catcagaagc	gatgagccag	cctgcagagc	caagcctgat	1140
gccagcatgg	taggaggcca	cccctga				1167

<210> 404
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 404	
atggctcagg	agactaacca gacccccggg cccatgctgt gtagcacagg atgtggcttt 60
tatggaaatc	ctaggacaaa tggaatgtgt tcagtttgct acaaagaaca tcttcagagg 120
cagcaaaaata	gtggcagaat gagcccaatg ggaacagcta gtgggttcaa cagtcctacc 180
tcagattctg	catctgtaca gagagcagac actagcttaa acaactgtga aggtgctgct 240
ggcagcacat	ctgaaaaatc aagaaatgtg cctgtggctg ccttgccctgt aactcagcaa 300
atgacagaaa	tgagcatttc aagagaggac aaaataacta ccccgaaaac agaggtgtca 360
gagccagttg	tcactcagcc cagtccatca gtttctcagc ccagtacttc tcagagtga 420
gaaaaagctc	ctgaattgcc caaaccaaag aaaaacagat gtttcatgtg cagaaagaaa 480
gttggtctta	caggggtttga ctgccgatgt ggaaatttgt tttgtggact tcaccgttac 540
tctgacaagc	acaactgtcc gtatgattac aaagcagaag ctgcagcaaa aatcagaaaa 600
gagaatccag	ttgttgtggc tgaaaaaatt cagagaatat aa 642

<210> 405
 <211> 5970
 <212> DNA
 <213> Homo sapiens

<400> 405
 atggcgaccg cagatactcc ggccccggcc tccagtggcc tctcgccgaa ggaagaaggg 60
 gagcttgaag atgggggaaat cagtgcacgac gataataaca gccagatacg gagtcggagc 120
 agcagcagca gcagcggcgg cgggctgtta ccctatccgc ggcgaaggcc tcctcactcg 180
 gcccggggcg gtggatctgg cggaggcggg ggctcttcct cgtcatcgtc ctcttctcag 240
 cagcagctga ggaatttctc acgctcgcgg cagcgcgtctg agcggggcca cctcagggga 300
 cccagcagct accgacccaa agaaccgttc cggctctcatc cgccttctgt acggatgcct 360
 tcgagctcac tgtccgaaag cagtccccgg ccgtctttct gggagcggag ccacctcgcc 420
 ttggaccgtt tccgctttcg aggcaggcct taccggggtg ggagtcgctg gagtcggggg 480
 cgaggagtgg gtgagcgagg aggcaagccg ggggtgcagac ctctcttggg aggaggagca 540
 ggatccgggt tcagcagcag tcagagctgg cgagagccct ctccacctcg gaagagctcc 600
 aaaagttttg gaaggtctcc atcaagaaaa caaaattatt catcaaaaaa tgaaaactgt 660
 gtggaagaaa cttttgaaga tttgctttta aagtataaac aaatacagtt ggaactagaa 720
 tgcatacaata aggatgaaaa actagcattg agtagcaaag aagagaatgt gcaggaagat 780
 cctaaaacat tgaacttcga ggaccaaact agcactgata atgtcagtat taaaaaggat 840
 tcaagtaaag aagtagctcc tgaggagaaa acacaagtca aaacttttca ggcatttgaa 900
 ttaaaaccac tcaggcaaaa attgacttta ccaggagata agaaccgttt gaaaaaagtt 960
 aaagatggag caaaaccact ttccctgaaa tccgacacta ctgattctag tcaaggatta 1020
 caagataaag aacaaaattt aacaagaaga attagtagct cagatattct gtctgaaaag 1080
 aaacttggtg aagatgaaga ggaactatct gaattacagc ttcgcctttt ggctcttcag 1140
 tcagccagta aaaaatggca acaaaaagaa cagcaggtga tgaaagaaag caaagaaaag 1200
 ttgactaaga cgaaaactgt acagcaaaaa gttaaaacaa gtacaaaaac acattcggcc 1260
 aaaaaagtta gcactacagc taaacaagca ttgaggaagc agcaaaaaa ggcattggaag 1320
 aaactacaac aacaaaaaga gcaggaaaga cagaaagaag aggatcagcg gaaacaagct 1380
 gaagaagaag agagaaggaa aagagaggaa gaaatcagaa aaattcgaga tctctcaaat 1440
 caggaagaac agtacaatcg attcatgaaa ttggttggtg gcaagaggag atcaagaagt 1500
 aaatcttcag atcctgacct gaggcgatcc ttagataagc aacctactga tagtgaggga 1560
 ggcatttatc agtatgataa ctatgaagaa gttgctatgg atacagatag tgaaaccagt 1620
 tctccagctc cttcaccagt gcaaccgcca tttttctctg aatgttcatt ggggtatatt 1680
 tctccagcac catctctttc ttgcctcca ccacctcagg tttcttctct gccacctttg 1740
 agccagcctt atgtggaagg cttgtgtgtt tctcttgaac ctctacctcc tctaccacca 1800
 ttaccacctc tcccacctga agatccagaa cagcctccaa aaccaccttt tgcagatgag 1860

gaagaggagg	aagaaatgct	gcttcgagaa	gaactactta	aatctctagc	aaataaaaaga	1920
gcttttaagc	cagaggaaac	atccagtaat	agtgaccac	cttcacctcc	agttctgaac	1980
aattcacatc	ctgtgccaa	aagcaatcta	tcaatagtca	gtattaacac	agtgtctcag	2040
cctaggatac	agaatccaaa	gtttcacaga	ggaccccgtc	ttccacgaac	tgtgatctcg	2100
cttccaaagc	ataaatcagt	ggttgtaaca	ctaaatgatt	cagatgatag	tgaatctgat	2160
ggagaggctt	ccaagtcaac	aaatagtgtt	tttggtggat	tagagtccat	gattaaagaa	2220
gcaagacgaa	ctgctgagca	agcttcaaaa	ccgaaagtac	ctccaaaatc	tgaaaaagaa	2280
aatgatcctc	tgcgaaacac	ggaggctttg	cctgaagaaa	agaagattga	atatagattg	2340
ttaaaggaag	agattgccaa	ccgtgagaaa	cagcgtttga	ttaaatacaga	tcagctgaag	2400
acaagttcat	catccccagc	aaactctgat	gtggaaattg	atgggtattg	caggatagca	2460
atggttacta	agcaggttac	agatgcagaa	tcaaaactga	aaaaacatag	gattctcttg	2520
atgaaagatg	aatctgtttt	aaagaattta	gtgcaacaag	aagctaagaa	gaaagaatct	2580
gtagaaatg	ctgaagcaaa	gattacaaaa	cttacagaac	agcttcaagc	aactgaaaaa	2640
attcttaatg	ttaacagaat	gtttttgaag	aagcttcagg	aacaaattca	cagagttcaa	2700
cagcgtgtta	caattaagaa	agctttgact	ctaaaatatg	gagaagagct	tgctcgggca	2760
aaggcagtgg	ccagtaaaga	aataggaaaa	cgtaaactgg	aacaagatcg	ctttgggcca	2820
aacaaaaatga	tgagactgga	cagttctcca	gtatcaagtc	caagaaagca	ttcagcagaa	2880
ctaattgcta	tggagaaaag	acgggttaca	aagctagaat	atgaatatgc	cctgaaaatt	2940
caaaaattaa	aagaagcccg	tgcccttaaa	gcaaaggaac	aacaaaatat	ctctccagtt	3000
gtggaagagg	aaccgaattt	ttctttacct	caaccctcac	ttcatgatct	gacacaagat	3060
aaattaaccc	tggacactga	agaaaatgat	gttgatgatg	aaattttgtc	tggttcaagc	3120
agagagcgaa	gaagatcttt	tttagaatcc	aattatttta	ctaaacctaa	ccttaagcac	3180
actgatactg	ctaacaaaga	atgcataaac	aaacttaata	aaaatactgt	agaaaaacca	3240
gaactttttc	taggggttaa	aattggtgaa	ttgcaaaaat	tgtattcaaa	agctgacagc	3300
ctaaaacagc	tgatttttaa	aaccaccaca	ggcattacag	agaaggtttt	gcatggtcag	3360
gagatttctg	tagatgtgga	ttttgtcaca	gcacaaagta	aaacaatgga	agtgaagcca	3420
tgtcctttta	gaccctacca	tagtcctctt	ctagttttta	agtcctacag	atttagtcca	3480
tattatcgaa	ccaaggaaaa	acttcccctg	agctcagtat	catacagtaa	tatgattgaa	3540
ccggatcagt	gtttctgccg	ttttgattta	acaggaacat	gtaatgatga	tgattgtcaa	3600
tggcagcata	tacaagacta	tacacttagc	cgaaaacagt	tattccagga	cattctgtca	3660
tataatctgt	ctttgattgg	ttgtgcagag	acaagtacta	atgaagaaat	tactgcttca	3720
gcagaaaaat	atgttgagaa	acttttttga	gtaaacaag	atcgaatgtc	aatggaccag	3780
atggctgttc	tccttgttag	caatatcaat	gaaagtaaag	gtcatactcc	tccattttaca	3840
acctacaaag	ataaaagaaa	gtggaagcca	aagtttttga	gaaaacctat	ttcagataat	3900

agcttcagta	gtgatgagga	acagtctaca	ggaccaatta	agtatgcttt	ccagccagag	3960
aaccaaataa	atgttccagc	tctggataca	gttgtcactc	cagatgatgt	cagatacttt	4020
acaaatgaga	ctgatgacat	cgctaattta	gaagcaagtg	tgcttgaaaa	tcctttctcat	4080
gtacaacttt	ggctcaagct	tgcgtacaag	tacttgaatc	aaaatgaggg	ggagtgtctca	4140
gaatccttgg	attctgcttt	aaatgtttctg	gcgcgagcat	tgaaaaataa	caaagacaat	4200
ccagaaattt	ggtgccatta	cctcagattg	ttctcaaaaa	gaggaaccaa	ggacgaggtg	4260
caggaaatgt	gtgaaacagc	tgttgaatat	gctccagatt	atcaaagctt	ttggactttt	4320
ctacacctag	aaagtacctt	tgaagaaaag	gattacgtat	gtgagagaat	gttggagtgt	4380
ctgatgggag	cagccaagca	ggaaacatcc	aatattttgt	cctttcagct	tttagaggct	4440
cttttgttta	gagttcagct	gcacatattt	actggaagat	gccaaagtgc	actggcaatt	4500
ttacagaatg	cattgaaatc	tgctaattgat	ggaatagtag	ctgaatacct	taaaaccagt	4560
gatcgatgtt	tggcatgggt	ggcctacata	catcttattg	aattcaacat	tctcccttca	4620
aaattttatg	atccatctaa	tgataatcct	tcaagaattg	ttaacactga	atcatttgta	4680
atgccatggc	aagctgttca	agatgtaaag	actaatcctg	acatgttggt	agcagttttt	4740
gaagatgcag	tgaaagcttg	cacagatgag	agccttgctg	ttgaggaaaag	aatagaggcc	4800
tgcttccac	tttacacaaa	catgattgct	ctgcaccaac	tcctggagag	gtatgaggct	4860
gcaatggagc	tttgtaaate	tttattggaa	tcatgtccta	ttaactgcca	gttgctggaa	4920
gctcttggtg	cattatattt	gcaaacaaat	cagcatgaca	aagccagagc	agtgtggctt	4980
actgcatttg	aaaaaaatcc	tcagaatgca	gaggtttttt	atcatatgtg	caaattcttc	5040
atcttacaga	atcgaggcga	taatcttctt	ccatttttgc	ggaaatttat	tgcatccttc	5100
tttaaaccgg	ggtttgagaa	gtataataac	ttggatctgt	ttcggtatct	cttaaataatt	5160
ccaggaccaa	ttgacattcc	atctcgttta	tgtaaaggga	attttgatga	tgatatgttt	5220
aaccaccaag	ttccttattt	gtggctgatt	tactgccttt	gtcatcctct	tcaatcaagt	5280
attaaagaaa	cagtggaggc	atatgaggca	gcattagggg	tggctatgag	atgtgatata	5340
gtacagaaga	tatggatgga	ttatcttgtc	tttgcaaata	atagagctgc	tggatccaga	5400
aacaaagttc	aagaattcaa	attttttact	gatttagtga	atagatgttt	ggttacagtc	5460
cctgcccgat	acccatttcc	ttttagcagt	gctgattact	ggtccaacta	tgaatttcat	5520
aatagggtta	ttttctttta	tttgagctgt	gttccaaaga	cccagcattc	caaaaccttg	5580
gaacgggttt	gttcagttat	gccagctaata	tctggacttg	cattgagggt	acttcaacat	5640
gaatgggaag	aaagcaatgt	tcagattctg	aaacttcaag	ccaagatgtt	tacatataat	5700
atccaacat	gcctggccac	ctggaaaata	gccattgctg	ctgagattgt	tctaaaggga	5760
caaagagagg	tccaccgttt	atatcagaga	gccttacaga	agttacctct	ttgtgcatca	5820
ctgtggaaag	atcaactctt	gtttgaagca	tcagaaggag	gtaaaactga	taacctgaga	5880
aaactagttt	ccaagtgcc	agagattgga	gtcagcctaa	atgagctctt	aaatttaaac	5940

agtaacaaaa cagaaagcaa gaatcactga

5970

<210> 406
 <211> 4620
 <212> DNA
 <213> Homo sapiens

<400> 406
 atggacagtt attttaaaagc agctgtcagt gacttggaca aactccttga tgattttgaa 60
 cagaacccag atgaacaaga ttatctccaa gatgtacaaa atgcatatga ttctaaccac 120
 tgctcagttt cttcagagtt ggcttcctca cagcgaactt cattgctccc aaaagaccaa 180
 gagtgcgtta atagttgtgc ctcatcagaa acaagctatg gaacaaatga gagttccctg 240
 aatgaaaaaa cactcaaggg acttacttct atacaaaatg aaaaaaatgt aacaggactt 300
 gatcttcttt cttctgtgga tgggtgtact tcagatgaaa tccagccggt atatatggga 360
 cgatgtagta aacctatctg tgatctgata agtgacatgg gtaacttagt tcatgcaacc 420
 aatagtgaag aagatattaa aaaattattg ccagatgatt ttaagtctaa tgcagattcc 480
 ttgattggat tggatttatc ttcagtgatc gatactccct gtgtttcttc aacagaccat 540
 gatagtata ctgtcagaga acaacagaat gatatcagtt ctgaattaca aaatagagaa 600
 atcggaggaa tcaaagaatt ggggtataaaa gtagatacaa cactttcaga ttcctataat 660
 tacagtggaa cagaaaattt aaaagataaa aagatcttta atcagttaga atcaattggt 720
 gattttaaca tgtcatctgc tttgactcga caaagttcca aaatgtttca tgccaaagac 780
 aagctacaac acaagagcca gccatgtgga ttactaaaag atgttggttt agtaaaagag 840
 gaagtagatg tggcagtcac aactgccgca gaatgtttta aagaagaggg caagacaagt 900
 gctttgacct gcagccttcc gaaaaatgaa gatttatgct taaatgattc aaattcaaga 960
 gatgaaaatt tcaaattacc tgacttttcc tttcaggaag ataagactgt tataaaacaa 1020
 tctgcacaag aagactcaaa aagtttagac cttaggata atgatgtaat ccaagattcc 1080
 tcttcagctt tacatgtttc cagtaaagat gtgccgtcct cattgtcctg tcttcctgag 1140
 tctgggtcta tgtgtggatc attaatgaa agtaaagcac ggggtgattt tttacctcag 1200
 catgaacata aagataatat acaagatgca gtgactatac atgaagaaat acagaacagt 1260
 gttgttctag gtggggaacc attcaaagag aatgatcttt tgaaacagga aaaatgtaaa 1320
 agcatactcc ttcagtcatt aattgaaggg atggaagaca gaaagataga tcctgaccag 1380
 acagtaatca gagctgagtc tttggatggg ggtgacacca gttctacagt tgtagaatct 1440
 caagaggggc tttctggcac tcatgtccca gagtcttctg attgttgtga aggttttatt 1500
 aatacttttt caagcaatga tatggatggg caagacttag attactttta tattgatgaa 1560
 ggcgcaaaaa gtggcccact aattagtgat gctgaacttg atgcctttct gacagaacag 1620
 tatcttcaga ccactaacat aaagtctttt gaagaaaatg taaatgactc taaatcgcaa 1680
 atgaatcaga tagatatgaa aggcttagat gatggaaaca tcaataatat atatttcaat 1740
 gcagaagcag gagctatttg ggaaagtcat ggtattaata taatttgtga aatagttgat 1800

aaacaaaata	caatagaaaa	tggcctttct	ttaggagaaa	aaagcactat	tccagttcaa	1860
caaggggttac	ctaccagtaa	gtctgagatt	acaaatcaat	tatcgggtctc	tgatattaac	1920
agtcaatctg	ttggaggggc	cagacctaag	caattgttta	gccttccatc	aagaacaagg	1980
agttcaaagg	acctgaataa	gccagatggt	ccagatacaa	tagaaagtga	accagcac	2040
gcagataccg	ttgttccaat	cacttgtgct	atagattcta	cagctgatcc	acagggttagc	2100
ttcaactcta	attacattga	tatagaaagt	aattctgaag	gtggatctag	tttcgtaact	2160
gcaaatgaag	attctgtacc	tgaaaacact	tgcaaagaag	gcttggtttt	gggccagaaa	2220
cagcctactt	gggttcctga	ttcagaagct	ccaaactgta	tgaactgcc	agtcaaattt	2280
acttttacca	aacggcgaca	ccattgccga	gcattgtgga	aagtattttg	tggtgtctgt	2340
tgtaatagga	agtgtaaact	gcaatatcta	gaaaaggaag	caagagtatg	tgtagtctgc	2400
tatgaaacta	ttagtaaaagc	tcaggcattt	gaaaggatga	tgagtccaac	tggttcta	2460
cttaagtcta	atcattctga	tgaatgtact	actgtccagc	ctcctcagga	gaaccaaaca	2520
tccagtatac	cttcaccagc	aactttgcc	gtctcagcac	ttaaacaacc	aggtgttgaa	2580
ggactatggt	ccaaagaaca	gaagagagta	tggtttgcag	atggtatatt	gcccaatggt	2640
gaagttgcag	atacaacaaa	attatcatct	ggaagtaaaa	gatgttctga	agactttagt	2700
cctctctcac	ctgatgtgcc	tatgacagta	aacacagtgg	atcattccca	ttctactaca	2760
gtggaaaagc	caaacaatga	gacaggagat	attacaagaa	atgagataat	tcagagtcct	2820
atttctcagg	ttccatcagt	ggaaaaattg	tctatgaaca	caggaaatga	ggggttacct	2880
acttctgggt	catttacact	agatgatgat	gtttttgcag	aaactgaaga	accatctagt	2940
cctactgggtg	tcttagtta	cagcaattta	cctattgcta	gtatttcaga	ttataggtta	3000
ctgtgtgata	ttaacaagta	tgtctgcaat	aagattagtc	ttctacctaa	tgatgaggac	3060
agtttgcccc	cacttctggt	tgcatctgga	gaaaagggat	cagtgcctgt	agtagaagaa	3120
catccatctc	atgagcagat	cattttgctt	cttgaagggtg	aaagctttca	tcctgttaca	3180
tttgcctaa	atgctaactc	actcgtgaat	gtcaaattca	tattttattc	ctcagacaaa	3240
tattgggtact	tttcaaccaa	tggtattgcat	ggcttgggac	aggcagaaat	tattattcta	3300
ttgttatggt	tgccaaatga	agatactatt	cctaaggaca	tcttcagact	atttatcacc	3360
atatataagg	atgctctaaa	aggaaaatac	atagaaaact	tggaacaatat	tacctttact	3420
gagagttttc	tcagtagcaa	ggatcacgga	ggattcctgt	ttattacacc	tacttttcag	3480
aaacttgatg	atctctcatt	accaagtaat	ccttttcttt	gtggaattct	tatccagaag	3540
cttgagattc	cctgggcaaa	ggtttttcct	atgcgtttta	tggtgagatt	gggtgcagaa	3600
tataaagcat	atcctgtctc	tctaacaagc	atcagaggcc	gaaaacctct	ttttggagaa	3660
ataggacaca	ctattatgaa	cttacttggt	gaccttcgaa	attaccagta	taccttgcat	3720
aatatagatc	aactgttgat	tcatatggaa	atgggaaaaa	gctgcataaa	aataccacgg	3780
aaaaagtaca	gtgatgtaat	gaaagtacta	aattcttcca	atgagcatgt	catttagcatt	3840

ggagcaagtt tcagtacaga agcagattct catctagtct gtatacagaa tgatggaatt	3900
tatgaaacac aggccaacag tgccactggc catcctagaa aagtgcagg tgcaagtttt	3960
gtggtattca atggagctct aaaaacatct tcaggatttc ttgctaagtc cagcatagtt	4020
gaagatggct taatggtaca aataactcca gagaccatga atggcttgcg gctagcttta	4080
cgagaacaga aagactttta aattacatgt gggaaagttg atgcagtaga cctgagagaa	4140
tacgtggata tctgctgggt agatgctgaa gaaaaaggaa acaaaggagt tatcagttca	4200
gtggatggaa tatcattaca aggatttcca agtgaaaaaa taaaactgga agcagatttt	4260
gaaaccgatg agaagattgt aaaatgtacc gaggtgttct actttctaaa ggaccaggat	4320
ttatctatct tatcaacttc ttatcagttt gcaaaagaaa tagccatggc ttgtagtgtc	4380
gcgctgtgcc ctcacctgaa aactctaaaa agtaatggga tgaataaaat tggactcaga	4440
gtttccattg acactgatat ggttgaattt caggcaggat ctgaaggcca acttctgcct	4500
cagcattatc taaatgatct tgatagtgtc ctgatacctg tgatccatgg tgggacctcc	4560
aactctagtt taccattaga aatagaatta gtgtttttca ttatagaaca tcttttttag	4620

<210> 407
 <211> 3204
 <212> DNA
 <213> Homo sapiens

<400> 407	
atgaattcta tggacaggca catccagcag accaatgacc gactgcagtg catcaagcag	60
cacttacaga atcctgccaa cttccacaat gccgccacgg agctgctgga ctggtgcgga	120
gaccacagg ctttcagcg gcccttcgag cagagcctga tgggctgttt gacggtggtc	180
agtcgggtgg cagcccagca aggctttgac ctggacctcg gctacagact gctggctgtg	240
tgtgctgcaa accgagacaa gttcaccccg aagtctgccg ccttgttgtc ctctggtgc	300
gaagagctcg gccgctgct gctgctccga catcagaaga gccgccagag cgatccccct	360
gggaaactcc ccatgcagcc ccctctcagc tccatgagct ccatgaaacc cactctgtcg	420
cacagtgatg ggtcgttccc ctatgactct gtcccttggc agcagaacac caaccagcct	480
cccggctccc tttccgtggt caccacggtt tggggagtaa ccaacacatc ccagagccag	540
gtccttggga accctatggc caatgccaac aaccccatga atccaggcgg caaccccatg	600
gcgtcgggca tgaccaccag caaccaggc ctcaactccc cacagtttgc ggggcagcag	660
cagcagttct cagccaaggc tggccccgct cagccctaca tccagcagag catgtatggc	720
cggcccaact accccggcag cgggggcttt ggggccagtt accctggggg tcctaacgcc	780
cccgcaggca tgggcatccc tccgcacacc aggccgctg ctgacttcac tcagcccgcg	840
gcagccgctg cagcagcggc agtggcagca gcagcagcca cagctacagc cacagccacg	900
gccactgtgg cagccctgca ggagacacag aacaaggata taaaccagta tggaccgatg	960
ggtcccaccc aggcgtataa cagccaattc atgaaccagc ccgggcccgcg ggggcctgcc	1020

tccatggggg	gcagcatgaa	ccccgcgagc	atggcgggctg	gcatgacgcc	ctcgggggatg	1080
agcggccctc	ccatgggcat	gaaccagccc	cggccgcccg	gcatcagccc	ctttggcaca	1140
cacgggcagc	ggatgcccc	gcagacctac	ccggggcccc	ggccccagtc	ccttcctatt	1200
cagaacataa	agaggccata	ccctggagag	cccaactatg	gaaaccagca	atatggacca	1260
aacagccagt	tccccaccca	gccaggccag	taccagccc	ccaaccccc	gaggccactc	1320
acctccccca	actaccagg	acagaggatg	cccagccagc	cgagctccgg	gcagtacccg	1380
ccccccacgg	tcaacatggg	gcagtattac	aagccagaac	agtttaatgg	acaaaataac	1440
acgttctcgg	gaagcagcta	cagtaactac	agccaaggga	atgtcaacag	gcctcccagg	1500
ccggttcctg	tggcaaatta	ccccactca	cctgttccag	ggaacccac	acccccatg	1560
accctggga	gcagcatccc	tccatacctg	tccccagcc	aagacgtcaa	accacccttc	1620
ccgcctgaca	tcaagccaaa	tatgagcgct	ctgccaccac	ccccagccaa	ccacaatgac	1680
gagctgcggc	tcacattccc	tgtgcgggat	ggcgtggtgc	tggagccctt	ccgcctggag	1740
cacaacctgg	cggtcagcaa	ccatgtgttc	cacctgcggc	ccacggtcca	ccagacgctg	1800
atgtggaggt	ctgacctgga	gctgcagttc	aagtgtctacc	accacgagga	ccggcagatg	1860
aacaccaact	ggcccgcctc	ggtgcaggtc	agcgtgaacg	ccacgcccct	caccattgag	1920
cgcggcgaca	acaagacctc	ccacaagccc	ctgcacctga	agcacgtgtg	ccagccgggc	1980
cgcaacacca	tccagatcac	cgtcacggcc	tgtgtgtgt	cccacctctt	cgtgtgtcag	2040
ctggtacacc	ggccctccgt	ccgctctgtg	ctgcaaggac	tcctcaagaa	gcgcctcctg	2100
cccgcagagc	actgtatcac	gaaaatcaag	cggaatttca	gcagcgtggc	tgcctcctcg	2160
ggcaacacga	ccctcaacgg	ggaggatggg	gtggagcaga	cggccatcaa	ggtgtctctg	2220
aagtgcccc	tcacattccg	gcgcattccag	ctgcctgctc	gaggacacga	ttgcaagcat	2280
gtgcagtgt	ttgatctgga	gtcatacctg	cagctgaatt	gcgagagagg	gacctggagg	2340
tgtcctgtgt	gcaataaaac	cgctctgtgt	gagggcctgg	aggtggatca	gtacatgtgg	2400
ggaatcctga	atgccatcca	acactccgag	tttgaagagg	tcaccatcga	tcccacgtgc	2460
agctggcggc	cggtgcccat	caagtccgac	ttacacatca	aggacgaccc	tgatggcatc	2520
ccctccaagc	ggttcaagac	catgagtccc	agccagatga	tcatgcccc	tgtcatggag	2580
atgatcgcag	ccctggggcc	cggcccgtcc	ccctatcccc	tcccgcctcc	cccagggggc	2640
accaactcca	acgactacag	cagccaaggc	aacaactacc	aaggccatgg	caactttgac	2700
ttccccacg	ggaaccctgg	agggacatcc	atgaatgact	tcatgcacgg	gccccccag	2760
ctctcccacc	ccccggacat	gccaacaac	atggccgccc	tcgagaaacc	cctcagccac	2820
cccatgcagg	aaactatgcc	acacgtggc	agctctgacc	agccccaccc	ctccatacaa	2880
caaggtttgc	acgtaccaca	ccccagcagc	cagtcagggc	ctccattaca	tcacagtggg	2940
gtcctcctc	ctcctccttc	ccagcctccc	cggcagccgc	cacaggccgc	tcccagcagc	3000
catccacaca	gcgacctgac	ctttaacccc	tcctcagcct	tagagggtca	ggccggagcg	3060

cagggagcgt ccgacatgcc ggagccttcg ctggatctcc ttcccgaact cacaatcct	3120
gacgagctcc tgtcttatct ggaccccccc gacctgccga gcaatagtaa cgatgacctc	3180
ctgtctctat ttgagaacaa ctga	3204

<210> 408
 <211> 1917
 <212> DNA
 <213> Homo sapiens

<400> 408	
atgttgtag cccaaataaa tcgagattct cagggaaatga cagagtttcc tggaggaggg	60
atggaggcgc aacatgttac gctgtgcttg acagaggcag tcaccgtggc agatggtgac	120
aacttagaaa atatggaagg cgtaagcttg caagcagtaa cacttgcaga tggttctact	180
gcttacatac aacacaattc taaagatgca aaactcatag atggccaggt cattcagttg	240
gaagatgggt ctgcggccta tgttcaacat gtaccatac ctaaaagtac aggggacagt	300
ttgcgtctag aggatggtca agcagtagc ttagaagatg gtaccacagc atttattcac	360
cacacctca aagatagtta tgaccagagt gcattacagg cggttcagct ggaagatggt	420
accacagctt atatccacca tgcagtgcaa gtcccgagc ctgacaccat cttggcaatt	480
caggctgatg ggacagtggc aggtctgcac actggggatg ctacaattga ccctgacacc	540
atcagtgcct tggaaacagta tgcagcaaag gtgtccattg atggaagtga aagtgtagca	600
ggtactggaa tgattggaga aaatgagcaa gagaaaaaaa tgcagattgt tttacaagga	660
catgctacaa gagtaactgc taaatctcaa cagagtggag agaaggcatt tcgatgtgaa	720
tatgatggat gtggaaaatt atatacaaca gctcatcatc tcaaggcca tgagaggcca	780
cacacaggag atcggcctta tcagtgtgag catgcaggct gtgggaaggc atttgcaaca	840
ggttatggat taaaaagtca cgtcagaact catacaggag aaaagccata tcggtgttcg	900
gaagataatt gtactaaatc tttcaaaact tcaggagatc tacagaaaca catcagaact	960
catacaggag aaaggccctt taagtgtccc ttcgaaggct gcggtcggtc ctttacaaca	1020
tcaaatatca gaaaagtga cgtaggaca cacacaggag aaagacctta ttactgcaca	1080
gagccaggat gtgggagggc atttgccagt gcaacaaatt ataaaaacca tgtgaggata	1140
cacacaggag aaaagccata tgtttgtaca gttcctgggt gtgacaaaag gtttacagaa	1200
tattccagtt tgtacaaaca tcatgttgc cacactcatt ccaaacctta caactgtaac	1260
cactgtggga agacatacaa gcagatctcc acgctggcca tgcacaaacg gacagcccac	1320
aacgacactg agcccatcga ggaggagcag gaagccttct ttgagccgcc ccagggtcaa	1380
ggtgaagatg ttcttaaagg gtcccagatt acgtatgtta cagggtgtaga aggggacgac	1440
gttgtttcta cacaagtagc cacagtaacc caatctggac tgagtcaaca agttacactc	1500
atatcccagg atgggactca gcatgtcaac atatctcaag ctgacatgca ggccattggc	1560
aacaccatca caatggtaac gcaggatggc acgcccata cagtccccgc ccatgatgca	1620
gtcatctcct cagcaggaac gcactctgtt gctatggtta ctgctgaggg tacagaaggg	1680

PCTAU2016050927-seql-000001-EN-20161013

gaacagggttg	caattgtagc	tcaagacttg	gcagcattcc	atactgcctc	atcagaaatg	1740
gggcaccagc	agcatagcca	tcacttagta	accacagaaa	ccagacctct	gaccttagta	1800
gcaacatcca	atggcaccca	gattgcagtt	cagcttggag	aacagccatc	tctggaagaa	1860
gccatcagaa	tagcgtctag	aatccaacaa	ggagaaacgc	cagggttgga	tgattaa	1917

<210> 409
 <211> 2385
 <212> DNA
 <213> Homo sapiens

<400> 409	
atgaacattg	acgacaaact ggaaggattg tttcttaaat gtggcggcac agacgaaatg 60
cagtcttcca	ggacaatggt tgtaatgggt ggagtgtctg gccagtctac tgtgtctgga 120
gagctacagg	attcagtact tcaagatcga agtatgcctc accaggagat ccttgctgca 180
gatgaagtgt	tacaagaaag tgaaatgaga caacaggata tgatatcaca tgatgaactc 240
atggtccatg	aggagacagt gaaaaatgat gaagagcaga tggaaacaca tgaaagactt 300
cctcaaggac	tacagtatgc acttaatgtc cctataagcg taaagcagga aattactttt 360
actgatgtat	ctgagcaact gatgagagac aaaaaacaaa tcagagagcc agtagactta 420
cagaaaaaga	agaagcggaa acaacgttct cccgcaaaaa tccttacaat aaatgaggat 480
ggatcacttg	gtttgaaaac ccctaaatct caggtttgtg agcactgcaa tgctgccttt 540
agaacgaact	atcacttaca gagacatgtc ttcattcata caggtgaaaa accatttcaa 600
tgtagtcaat	gtgacatgcg tttcatacag aagtacctgc ttcagagaca tgagaagatt 660
catactgggtg	aaaaaccatt tcgctgtgat gaatgtggta tgagattcat acaaaaatat 720
catatggaaa	ggcataagag aactcatagt ggagaaaaac cttaccagtg tgaatactgt 780
ttacagtatt	tttcagaac agatcgtgta ttgaaacata aacgtatgtg ccatgaaaat 840
catgacaaaa	aactaaatag atgtgccatc aaaggtggcc ttctgacatc tgaggaagat 900
tctggctttt	ctacatcacc aaaagacaac tcaactgcaa aaaagaaaag gcagaaaacg 960
gagaaaaaat	catctggaat ggacaaagag agtgcttttg acaaactctga cctgaaaaaa 1020
gacaaaaatg	attacttgcc tctttattct tcaagtacta aagtaaaaga tgagtatatg 1080
gttgacagaat	atgctgttga aatgccacat tcgtcagttg ggggctcgca tttagaagat 1140
gcgtcaggag	aaatacacc acctaagtta gttctcaaaa aaattaatag taagagaagt 1200
ctgaaacagc	caactggagca aatcaaaca atttcacctt tatccacata tgaagagagc 1260
aaagtttcaa	agtatgcttt tgaacttggt gataaacagg ctttactgga ctcagaaggc 1320
aatgctgaca	ttgatcaggt tgataatttg caggaggggc ccagtaaacc tgtgcatagt 1380
agtactaatt	atgatgatgc catgcagttt ttgaagaaga agcggatatct tcaagcagca 1440
agtaacaaca	gcagggaata tgcgctgaat gtgggtacca tagctttctca gccttctgta 1500
acacaagcag	ctgtggcaag tgtcattgat gaaagtacca cggcatccat attagagtca 1560

caggcactga atgtggagat taagagtaat catgacaaaa atgtttattcc agatgaggta	1620
ctgcagactc tgttggatca ttattcccac aaagctaattg gacagcatga gatatccttc	1680
agtgttgagc atactgaagt gacttctagc atatcaataa attcttcaga agtaccagag	1740
gtcaccctgt cagagaatgt tggatcaagc tccaagcat cctcatcaga taaagccaac	1800
atgttgaggc aatactccaa gtttctgcag caggcttttg acagaactag ccaaatgat	1860
gcctatttga atagcccagc ccttaacttt gtgactgata accagaccct cccaaatcag	1920
ccagcattct cttccataga caagcaggtc tatgccacca tgcccatcaa tagctttcga	1980
tcaggaatga attctccact aagaacaact ccagataagt cccacttttg actaatagtt	2040
ggtgattcac agcactcatt tcccttttca ggtgatgaga caaacatgc ttctgccaca	2100
tcaacacagg actttctgga tcaagtact tctcagaaga aagctgaggc ccagcctgtc	2160
caccaagctt accaaatgag ctcccttgaa cagcccttcc gtgctcccta tcatggatca	2220
agagctggaa tagctactca atttagcact gccaatggac aggtgaacct tcggggacca	2280
gggacaagt ctgaattttc agaatttccc ttggtgaatg taaatgataa tagagctggg	2340
atgacatctt cacctgatgc cacaactggc cagacttttg gctaa	2385

<210> 410
 <211> 1647
 <212> DNA
 <213> Homo sapiens

<400> 410	
atgaacattg aggttgttga ggtcctcaca ctgaaccagg aggtggctgg tccccggaat	60
gcccagatcc aggccctata tgctgaagat ggaagcctga gtgcagatgc cccagtgag	120
caggtccaac agcagggcaa gcatccaggt gaccctgagg ccgcgcgcca gaggttccgg	180
cagttccgtt ataaggacat gacagggtccc cgggaggccc tggaccagct ccgagagctg	240
tgtcaccagt ggctacagcc taaggcacgc tccaaggagc agatcctgga gctgctggtg	300
ctggagcagt tcctaggtgc actgcctgtg aagctccgga catgggtgga atcgcagcac	360
ccagagaact gccaaagggt ggtggccctg gtagagggtg tgacctggat gtctgaggag	420
gaagtacttc ctgcaggaca acctgccgag ggcaccacct gctgcctcga ggtcactgcc	480
cagcaggagg agaagcagga ggatgcagcc atctgcccag tgacagtgtc ccctgaggag	540
ccagtgcact tccaggatgt ggctgtggac ttcagccggg aggagtgggg gctgctgggc	600
ccgacacaga ggaccgagta ccgcgatgtg atgctggaga ctttgggca cctggtctct	660
gtggggtggg agactacact ggaaaataaa gagttagctc caaatctga cattcctgag	720
gaagaaccag cccccagcct gaaagtacaa gaatcctcaa gggattgtgc cttgtcctct	780
acattagaag ataccttgca ggggtggggtc caggaagtcc aagacacagt gttgaagcag	840
atggagtctg ctcaggaaaa agaccttcct cagaagaagc actttgacaa ccgtgagtcc	900
caggcaaaca gtggtgtctt tgacacaaac caagtttcgc tccagaaaat tgacaacct	960
gagtcccagg caaacagtgg cgctcttgac acaaaccaag ttttgctcca caaaattcct	1020

cctagaaaac gattgcgcaa acgtgactca caagttaaaa gtatgaaaca taattcacgt	1080
gtaaaaattc atcagaagag ctgtgaaagg caaaaggcca aggaaggcaa tggttgtagg	1140
aaaaccttca gtcggagtac taaacagatt acgtttataa gaattcacaa ggggagccaa	1200
gtttgccgat gcagtgaatg tggtaaaata ttccggaacc caagatactt ttctgtgcat	1260
aagaaaatcc ataccggaga gaggccctat gtgtgtcaag actgtgggaa aggatttggt	1320
cagagctctt ccctcacaca gcatcagaga gttcattctg gagagagacc atttgaatgt	1380
caggagtgtg ggaggacctt caatgatcgc tcagccatct cccagcacct gaggactcac	1440
actggcgcta agccctacaa gtgtcaggac tgtggaaaag ctttccgcca gagctccac	1500
ctcatcagac atcagaggac tcacaccggg gagcgcccat atgcatgcaa caaatgtgga	1560
aaggccttca cccagagctc acaccttatt gggcaccaga gaaccacaa taggacaaag	1620
cgaaagaaga aacagcctac ctcatag	1647

<210> 411
 <211> 8172
 <212> DNA
 <213> Homo sapiens

<400> 411	
atggcggacg aagaggccga gcaggagagg ttgagttgcg gcgaaggcgg ctgcgtcgcg	60
gagctgcagc gcctgggcca gcggtccag gagctggagc tacagctgcg ggagagccgg	120
gtaccggccg tggaagcggc caccgactac tgtcagcagc tgtgccagac actcctagaa	180
tatgcagaga aatggaaaac ttcagaagat cttttacctt tattggaggt atacacagtg	240
gctatccaaa gttatgttaa agcccgacct tatcttacct ctgaatgtga aaatgtagcc	300
ttggttctgg aacgcttggc attagctgt gttgaacttt tactgtgtct gcctgttgag	360
ttatcagata aacagtggga acaatttcag aactggtgc aggtagctca tgaaaagctg	420
atggagaatg gcagctgtga attgcatttt ttagctactc tagctcaaga gactggggtg	480
tggaaaaacc cggtagctgt cactattctt tcccaggaac cattggataa ggataaagtg	540
aatgaatttt tagcttttga ggggtccatc ttgttgata tgagaattaa acatctaadc	600
aaaacaaatc agttaagtca agcaactgct ctagcaaagc tgtgttctga ccatccagag	660
attggcataa aaggtagttt taagcaaact taccttgtct gtctttgtac atcatcacca	720
aatggaaaagt taatcgaaga gatttcagaa gttgattgca aagatgcact ggaaatgac	780
tgtaaacttag aatctgaggg tgatgaaaaa agcgctcttg ttttatgtac tgcgtttttg	840
tcacgtcagc tccaacaagg agatatgtac tgcgcttggg aacttactct cttttggagt	900
aaattacaac aaagagtaga accatctata caagtgtacc ttgagaggtg tcgtcaactt	960
tctttgttaa cgaaaacagt atatcacatt ttcttcctga ttaaagttat taattcagag	1020
actgaagggg ctggacttgc tacctgtata gaactgtgtg taaaggctct tcgcttgag	1080
tctacagaaa atactgaagt gaaaatatct atttgcaaga ccatttcatg tttgttgcc	1140

gatgatctgg aagttaaacg tgcttgtcaa ctgagtgaat ttcttattga gcctacagta	1200
gatgcgtatt atgctgtgga aatgttgtat aatcagccag accagaaata tgatgaagag	1260
aatcttccaa taccaaattc ttacgctgt gagctgttac ttgtattgaa aactcaatgg	1320
ccctttgatc cagaattctg ggattggaaa accttgaaac gacaatgtct tgcattaatg	1380
ggagaagaag catccattgt gtcttcaata gatgaactaa atgacagtga agtatatgaa	1440
aaagtggtag actaccaaga agagagtaaa gaaacttcta tgaatgggct ttctgggtgga	1500
gttgggtgcta attctggcct tcttaaagac attgggtgatg aaaagcagaa gaagagagag	1560
ataaaacagt taagagagag gggatttata tctgctcggg ttaggaattg gcaagcctac	1620
atgcagtatt gtgtgttgtg tgacaaagaa ttccttggtc acagaatagt acgacatgct	1680
cagaaacatt acaaagatgg aatttatagt tgcccatat gtgcaaagaa ctttaattct	1740
aaagaaactt ttgtccctca tgtcacactg catgtttaa acatctagtaa agagagacta	1800
gcagctatga aaccattaag aagattggga aggcctccaa agatcacaaac taccaatgaa	1860
aatcagaaga ctaatactgt ggctaaacag gagcagcgac ctataaaaaa gaatagtctc	1920
tattcaacag attttatagt gtttaatgac aatgatgggt cagatgatga gaatgatgac	1980
aaagataaat cctatgagcc agaagtgatt ccagtccaga aaccagtacc tgttaatgaa	2040
tttaattgcc ctgtaacttt ttgtaaaaag ggctttaagt actttaaaaa tttaattgct	2100
catgtgaagg ggcataaaga taatgaagac gccaaagcgt ttcttgaaat gcagagcaaa	2160
aaagttatit gccagtactg taggcggcat tttgtgagt ttactcatct caatgatcac	2220
ttacagatgc actgtggcag taaaccatat atctgtatac agatgaaatg taaagctggt	2280
tttaatagtt acgccgagct ttttaaccac cgaaaggagc atcaagtctt tagagcaaaa	2340
tgtatgtttc ctaaagtgtg aagaatitit tcggaagctt atttactata tgatcatgaa	2400
gcacaacatt ataatacgta cacttgtaag ttcacagggt gtggtaaagt ttatcgttct	2460
cagggtagagc tggaaaagca tctggatgat cacagtactc ctctgaaaa agtgctgcct	2520
cctgaagccc aacttaattc atctggagat tccattcagc cttctgaagt gaatcagaac	2580
acagcagaga atattgagaa agaaagatct atgcttcctt cagaaaataa cattgaaaac	2640
agcttactag cagatagaag tgatgcttgg gataaaagca aagcagaatc agctgtgacc	2700
aaacaagacc agatttctgc ctctgagctc aggcaagcta atggaccatt gtcaaaggt	2760
ttggaaaacc ctgtactac tcctctactt caatccagtg aagtagctgt gtccattaag	2820
gtgtctctca atcaggggat tgaggataac tttggaaagc aagaaaactc aactgtggaa	2880
ggcagtgggt aagcactgggt cacagactta catagccag ttgaagatac ttgtaatgat	2940
ttgtgtcatc caggtttcca ggagagaaaa gaacaagatt gctttaatga tgcccatgtt	3000
actcagaatt ctttagtaaa ttcagaaact ctcaaaatag gtgaccttac cccacaaaac	3060
ttagaaagac aagtgaacaa cttgatgacc ttttctgtgc aaaatcaggc agcatttcaa	3120
aacaatttac caacttccaa atttgaatgt ggagataatg ttaaaacatc atccaatctt	3180

tataatttac	ctcttaagac	attagaaagt	attgcatttg	ttccaccgca	gtccgaccta	3240
agtaattcat	taggaactcc	atcagtgcc	ccaaaagctc	cagttcagaa	attcagctgc	3300
caggtcgagg	gatgtactcg	aacctataat	tcttcacaga	gtattgggaa	acacatgaag	3360
acagcacacc	ctgaccaata	tgctgcattt	aaaatgcagc	gcaaaagtaa	aaaaggtcag	3420
aaagctaaca	acttaaatac	accaaataat	ggaaagtttg	tttatttttt	gccatcacccg	3480
gtgaacagct	caaatccatt	ttttacatca	cagaccaaag	ccaatgggaa	tcctgcttgt	3540
tcggcccagt	tgcagcatgt	ctcgccaccc	atttttccag	ctcatttagc	aagtgtgtca	3600
actccattgt	tgtcctcaat	ggaaagtgtc	ataaatccaa	atataacttc	tcaggataaa	3660
aatgaacaag	gtggtatggt	atgttcccaa	atggaaaatt	tacctagtac	tgcttgcca	3720
gcacaaatgg	aagatctaac	caaaacagtt	ctgcctttga	atattgacag	tggtcagat	3780
cctttccttc	ctttacctgc	agaaagtagt	tcaatgtctc	tcttccttc	accagcagat	3840
agtgggacta	attctgtttt	ttcccaactg	gaaaataata	caaatcatta	ttcctcacag	3900
attgaaggaa	acactaattc	ctcctttcta	aaggggggta	atggtgaaaa	tgagttttt	3960
ccttcacaag	tgaatgttgc	aaataacttc	agtagcacca	atgcccaaca	gtctgcacct	4020
gaaaaagtta	aaaaagaccg	tgggcggggc	ccaaatggga	aggaaagaaa	acctaagcac	4080
aacaaaagg	ctaaatggcc	tgcaattatc	agagatggga	aatttatctg	tagcaggtgt	4140
tacagggctt	ttactaatcc	cagatcactg	ggtgggcact	tatccaagcg	atcttactgt	4200
aaaccactgg	atggagccga	aattgctcaa	gaacttctac	agagtaatgg	acagccttct	4260
cttcttgcca	gcatgattct	ctccacaaat	gcagtaaatt	tgagcagcc	acaacaatct	4320
accttcaatc	cagaagcatg	ttttaagat	ccatcatttc	tacagcttct	tgctgaaaat	4380
cgctcgccag	catttttacc	aaatacattt	cctcgatctg	gtgtgactaa	ctttaataacc	4440
agtgtcagtc	aagaaggtag	tgaaattatt	aaacaggctt	tggaactgc	tggcattccc	4500
agtacatttg	aggggtgccga	aatgctttct	catgtttcaa	caggttgtgt	ctctgatgca	4560
tcacaagtaa	atgcaacggt	gatgccaaat	ccaactgtac	caccctgtt	gcacactgta	4620
tgccatccaa	acaccttgct	gaccaaccag	aataggacgt	caaactccaa	aacttcctcc	4680
attgaggaat	gtagcagctt	gcctgttttt	ccaacgaatg	acttactact	gaagactggt	4740
gaaaatgggt	tgtgctctag	ttcatttcct	aattctgggtg	ggccatcaca	aaattttacc	4800
agtaacagtt	ctcgtgtttc	tgttataagt	ggcctcaga	acacaagatc	cagtcattta	4860
aataaaaagg	gaaacagtgc	ttctaagaga	agaaagaaag	ttgctcctcc	actaattgca	4920
cctaacgctt	cccaaaactt	ggtaacaagt	gacttaacaa	caatgggact	catagcaaag	4980
agtgttgaaa	tccaactac	taaccttcat	tcaaatgtaa	ttccaacttg	tgaacctcag	5040
agtttggtgg	aaaatctaac	acagaaatta	aataatgtta	acaatcagtt	atttatgact	5100
gatgtaaaag	agaatttcaa	aaccagtctt	gagtcccata	cagtgttagc	ccctttaaca	5160
ttaaaaactg	aaaatggtga	ttcccaaagt	atggctttga	attcatgcac	aacttcaata	5220

aattctgatt tgcagatttc tgaagacaat gttatacaaa actttgaaaa gactcttgaa	5280
attattaaaa ctgctatgaa ttctcaaata cttgaggtaa aaagtggatc tcagggtgct	5340
ggtgaaactt cacaaaatgc tcaaataaat tataacattc agcttccttc agtaaact	5400
gtgcaaaata acaaattacc cgattcttct ccgttttcct cttttataag tgtcatgcca	5460
acaaaaagta acattcctca gtctgaagta tcacataagg aggatcaaat acaggaaatt	5520
ttagaaggct tacagaaatt aaaattagaa aatgacctat ccactccagc atcccaatgt	5580
gtactgataa atacatcagt gacactgact cccacgcctg ttaaataaac tgcagatata	5640
acagttattc agccagtttc tgaaatgata aacattcaat ttaatgacaa agttaataaa	5700
ccctttgtgt gtcaaaacca aggctgtaac tacagtgtta tgacaaagga tgcactat	5760
aagcactatg gtaaaattca tcaatacact ccagaaatga ttcttgaaat taagaagaat	5820
caattgaaat ttgctccctt taaatgtgta gtacctacat gtacaaaaac atttacaaga	5880
aattctaacc tccgggcaca ctgtcagttg gtgcatcatt ttacaactga agaaatggta	5940
aagttaaaaa ttaaaaggcc ttatggaaga aaatctcaga gtgaaaatgt gccggcctca	6000
cgaagtacac aagtgaaaaa acagctagct atgacagagg aaaataaaaa ggaatctcag	6060
cctgctttag aattgagagc agagacccaa aataccaca gtaatgtagc agtgatccca	6120
gaaaaacaac ttgtagaaaa aaaaagtcct gacaaaacag aaagtctctt acaagtgatt	6180
acagttactt cagaacaatg taatacaaat gcactcaca acacacaaac caaaggacgg	6240
aagattagga ggcataaaaa agaaaaggag gagaaaaaac gaaagaagcc agtttccaa	6300
tcccttgagt ttccaacaag atacagtcct tacagacctt atcgatgtgt tcaccagga	6360
tgctttgctg cttttacgat acagcaaac ttgattctcc attaccaggc tgtacacaaa	6420
tcagatctac ctgcattttc agcagaggtc gaagaggaaa gtgaagctgg taaagaaagt	6480
gaagaaactg aaactaaaca aactttgaaa gaatttcgat gtcaggtaag tgactgttct	6540
cgaattttcc aagcaattac tggcctaata caacactaca tgaaacttca tgaaatgact	6600
cctgaagaaa ttgaaagtat gactgcttca gtggatgttg ggaagtttcc atgtgaccag	6660
ttagagtgtg aatcttcatt tactacatat ttgaactatg ttgttcattc agaggcagac	6720
cacgggattg gactaagggc aagtaaaaca gaagaagatg gtgtatacaa atgtgattgt	6780
gaaggctgtg accgtatata tgcaaccggc tcgaatctcc tccgacacat ttttaataag	6840
cataatgaca aacataaggc tcatttgatt cgtccaagaa gattaacacc aggccaggaa	6900
aatatgtcaa gcaaggcaaa ccaagaaaaa tcaaagtcta aacatcgggg gaccaagcac	6960
agcagatgtg gaaaggaagg aataaaaatg cccaagacca aacgaaagaa aaaaaataat	7020
ttagaaaaca agaatacaaa gattgtgcag attgaagaaa ataagcctta ttctctgaaa	7080
cgtgggaagc atgtatatcc tataaaggct agaaatgatg ccctgtctga gtgtacaagc	7140
agatttgtaa cccagtatcc atgtatgata aagggatgtg cttcagttgt tacaagttaa	7200
agcaatataa ttagacatta taagtgccat aaattatcta aggcatttac atcacaacac	7260

cgaaatcttc ttattgtatt caaacggtgt tgcaactcac aagtaaagga aacgtctgag	7320
caagaagggtg ctaagaatga tgtgaaagat tctgacacgt gtgtatcaga gagcaatgat	7380
aattcaagaa caacagctac agtttcacaa aaggaagttg aaaaaaatga aaaagatgaa	7440
atggatgaac taacagaatt gtttattaca aaattaataa atgaagatag cacaagtgtg	7500
gagacccaag ctaatacttc ttcaaagtga agtaatgatt ttcaggaaga taacctctgc	7560
cagtcagaaa gacaaaaagc aagtaatttg aagagagtta ataaggaaaa aaatgtctca	7620
caaaataaaa aaaggaaagt tgaaaaagct gaaccagcat cagcagctga gttaagtagc	7680
gtgcgtaaag aagaagaaac tgctgttgcc attcaaacca ttgaggagca tcctgcatct	7740
tttgactgga gctcttttaa gccaatggga tttgaagtat cttttctgaa gtttcttgag	7800
gagtctgcag tgaagcagaa gaaaaatact gacaaagacc atccgaatac tggaaacaaa	7860
aaaggatccc attcaaattc aagaaaaaat attgataaga ctgctgtgac tagtggaat	7920
catgtatgtc cttgtaaaga aagcgaaacg tttgtacagt ttgccaatcc atcacagctt	7980
cagtgcagtg ataatgtaaa aattgtttta gacaagaatc ttaaagattg cactgagctt	8040
gtcttaaagc aacttcagga aatgaaacct accgtcagtc tgaaaaaact tgaagtacat	8100
tcaaagtatc cagatatgtc tgttatgaaa gatatcagta taggtaaagc cacaggcaga	8160
ggtcagtact ga	8172

<210> 412
 <211> 2577
 <212> DNA
 <213> Homo sapiens

<400> 412	
atggacctcc cggcgctgct ccccgccccg actgcgcgcg gagggcaaca tggcggcggc	60
cccggccccg tccgccgagc cccagcgccg ctcggcgcga gccccgcgcg ccgccgcctg	120
ctactggtgc gggggccctga agatggcggg cccggggcgc ggcccgggga ggcctccggg	180
ccaagcccgc cgcccgccga ggacgacagc gacggcgact ctttcttggt gctgctggaa	240
gtgccgcacg gcggcgctgc cgccgaggct gccggatcac aggaggccga gcctggctcc	300
cgtgtcaacc tggcgagccg ccccgagcag ggccccagcg gcccggccgc cccccccggc	360
cctggcgtag ccccggcggg cgccgtcacc atcagcagcc aggacctgct ggtgctctc	420
gaccgcggcg tctcgcgct gtctgcgccg cccggccccg caaccgcggg cgccgccgct	480
ccccgccgcy cgccccaggc ctccggcccc agcacgcccc gctaccgctg ccccgagccg	540
cagtgcgcgc tggccttcgc caagaagcac cagctcaagg tgcacctgct cacgcacggc	600
ggcggtcagg gccggcggcc cttcaagtgc cactggagg gctgtggttg ggccttcaca	660
acgtcctaca agctcaagcg gcacctgcag tcgcacgaca agctgcggcc cttcggctgt	720
ccagtgggcy gctgtggcaa gaagttcact acggtctata acctcaaggc gcacatgaag	780
ggccacgagc aggagagcct gttcaagtgc gaggtgtgcy ccgagcgctt cccacgcac	840
gccaagctca gtcaccacca gcgcagccac ttcgagcccc agcgccctta caagtgtgac	900

tttcccggt	gtgagaagac	atttatcaca	gtgagtgcc	tgttttccca	taaccgagcc	960
cacttcaggg	aacaagagct	cttttcctgc	tcctttcctg	ggtgcagcaa	gcagtatgat	1020
aaagcctgtc	ggctgaaaat	tcacctgcgg	agccatacag	gtgaaagacc	atttatttgt	1080
gactctgaca	gctgtggctg	gaccttcacc	agcatgtcca	aactttctaag	gcacagaagg	1140
aaacatgacg	atgaccggag	gtttacctgc	cctgtcgagg	gctgtgggaa	atcattcacc	1200
agagcagagc	atctgaaagg	ccacagcata	acccacctag	gcacaaagcc	gttcgagtgt	1260
cctgtggaag	gatgttgcgc	gaggttctcc	gctcgtagca	gtctgtacat	tacttctaag	1320
aaacacgtgc	aggatgtggg	tgctccgaaa	agccgttgcc	cagtttctac	ctgcaacaga	1380
ctcttcacct	ccaagcacag	catgaaggcg	cacatggtca	gacagcacag	ccggcgccaa	1440
gatctcttac	ctcagctaga	agctccgagt	tctcttactc	ccagcagtga	actcagcagc	1500
ccaggccaaa	gtgagctcac	taacatggat	cttgctgcac	tcttctctga	cacacctgcc	1560
aatgctagtg	gttctgcagg	tgggtcggat	gaggctctga	actccggaat	cctgactatt	1620
gacgtcactt	ctgtgagctc	ctctctggga	gggaacctcc	ctgctaataa	tagctcccta	1680
gggccgatgg	aacctctggt	cctgggtggc	cacagtgata	ttcccccaag	cctggacagc	1740
cctctgggtc	tcgggacagc	agccacgggt	ctgcagcagg	gcagcttcag	tgtggatgac	1800
gtgcagactg	tgagtgcagg	agcattaggc	tgtctggtgg	ctctgcccac	gaagaacttg	1860
agtgacgacc	cactggcttt	gacctccaat	agtaacttag	cagcacatat	caccacaccg	1920
acctcttcga	gcaccccccg	agaaaatgcc	agtgtcccgg	aactgctggc	tccaatcaag	1980
gtggagccgg	actcgccttc	tcgcccagga	gcagttgggc	agcaggaagg	aagccatggg	2040
ctgccccagt	ccacgttgcc	cagtccagca	gagcagcacg	gtgcccagga	cacagagctc	2100
agtgcaggca	ctggcaactt	ctatttgga	agtgggggct	cagcaagaac	tgattaccga	2160
gccattcaac	tagccaagga	aaaaaagcag	agaggagcgg	ggagcaatgc	aggagcctca	2220
cagtctactc	agagaaaaat	aaaagaaggc	aaaatgagtc	ctccccattt	ccatgcaagc	2280
cagaacagtt	ggttgtgtgg	gagcctcgtg	gtgcccagcg	gaggacggcc	aggaccagct	2340
ccagcagctg	gggtgcagtg	cggggcgagc	ggcgtccagg	tccagctggg	gcaggatgac	2400
ccctccggcg	aaggtgtcct	gccctcggcc	cgcgggccag	ccaccttcct	ccccttcctc	2460
actgtggacc	tgcccgtcta	cgtcctccag	gaggtgtctc	cctcatctgg	aggccctgct	2520
ggaccggagg	ccaccagtt	cccaggaagc	actatcaacc	tgcaggatct	gcagtga	2577

<210> 413
 <211> 1719
 <212> DNA
 <213> Homo sapiens

<400> 413	
atggcgggccc	cccggccgtc tcccgcgac tccgtttcgg tctcggctcc ggctttttac 60
gccccgcaga	agaagtccgg ccctgtggtg gcccacaaagc ccaaagtga tcccttcagg 120

PCTAU2016050927-seq1-000001-EN-20161013

cccggggaca gcgagcctcc	cccggcaccc ggggccagc	gcgcacagat gggccgggtg	180
ggcgagattc ccccgccgcc	cccggaagac tttcccctgc	ctccacctcc ccttgctggg	240
gatggcgacg atgcagaggg	tgctctggga ggtgccttcc	cgccgcccc tccccgatc	300
gaggaatcat ttcccctgc	gcctctggag gaggagatct	tcccttcccc gccgcctcct	360
ccggaggagg agggaggggc	tgaggcccc ataccgcccc	caccacagcc cagggagaag	420
gtgagcagta ttgatttgga	gatcgactct ctgtcctcac	tgctggatga catgaccaag	480
aatgatcctt tcaaagcccg	ggtgtcatct ggatatgtgc	ccccaccagt ggccactcca	540
ttcagttcca agtccagtac	caagcctgca gccgggggca	cagcaccctt gcctccttgg	600
aagtcccctt ccagctccca	gcctctgccc caggttccgg	ctccgggtca gagccagaca	660
cagttccatg ttcagcccca	gccccagccc aagcctcagg	tccaactcca tgtccagtc	720
cagaccagc ctgtgtcttt	ggctaacacc cagccccgag	ggccccagc ctcatctccg	780
gctccagccc ctaagttttc	tccagtact cctaagttta	ctcctgtggc ttccaagttc	840
agtcctggag cccaggtgg	atctgggtca caaccaaac	aaaaattggg gcaccccgaa	900
gctctttctg ctggcacagg	ctcccctcaa cctcccagct	tcacctatgc ccagcagagg	960
gagaagcccc gagtgcagga	gaagcagcac cccgtgcccc	caccgggtca gaaccaaacc	1020
caggtgcgct cccctggggc	cccagggccc ctgactctga	aggaggtgga ggagctggag	1080
cagctgaccc agcagcta	atgcagacatg gagcatcctc	agaggcagaa tgtggctgtc	1140
aacgaactct gcggccgatg	ccatcaaccc ctggcccggg	cgcagccagc cgtccgcgct	1200
ctagggcagc tgttcacat	cgctgtctt acctgccacc	agtgtgcgca gcagctccag	1260
ggccagcagt tctacagtct	ggagggggcg ccgtactg	cagggtgtta cactgacacc	1320
ctggagaagt gtaacacctg	cggggagccc atcactgacc	gcatgctgag ggccacgggc	1380
aaggcctatc acccgactg	cttcacctgt gtggtctg	cgcgccccct ggagggcacc	1440
tccttcatcg tggaccaggc	caaccggccc cactgtgtcc	ccgactacca caagcagtac	1500
gccccgaggt gtcctgtctg	ctctgagccc atcatgcctg	agcctggccg agatgagact	1560
gtgcgagtgg tcgccctgga	caagaacttc cacatgaagt	gttacaagtg tgaggactgc	1620
gggaagcccc tgtcgattga	ggcagatgac aatggctgct	tccccctgga cggtcacgtg	1680
ctctgtcggga agtgccacac	tgctagagcc cagacctga		1719

<210> 414
 <211> 2776
 <212> DNA
 <213> Homo sapiens

<400> 414	ggtgttcaga gtttcgggtc	tcttttctgt gatcgatta	cttatgcaaa acgagcccag	60
	tcacttgccg ggccagagag	gggcaggtgc tgggcccggg	ctgacggggc cagcacccta	120
	ggcccagtgt ctggctccag	ccccgcatcc ggcgccggcc	ccgcatccag ctctggccct	180
	gcgacaatag agtccggaag	tgagggcaaa gcggctccc	ggagcgccgc gcggctctgc	240

gcgggatcag	cgagggccgc	gccccggcgg	gcgggcggca	tggctgcagt	gctggctctc	300
aggggtggtcg	cgggggttggc	ggccgcagcg	ctgggtggcca	tgctcttgga	gcactacggc	360
ctggcgggcc	agccctcgcc	gctgccgcgc	cccgcgcccc	ccaggaggcc	gcaccctgcg	420
ccagggcccc	gagacagcaa	catcttctgg	ggcctgcaga	tatccgacat	tcacctgagc	480
aggtttcgag	atccaggcag	agcggtagac	ttagagaaat	tctgttctga	aactattgac	540
atcattcaac	cagctctcgt	cctagcaaca	ggagacctga	cagatgccaa	aacaaaggaa	600
cagttgggat	ccaggcagca	tgaggtagaa	tggcaaacct	accagggtat	tctgaagaag	660
acaagagtca	tggaaaaaac	caagtggctg	gatatacaag	gaaatcatga	tgcattcaat	720
attccaagtc	tggacagcat	caagaattat	tacaggaaat	attctgctgt	acgtagagat	780
ggctctttcc	attatgtcca	cagtactccc	tttggcaact	attcgttcat	ctgtgtagat	840
gccactgtaa	atccagggcc	taagagacc	tataatttct	ttggaatttt	agataagaaa	900
aagatggagg	agctcttatt	actggccaag	gaaagcagtc	ggagcaacca	tacaatttgg	960
tttggacact	ttacaacatc	cactattctt	tctccatcac	caggaatccg	gtcaataatg	1020
agttcggcta	tagcttattt	gtgtggacat	ctccatacac	ttggtggact	gatgcctggt	1080
ttgcacactc	gtcacttcca	gggcactttg	gaacttgagg	tgggagactg	gaaggataat	1140
aggaggtacc	ggatttttgc	ttttgatcac	gacctcttta	gctttgcaga	tttgatcttt	1200
gggaagtggc	ctgtggttct	tatcaccaat	cctaaatcac	tcctttatag	ttgtggtgaa	1260
catgaaccac	tagaaagact	tcttactca	acacacatca	gagtccttggc	cttttcctta	1320
tcctccatta	cttctgtcac	agttaagatt	gatggagttc	atttaggcca	ggctgttcat	1380
gtgtctggtc	ccattttcgt	actgaagtgg	aatcctagaa	actacagtag	tgggacacat	1440
aacatagaag	taatcgtcca	ggattctgct	ggaagaagta	agagtgttca	ccacatattt	1500
tctgttcaag	agaataatca	tctcagtttt	gatcccctgg	catcatttat	tctccgtact	1560
gatcactaca	tcatggcccc	ggtccttttt	gtgctgattg	tgctgagcca	gctcaccatt	1620
ctcattattt	ttagatatcg	aggataccca	gagcttaaag	aaccttcagg	gtttataaat	1680
ctgacctcat	tttctcttca	tgtcttgagc	aaaataaaca	tcttctacta	ttctgtgttg	1740
ttgttgaccc	tgtatacagt	gctgggtcca	tggttttttg	gtgaaatcat	tgatggcaaa	1800
tttggttgct	gcttttcctt	tgggatattt	gttaatggac	atttcctaca	aggcagcata	1860
acatttataa	ttggaattct	ccagctggcg	ttttttaaca	tccccttgat	ggcttacatg	1920
tgttgagct	tgctgcagcg	gtgctttggt	cacaacttca	ggtctcatct	ccatcaaaga	1980
aaatacttga	aaattatgcc	tgttcaccta	cttatgttac	tgctgtacat	ctggcaggtt	2040
tattcctgct	actttcttta	tgcaacatac	ggcaccctag	cttttttatt	ctcccctttg	2100
cggacctggt	tgacactgct	gacacctgtt	ctcattcggt	atgtgtggac	actgaactcc	2160
accaagtttg	gaatcttcat	ggtgcagtta	aaaagccacc	tgagctcctg	aaggccatgt	2220
ctcaccactg	gcagctgggc	agaagcccag	cctctgtgtc	tgtagcccag	gcctctaccc	2280

PCTAU2016050927-seq1-000001-EN-20161013

cagtagcagg	tggagggcca	ggattggtgg	gtgagcttta	gggagcagct	gctcgttttg	2340
agtcctggac	gttggagggg	ttaccacta	ctgatacctg	cagaatggac	tgcagaaaag	2400
tctcaaaaat	aatgccttta	ttccttcct	ccctaaggag	gcaaagagtt	gatttacctt	2460
tgtgaagaga	aaacccttat	ctaggacatc	cacagggtag	aggttgggtg	tgtgtacggg	2520
agtgtctgag	gccagtggtg	ttttttagg	ttaccccatg	taaagcactt	accgctgtgc	2580
ttggaattca	gcagctgtca	aaggtgcaat	ttcaggggca	gggaaccttt	gaggatctgg	2640
gcccggaccct	cactaccctt	gagatattag	ttcccaggcc	tgttttccca	caggattgtg	2700
ggctctctgc	ttccttagtc	ggaagtgttt	tcaactaatc	aaataaatga	atgaatgatg	2760
aataagaaaa	aaaaaa					2776

<210> 415
 <211> 1494
 <212> DNA
 <213> Homo sapiens

<400> 415	
agtgaacag	aaggggaggt gcagtttcag aaccagcca gcctctctct tgctgcctag 60
cctcctgccg	gcctcatctt cgcccagcca acccgcctg gagccctatg gccaaactgcg 120
agttcagccc	ggtgtccggg gacaaacct gctgccggct ctctaggaga gccaaactct 180
gtcttggcgt	cagtatcctg gtcctgatcc tcgtcgtggt gctcgcggtg gtcgtcccgga 240
ggtggcgcca	gcagtgagc ggtccgggca ccaccaagcg ctttcccgag accgtcctgg 300
cgcgatgcgt	caagtacact gaaattcatc ctgagatgag acatgtagac tgccaaagtg 360
tatgggatgc	tttcaaggtt gcatttatct caaacatcc ttgcaacatt actgaagaag 420
actatcagcc	actaatgaag ttgggaactc agaccgtacc ttgcaacaag attcttcttt 480
ggagcagaat	aaaagatctg gccatcagt tcacacaggt ccagcgggac atgttcaccc 540
tggaggacac	gctgctaggc taccttgctg atgacctcac atgggtgtggt gaattcaaca 600
cttccaaaat	aaactatcaa tcttgcccag actggagaaa ggactgcagc aacaacctg 660
tttcagtatt	ctggaaaacg gtttcccgca ggtttgcaga agctgcctgt gatgtggtcc 720
atgtgatgct	caatggatcc cgcagtaaaa tctttgacaa aaacagcact tttgggagtg 780
tggaagtcca	taatttgcaa ccagagaagg ttcagacact agaggcctgg gtgatacatg 840
gtggaagaga	agattccaga gacttatgcc aggatccac cataaaagag ctggaatcga 900
ttataagcaa	aaggaatatt caattttcct gcaagaatat ctacagacct gacaagtttc 960
ttcagtgtgt	gaaaaatcct gaggattcat cttgcacatc tgagatctga gccagtcgct 1020
gtggttgttt	tagctccttg actccttggt gtttatgtca tcatacatga ctcagcatac 1080
ctgctgggtc	agagctgaag attttgagg gtcctccaca ataagggtcaa tgccagagac 1140
ggaagccttt	ttcccaaag tcttaaaata acttatatca tcagcatacc tttattgtga 1200
tctatcaata	gtcaagaaaa attattgtat aagattagaa tgaaaattgt atgttaagtt 1260

acttcacttt aattctcatg tgatcctttt atgttattta tatattggta acatcctttc 1320
tattgaaaaa tcaccacacc aaacctctct tattagaaca ggcaagtga gaaaagtga 1380
tgctcaagtt tttcagaaag cattacattt ccaaataaat gaccttggtg catgatgtat 1440
ttttgtaccc ttcctacaga tagtcaaacc ataaacttca tggatcatggg taaa 1494

<210> 416
<211> 500
<212> PRT
<213> Homo sapiens

<400> 416

Met Ala Ser Met Leu Leu Ala Gln Arg Leu Ala Cys Ser Phe Gln His
1 5 10 15

Ser Tyr Arg Leu Leu Val Pro Gly Ser Arg His Ile Ser Gln Ala Ala
20 25 30

Ala Lys Val Asp Val Glu Phe Asp Tyr Asp Gly Pro Leu Met Lys Thr
35 40 45

Glu Val Pro Gly Pro Arg Ser Gln Glu Leu Met Lys Gln Leu Asn Ile
50 55 60

Ile Gln Asn Ala Glu Ala Val His Phe Phe Cys Asn Tyr Glu Glu Ser
65 70 75 80

Arg Gly Asn Tyr Leu Val Asp Val Asp Gly Asn Arg Met Leu Asp Leu
85 90 95

Tyr Ser Gln Ile Ser Ser Val Pro Ile Gly Tyr Ser His Pro Ala Leu
100 105 110

Leu Lys Leu Ile Gln Gln Pro Gln Asn Ala Ser Met Phe Val Asn Arg
115 120 125

Pro Ala Leu Gly Ile Leu Pro Pro Glu Asn Phe Val Glu Lys Leu Arg
130 135 140

Gln Ser Leu Leu Ser Val Ala Pro Lys Gly Met Ser Gln Leu Ile Thr
145 150 155 160

Met Ala Cys Gly Ser Cys Ser Asn Glu Asn Ala Leu Lys Thr Ile Phe
165 170 175

Met Trp Tyr Arg Ser Lys Glu Arg Gly Gln Arg Gly Phe Ser Gln Glu
180 185 190

Glu Leu Glu Thr Cys Met Ile Asn Gln Ala Pro Gly Cys Pro Asp Tyr
195 200 205

Ser Ile Leu Ser Phe Met Gly Ala Phe His Gly Arg Thr Met Gly Cys
 210 215 220
 Leu Ala Thr Thr His Ser Lys Ala Ile His Lys Ile Asp Ile Pro Ser
 225 230 235 240
 Phe Asp Trp Pro Ile Ala Pro Phe Pro Arg Leu Lys Tyr Pro Leu Glu
 245 250 255
 Glu Phe Val Lys Glu Asn Gln Gln Glu Glu Ala Arg Cys Leu Glu Glu
 260 265 270
 Val Glu Asp Leu Ile Val Lys Tyr Arg Lys Lys Lys Lys Thr Val Ala
 275 280 285
 Gly Ile Ile Val Glu Pro Ile Gln Ser Glu Gly Gly Asp Asn His Ala
 290 295 300
 Ser Asp Asp Phe Phe Arg Lys Leu Arg Asp Ile Ala Arg Lys His Gly
 305 310 315 320
 Cys Ala Phe Leu Val Asp Glu Val Gln Thr Gly Gly Gly Cys Thr Gly
 325 330 335
 Lys Phe Trp Ala His Glu His Trp Gly Leu Asp Asp Pro Ala Asp Val
 340 345 350
 Met Thr Phe Ser Lys Lys Met Met Thr Gly Gly Phe Phe His Lys Glu
 355 360 365
 Glu Phe Arg Pro Asn Ala Pro Tyr Arg Ile Phe Asn Thr Trp Leu Gly
 370 375 380
 Asp Pro Ser Lys Asn Leu Leu Leu Ala Glu Val Ile Asn Ile Ile Lys
 385 390 395 400
 Arg Glu Asp Leu Leu Asn Asn Ala Ala His Ala Gly Lys Ala Leu Leu
 405 410 415
 Thr Gly Leu Leu Asp Leu Gln Ala Arg Tyr Pro Gln Phe Ile Ser Arg
 420 425 430
 Val Arg Gly Arg Gly Thr Phe Cys Ser Phe Asp Thr Pro Asp Asp Ser
 435 440 445
 Ile Arg Asn Lys Leu Ile Leu Ile Ala Arg Asn Lys Gly Val Val Leu
 450 455 460
 Gly Gly Cys Gly Asp Lys Ser Ile Arg Phe Arg Pro Thr Leu Val Phe
 465 470 475 480

Arg Asp His His Ala His Leu Phe Leu Asn Ile Phe Ser Asp Ile Leu
 485 490 495

Ala Asp Phe Lys
 500

<210> 417
 <211> 425
 <212> PRT
 <213> Homo sapiens
 <400> 417

Met Asn Ala Met Leu Glu Thr Pro Glu Leu Pro Ala Val Phe Asp Gly
 1 5 10 15

Val Lys Leu Ala Ala Val Ala Ala Val Leu Tyr Val Ile Val Arg Cys
 20 25 30

Leu Asn Leu Lys Ser Pro Thr Ala Pro Pro Asp Leu Tyr Phe Gln Asp
 35 40 45

Ser Gly Leu Ser Arg Phe Leu Leu Lys Ser Cys Pro Leu Leu Thr Lys
 50 55 60

Glu Tyr Ile Pro Pro Leu Ile Trp Gly Lys Ser Gly His Ile Gln Thr
 65 70 75 80

Ala Leu Tyr Gly Lys Met Gly Arg Val Arg Ser Pro His Pro Tyr Gly
 85 90 95

His Arg Lys Phe Ile Thr Met Ser Asp Gly Ala Thr Ser Thr Phe Asp
 100 105 110

Leu Phe Glu Pro Leu Ala Glu His Cys Val Gly Asp Asp Ile Thr Met
 115 120 125

Val Ile Cys Pro Gly Ile Ala Asn His Ser Glu Lys Gln Tyr Ile Arg
 130 135 140

Thr Phe Val Asp Tyr Ala Gln Lys Asn Gly Tyr Arg Cys Ala Val Leu
 145 150 155 160

Asn His Leu Gly Ala Leu Pro Asn Ile Glu Leu Thr Ser Pro Arg Met
 165 170 175

Phe Thr Tyr Gly Cys Thr Trp Glu Phe Gly Ala Met Val Asn Tyr Ile
 180 185 190

Lys Lys Thr Tyr Pro Leu Thr Gln Leu Val Val Val Gly Phe Ser Leu
 195 200 205

Gly Gly Asn Ile Val Cys Lys Tyr Leu Gly Glu Thr Gln Ala Asn Gln
 Page 444

210

215

220

Glu Lys Val Leu Cys Cys Val Ser Val Cys Gln Gly Tyr Ser Ala Leu
 225 230 235 240

Arg Ala Gln Glu Thr Phe Met Gln Trp Asp Gln Cys Arg Arg Phe Tyr
 245 250 255

Asn Phe Leu Met Ala Asp Asn Met Lys Lys Ile Ile Leu Ser His Arg
 260 265 270

Gln Ala Leu Phe Gly Asp His Val Lys Lys Pro Gln Ser Leu Glu Asp
 275 280 285

Thr Asp Leu Ser Arg Leu Tyr Thr Ala Thr Ser Leu Met Gln Ile Asp
 290 295 300

Asp Asn Val Met Arg Lys Phe His Gly Tyr Asn Ser Leu Lys Glu Tyr
 305 310 315 320

Tyr Glu Glu Glu Ser Cys Met Arg Tyr Leu His Arg Ile Tyr Val Pro
 325 330 335

Leu Met Leu Val Asn Ala Ala Asp Asp Pro Leu Val His Glu Ser Leu
 340 345 350

Leu Thr Ile Pro Lys Ser Leu Ser Glu Lys Arg Glu Asn Val Met Phe
 355 360 365

Val Leu Pro Leu His Gly Gly His Leu Gly Phe Phe Glu Gly Ser Val
 370 375 380

Leu Phe Pro Glu Pro Leu Thr Trp Met Asp Lys Leu Val Val Glu Tyr
 385 390 395 400

Ala Asn Ala Ile Cys Gln Trp Glu Arg Asn Lys Leu Gln Cys Ser Asp
 405 410 415

Thr Glu Gln Val Glu Ala Asp Leu Glu
 420 425

<210> 418
 <211> 508
 <212> PRT
 <213> Homo sapiens

<400> 418

Met Ala Glu Leu Gln Met Leu Leu Glu Glu Glu Ile Pro Ser Gly Lys
 1 5 10 15

Arg Ala Leu Ile Glu Ser Tyr Gln Asn Leu Thr Arg Val Ala Asp Tyr
 20 25 30

Cys Glu Asn Asn Tyr Ile Gln Ala Thr Asp Lys Arg Lys Ala Leu Glu
 35 40 45
 Glu Thr Lys Ala Tyr Thr Thr Gln Ser Leu Ala Ser Val Ala Tyr Gln
 50 55 60
 Ile Asn Ala Leu Ala Asn Asn Val Leu Gln Leu Leu Asp Ile Gln Ala
 65 70 75 80
 Ser Gln Leu Arg Arg Met Glu Ser Ser Ile Asn His Ile Ser Gln Thr
 85 90 95
 Val Asp Ile His Lys Glu Lys Val Ala Arg Arg Glu Ile Gly Ile Leu
 100 105 110
 Thr Thr Asn Lys Asn Thr Ser Arg Thr His Lys Ile Ile Ala Pro Ala
 115 120 125
 Asn Met Glu Arg Pro Val Arg Tyr Ile Arg Lys Pro Ile Asp Tyr Thr
 130 135 140
 Val Leu Asp Asp Val Gly His Gly Val Lys Trp Leu Lys Ala Lys His
 145 150 155 160
 Gly Asn Asn Gln Pro Ala Arg Thr Gly Thr Leu Ser Arg Thr Asn Pro
 165 170 175
 Pro Thr Gln Lys Pro Pro Ser Pro Pro Met Ser Gly Arg Gly Thr Leu
 180 185 190
 Gly Arg Asn Thr Pro Tyr Lys Thr Leu Glu Pro Val Lys Pro Pro Thr
 195 200 205
 Val Pro Asn Asp Tyr Met Thr Ser Pro Ala Arg Leu Gly Ser Gln His
 210 215 220
 Ser Pro Gly Arg Thr Ala Ser Leu Asn Gln Arg Pro Arg Thr His Ser
 225 230 235 240
 Gly Ser Ser Gly Gly Ser Gly Ser Arg Glu Asn Ser Gly Ser Ser Ser
 245 250 255
 Ile Gly Ile Pro Ile Ala Val Pro Thr Pro Ser Pro Pro Thr Ile Gly
 260 265 270
 Pro Glu Asn Ile Ser Val Pro Pro Pro Ser Gly Ala Pro Pro Ala Pro
 275 280 285
 Pro Leu Ala Pro Leu Leu Pro Val Ser Thr Val Ile Ala Ala Pro Gly
 290 295 300

Ser Ala Pro Gly Ser Gln Tyr Gly Thr Met Thr Arg Gln Ile Ser Arg
305 310 315 320

His Asn Ser Thr Thr Ser Ser Thr Ser Ser Gly Gly Tyr Arg Arg Thr
325 330 335

Pro Ser Val Thr Ala Gln Phe Ser Ala Gln Pro His Val Asn Gly Gly
340 345 350

Pro Leu Tyr Ser Gln Asn Ser Ile Ser Ile Ala Pro Pro Pro Pro Pro
355 360 365

Met Pro Gln Leu Thr Pro Gln Ile Pro Leu Thr Gly Phe Val Ala Arg
370 375 380

Val Gln Glu Asn Ile Ala Asp Ser Pro Thr Pro Pro Pro Pro Pro Pro
385 390 395 400

Pro Asp Asp Ile Pro Met Phe Asp Asp Ser Pro Pro ProPro Pro Pro
405 410 415

Pro Pro Val Asp Tyr Glu Asp Glu Glu Ala Ala Val Val Gln Tyr Asn
420 425 430

Asp Pro Tyr Ala Asp Gly Asp Pro Ala Trp Ala Pro Lys Asn Tyr Ile
435 440 445

Glu Lys Val Val Ala Ile Tyr Asp Tyr Thr Lys Asp Lys Asp Asp Glu
450 455 460

Leu Ser Phe Met Glu Gly Ala Ile Ile Tyr Val Ile Lys Lys Asn Asp
465 470 475 480

Asp Gly Trp Tyr Glu Gly Val Cys Asn Arg Val Thr Gly Leu Phe Pro
485 490 495

Gly Asn Tyr Val Glu Ser Ile Met His Tyr Thr Asp
500 505

<210> 419
<211> 424
<212> PRT
<213> Homo sapiens

<400> 419

Met Gln Arg Leu Gln Val Val Leu Gly His Leu Arg Gly Pro Ala Asp
1 5 10 15

Ser Gly Trp Met Pro Gln Ala Ala Pro Cys Leu Ser Gly Ala Pro Gln
20 25 30

Ala Ser Ala Ala Asp Val Val Val Val His Gly Arg Arg Thr Ala Ile
 35 40 45

Cys Arg Ala Gly Arg Gly Gly Phe Lys Asp Thr Thr Pro Asp Glu Leu
 50 55 60

Leu Ser Ala Val Met Thr Ala Val Leu Lys Asp Val Asn Leu Arg Pro
 65 70 75 80

Glu Gln Leu Gly Asp Ile Cys Val Gly Asn Val Leu Gln Pro Gly Ala
 85 90 95

Gly Ala Ile Met Ala Arg Ile Ala Gln Phe Leu Ser Asp Ile Pro Glu
 100 105 110

Thr Val Pro Leu Ser Thr Val Asn Arg Gln Cys Ser Ser Gly Leu Gln
 115 120 125

Ala Val Ala Ser Ile Ala Gly Gly Ile Arg Asn Gly Ser Tyr Asp Ile
 130 135 140

Gly Met Ala Cys Gly Val Glu Ser Met Ser Leu Ala Asp Arg Gly Asn
 145 150 155 160

Pro Gly Asn Ile Thr Ser Arg Leu Met Glu Lys Glu Lys Ala Arg Asp
 165 170 175

Cys Leu Ile Pro Met Gly Ile Thr Ser Glu Asn Val Ala Glu Arg Phe
 180 185 190

Gly Ile Ser Arg Glu Lys Gln Asp Thr Phe Ala Leu Ala Ser Gln Gln
 195 200 205

Lys Ala Ala Arg Ala Gln Ser Lys Gly Cys Phe Gln Ala Glu Ile Val
 210 215 220

Pro Val Thr Thr Thr Val His Asp Asp Lys Gly Thr Lys Arg Ser Ile
 225 230 235 240

Thr Val Thr Gln Asp Glu Gly Ile Arg Pro Ser Thr Thr Met Glu Gly
 245 250 255

Leu Ala Lys Leu Lys Pro Ala Phe Lys Lys Asp Gly Ser Thr Thr Ala
 260 265 270

Gly Asn Ser Ser Gln Val Ser Asp Gly Ala Ala Ala Ile Leu Leu Ala
 275 280 285

Arg Arg Ser Lys Ala Glu Glu Leu Gly Leu Pro Ile Leu Gly Val Leu
 290 295 300

Arg Ser Tyr Ala Val Val Gly Val Pro Pro Asp Ile Met Gly Ile Gly
305 310 315 320

Pro Ala Tyr Ala Ile Pro Val Ala Leu Gln Lys Ala Gly Leu Thr Val
325 330 335

Ser Asp Val Asp Ile Phe Glu Ile Asn Glu Ala Phe Ala Ser Gln Ala
340 345 350

Ala Tyr Cys Val Glu Lys Leu Arg Leu Pro Pro Glu Lys Val Asn Pro
355 360 365

Leu Gly Gly Ala Val Ala Leu Gly His Pro Leu Gly Cys Thr Gly Ala
370 375 380

Arg Gln Val Ile Thr Leu Leu Asn Glu Leu Lys Arg Arg Gly Lys Arg
385 390 395 400

Ala Tyr Gly Val Val Ser Met Cys Ile Gly Thr Gly Met Gly Ala Ala
405 410 415

Ala Val Phe Glu Tyr Pro Gly Asn
420

<210> 420
<211> 778
<212> PRT
<213> Homo sapiens
<400> 420

Met Lys Met Thr Val Asp Phe Glu Glu Cys Leu Lys Asp Ser Pro Arg
1 5 10 15

Phe Arg Ala Ala Leu Glu Glu Val Glu Gly Asp Val Ala Glu Leu Glu
20 25 30

Leu Lys Leu Asp Lys Leu Val Lys Leu Cys Ile Ala Met Ile Asp Thr
35 40 45

Gly Lys Ala Phe Cys Val Ala Asn Lys Gln Phe Met Asn Gly Ile Arg
50 55 60

Asp Leu Ala Gln Tyr Ser Ser Asn Asp Ala Val Val Glu Thr Ser Leu
65 70 75 80

Thr Lys Phe Ser Asp Ser Leu Gln Glu Met Ile Asn Phe His Thr Ile
85 90 95

Leu Phe Asp Gln Thr Gln Arg Ser Ile Lys Ala Gln Leu Gln Asn Phe
100 105 110

Val Lys Glu Asp Leu Arg Lys Phe Lys Asp Ala Lys Lys Gln Phe Glu
 115 120 125
 Lys Val Ser Glu Glu Lys Glu Asn Ala Leu Val Lys Asn Ala Gln Val
 130 135 140
 Gln Arg Asn Lys Gln His Glu Val Glu Glu Ala Thr Asn Ile Leu Thr
 145 150 155 160
 Ala Thr Arg Lys Cys Phe Arg His Ile Ala Leu Asp Tyr Val Leu Gln
 165 170 175
 Ile Asn Val Leu Gln Ser Lys Arg Arg Ser Glu Ile Leu Lys Ser Met
 180 185 190
 Leu Ser Phe Met Tyr Ala His Leu Ala Phe Phe His Gln Gly Tyr Asp
 195 200 205
 Leu Phe Ser Glu Leu Gly Pro Tyr Met Lys Asp Leu Gly Ala Gln Leu
 210 215 220
 Asp Arg Leu Val Val Asp Ala Ala Lys Glu Lys Arg Glu Met Glu Gln
 225 230 235 240
 Lys His Ser Thr Ile Gln Gln Lys Asp Phe Ser Ser Asp Asp Ser Lys
 245 250 255
 Leu Glu Tyr Asn Val Asp Ala Ala Asn Gly Ile Val Met Glu Gly Tyr
 260 265 270
 Leu Phe Lys Arg Ala Ser Asn Ala Phe Lys Thr Trp Asn Arg Arg Trp
 275 280 285
 Phe Ser Ile Gln Asn Asn Gln Leu Val Tyr Gln Lys Lys Phe Lys Asp
 290 295 300
 Asn Pro Thr Val Val Val Glu Asp Leu Arg Leu Cys Thr Val Lys His
 305 310 315 320
 Cys Glu Asp Ile Glu Arg Arg Phe Cys Phe Glu Val Val Ser Pro Thr
 325 330 335
 Lys Ser Cys Met Leu Gln Ala Asp Ser Glu Lys Leu Arg Gln Ala Trp
 340 345 350
 Ile Lys Ala Val Gln Thr Ser Ile Ala Thr Ala Tyr Arg Glu Lys Gly
 355 360 365
 Asp Glu Ser Glu Lys Leu Asp Lys Lys Ser Ser Pro Ser Thr Gly Ser
 370 375 380

Leu Asp Ser Gly Asn Glu Ser Lys Glu Lys Leu Leu Lys Gly Glu Ser
 385 390 395 400
 Ala Leu Gln Arg Val Gln Cys Ile Pro Gly Asn Ala Ser Cys Cys Asp
 405 410 415
 Cys Gly Leu Ala Asp Pro Arg Trp Ala Ser Ile Asn Leu Gly Ile Thr
 420 425 430
 Leu Cys Ile Glu Cys Ser Gly Ile His Arg Ser Leu Gly Val His Phe
 435 440 445
 Ser Lys Val Arg Ser Leu Thr Leu Asp Thr Trp Glu Pro Glu Leu Leu
 450 455 460
 Lys Leu Met Cys Glu Leu Gly Asn Asp Val Ile Asn Arg Val Tyr Glu
 465 470 475 480
 Ala Asn Val Glu Lys Met Gly Ile Lys Lys Pro Gln Pro Gly Gln Arg
 485 490 495
 Gln Glu Lys Glu Ala Tyr Ile Arg Ala Lys Tyr Val Glu Arg Lys Phe
 500 505 510
 Val Asp Lys Tyr Ser Ile Ser Leu Ser Pro Pro Glu Gln Gln Lys Lys
 515 520 525
 Phe Val Ser Lys Ser Ser Glu Glu Lys Arg Leu Ser Ile Ser Lys Phe
 530 535 540
 Gly Pro Gly Asp Gln Val Arg Ala Ser Ala Gln Ser Ser Val Arg Ser
 545 550 555 560
 Asn Asp Ser Gly Ile Gln Gln Ser Ser Asp Asp Gly Arg Glu Ser Leu
 565 570 575
 Pro Ser Thr Val Ser Ala Asn Ser Leu Tyr Glu Pro Glu Gly Glu Arg
 580 585 590
 Gln Asp Ser Ser Met Phe Leu Asp Ser Lys His Leu Asn Pro Gly Leu
 595 600 605
 Gln Leu Tyr Arg Ala Ser Tyr Glu Lys Asn Leu Pro Lys Met Ala Glu
 610 615 620
 Ala Leu Ala His Gly Ala Asp Val Asn Trp Ala Asn Ser Glu Glu Asn
 625 630 635 640
 Lys Ala Thr Pro Leu Ile Gln Ala Val Leu Gly Gly Ser Leu Val Thr
 645 650 655

Cys Glu Phe Leu Leu Gln Asn Gly Ala Asn Val Asn Gln Arg Asp Val
660 665 670

Gln Gly Arg Gly Pro Leu His His Ala Thr Val Leu Gly His Thr Gly
675 680 685

Gln Val Cys Leu Phe Leu Lys Arg Gly Ala Asn Gln His Ala Thr Asp
690 695 700

Glu Glu Gly Lys Asp Pro Leu Ser Ile Ala Val Glu Ala Ala Asn Ala
705 710 715 720

Asp Ile Val Thr Leu Leu Arg Leu Ala Arg Met Asn Glu Glu Met Arg
725 730 735

Glu Ser Glu Gly Leu Tyr Gly Gln Pro Gly Asp Glu Thr Tyr Gln Asp
740 745 750

Ile Phe Arg Asp Phe Ser Gln Met Ala Ser Asn Asn Pro Glu Lys Leu
755 760 765

Asn Arg Phe Gln Gln Asp Ser Gln Lys Phe
770 775

<210> 421
<211> 505
<212> PRT
<213> Homo sapiens

<400> 421

Met Ala Glu Ser Ala Gly Ala Ser Ser Phe Phe Pro Leu Val Val Leu
1 5 10 15

Leu Leu Ala Gly Ser Gly Gly Ser Gly Pro Arg Gly Val Gln Ala Leu
20 25 30

Leu Cys Ala Cys Thr Ser Cys Leu Gln Ala Asn Tyr Thr Cys Glu Thr
35 40 45

Asp Gly Ala Cys Met Val Ser Ile Phe Asn Leu Asp Gly Met Glu His
50 55 60

His Val Arg Thr Cys Ile Pro Lys Val Glu Leu Val Pro Ala Gly Lys
65 70 75 80

Pro Phe Tyr Cys Leu Ser Ser Glu Asp Leu Arg Asn Thr His Cys Cys
85 90 95

Tyr Thr Asp Tyr Cys Asn Arg Ile Asp Leu Arg Val Pro Ser Gly His
100 105 110

Leu Lys Glu Pro Glu His Pro Ser Met Trp Gly Pro Val Glu Leu Val
Page 452

115

120

125

Gly Ile Ile Ala Gly Pro Val Phe Leu Leu Phe Leu Ile Ile Ile Ile
 130 135 140

Val Phe Leu Val Ile Asn Tyr His Gln Arg Val Tyr His Asn Arg Gln
 145 150 155 160

Arg Leu Asp Met Glu Asp Pro Ser Cys Glu Met Cys Leu Ser Lys Asp
 165 170 175

Lys Thr Leu Gln Asp Leu Val Tyr Asp Leu Ser Thr Ser Gly Ser Gly
 180 185 190

Ser Gly Leu Pro Leu Phe Val Gln Arg Thr Val Ala Arg Thr Ile Val
 195 200 205

Leu Gln Glu Ile Ile Gly Lys Gly Arg Phe Gly Glu Val Trp Arg Gly
 210 215 220

Arg Trp Arg Gly Gly Asp Val Ala Val Lys Ile Phe Ser Ser Arg Glu
 225 230 235 240

Glu Arg Ser Trp Phe Arg Glu Ala Glu Ile Tyr Gln Thr Val Met Leu
 245 250 255

Arg His Glu Asn Ile Leu Gly Phe Ile Ala Ala Asp Asn Lys Asp Asn
 260 265 270

Gly Thr Trp Thr Gln Leu Trp Leu Val Ser Asp Tyr His Glu His Gly
 275 280 285

Ser Leu Phe Asp Tyr Leu Asn Arg Tyr Thr Val Thr Ile Glu Gly Met
 290 295 300

Ile Lys Leu Ala Leu Ser Ala Ala Ser Gly Leu Ala His Leu His Met
 305 310 315 320

Glu Ile Val Gly Thr Gln Gly Lys Pro Gly Ile Ala His Arg Asp Leu
 325 330 335

Lys Ser Lys Asn Ile Leu Val Lys Lys Asn Gly Met Cys Ala Ile Ala
 340 345 350

Asp Leu Gly Leu Ala Val Arg His Asp Ala Val Thr Asp Thr Ile Asp
 355 360 365

Ile Ala Pro Asn Gln Arg Val Gly Thr Lys Arg Tyr Met Ala Pro Glu
 370 375 380

Val Leu Asp Glu Thr Ile Asn Met Lys His Phe Asp Ser Phe Lys Cys
 Page 453

385 390 395 400

Ala Asp Ile Tyr Ala Leu Gly Leu Val Tyr Trp Glu Ile Ala Arg Arg
405 410 415

Cys Asn Ser Gly Gly Val His Glu Glu Tyr Gln Leu Pro Tyr Tyr Asp
420 425 430

Leu Val Pro Ser Asp Pro Ser Ile Glu Glu Met Arg Lys Val Val Cys
435 440 445

Asp Gln Lys Leu Arg Pro Asn Ile Pro Asn Trp Trp Gln Ser Tyr Glu
450 455 460

Ala Leu Arg Val Met Gly Lys Met Met Arg Glu Cys Trp Tyr Ala Asn
465 470 475 480

Gly Ala Ala Arg Leu Thr Ala Leu Arg Ile Lys Lys Thr Leu Ser Gln
485 490 495

Leu Ser Val Gln Glu Asp Val Lys Ile
500 505

<210> 422
<211> 485
<212> PRT
<213> Homo sapiens

<400> 422

Met Glu Leu Glu Val Arg Arg Val Arg Gln Ala Phe Leu Ser Gly Arg
1 5 10 15

Ser Arg Pro Leu Arg Phe Arg Leu Gln Gln Leu Glu Ala Leu Arg Arg
20 25 30

Met Val Gln Glu Arg Glu Lys Asp Ile Leu Thr Ala Ile Ala Ala Asp
35 40 45

Leu Cys Lys Ser Glu Phe Asn Val Tyr Ser Gln Glu Val Ile Thr Val
50 55 60

Leu Gly Glu Ile Asp Phe Met Leu Glu Asn Leu Pro Glu Trp Val Thr
65 70 75 80

Ala Lys Pro Val Lys Lys Asn Val Leu Thr Met Leu Asp Glu Ala Tyr
85 90 95

Ile Gln Pro Gln Pro Leu Gly Val Val Leu Ile Ile Gly Ala Trp Asn
100 105 110

Tyr Pro Phe Val Leu Thr Ile Gln Pro Leu Ile Gly Ala Ile Ala Ala
115 120 125

Gly Asn Ala Val Ile Ile Lys Pro Ser Glu Leu Ser Glu Asn Thr Ala
 130 135 140
 Lys Ile Leu Ala Lys Leu Leu Pro Gln Tyr Leu Asp Gln Asp Leu Tyr
 145 150 155 160
 Ile Val Ile Asn Gly Gly Val Glu Glu Thr Thr Glu Leu Leu Lys Gln
 165 170 175
 Arg Phe Asp His Ile Phe Tyr Thr Gly Asn Thr Ala Val Gly Lys Ile
 180 185 190
 Val Met Glu Ala Ala Ala Lys His Leu Thr Pro Val Thr Leu Glu Leu
 195 200 205
 Gly Gly Lys Ser Pro Cys Tyr Ile Asp Lys Asp Cys Asp Leu Asp Ile
 210 215 220
 Val Cys Arg Arg Ile Thr Trp Gly Lys Tyr Met Asn Cys Gly Gln Thr
 225 230 235 240
 Cys Ile Ala Pro Asp Tyr Ile Leu Cys Glu Ala Ser Leu Gln Asn Gln
 245 250 255
 Ile Val Trp Lys Ile Lys Glu Thr Val Lys Glu Phe Tyr Gly Glu Asn
 260 265 270
 Ile Lys Glu Ser Pro Asp Tyr Glu Arg Ile Ile Asn Leu Arg His Phe
 275 280 285
 Lys Arg Ile Leu Ser Leu Leu Glu Gly Gln Lys Ile Ala Phe Gly Gly
 290 295 300
 Glu Thr Asp Glu Ala Thr Arg Tyr Ile Ala Pro Thr Val Leu Thr Asp
 305 310 315 320
 Val Asp Pro Lys Thr Lys Val Met Gln Glu Glu Ile Phe Gly Pro Ile
 325 330 335
 Leu Pro Ile Val Pro Val Lys Asn Val Asp Glu Ala Ile Asn Phe Ile
 340 345 350
 Asn Glu Arg Glu Lys Pro Leu Ala Leu Tyr Val Phe Ser His Asn His
 355 360 365
 Lys Leu Ile Lys Arg Met Ile Asp Glu Thr Ser Ser Gly Gly Val Thr
 370 375 380
 Gly Asn Asp Val Ile Met His Phe Thr Leu Asn Ser Phe Pro Phe Gly
 385 390 395 400

Gly Val Gly Ser Ser Gly Met Gly Ala Tyr His Gly Lys His Ser Phe
405 410 415

Asp Thr Phe Ser His Gln Arg Pro Cys Leu Leu Lys Ser Leu Lys Arg
420 425 430

Glu Gly Ala Asn Lys Leu Arg Tyr Pro Pro Asn Ser Gln Ser Lys Val
435 440 445

Asp Trp Gly Lys Phe Phe Leu Leu Lys Arg Phe Asn Lys Glu Lys Leu
450 455 460

Gly 465 Leu Leu Leu Leu Thr 470 Phe Leu Gly Ile Val 475 Ala Ala Val Leu Val 480

Lys Ala Glu Tyr Tyr
485

```
<210> 423
<211> 239
<212> PRT
<213> Homo sapiens
```

<400> 423

Met Glu Lys Glu Lys Gly Asn Asp Asp Gly Ile Pro Asp Gln Glu Asn
1 5 10 15

Ser Leu Asp Phe Ser Glu His Phe Asn Gln Leu Glu Leu Leu Glu Thr
20 25 30

His Gly His Leu Ile Pro Thr Gly Thr Gln Ser Leu Trp Val Gly Asn
35 40 45

Ser Asp Glu Asp Glu Glu Gln Asp Asp Lys Asn Glu Glu Trp Tyr Arg
50 55 60

Leu Gln Glu Lys Lys Met Glu Lys Asp Pro Ser Arg Leu Leu Leu Trp
65 70 75 80

Ala Ala Glu Lys Asn Arg Leu Thr Thr Val Arg Arg Leu Leu Ser Glu
85 90 95

Lys Ala Thr His Val Asn Thr Arg Asp Glu Asp Glu Tyr Thr Pro Leu
100 105 110

His Arg Ala Ala Tyr Ser Gly His Leu Asp Ile Val Gln Glu Leu Ile
115 120 125

Ala Gln Gly Ala Asp Val His Ala Val Thr Val Asp Gly Trp Thr Pro
130 135 140

Leu His Ser Ala Cys Lys Trp Asn Asn Thr Arg Val Ala Ser Phe Leu
145 150 155 160

Leu Gln His Asp Ala Asp Ile Asn Ala Gln Thr Lys Gly Leu Leu Thr
165 170 175

Pro Leu His Leu Ala Ala Gly Asn Arg Asp Ser Lys Asp Thr Leu Glu
180 185 190

Leu Leu Leu Met Asn Arg Tyr Val Lys Pro Gly Leu Lys Asn Asn Leu
195 200 205

Glu Glu Thr Ala Phe Asp Ile Ala Arg Arg Thr Ser Ile Tyr His Tyr
210 215 220

Leu Phe Glu Ile Val Glu Gly Cys Thr Asn Ser Ser Pro Gln Ser
225 230 235

<210> 424
<211> 575
<212> PRT
<213> Homo sapiens

<400> 424

Met Gln Ser Pro Trp Lys Ile Leu Thr Val Ala Pro Leu Phe Leu Leu
1 5 10 15

Leu Ser Leu Gln Ser Ser Ala Ser Pro Ala Asn Asp Asp Gln Ser Arg
20 25 30

Pro Ser Leu Ser Asn Gly His Thr Cys Val Gly Cys Val Leu Val Val
35 40 45

Ser Val Ile Glu Gln Leu Ala Gln Val His Asn Ser Thr Val Gln Ala
50 55 60

Ser Met Glu Arg Leu Cys Ser Tyr Leu Pro Glu Lys Leu Phe Leu Lys
65 70 75 80

Thr Thr Cys Tyr Leu Val Ile Asp Lys Phe Gly Ser Asp Ile Ile Lys
85 90 95

Leu Leu Ser Ala Asp Met Asn Ala Asp Val Val Cys His Thr Leu Glu
100 105 110

Phe Cys Lys Gln Asn Thr Gly Gln Pro Leu Cys His Leu Tyr Pro Leu
115 120 125

Pro Lys Glu Thr Trp Lys Phe Thr Leu Gln Lys Ala Arg Gln Ile Val
130 135 140

Lys Lys Ser Pro Ile Leu Lys Tyr Ser Arg Ser Gly Ser Asp Ile Cys
 145 150 155 160
 Ser Leu Pro Val Leu Ala Lys Ile Cys Gln Lys Ile Lys Leu Ala Met
 165 170 175
 Glu Gln Ser Val Pro Phe Lys Asp Val Asp Ser Asp Lys Tyr Ser Val
 180 185 190
 Phe Pro Thr Leu Arg Gly Tyr His Trp Arg Gly Arg Asp Cys Asn Asp
 195 200 205
 Ser Asp Glu Ser Val Tyr Pro Gly Arg Arg Pro Asn Asn Trp Asp Val
 210 215 220
 His Gln Asp Ser Asn Cys Asn Gly Ile Trp Gly Val Asp Pro Lys Asp
 225 230 235 240
 Gly Val Pro Tyr Glu Lys Lys Phe Cys Glu Gly Ser Gln Pro Arg Gly
 245 250 255
 Ile Ile Leu Leu Gly Asp Ser Ala Gly Ala His Phe His Ile Ser Pro
 260 265 270
 Glu Trp Ile Thr Ala Ser Gln Met Ser Leu Asn Ser Phe Ile Asn Leu
 275 280 285
 Pro Thr Ala Leu Thr Asn Glu Leu Asp Trp Pro Gln Leu Ser Gly Ala
 290 295 300
 Thr Gly Phe Leu Asp Ser Thr Val Gly Ile Lys Glu Lys Ser Ile Tyr
 305 310 315 320
 Leu Arg Leu Trp Lys Arg Asn His Cys Asn His Arg Asp Tyr Gln Asn
 325 330 335
 Ile Ser Arg Asn Gly Ala Ser Ser Arg Asn Leu Lys Lys Phe Ile Glu
 340 345 350
 Ser Leu Ser Arg Asn Lys Val Leu Asp Tyr Pro Ala Ile Val Ile Tyr
 355 360 365
 Ala Met Ile Gly Asn Asp Val Cys Ser Gly Lys Ser Asp Pro Val Pro
 370 375 380
 Ala Met Thr Thr Pro Glu Lys Leu Tyr Ser Asn Val Met Gln Thr Leu
 385 390 395 400
 Lys His Leu Asn Ser His Leu Pro Asn Gly Ser His Val Ile Leu Tyr
 405 410 415

Gly Leu Pro Asp Gly Thr Phe Leu Trp Asp Asn Leu His Asn Arg Tyr
 420 425 430

His Pro Leu Gly Gln Leu Asn Lys Asp Met Thr Tyr Ala Gln Leu Tyr
 435 440 445

Ser Phe Leu Asn Cys Leu Gln Val Ser Pro Cys His Gly Trp Met Ser
 450 455 460

Ser Asn Lys Thr Leu Arg Thr Leu Thr Ser Glu Arg Ala Glu Gln Leu
 465 470 475 480

Ser Asn Thr Leu Lys Lys Ile Ala Ala Ser Glu Lys Phe Thr Asn Phe
 485 490 495

Asn Leu Phe Tyr Met Asp Phe Ala Phe His Glu Ile Ile Gln Glu Trp
 500 505 510

Gln Lys Arg Gly Gly Gln Pro Trp Gln Leu Ile Glu Pro Val Asp Gly
 515 520 525

Phe His Pro Asn Glu Val Ala Leu Leu Leu Leu Ala Asp His Phe Trp
 530 535 540

Lys Lys Val Gln Leu Gln Trp Pro Gln Ile Leu Gly Lys Glu Asn Pro
 545 550 555 560

Phe Asn Pro Gln Ile Lys Gln Val Phe Gly Asp Gln Gly Gly His
 565 570 575

<210> 425
 <211> 763
 <212> PRT
 <213> Homo sapiens

<400> 425

Met Ala Ala Thr Gly Thr Ala Ala Ala Ala Ala Thr Gly Arg Leu Leu
 1 5 10 15

Leu Leu Leu Leu Val Gly Leu Thr Ala Pro Ala Leu Ala Leu Ala Gly
 20 25 30

Tyr Ile Glu Ala Leu Ala Ala Asn Ala Gly Thr Gly Phe Ala Val Ala
 35 40 45

Glu Pro Gln Ile Ala Met Phe Cys Gly Lys Leu Asn Met His Val Asn
 50 55 60

Ile Gln Thr Gly Lys Trp Glu Pro Asp Pro Thr Gly Thr Lys Ser Cys
 65 70 75 80

Phe Glu Thr Lys Glu Glu Val Leu Gln Tyr Cys Gln Glu Met Tyr Pro
 Page 459

85

90

95

Glu Leu Gln Ile Thr Asn Val Met Glu Ala Asn Gln Arg Val Ser Ile
 100 105 110

Asp Asn Trp Cys Arg Arg Asp Lys Lys Gln Cys Lys Ser Arg Phe Val
 115 120 125

Thr Pro Phe Lys Cys Leu Val Gly Glu Phe Val Ser Asp Val Leu Leu
 130 135 140

Val Pro Glu Lys Cys Gln Phe Phe His Lys Glu Arg Met Glu Val Cys
 145 150 155 160

Glu Asn His Gln His Trp His Thr Val Val Lys Glu Ala Cys Leu Thr
 165 170 175

Gln Gly Met Thr Leu Tyr Ser Tyr Gly Met Leu Leu Pro Cys Gly Val
 180 185 190

Asp Gln Phe His Gly Thr Glu Tyr Val Cys Cys Pro Gln Thr Lys Ile
 195 200 205

Ile Gly Ser Val Ser Lys Glu Glu Glu Glu Glu Asp Glu Glu Glu Glu
 210 215 220

Glu Glu Glu Asp Glu Glu Glu Asp Tyr Asp Val Tyr Lys Ser Glu Phe
 225 230 235 240

Pro Thr Glu Ala Asp Leu Glu Asp Phe Thr Glu Ala Ala Val Asp Glu
 245 250 255

Asp Asp Glu Asp Glu Glu Glu Gly Glu Glu Val Val Glu Asp Arg Asp
 260 265 270

Tyr Tyr Tyr Asp Thr Phe Lys Gly Asp Asp Tyr Asn Glu Glu Asn Pro
 275 280 285

Thr Glu Pro Gly Ser Asp Gly Thr Met Ser Asp Lys Glu Ile Thr His
 290 295 300

Asp Val Lys Ala Val Cys Ser Gln Glu Ala Met Thr Gly Pro Cys Arg
 305 310 315 320

Ala Val Met Pro Arg Trp Tyr Phe Asp Leu Ser Lys Gly Lys Cys Val
 325 330 335

Arg Phe Ile Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Glu Ser
 340 345 350

Glu Asp Tyr Cys Met Ala Val Cys Lys Ala Met Ile Pro Pro Thr Pro
 Page 460

355

360

365

Leu Pro Thr Asn Asp Val Asp Val Tyr Phe Glu Thr Ser Ala Asp Asp
 370 375 380

Asn Glu His Ala Arg Phe Gln Lys Ala Lys Glu Gln Leu Glu Ile Arg
 385 390 395 400

His Arg Asn Arg Met Asp Arg Val Lys Lys Glu Trp Glu Glu Ala Glu
 405 410 415

Leu Gln Ala Lys Asn Leu Pro Lys Ala Glu Arg Gln Thr Leu Ile Gln
 420 425 430

His Phe Gln Ala Met Val Lys Ala Leu Glu Lys Glu Ala Ala Ser Glu
 435 440 445

Lys Gln Gln Leu Val Glu Thr His Leu Ala Arg Val Glu Ala Met Leu
 450 455 460

Asn Asp Arg Arg Arg Met Ala Leu Glu Asn Tyr Leu Ala Ala Leu Gln
 465 470 475 480

Ser Asp Pro Pro Arg Pro His Arg Ile Leu Gln Ala Leu Arg Arg Tyr
 485 490 495

Val Arg Ala Glu Asn Lys Asp Arg Leu His Thr Ile Arg His Tyr Gln
 500 505 510

His Val Leu Ala Val Asp Pro Glu Lys Ala Ala Gln Met Lys Ser Gln
 515 520 525

Val Met Thr His Leu His Val Ile Glu Glu Arg Arg Asn Gln Ser Leu
 530 535 540

Ser Leu Leu Tyr Lys Val Pro Tyr Val Ala Gln Glu Ile Gln Glu Glu
 545 550 555 560

Ile Asp Glu Leu Leu Gln Glu Gln Arg Ala Asp Met Asp Gln Phe Thr
 565 570 575

Ala Ser Ile Ser Glu Thr Pro Val Asp Val Arg Val Ser Ser Glu Glu
 580 585 590

Ser Glu Glu Ile Pro Pro Phe His Pro Phe His Pro Phe Pro Ala Leu
 595 600 605

Pro Glu Asn Glu Asp Thr Gln Pro Glu Leu Tyr His Pro Met Lys Lys
 610 615 620

Gly Ser Gly Val Gly Glu Gln Asp Gly Gly Leu Ile Gly Ala Glu Glu
 Page 461

625 630 635 640

Lys Val Ile Asn Ser Lys Asn Lys Val Asp Glu Asn Met Val Ile Asp
645 650 655

Glu Thr Leu Asp Val Lys Glu Met Ile Phe Asn Ala Glu Arg Val Gly
660 665 670

Gly Leu Glu Glu Glu Arg Glu Ser Val Gly Pro Leu Arg Glu Asp Phe
675 680 685

Ser Leu Ser Ser Ser Ala Leu Ile Gly Leu Leu Val Ile Ala Val Ala
690 695 700

Ile Ala Thr Val Ile Val Ile Ser Leu Val Met Leu Arg Lys Arg Gln
705 710 715 720

Tyr Gly Thr Ile Ser His Gly Ile Val Glu Val Asp Pro Met Leu Thr
725 730 735

Pro Glu Glu Arg His Leu Asn Lys Met Gln Asn His Gly Tyr Glu Asn
740 745 750

Pro Thr Tyr Lys Tyr Leu Glu Gln Met Gln Ile
755 760

<210> 426
<211> 1205
<212> PRT
<213> Homo sapiens

<400> 426

Met Thr Lys Lys Glu Glu Pro Pro Pro Ser Arg Val Pro Arg Ala Val
1 5 10 15

Arg Val Ala Ser Leu Leu Ser Glu Gly Glu Glu Leu Ser Gly Asp Asp
20 25 30

Gln Gly Asp Glu Glu Glu Asp Asp His Ala Tyr Glu Gly Val Pro Asn
35 40 45

Gly Gly Trp His Thr Ser Ser Leu Ser Leu Ser Leu Pro Ser Thr Ile
50 55 60

Ala Ala Pro His Pro Met Asp Gly Pro Pro Gly Gly Ser Thr Pro Val
65 70 75 80

Thr Pro Val Ile Lys Ala Gly Trp Leu Asp Lys Asn Pro Pro Gln Gly
85 90 95

Ser Tyr Ile Tyr Gln Lys Arg Trp Val Arg Leu Asp Thr Asp His Leu
100 105 110

Arg Tyr Phe Asp Ser Asn Lys Asp Ala Tyr Ser Lys Arg Phe Ile Ser
 115 120 125
 Val Ala Cys Ile Ser His Val Ala Ala Ile Gly Asp Gln Lys Phe Glu
 130 135 140
 Val Ile Thr Asn Asn Arg Thr Phe Ala Phe Arg Ala Glu Ser Asp Val
 145 150 155 160
 Glu Arg Lys Glu Trp Met Gln Ala Leu Gln Gln Ala Met Ala Glu Gln
 165 170 175
 Arg Ala Arg Ala Arg Leu Ser Ser Ala Tyr Leu Leu Gly Val Pro Gly
 180 185 190
 Ser Glu Gln Pro Asp Arg Ala Gly Ser Leu Glu Leu Arg Gly Phe Lys
 195 200 205
 Asn Lys Leu Tyr Val Ala Val Val Gly Asp Lys Val Gln Leu Tyr Lys
 210 215 220
 Asn Leu Glu Glu Tyr His Leu Gly Ile Gly Ile Thr Phe Ile Asp Met
 225 230 235 240
 Ser Val Gly Asn Val Lys Glu Val Asp Arg Arg Ser Phe Asp Leu Thr
 245 250 255
 Thr Pro Tyr Arg Ile Phe Ser Phe Ser Ala Asp Ser Glu Leu Glu Lys
 260 265 270
 Glu Gln Trp Leu Glu Ala Met Gln Gly Ala Ile Ala Glu Ala Leu Ser
 275 280 285
 Thr Ser Glu Val Ala Glu Arg Ile Trp Ala Ala Ala Pro Asn Arg Phe
 290 295 300
 Cys Ala Asp Cys Gly Ala Pro Gln Pro Asp Trp Ala Ser Ile Asn Leu
 305 310 315 320
 Cys Val Val Ile Cys Lys Arg Cys Ala Gly Glu His Arg Gly Leu Gly
 325 330 335
 Ala Gly Val Ser Lys Val Arg Ser Leu Lys Met Asp Arg Lys Val Trp
 340 345 350
 Thr Glu Thr Leu Ile Glu Leu Phe Leu Gln Leu Gly Asn Gly Ala Gly
 355 360 365
 Asn Arg Phe Trp Ala Ala Asn Val Pro Pro Ser Glu Ala Leu Gln Pro
 370 375 380

Ser Ser Ser Pro Ser Thr Arg Arg Cys His Leu Glu Ala Lys Tyr Arg
 385 390 395 400
 Glu Gly Lys Tyr Arg Arg Tyr His Pro Leu Phe Gly Asn Gln Glu Glu
 405 410 415
 Leu Asp Lys Ala Leu Cys Ala Ala Val Thr Thr Thr Asp Leu Ala Glu
 420 425 430
 Thr Gln Ala Leu Leu Gly Cys Gly Ala Gly Ile Asn Cys Phe Ser Gly
 435 440 445
 Asp Pro Glu Ala Pro Thr Pro Leu Ala Leu Ala Glu Gln Ala Gly Gln
 450 455 460
 Thr Leu Gln Met Glu Phe Leu Arg Asn Asn Arg Thr Thr Glu Val Pro
 465 470 475 480
 Arg Leu Asp Ser Met Lys Pro Leu Glu Lys His Tyr Ser Val Val Leu
 485 490 495
 Pro Thr Val Ser His Ser Gly Phe Leu Tyr Lys Thr Ala Ser Ala Gly
 500 505 510
 Lys Leu Leu Gln Asp Arg Arg Ala Arg Glu Glu Phe Ser Arg Arg Trp
 515 520 525
 Cys Val Leu Gly Asp Gly Val Leu Ser Tyr Phe Glu Asn Glu Arg Ala
 530 535 540
 Val Thr Pro Asn Gly Glu Ile Arg Ala Ser Glu Ile Val Cys Leu Ala
 545 550 555 560
 Val Pro Pro Pro Asp Thr His Gly Phe Glu His Thr Phe Glu Val Tyr
 565 570 575
 Thr Glu Gly Glu Arg Leu Tyr Leu Phe Gly Leu Glu Ser Ala Glu Gln
 580 585 590
 Ala His Glu Trp Val Lys Cys Ile Ala Lys Ala Phe Val Pro Pro Leu
 595 600 605
 Ala Glu Asp Leu Leu Ala Arg Asp Phe Glu Arg Leu Gly Arg Leu Pro
 610 615 620
 Tyr Lys Ala Gly Leu Ser Leu Gln Arg Ala Gln Glu Gly Trp Phe Ser
 625 630 635 640
 Leu Ser Gly Ser Glu Leu Arg Ala Val Phe Pro Glu Gly Pro Cys Glu
 645 650 655

Glu Pro Leu Gln Leu Arg Lys Leu Gln Glu Leu Ser Ile Gln Gly Asp
 660 665 670
 Ser Glu Asn Gln Val Leu Val Leu Val Glu Arg Arg Arg Thr Leu Tyr
 675 680 685
 Ile Gln Gly Glu Arg Arg Leu Asp Phe Met Gly Trp Leu Gly Ala Ile
 690 695 700
 Gln Lys Ala Ala Ala Ser Met Gly Asp Thr Leu Ser Glu Gln Gln Leu
 705 710 715 720
 Gly Asp Ser Asp Ile Pro Val Ile Val Tyr Arg Cys Val Asp Tyr Ile
 725 730 735
 Thr Gln Cys Gly Leu Thr Ser Glu Gly Ile Tyr Arg Lys Cys Gly Gln
 740 745 750
 Thr Ser Lys Thr Gln Arg Leu Leu Glu Ser Leu Arg Gln Asp Ala Arg
 755 760 765
 Ser Val His Leu Lys Glu Gly Glu Gln His Val Asp Asp Val Ser Ser
 770 775 780
 Ala Leu Lys Arg Phe Leu Arg Asp Leu Pro Asp Gly Leu Phe Thr Arg
 785 790 795 800
 Ala Gln Arg Leu Thr Trp Leu Glu Ala Ser Glu Ile Glu Asp Glu Glu
 805 810 815
 Glu Lys Val Ser Arg Tyr Arg Glu Leu Leu Val Arg Leu Pro Pro Val
 820 825 830
 Asn Arg Ala Thr Val Lys Ala Leu Ile Ser His Leu Tyr Cys Val Gln
 835 840 845
 Cys Phe Ser Asp Thr Asn Gln Met Asn Val His Asn Leu Ala Ile Val
 850 855 860
 Phe Gly Pro Thr Leu Phe Gln Thr Asp Gly Gln Asp Tyr Lys Ala Gly
 865 870 875 880
 Arg Val Val Glu Asp Leu Ile Asn His Tyr Val Val Val Phe Ser Val
 885 890 895
 Asp Glu Glu Glu Leu Arg Lys Gln Arg Glu Glu Ile Thr Ala Ile Val
 900 905 910
 Lys Met Arg Val Ala Gly Thr Ala Ser Gly Thr Gln His Ala Gly Asp
 915 920 925

Phe Ile Cys Thr Val Tyr Leu Glu Glu Lys Lys Ala Glu Thr Glu Gln
 930 935 940

His Ile Lys Val Pro Ala Ser Met Thr Ala Glu Glu Leu Thr Leu Glu
 945 950 955 960

Ile Leu Asp Arg Arg Asn Val Gly Ile Arg Glu Lys Asp Tyr Trp Thr
 965 970 975

Cys Phe Glu Val Asn Glu Arg Glu Glu Ala Glu Arg Pro Leu His Phe
 980 985 990

Ala Glu Lys Val Leu Pro Ile Leu His Gly Leu Gly Thr Asp Ser His
 995 1000 1005

Leu Val Val Lys Lys His Gln Ala Met Glu Ala Met Leu Leu Tyr
 1010 1015 1020

Leu Ala Ser Arg Val Gly Asp Thr Lys His Gly Met Met Lys Phe
 1025 1030 1035

Arg Glu Asp Arg Ser Leu Leu Gly Leu Gly Leu Pro Ser Gly Gly
 1040 1045 1050

Phe His Asp Arg Tyr Phe Ile Leu Asn Ser Ser Cys Leu Arg Leu
 1055 1060 1065

Tyr Lys Glu Val Arg Ser Gln Arg Pro Trp Ser Gly Ala Pro Glu
 1070 1075 1080

Thr Ser His Arg Pro Glu Lys Glu Trp Pro Ile Lys Ser Leu Lys
 1085 1090 1095

Val Tyr Leu Gly Val Lys Lys Lys Leu Arg Pro Pro Thr Cys Trp
 1100 1105 1110

Gly Phe Thr Val Val His Glu Thr Glu Lys His Glu Lys Gln Gln
 1115 1120 1125

Trp Tyr Leu Cys Cys Asp Thr Gln Met Glu Leu Arg Glu Trp Phe
 1130 1135 1140

Ala Thr Phe Leu Phe Val Gln His Asp Gly Leu Val Trp Pro Ser
 1145 1150 1155

Glu Pro Ser Arg Val Ser Arg Ala Val Pro Glu Val Arg Leu Gly
 1160 1165 1170

Ser Val Ser Leu Ile Pro Leu Arg Gly Ser Glu Asn Glu Met Arg
 1175 1180 1185

Arg Ser Val Ala Ala Phe Thr Ala Asp Pro Leu Ser Leu Leu Arg
 1190 1195 1200

Asn Val
 1205

<210> 427
 <211> 475
 <212> PRT
 <213> Homo sapiens

<400> 427

Met Gln Lys Ser Thr Asn Ser Asp Thr Ser Val Glu Thr Leu Asn Ser
 1 5 10 15

Thr Arg Gln Gly Thr Gly Ala Val Gln Met Arg Ile Lys Asn Ala Asn
 20 25 30

Ser His His Asp Arg Leu Ser Gln Ser Lys Ser Met Ile Leu Thr Asp
 35 40 45

Val Gly Lys Val Thr Glu Pro Ile Ser Arg His Arg Arg Asn His Ser
 50 55 60

Gln His Ile Leu Lys Asp Val Ile Pro Pro Leu Glu Gln Leu Met Val
 65 70 75 80

Glu Lys Glu Gly Tyr Leu Gln Lys Ala Lys Ile Ala Asp Gly Gly Lys
 85 90 95

Lys Leu Arg Lys Asn Trp Ser Thr Ser Trp Ile Val Leu Ser Ser Arg
 100 105 110

Arg Ile Glu Phe Tyr Lys Glu Ser Lys Gln Gln Ala Leu Ser Asn Met
 115 120 125

Lys Thr Gly His Lys Pro Glu Ser Val Asp Leu Cys Gly Ala His Ile
 130 135 140

Glu Trp Ala Lys Glu Lys Ser Ser Arg Lys Asn Val Phe Gln Ile Thr
 145 150 155 160

Thr Val Ser Gly Asn Glu Phe Leu Leu Gln Ser Asp Ile Asp Phe Ile
 165 170 175

Ile Leu Asp Trp Phe His Ala Ile Lys Asn Ala Ile Asp Arg Leu Pro
 180 185 190

Lys Asp Ser Ser Cys Pro Ser Arg Asn Leu Glu Leu Phe Lys Ile Gln
 195 200 205

Arg Ser Ser Ser Thr Glu Leu Leu Ser His Tyr Asp Ser Asp Ile Lys
 210 215 220
 Glu Gln Lys Pro Glu His Arg Lys Ser Leu Met Phe Arg Leu His His
 225 230 235 240
 Ser Ala Ser Asp Thr Ser Asp Lys Asn Arg Val Lys Ser Arg Leu Lys
 245 250 255
 Lys Phe Ile Thr Arg Arg Pro Ser Leu Lys Thr Leu Gln Glu Lys Gly
 260 265 270
 Leu Ile Lys Asp Gln Ile Phe Gly Ser His Leu His Lys Val Cys Glu
 275 280 285
 Arg Glu Asn Ser Thr Val Pro Trp Phe Val Lys Gln Cys Ile Glu Ala
 290 295 300
 Val Glu Lys Arg Gly Leu Asp Val Asp Gly Ile Tyr Arg Val Ser Gly
 305 310 315 320
 Asn Leu Ala Thr Ile Gln Lys Leu Arg Phe Ile Val Asn Gln Glu Glu
 325 330 335
 Lys Leu Asn Leu Asp Asp Ser Gln Trp Glu Asp Ile His Val Val Thr
 340 345 350
 Gly Ala Leu Lys Met Phe Phe Arg Glu Leu Pro Glu Pro Leu Phe Pro
 355 360 365
 Tyr Ser Phe Phe Glu Gln Phe Val Glu Ala Ile Lys Lys Gln Asp Asn
 370 375 380
 Asn Thr Arg Ile Glu Ala Val Lys Ser Leu Val Gln Lys Leu Pro Pro
 385 390 395 400
 Pro Asn Arg Asp Thr Met Lys Val Leu Phe Gly His Leu Thr Lys Ile
 405 410 415
 Val Ala Lys Ala Ser Lys Asn Leu Met Ser Thr Gln Ser Leu Gly Ile
 420 425 430
 Val Phe Gly Pro Thr Leu Leu Arg Ala Glu Asn Glu Thr Gly Asn Met
 435 440 445
 Ala Ile His Met Val Tyr Gln Asn Gln Ile Ala Glu Leu Met Leu Ser
 450 455 460
 Glu Tyr Ser Lys Ile Phe Gly Ser Glu Glu Asp
 465 470 475

<210> 428
 <211> 638
 <212> PRT
 <213> Homo sapiens

<400> 428

Met Ser Leu Gly Gln Ser Ala Cys Leu Phe Leu Ser Ile Ala Arg Ser
 1 5 10 15

Arg Ser Val Met Thr Gly Glu Gln Met Ala Ala Phe His Pro Ser Ser
 20 25 30

Thr Pro Asn Pro Leu Glu Arg Pro Ile Lys Met Gly Trp Leu Lys Lys
 35 40 45

Gln Arg Ser Ile Val Lys Asn Trp Gln Gln Arg Tyr Phe Val Leu Arg
 50 55 60

Ala Gln Gln Leu Tyr Tyr Tyr Lys Asp Glu Glu Asp Thr Lys Pro Gln
 65 70 75 80

Gly Cys Met Tyr Leu Pro Gly Cys Thr Ile Lys Glu Ile Ala Thr Asn
 85 90 95

Pro Glu Glu Ala Gly Lys Phe Val Phe Glu Ile Ile Pro Ala Ser Trp
 100 105 110

Asp Gln Asn Arg Met Gly Gln Asp Ser Tyr Val Leu Met Ala Ser Ser
 115 120 125

Gln Ala Glu Met Glu Glu Trp Val Lys Phe Leu Arg Arg Val Ala Gly
 130 135 140

Thr Pro Cys Gly Val Phe Gly Gln Arg Leu Asp Glu Thr Val Ala Tyr
 145 150 155 160

Glu Gln Lys Phe Gly Pro His Leu Val Pro Ile Leu Val Glu Lys Cys
 165 170 175

Ala Glu Phe Ile Leu Glu His Gly Arg Asn Glu Glu Gly Ile Phe Arg
 180 185 190

Leu Pro Gly Gln Asp Asn Leu Val Lys Gln Leu Arg Asp Ala Phe Asp
 195 200 205

Ala Gly Glu Arg Pro Ser Phe Asp Arg Asp Thr Asp Val His Thr Val
 210 215 220

Ala Ser Leu Leu Lys Leu Tyr Leu Arg Asp Leu Pro Glu Pro Val Val
 225 230 235 240

Pro Trp Ser Gln Tyr Glu Gly Phe Leu Leu Cys Gly Gln Leu Thr Asn
 245 250 255
 Ala Asp Glu Ala Lys Ala Gln Gln Glu Leu Met Lys Gln Leu Ser Ile
 260 265 270
 Leu Pro Arg Asp Asn Tyr Ser Leu Leu Ser Tyr Ile Cys Arg Phe Leu
 275 280 285
 His Glu Ile Gln Leu Asn Cys Ala Val Asn Lys Met Ser Val Asp Asn
 290 295 300
 Leu Ala Thr Val Ile Gly Val Asn Leu Ile Arg Ser Lys Val Glu Asp
 305 310 315
 Pro Ala Val Ile Met Arg Gly Thr Pro Gln Ile Gln Arg Val Met Thr
 325 330 335
 Met Met Ile Arg Asp His Glu Val Leu Phe Pro Lys Ser Lys Asp Ile
 340 345 350
 Pro Leu Ser Pro Pro Ala Gln Lys Asn Asp Pro Lys Lys Ala Pro Val
 355 360 365
 Ala Arg Ser Ser Val Gly Trp Asp Ala Thr Glu Asp Leu Arg Ile Ser
 370 375 380
 Arg Thr Asp Ser Phe Ser Ser Met Thr Ser Asp Ser Asp Thr Thr Ser
 385 390 395 400
 Pro Thr Gly Gln Gln Pro Ser Asp Ala Phe Pro Glu Asp Ser Ser Lys
 405 410 415
 Val Pro Arg Glu Lys Pro Gly Asp Trp Lys Met Gln Ser Arg Lys Arg
 420 425 430
 Thr Gln Thr Leu Pro Asn Arg Lys Cys Phe Leu Thr Ser Ala Phe Gln
 435 440 445
 Gly Ala Asn Ser Ser Lys Met Glu Ile Phe Lys Asn Glu Phe Trp Ser
 450 455 460
 Pro Ser Ser Glu Ala Lys Ala Gly Glu Gly His Arg Arg Thr Met Ser
 465 470 475 480
 Gln Asp Leu Arg Gln Leu Ser Asp Ser Gln Arg Thr Ser Thr Tyr Asp
 485 490 495
 Asn Val Pro Ser Leu Pro Gly Ser Pro Gly Glu Glu Ala Ser Ala Leu
 500 505 510

Ser Ser Gln Ala Cys Asp Ser Lys Gly Asp Thr Leu Ala Ser Pro Asn
515 520 525

Ser Glu Thr Gly Pro Gly Lys Lys Asn Ser Gly Glu Glu Glu Ile Asp
530 535 540

Ser Leu Gln Arg Met Val Gln Glu Leu Arg Lys Glu Ile Glu Thr Gln
545 550 555 560

Lys Gln Met Tyr Glu Glu Gln Ile Lys Asn Leu Glu Lys Glu Asn Tyr
565 570 575

Asp Val Trp Ala Lys Val Val Arg Leu Asn Glu Glu Leu Glu Lys Glu
580 585 590

Lys Lys Lys Ser Ala Ala Leu Glu Ile Ser Leu Arg Asn Met Glu Arg
595 600 605

Ser Arg Glu Asp Val Glu Lys Arg Asn Lys Ala Leu Glu Glu Glu Val
610 615 620

Lys Glu Phe Val Lys Ser Met Lys Glu Pro Lys Thr Glu Ala
625 630 635

<210> 429
<211> 814
<212> PRT
<213> Homo sapiens

<400> 429

Met Gly Leu Pro Ala Leu Glu Phe Ser Asp Cys Cys Leu Asp Ser Pro
1 5 10 15

His Phe Arg Glu Thr Leu Lys Ser His Glu Ala Glu Leu Asp Lys Thr
20 25 30

Asn Lys Phe Ile Lys Glu Leu Ile Lys Asp Gly Lys Ser Leu Ile Ser
35 40 45

Ala Leu Lys Asn Leu Ser Ser Ala Lys Arg Lys Phe Ala Asp Ser Leu
50 55 60

Asn Glu Phe Lys Phe Gln Cys Ile Gly Asp Ala Glu Thr Asp Asp Glu
65 70 75 80

Met Cys Ile Ala Arg Ser Leu Gln Glu Phe Ala Thr Val Leu Arg Asn
85 90 95

Leu Glu Asp Glu Arg Ile Arg Met Ile Glu Asn Ala Ser Glu Val Leu
100 105 110

Ile Thr Pro Leu Glu Lys Phe Arg Lys Glu Gln Ile Gly Ala Ala Lys
Page 471

115

120

125

Glu Ala Lys Lys Lys Tyr Asp Lys Glu Thr Glu Lys Tyr Cys Gly Ile
 130 135 140

Leu Glu Lys His Leu Asn Leu Ser Ser Lys Lys Lys Glu Ser Gln Leu
 145 150 155 160

Gln Glu Ala Asp Ser Gln Val Asp Leu Val Arg Gln His Phe Tyr Glu
 165 170 175

Val Ser Leu Glu Tyr Val Phe Lys Val Gln Glu Val Gln Glu Arg Lys
 180 185 190

Met Phe Glu Phe Val Glu Pro Leu Leu Ala Phe Leu Gln Gly Leu Phe
 195 200 205

Thr Phe Tyr His His Gly Tyr Glu Leu Ala Lys Asp Phe Gly Asp Phe
 210 215 220

Lys Thr Gln Leu Thr Ile Ser Ile Gln Asn Thr Arg Asn Arg Phe Glu
 225 230 235 240

Gly Thr Arg Ser Glu Val Glu Ser Leu Met Lys Lys Met Lys Glu Asn
 245 250 255

Pro Leu Glu His Lys Thr Ile Ser Pro Tyr Thr Met Glu Gly Tyr Leu
 260 265 270

Tyr Val Gln Glu Lys Arg His Phe Gly Thr Ser Trp Val Lys His Tyr
 275 280 285

Cys Thr Tyr Gln Arg Asp Ser Lys Gln Ile Thr Met Val Pro Phe Asp
 290 295 300

Gln Lys Ser Gly Gly Lys Gly Gly Glu Asp Glu Ser Val Ile Leu Lys
 305 310 315 320

Ser Cys Thr Arg Arg Lys Thr Asp Ser Ile Glu Lys Arg Phe Cys Phe
 325 330 335

Asp Val Glu Ala Val Asp Arg Pro Gly Val Ile Thr Met Gln Ala Leu
 340 345 350

Ser Glu Glu Asp Arg Arg Leu Trp Met Glu Ala Met Asp Gly Arg Glu
 355 360 365

Pro Val Tyr Asn Ser Asn Lys Asp Ser Gln Ser Glu Gly Thr Ala Gln
 370 375 380

Leu Asp Ser Ile Gly Phe Ser Ile Ile Arg Lys Cys Ile His Ala Val
 Page 472

385 390 395 400
 Glu Thr Arg Gly Ile Asn Glu Gln Gly Leu Tyr Arg Ile Val Gly Val
 405 410 415
 Asn Ser Arg Val Gln Lys Leu Leu Ser Val Leu Met Asp Pro Lys Thr
 420 425 430
 Ala Ser Glu Thr Glu Thr Asp Ile Cys Ala Glu Trp Glu Ile Lys Thr
 435 440 445
 Ile Thr Ser Ala Leu Lys Thr Tyr Leu Arg Met Leu Pro Gly Pro Leu
 450 455 460
 Met Met Tyr Gln Phe Gln Arg Ser Phe Ile Lys Ala Ala Lys Leu Glu
 465 470 475 480
 Asn Gln Glu Ser Arg Val Ser Glu Ile His Ser Leu Val His Arg Leu
 485 490 495
 Pro Glu Lys Asn Arg Gln Met Leu Gln Leu Leu Met Asn His Leu Ala
 500 505 510
 Asn Val Ala Asn Asn His Lys Gln Asn Leu Met Thr Val Ala Asn Leu
 515 520 525
 Gly Val Val Phe Gly Pro Thr Leu Leu Arg Pro Gln Glu Glu Thr Val
 530 535 540
 Ala Ala Ile Met Asp Ile Lys Phe Gln Asn Ile Val Ile Glu Ile Leu
 545 550 555 560
 Ile Glu Asn His Glu Lys Ile Phe Asn Thr Val Pro Asp Met Pro Leu
 565 570 575
 Thr Asn Ala Gln Leu His Leu Ser Arg Lys Lys Ser Ser Asp Ser Lys
 580 585 590
 Pro Pro Ser Cys Ser Glu Arg Pro Leu Thr Leu Phe His Thr Val Gln
 595 600 605
 Ser Thr Glu Lys Gln Glu Gln Arg Asn Ser Ile Ile Asn Ser Ser Leu
 610 615 620
 Glu Ser Val Ser Ser Asn Pro Asn Ser Ile Leu Asn Ser Ser Ser Ser
 625 630 635 640
 Leu Gln Pro Asn Met Asn Ser Ser Asp Pro Asp Leu Ala Val Val Lys
 645 650 655
 Pro Thr Arg Pro Asn Ser Leu Pro Pro Asn Pro Ser Pro Thr Ser Pro
 Page 473

660

665

670

Leu Ser Pro Ser Trp Pro Met Phe Ser Ala Pro Ser Ser Pro Met Pro
 675 680 685

Thr Ser Ser Thr Ser Ser Asp Ser Ser Pro Val Arg Ser Val Ala Gly
 690 695 700

Phe Val Trp Phe Ser Val Ala Ala Val Val Leu Ser Leu Ala Arg Ser
 705 710 715 720

Ser Leu His Ala Val Phe Ser Leu Leu Val Asn Phe Val Pro Cys His
 725 730 735

Pro Asn Leu His Leu Leu Phe Asp Arg Pro Glu Glu Ala Val His Glu
 740 745 750

Asp Ser Ser Thr Pro Phe Arg Lys Ala Lys Ala Leu Tyr Ala Cys Lys
 755 760 765

Ala Glu His Asp Ser Glu Leu Ser Phe Thr Ala Gly Thr Val Phe Asp
 770 775 780

Asn Val His Pro Ser Gln Glu Pro Gly Trp Leu Glu Gly Thr Leu Asn
 785 790 795 800

Gly Lys Thr Gly Leu Ile Pro Glu Asn Tyr Val Glu Phe Leu
 805 810

<210> 430
 <211> 958
 <212> PRT
 <213> Homo sapiens

<400> 430

Met Lys Glu Ala Lys Asp Ala Arg Tyr Thr Asn Gly His Leu Phe Thr
 1 5 10 15

Thr Ile Ser Val Ser Gly Met Thr Met Cys Tyr Ala Cys Asn Lys Ser
 20 25 30

Ile Thr Ala Lys Glu Ala Leu Ile Cys Pro Thr Cys Asn Val Thr Ile
 35 40 45

His Asn Arg Cys Lys Asp Thr Leu Ala Asn Cys Thr Lys Val Lys Gln
 50 55 60

Lys Gln Gln Lys Ala Ala Leu Leu Lys Asn Asn Thr Ala Leu Gln Ser
 65 70 75 80

Val Ser Leu Arg Ser Lys Thr Thr Ile Arg Glu Arg Pro Ser Ser Ala
 85 90 95

Ile Tyr Pro Ser₁₀₀ Asp Ser Phe Arg Gln₁₀₅ Ser Leu Leu Gly Ser₁₁₀ Arg Arg
 Gly Arg Ser₁₁₅ Ser Leu Ser Leu Ala₁₂₀ Lys Ser Val Ser Thr₁₂₅ Thr Asn Ile
 Ala Gly₁₃₀ His Phe Asn Asp Glu₁₃₅ Ser Pro Leu Gly Leu₁₄₀ Arg Arg Ile Leu
 Ser₁₄₅ Gln Ser Thr Asp Ser₁₅₀ Leu Asn Met Arg Asn₁₅₅ Arg Thr Leu Ser Val₁₆₀
 Glu Ser Leu Ile Asp₁₆₅ Glu Glu Val Ile Tyr₁₇₀ Ser Glu Leu Met Ser₁₇₅ Asp
 Phe Glu Met Asp₁₈₀ Glu Lys Asp Phe Ala₁₈₅ Ala Asp Ser Trp Ser₁₉₀ Leu Ala
 Val Asp Ser₁₉₅ Ser Phe Leu Gln Gln₂₀₀ His Lys Lys Glu Val₂₀₅ Met Lys Gln
 Gln Asp₂₁₀ Val Ile Tyr Glu Leu₂₁₅ Ile Gln Thr Glu Leu₂₂₀ His His Val Arg
 Thr₂₂₅ Leu Lys Ile Met Thr₂₃₀ Arg Leu Phe Arg Thr₂₃₅ Gly Met Leu Glu Glu₂₄₀
 Leu His Leu Glu Pro₂₄₅ Gly Val Val Gln Gly₂₅₀ Leu Phe Pro Cys Val₂₅₅ Asp
 Glu Leu Ser Asp₂₆₀ Ile His Thr Arg Phe₂₆₅ Leu Ser Gln Leu Leu₂₇₀ Glu Arg
 Arg Arg Gln₂₇₅ Ala Leu Cys Pro Gly₂₈₀ Ser Thr Arg Asn Phe₂₈₅ Val Ile His
 Arg Leu Gly Asp Leu Leu Ile Ser Gln Phe Ser Gly₃₀₀ Pro Ser Ala Glu
 Gln₃₀₅ Met Cys Lys Thr Tyr₃₁₀ Ser Glu Phe Cys Ser₃₁₅ Arg His Ser Lys Ala₃₂₀
 Leu Lys Leu Tyr Lys₃₂₅ Glu Leu Tyr Ala Arg₃₃₀ Asp Lys Arg Phe Gln Gln₃₃₅
 Phe Ile Arg Lys₃₄₀ Val Thr Arg Pro Ala₃₄₅ Val Leu Lys Arg His Gly Val₃₅₀
 Gln Glu Cys₃₅₅ Ile Leu Leu Val Thr₃₆₀ Gln Arg Ile Thr Lys₃₆₅ Tyr Pro Leu

Leu Ile Ser Arg Ile Leu Gln His Ser His Gly Ile Glu Glu Glu Arg
 370 375 380
 Gln Asp Leu Thr Thr Ala Leu Gly Leu Val Lys Glu Leu Leu Ser Asn
 385 390 395 400
 Val Asp Glu Gly Ile Tyr Gln Leu Glu Lys Gly Ala Arg Leu Gln Glu
 405 410 415
 Ile Tyr Asn Arg Met Asp Pro Arg Ala Gln Thr Pro Val Pro Gly Lys
 420 425 430
 Gly Pro Phe Gly Arg Glu Glu Leu Leu Arg Arg Lys Leu Ile His Asp
 435 440 445
 Gly Cys Leu Leu Trp Lys Thr Ala Thr Gly Arg Phe Lys Asp Val Leu
 450 455 460
 Val Leu Leu Met Thr Asp Val Leu Val Phe Leu Gln Glu Lys Asp Gln
 465 470 475 480
 Lys Tyr Ile Phe Pro Thr Leu Asp Lys Pro Ser Val Val Ser Leu Gln
 485 490 495
 Asn Leu Ile Val Arg Asp Ile Ala Asn Gln Glu Lys Gly Met Phe Leu
 500 505 510
 Ile Ser Ala Ala Pro Pro Glu Met Tyr Glu Val His Thr Ala Ser Arg
 515 520 525
 Asp Asp Arg Ser Thr Trp Ile Arg Val Ile Gln Gln Ser Val Arg Thr
 530 535 540
 Cys Pro Ser Arg Glu Asp Phe Pro Leu Ile Glu Thr Glu Asp Glu Ala
 545 550 555 560
 Tyr Leu Arg Arg Ile Lys Met Glu Leu Gln Gln Lys Asp Arg Ala Leu
 565 570 575
 Val Glu Leu Leu Arg Glu Lys Val Gly Leu Phe Ala Glu Met Thr His
 580 585 590
 Phe Gln Ala Glu Glu Asp Gly Gly Ser Gly Met Ala Leu Pro Thr Leu
 595 600 605
 Pro Arg Gly Leu Phe Arg Ser Glu Ser Leu Glu Ser Pro Arg Gly Glu
 610 615 620
 Arg Leu Leu Gln Asp Ala Ile Arg Glu Val Glu Gly Leu Lys Asp Leu
 625 630 635 640

Leu Val Gly Pro Gly Val Glu Leu Leu Leu Thr Pro Arg Glu Pro Ala
 645 650 655
 Leu Pro Leu Glu Pro Asp Ser Gly Gly Asn Thr Ser Pro Gly Val Thr
 660 665 670
 Ala Asn Gly Glu Ala Arg Thr Phe Asn Gly Ser Ile Glu Leu Cys Arg
 675 680 685
 Ala Asp Ser Asp Ser Ser Gln Arg Asp Arg Asn Gly Asn Gln Leu Arg
 690 695 700
 Ser Pro Gln Glu Glu Ala Leu Gln Arg Leu Val Asn Leu Tyr Gly Leu
 705 710 715 720
 Leu His Gly Leu Gln Ala Ala Val Ala Gln Gln Asp Thr Leu Met Glu
 725 730 735
 Ala Arg Phe Pro Glu Gly Pro Glu Arg Arg Glu Lys Leu Cys Arg Ala
 740 745 750
 Asn Ser Arg Asp Gly Glu Ala Gly Arg Ala Gly Ala Ala Pro Val Ala
 755 760 765
 Pro Glu Lys Gln Ala Thr Glu Leu Ala Leu Leu Gln Arg Gln His Ala
 770 775 780
 Leu Leu Gln Glu Glu Leu Arg Arg Cys Arg Arg Leu Gly Glu Glu Arg
 785 790 795 800
 Ala Thr Glu Ala Gly Ser Leu Glu Ala Arg Leu Arg Glu Ser Glu Gln
 805 810 815
 Ala Arg Ala Leu Leu Glu Arg Glu Ala Glu Glu Ala Arg Arg Gln Leu
 820 825 830
 Ala Ala Leu Gly Gln Thr Glu Pro Leu Pro Ala Glu Ala Pro Trp Ala
 835 840 845
 Arg Arg Pro Val Asp Pro Arg Arg Arg Ser Leu Pro Ala Gly Asp Ala
 850 855 860
 Leu Tyr Leu Ser Phe Asn Pro Pro Gln Pro Ser Arg Gly Thr Asp Arg
 865 870 875 880
 Leu Asp Leu Pro Val Thr Thr Arg Ser Val His Arg Asn Phe Glu Asp
 885 890 895
 Arg Glu Arg Gln Glu Leu Gly Ser Pro Glu Glu Arg Leu Gln Asp Ser
 900 905 910

Ser Asp Pro Asp Thr Gly Ser Glu Glu Glu Gly Ser Ser Arg Leu Ser
 915 920 925

Pro Pro His Ser Pro Arg Asp Phe Thr Arg Met Gln Asp Ile Pro Glu
 930 935 940

Glu Thr Glu Ser Arg Asp Gly Glu Ala Val Ala Ser Glu Ser
 945 950 955

<210> 431
 <211> 418
 <212> PRT
 <213> Homo sapiens

<400> 431

Met Gly Asp Lys Gly Thr Arg Val Phe Lys Lys Ala Ser Pro Asn Gly
 1 5 10 15

Lys Leu Thr Val Tyr Leu Gly Lys Arg Asp Phe Val Asp His Ile Asp
 20 25 30

Leu Val Asp Pro Val Asp Gly Val Val Leu Val Asp Pro Glu Tyr Leu
 35 40 45

Lys Glu Arg Arg Val Tyr Val Thr Leu Thr Cys Ala Phe Arg Tyr Gly
 50 55 60

Arg Glu Asp Leu Asp Val Leu Gly Leu Thr Phe Arg Lys Asp Leu Phe
 65 70 75 80

Val Ala Asn Val Gln Ser Phe Pro Pro Ala Pro Glu Asp Lys Lys Pro
 85 90 95

Leu Thr Arg Leu Gln Glu Arg Leu Ile Lys Lys Leu Gly Glu His Ala
 100 105 110

Tyr Pro Phe Thr Phe Glu Ile Pro Pro Asn Leu Pro Cys Ser Val Thr
 115 120 125

Leu Gln Pro Gly Pro Glu Asp Thr Gly Lys Ala Cys Gly Val Asp Tyr
 130 135 140

Glu Val Lys Ala Phe Cys Ala Glu Asn Leu Glu Glu Lys Ile His Lys
 145 150 155 160

Arg Asn Ser Val Arg Leu Val Ile Arg Lys Val Gln Tyr Ala Pro Glu
 165 170 175

Arg Pro Gly Pro Gln Pro Thr Ala Glu Thr Thr Arg Gln Phe Leu Met
 180 185 190

Ser Asp Lys Pro Leu His Leu Glu Ala Ser Leu Asp Lys Glu Ile Tyr
195 200 205

Tyr His Gly Glu Pro Ile Ser Val Asn Val His Val Thr Asn Asn Thr
210 215 220

Asn Lys Thr Val Lys Lys Ile Lys Ile Ser Val Arg Gln Tyr Ala Asp
225 230 235 240

Ile Cys Leu Phe Asn Thr Ala Gln Tyr Lys Cys Pro Val Ala Met Glu
245 250 255

Glu Ala Asp Asp Thr Val Ala Pro Ser Ser Thr Phe Cys Lys Val Tyr
260 265 270

Thr Leu Thr Pro Phe Leu Ala Asn Asn Arg Glu Lys Arg Gly Leu Ala
275 280 285

Leu Asp Gly Lys Leu Lys His Glu Asp Thr Asn Leu Ala Ser Ser Thr
290 295 300

Leu Leu Arg Glu Gly Ala Asn Arg Glu Ile Leu Gly Ile Ile Val Ser
305 310 315 320

Tyr Lys Val Lys Val Lys Leu Val Val Ser Arg Gly Gly Leu Leu Gly
325 330 335

Asp Leu Ala Ser Ser Asp Val Ala Val Glu Leu Pro Phe Thr Leu Met
340 345 350

His Pro Lys Pro Lys Glu Glu Pro Pro His Arg Glu Val Pro Glu Asn
355 360 365

Glu Thr Pro Val Asp Thr Asn Leu Ile Glu Leu Asp Thr Asn Asp Asp
370 375 380

Asp Ile Val Phe Glu Asp Phe Ala Arg Gln Arg Leu Lys Gly Met Lys
385 390 395 400

Asp Asp Lys Glu Glu Glu Glu Asp Gly Thr Gly Ser Pro Gln Leu Asn
405 410 415

Asn Arg

<210> 432
<211> 409
<212> PRT
<213> Homo sapiens
<400> 432

Met Gly Glu Lys Pro Gly Thr Arg Val Phe Lys Lys Ser Ser Pro Asn
 1 5 10 15
 Cys Lys Leu Thr Val Tyr Leu Gly Lys Arg Asp Phe Val Asp His Leu
 20 25 30
 Asp Lys Val Asp Pro Val Asp Gly Val Val Leu Val Asp Pro Asp Tyr
 35 40 45
 Leu Lys Asp Arg Lys Val Phe Val Thr Leu Thr Cys Ala Phe Arg Tyr
 50 55 60
 Gly Arg Glu Asp Leu Asp Val Leu Gly Leu Ser Phe Arg Lys Asp Leu
 65 70 75 80
 Phe Ile Ala Thr Tyr Gln Ala Phe Pro Pro Val Pro Asn Pro Pro Arg
 85 90 95
 Pro Pro Thr Arg Leu Gln Asp Arg Leu Leu Arg Lys Leu Gly Gln His
 100 105 110
 Ala His Pro Phe Phe Phe Thr Ile Pro Gln Asn Leu Pro Cys Ser Val
 115 120 125
 Thr Leu Gln Pro Gly Pro Glu Asp Thr Gly Lys Ala Cys Gly Val Asp
 130 135 140
 Phe Glu Ile Arg Ala Phe Cys Ala Lys Ser Leu Glu Glu Lys Ser His
 145 150 155 160
 Lys Arg Asn Ser Val Arg Leu Val Ile Arg Lys Val Gln Phe Ala Pro
 165 170 175
 Glu Lys Pro Gly Pro Gln Pro Ser Ala Glu Thr Thr Arg His Phe Leu
 180 185 190
 Met Ser Asp Arg Ser Leu His Leu Glu Ala Ser Leu Asp Lys Glu Leu
 195 200 205
 Tyr Tyr His Gly Glu Pro Leu Asn Val Asn Val His Val Thr Asn Asn
 210 215 220
 Ser Thr Lys Thr Val Lys Lys Ile Lys Val Ser Val Arg Gln Tyr Ala
 225 230 235 240
 Asp Ile Cys Leu Phe Ser Thr Ala Gln Tyr Lys Cys Pro Val Ala Gln
 245 250 255
 Leu Glu Gln Asp Asp Gln Val Ser Pro Ser Ser Thr Phe Cys Lys Val
 260 265 270

Tyr Thr Ile Thr Pro Leu Leu Ser Asp Asn Arg Glu Lys Arg Gly Leu
 275 280 285

Ala Leu Asp Gly Lys Leu Lys His Glu Asp Thr Asn Leu Ala Ser Ser
 290 295 300

Thr Ile Val Lys Glu Gly Ala Asn Lys Glu Val Leu Gly Ile Leu Val
 305 310 315 320

Ser Tyr Arg Val Lys Val Lys Leu Val Val Ser Arg Gly Gly Asp Val
 325 330 335

Ser Val Glu Leu Pro Phe Val Leu Met His Pro Lys Pro His Asp His
 340 345 350

Ile Pro Leu Pro Arg Pro Gln Ser Ala Ala Pro Glu Thr Asp Val Pro
 355 360 365

Val Asp Thr Asn Leu Ile Glu Phe Asp Thr Asn Tyr Ala Thr Asp Asp
 370 375 380

Asp Ile Val Phe Glu Asp Phe Ala Arg Leu Arg Leu Lys Gly Met Lys
 385 390 395 400

Asp Asp Asp Tyr Asp Asp Gln Leu Cys
 405

<210> 433
 <211> 1129
 <212> PRT
 <213> Homo sapiens

<400> 433

Met Arg Ser Ser Ala Ser Arg Leu Ser Ser Phe Ser Ser Arg Asp Ser
 1 5 10 15

Leu Trp Asn Arg Met Pro Asp Gln Ile Ser Val Ser Glu Phe Ile Ala
 20 25 30

Glu Thr Thr Glu Asp Tyr Asn Ser Pro Thr Thr Ser Ser Phe Thr Thr
 35 40 45

Arg Leu His Asn Cys Arg Asn Thr Val Thr Leu Leu Glu Glu Ala Leu
 50 55 60

Asp Gln Asp Arg Thr Ala Leu Gln Lys Val Lys Lys Ser Val Lys Ala
 65 70 75 80

Ile Tyr Asn Ser Gly Gln Asp His Val Gln Asn Glu Glu Asn Tyr Ala
 85 90 95

Gln Val Leu Asp Lys Phe Gly Ser Asn Phe Leu Ser Arg Asp Asn Pro
 Page 481

100

105

110

Asp Leu Gly Thr Ala Phe Val Lys Phe Ser Thr Leu Thr Lys Glu Leu
 115 120 125

Ser Thr Leu Leu Lys Asn Leu Leu Gln Gly Leu Ser His Asn Val Ile
 130 135 140

Phe Thr Leu Asp Ser Leu Leu Lys Gly Asp Leu Lys Gly Val Lys Gly
 145 150 155 160

Asp Leu Lys Lys Pro Phe Asp Lys Ala Trp Lys Asp Tyr Glu Thr Lys
 165 170 175

Phe Thr Lys Ile Glu Lys Glu Lys Arg Glu His Ala Lys Gln His Gly
 180 185 190

Met Ile Arg Thr Glu Ile Thr Gly Ala Glu Ile Ala Glu Glu Met Glu
 195 200 205

Lys Glu Arg Arg Leu Phe Gln Leu Gln Met Cys Glu Tyr Leu Ile Lys
 210 215 220

Val Asn Glu Ile Lys Thr Lys Lys Gly Val Asp Leu Leu Gln Asn Leu
 225 230 235 240

Ile Lys Tyr Tyr His Ala Gln Cys Asn Phe Phe Gln Asp Gly Leu Lys
 245 250 255

Thr Ala Asp Lys Leu Lys Gln Tyr Ile Glu Lys Leu Ala Ala Asp Leu
 260 265 270

Tyr Asn Ile Lys Gln Thr Gln Asp Glu Glu Lys Lys Gln Leu Thr Ala
 275 280 285

Leu Arg Asp Leu Ile Lys Ser Ser Leu Gln Leu Asp Gln Lys Glu Asp
 290 295 300

Ser Gln Ser Arg Gln Gly Gly Tyr Ser Met His Gln Leu Gln Gly Asn
 305 310 315 320

Lys Glu Tyr Gly Ser Glu Lys Lys Gly Tyr Leu Leu Lys Lys Ser Asp
 325 330 335

Gly Ile Arg Lys Val Trp Gln Arg Arg Lys Cys Ser Val Lys Asn Gly
 340 345 350

Ile Leu Thr Ile Ser His Ala Thr Ser Asn Arg Gln Pro Ala Lys Leu
 355 360 365

Asn Leu Leu Thr Cys Gln Val Lys Pro Asn Ala Glu Asp Lys Lys Ser
 Page 482

370

375

380

Phe Asp Leu Ile Ser His Asn Arg Thr Tyr His Phe Gln Ala Glu Asp
 385 390 395 400

Glu Gln Asp Tyr Val Ala Trp Ile Ser Val Leu Thr Asn Ser Lys Glu
 405 410 415

Glu Ala Leu Thr Met Ala Phe Arg Gly Glu Gln Ser Ala Gly Glu Asn
 420 425 430

Ser Leu Glu Asp Leu Thr Lys Ala Ile Ile Glu Asp Val Gln Arg Leu
 435 440 445

Pro Gly Asn Asp Ile Cys Cys Asp Cys Gly Ser Ser Glu Pro Thr Trp
 450 455 460

Leu Ser Thr Asn Leu Gly Ile Leu Thr Cys Ile Glu Cys Ser Gly Ile
 465 470 475 480

His Arg Glu Met Gly Val His Ile Ser Arg Ile Gln Ser Leu Glu Leu
 485 490 495

Asp Lys Leu Gly Thr Ser Glu Leu Leu Leu Ala Lys Asn Val Gly Asn
 500 505 510

Asn Ser Phe Asn Asp Ile Met Glu Ala Asn Leu Pro Ser Pro Ser Pro
 515 520 525

Lys Pro Thr Pro Ser Ser Asp Met Thr Val Arg Lys Glu Tyr Ile Thr
 530 535 540

Ala Lys Tyr Val Asp His Arg Phe Ser Arg Lys Thr Cys Ser Thr Ser
 545 550 555 560

Ser Ala Lys Leu Asn Glu Leu Leu Glu Ala Ile Lys Ser Arg Asp Leu
 565 570 575

Leu Ala Leu Ile Gln Val Tyr Ala Glu Gly Val Glu Leu Met Glu Pro
 580 585 590

Leu Leu Glu Pro Gly Gln Glu Leu Gly Glu Thr Ala Leu His Leu Ala
 595 600 605

Val Arg Thr Ala Asp Gln Thr Ser Leu His Leu Val Asp Phe Leu Val
 610 615 620

Gln Asn Cys Gly Asn Leu Asp Lys Gln Thr Ala Leu Gly Asn Thr Val
 625 630 635 640

Leu His Tyr Cys Ser Met Tyr Ser Lys Pro Glu Cys Leu Lys Leu Leu
 Page 483

Leu Arg Ser Lys Pro Thr Val Asp Ile Val Asn Gln Ala Gly Glu Thr
660 665 670

Ala Leu Asp Ile Ala Lys Arg Leu Lys Ala Thr Gln Cys Glu Asp Leu
675 680 685

Leu Ser Gln Ala Lys Ser Gly Lys Phe Asn Pro His Val His Val Glu
690 695 700

Tyr Glu Trp Asn Leu Arg Gln Glu Glu Ile Asp Glu Ser Asp Asp Asp
705 710 715 720

Leu Asp Asp Lys Pro Ser Pro Ile Lys Lys Glu Arg Ser Pro Arg Pro
725 730 735

Gln Ser Phe Cys His Ser Ser Ser Ile Ser Pro Gln Asp Lys Leu Ala
740 745 750

Leu Pro Gly Phe Ser Thr Pro Arg Asp Lys Gln Arg Leu Ser Tyr Gly
755 760 765

Ala Phe Thr Asn Gln Ile Phe Val Ser Thr Ser Thr Asp Ser Pro Thr
770 775 780

Ser Pro Thr Thr Glu Ala Pro Pro Leu Pro Pro Arg Asn Ala Gly Lys
785 790 795 800

Gly Pro Thr Gly Pro Pro Ser Thr Leu Pro Leu Ser Thr Gln Thr Ser
805 810 815

Ser Gly Ser Ser Thr Leu Ser Lys Lys Arg Pro Pro Pro Pro Pro Pro
820 825 830

Gly His Lys Arg Thr Leu Ser Asp Pro Pro Ser Pro Leu Pro His Gly
835 840 845

Pro Pro Asn Lys Gly Ala Val Pro Trp Gly Asn Asp Gly Gly Pro Ser
850 855 860

Ser Ser Ser Lys Thr Thr Asn Lys Phe Glu Gly Leu Ser Gln Gln Ser
865 870 875 880

Ser Thr Ser Ser Ala Lys Thr Ala Leu Gly Pro Arg Val Leu Pro Lys
885 890 895

Leu Pro Gln Lys Val Ala Leu Arg Lys Thr Asp His Leu Ser Leu Asp
900 905 910

Lys Ala Thr Ile Pro Pro Glu Ile Phe Gln Lys Ser Ser Gln Leu Ala
Page 484

915

920

925

Glu Leu Pro Gln Lys Pro Pro Pro Gly Asp Leu Pro Pro Lys Pro Thr
 930 935 940

Glu Leu Ala Pro Lys Pro Gln Ile Gly Asp Leu Pro Pro Lys Pro Gly
 945 950 955 960

Glu Leu Pro Pro Lys Pro Gln Leu Gly Asp Leu Pro Pro Lys Pro Gln
 965 970 975

Leu Ser Asp Leu Pro Pro Lys Pro Gln Met Lys Asp Leu Pro Pro Lys
 980 985 990

Pro Gln Leu Gly Asp Leu Leu Ala Lys Ser Gln Thr Gly Asp Val Ser
 995 1000 1005

Pro Lys Ala Gln Gln Pro Ser Glu Val Thr Leu Lys Ser His Pro
 1010 1015 1020

Leu Asp Leu Ser Pro Asn Val Gln Ser Arg Asp Ala Ile Gln Lys
 1025 1030 1035

Gln Ala Ser Glu Asp Ser Asn Asp Leu Thr Pro Thr Leu Pro Glu
 1040 1045 1050

Thr Pro Val Pro Leu Pro Arg Lys Ile Asn Thr Gly Lys Asn Lys
 1055 1060 1065

Val Arg Arg Val Lys Thr Ile Tyr Asp Cys Gln Ala Asp Asn Asp
 1070 1075 1080

Asp Glu Leu Thr Phe Ile Glu Gly Glu Val Ile Ile Val Thr Gly
 1085 1090 1095

Glu Glu Asp Gln Glu Trp Trp Ile Gly His Ile Glu Gly Gln Pro
 1100 1105 1110

Glu Arg Lys Gly Val Phe Pro Val Ser Phe Val His Ile Leu Ser
 1115 1120 1125

Asp

<210> 434
 <211> 1458
 <212> PRT
 <213> Homo sapiens

<400> 434

Met Val Asn Thr Arg Lys Ser Ser Leu Arg Leu Leu Gly Ser Lys Ser
 1 5 10 15

Pro Gly Pro Gly Pro Gly Pro Gly Ala Gly Ala Glu Pro Gly Ala Thr
 20 25 30
 Gly Gly Ser Ser His Phe Ile Ser Ser Arg Thr Arg Ser Ser Lys Thr
 35 40 45
 Arg Ala Ala Ser Cys Pro Ala Ala Lys Ala Gly Gly Ser Gly Gly Ala
 50 55 60
 Gly Val Thr Leu Asp Glu Ala Arg Lys Val Glu Val Asp Gly Ser Leu
 65 70 75 80
 Ser Asp Ser His Val Ser Pro Pro Ala Lys Arg Thr Leu Lys Gln Pro
 85 90 95
 Asp Ser Val Cys Lys Asp Lys Ser Lys Ser Arg Ser Thr Gly Gln Arg
 100 105 110
 Glu Glu Trp Asn Leu Ser Thr Gly Gln Ala Arg Leu Thr Ser Gln Pro
 115 120 125
 Gly Ala Thr Leu Pro Asn Gly His Ser Gly Leu Ser Leu Arg Ser His
 130 135 140
 Pro Leu Arg Gly Glu Lys Lys Gly Asp Gly Asp Leu Ser Cys Ile Asn
 145 150 155 160
 Gly Asp Met Glu Val Arg Lys Ser Cys Arg Ser Arg Lys Asn Arg Phe
 165 170 175
 Glu Ser Val Asn Gln Ser Leu Leu Phe Asp Gln Leu Val Asn Ser Thr
 180 185 190
 Ala Glu Ala Val Leu Gln Glu Met Asp Asn Ile Asn Ile Arg Arg Asn
 195 200 205
 Arg Arg Ser Gly Glu Val Glu Arg Leu Arg Met Trp Thr Asp Thr Glu
 210 215 220
 Phe Glu Asn Met Asp Met Tyr Ser Arg Val Lys Arg Arg Arg Lys Ser
 225 230 235 240
 Leu Arg Arg Asn Ser Tyr Gly Ile Gln Asn His His Glu Val Ser Thr
 245 250 255
 Glu Gly Glu Glu Glu Glu Ser Gln Glu Glu Asp Gly Asp Ile Glu Val
 260 265 270
 Glu Glu Ala Glu Gly Glu Glu Asn Asp Arg Pro Tyr Asn Leu Arg Gln
 275 280 285

Arg Lys Thr Val Asp Arg Tyr Gln Ala Pro Pro Ile Val Pro Ala His
 290 295 300
 Gln Lys Lys Arg Glu Asn Thr Leu Phe Asp Ile His Arg Ser Pro Ala
 305 310 315 320
 Arg Arg Ser His Ile Arg Arg Lys Lys His Ala Ile His Ser Ser Asp
 325 330 335
 Thr Thr Ser Ser Asp Glu Glu Arg Phe Glu Arg Arg Lys Ser Lys Ser
 340 345 350
 Met Ala Arg Ala Arg Asn Arg Cys Leu Pro Met Asn Phe Arg Ala Glu
 355 360 365
 Asp Leu Ala Ser Gly Ile Leu Arg Glu Arg Val Lys Val Gly Ala Ser
 370 375 380
 Leu Ala Asp Val Asp Pro Met Asn Ile Asp Lys Ser Val Arg Phe Asp
 385 390 395 400
 Ser Ile Gly Gly Leu Ser His His Ile His Ala Leu Lys Glu Met Val
 405 410 415
 Val Phe Pro Leu Leu Tyr Pro Glu Ile Phe Glu Lys Phe Lys Ile Gln
 420 425 430
 Pro Pro Arg Gly Cys Leu Phe Tyr Gly Pro Pro Gly Thr Gly Lys Thr
 435 440 445
 Leu Val Ala Arg Ala Leu Ala Asn Glu Cys Ser Gln Gly Asp Lys Lys
 450 455 460
 Val Ala Phe Phe Met Arg Lys Gly Ala Asp Cys Leu Ser Lys Trp Val
 465 470 475 480
 Gly Glu Ser Glu Arg Gln Leu Arg Leu Leu Phe Asp Gln Ala Tyr Leu
 485 490 495
 Met Arg Pro Ser Ile Ile Phe Phe Asp Glu Ile Asp Gly Leu Ala Pro
 500 505 510
 Val Arg Ser Ser Arg Gln Asp Gln Ile His Ser Ser Ile Val Ser Thr
 515 520 525
 Leu Leu Ala Leu Met Asp Gly Leu Asp Asn Arg Gly Glu Ile Val Val
 530 535 540
 Ile Gly Ala Thr Asn Arg Leu Asp Ser Ile Asp Pro Ala Leu Arg Arg
 545 550 555 560

Pro Gly Arg Phe Asp Arg Glu Phe Leu Phe Asn Leu Pro Asp Gln Lys
 565 570 575
 Ala Arg Lys His Ile Leu Gln Ile His Thr Arg Asp Trp Asn Pro Lys
 580 585 590
 Leu Ser Asp Ala Phe Leu Gly Glu Leu Ala Glu Lys Cys Val Gly Tyr
 595 600 605
 Cys Gly Ala Asp Ile Lys Ala Leu Cys Thr Glu Ala Ala Leu Ile Ala
 610 615 620
 Leu Arg Arg Arg Tyr Pro Gln Ile Tyr Ala Ser Ser His Lys Leu Gln
 625 630 635 640
 Leu Asp Val Ser Ser Ile Val Leu Ser Ala Gln Asp Phe Tyr His Ala
 645 650 655
 Met Gln Asn Ile Val Pro Ala Ser Gln Arg Ala Val Met Ser Ser Gly
 660 665 670
 His Ala Leu Ser Pro Ile Ile Arg Pro Leu Leu Glu Arg Ser Phe Asn
 675 680 685
 Asn Ile Leu Ala Val Leu Gln Lys Val Phe Pro His Ala Glu Ile Ser
 690 695 700
 Gln Ser Asp Lys Lys Glu Asp Ile Glu Thr Leu Ile Leu Glu Asp Ser
 705 710 715 720
 Glu Asp Glu Asn Ala Leu Ser Ile Phe Glu Thr Asn Cys His Ser Gly
 725 730 735
 Ser Pro Lys Lys Gln Ser Ser Ser Ala Ala Ile His Lys Pro Tyr Leu
 740 745 750
 His Phe Thr Met Ser Pro Tyr His Gln Pro Thr Ser Tyr Arg Pro Arg
 755 760 765
 Leu Leu Leu Ser Gly Glu Arg Gly Ser Gly Gln Thr Ser His Leu Ala
 770 775 780
 Pro Ala Leu Leu His Thr Leu Glu Arg Phe Ser Val His Arg Leu Asp
 785 790 795 800
 Leu Pro Ala Leu Tyr Ser Val Ser Ala Lys Thr Pro Glu Glu Ser Cys
 805 810 815
 Ala Gln Ile Phe Arg Glu Ala Arg Arg Thr Val Pro Ser Ile Val Tyr
 820 825 830

Met Pro His Ile Gly Asp Trp Trp Glu Ala Val Ser Glu Thr Val Arg
 835 840 845

Ala Thr Phe Leu Thr Leu Leu Gln Asp Ile Pro Ser Phe Ser Pro Ile
 850 855 860

Phe Leu Leu Ser Thr Ser Glu Thr Met Tyr Ser Glu Leu Pro Glu Glu
 865 870 875 880

Val Lys Cys Ile Phe Arg Ile Gln Tyr Glu Glu Val Leu Tyr Ile Gln
 885 890 895

Arg Pro Ile Glu Glu Asp Arg Arg Lys Phe Phe Gln Glu Leu Ile Leu
 900 905 910

Asn Gln Ala Ser Met Ala Pro Pro Arg Arg Lys His Ala Ala Leu Cys
 915 920 925

Ala Met Glu Val Leu Pro Leu Ala Leu Pro Ser Pro Pro Arg Gln Leu
 930 935 940

Ser Glu Ser Glu Lys Ser Arg Met Glu Asp Gln Glu Glu Asn Thr Leu
 945 950 955 960

Arg Glu Leu Arg Leu Phe Leu Arg Asp Val Thr Lys Arg Leu Ala Thr
 965 970 975

Asp Lys Arg Phe Asn Ile Phe Ser Lys Pro Val Asp Ile Glu Glu Val
 980 985 990

Ser Asp Tyr Leu Glu Val Ile Lys Glu Pro Met Asp Leu Ser Thr Val
 995 1000 1005

Ile Thr Lys Ile Asp Lys His Asn Tyr Leu Thr Ala Lys Asp Phe
 1010 1015 1020

Leu Lys Asp Ile Asp Leu Ile Cys Ser Asn Ala Leu Glu Tyr Asn
 1025 1030 1035

Pro Asp Lys Asp Pro Gly Asp Lys Ile Ile Arg His Arg Ala Cys
 1040 1045 1050

Thr Leu Lys Asp Thr Ala His Ala Ile Ile Ala Ala Glu Leu Asp
 1055 1060 1065

Pro Glu Phe Asn Lys Leu Cys Glu Glu Ile Lys Glu Ala Arg Ile
 1070 1075 1080

Lys Arg Gly Leu Ser Val Thr Ser Glu Gln Ile Asn Pro His Ser
 1085 1090 1095

Thr	Gly 1100	Ala	Arg	Lys	Thr	Glu 1105	Thr	Arg	Val	Glu	Glu 1110	Ala	Phe	Arg
His	Lys 1115	Gln	Arg	Asn	Pro	Met 1120	Asp	Val	Trp	His	Asn 1125	Ser	Ala	Asn
Lys	Cys 1130	Ala	Phe	Arg	Val	Arg 1135	Arg	Lys	Ser	Arg	Arg 1140	Arg	Ser	Gln
Trp	Gly 1145	Lys	Gly	Ile	Ile	Lys 1150	Lys	Arg	Lys	Val	Asn 1155	Asn	Leu	Lys
Lys	Asp 1160	Glu	Glu	Asp	Thr	Lys 1165	Phe	Ala	Asp	Tyr	Glu 1170	Asn	His	Thr
Glu	Asp 1175	Arg	Lys	Leu	Leu	Glu 1180	Asn	Gly	Glu	Phe	Glu 1185	Val	Ser	Thr
Asp	Cys 1190	His	Glu	Glu	Asn	Gly 1195	Glu	Glu	Thr	Gly	Asp 1200	Leu	Ser	Met
Thr	Asn 1205	Asp	Glu	Ser	Ser	Cys 1210	Asp	Ile	Met	Asp	Leu 1215	Asp	Gln	Gly
Gln	Arg 1220	Leu	Asn	Asn	Gly	Ala 1225	Gly	Thr	Lys	Glu	Asn 1230	Phe	Ala	Ser
Thr	Glu 1235	Glu	Glu	Ser	Ser	Asn 1240	Glu	Ser	Leu	Leu	Val 1245	Asn	Ser	Ser
Ser	Ser 1250	Leu	Asn	Pro	Glu	Gln 1255	Thr	Ser	Arg	Lys	Glu 1260	Thr	Phe	Leu
Lys	Gly 1265	Asn	Cys	Leu	Asn	Gly 1270	Glu	Ala	Ser	Thr	Asp 1275	Ser	Phe	Glu
Gly	Ile 1280	Pro	Val	Leu	Glu	Cys 1285	Gln	Asn	Gly	Lys	Leu 1290	Glu	Val	Val
Ser	Phe 1295	Cys	Asp	Ser	Gly	Asp 1300	Lys	Cys	Ser	Ser	Glu 1305	Gln	Lys	Ile
Leu	Leu 1310	Glu	Asp	Gln	Ser	Lys 1315	Glu	Lys	Pro	Glu	Thr 1320	Ser	Thr	Glu
Asn	His 1325	Gly	Asp	Asp	Leu	Glu 1330	Lys	Leu	Glu	Ala	Leu 1335	Glu	Cys	Ser
Asn	Asn 1340	Glu	Lys	Leu	Glu	Pro 1345	Gly	Ser	Asp	Val	Glu 1350	Val	Lys	Asp

Ala Glu Leu Asp Lys Glu Gly Ala Ser Lys Val Lys Lys Tyr Arg
1355 1360 1365

Lys Leu Ile Leu Glu Gln Ala Lys Thr Thr Ser Leu Glu Leu Val
1370 1375 1380

Pro Glu Glu Pro Ser Glu Pro Val Pro Pro Leu Ile Val Asp Arg
1385 1390 1395

Glu Arg Leu Lys Lys Leu Leu Asp Leu Leu Val Asp Lys Ser Asn
1400 1405 1410

Asn Leu Ala Val Asp Gln Leu Glu Arg Leu Tyr Ser Leu Leu Ser
1415 1420 1425

Gln Cys Ile Tyr Arg His Arg Lys Asp Tyr Asp Lys Ser Gln Leu
1430 1435 1440

Val Glu Glu Met Glu Arg Thr Val His Met Phe Glu Thr Phe Leu
1445 1450 1455

<210> 435
<211> 682
<212> PRT
<213> Homo sapiens

<400> 435

Met Ala Ser Pro Asp Arg Ser Lys Arg Lys Ile Leu Lys Ala Lys Lys
1 5 10 15

Thr Met Pro Leu Ser Cys Arg Lys Gln Val Glu Met Leu Asn Lys Ser
20 25 30

Arg Asn Val Glu Ala Leu Lys Thr Ala Ile Gly Ser Asn Val Pro Ser
35 40 45

Gly Asn Gln Ser Phe Ser Pro Ser Val Ile Thr Arg Thr Thr Glu Ile
50 55 60

Thr Lys Cys Ser Pro Ser Glu Asn Gly Ala Ser Ser Leu Asp Ser Asn
65 70 75 80

Lys Asn Ser Ile Ser Glu Lys Ser Lys Val Phe Ser Gln Asn Cys Ile
85 90 95

Lys Pro Val Glu Glu Ile Val His Ser Glu Thr Lys Leu Glu Gln Val
100 105 110

Val Cys Ser Tyr Gln Lys Pro Ser Arg Thr Thr Glu Ser Pro Ser Arg
115 120 125

PCTAU2016050927-seql-000001-EN-20161013

Val Phe Thr Glu Glu Ala Lys Asp Ser Leu Asn Thr Ser Glu Asn Asp
130 135 140

Ser Glu His Gln Thr Asn Val Thr Arg Ser Leu Phe Glu His Glu Gly
145 150 155 160

Ala Cys Ser Leu Lys Ser Ser Cys Cys Pro Pro Ser Val Leu Ser Gly
165 170 175

Val Val Gln Met Pro Glu Ser Thr Val Thr Ser Thr Val Gly Asp Lys
180 185 190

Lys Thr Asp Gln Met Val Phe His Leu Glu Thr Asn Ser Asn Ser Glu
195 200 205

Ser His Asp Lys Arg Gln Ser Asp Asn Ile Leu Cys Ser Glu Asp Ser
210 215 220

Gly Phe Val Pro Val Glu Lys Thr Pro Asn Leu Val Asn Ser Val Thr
225 230 235 240

Ser Asn Asn Cys Ala Asp Asp Ile Leu Lys Thr Asp Glu Cys Ser Arg
245 250 255

Thr Ser Ile Ser Asn Cys Glu Ser Ala Asp Ser Thr Trp Gln Ser Ser
260 265 270

Leu Asp Thr Asn Asn Asn Ser His Tyr Gln Lys Lys Arg Met Phe Ser
275 280 285

Glu Asn Glu Glu Asn Val Lys Arg Met Lys Thr Ser Glu Gln Ile Asn
290 295 300

Glu Asn Ile Cys Val Ser Leu Glu Arg Gln Thr Ala Phe Leu Glu Gln
305 310 315 320

Val Arg His Leu Ile Gln Gln Glu Ile Tyr Ser Ile Asn Tyr Glu Leu
325 330 335

Phe Asp Lys Lys Leu Lys Glu Leu Asn Gln Arg Ile Gly Lys Thr Glu
340 345 350

Cys Arg Asn Lys His Glu Gly Ile Ala Asp Lys Leu Leu Ala Lys Ile
355 360 365

Ala Lys Leu Gln Arg Arg Ile Lys Thr Val Leu Leu Phe Gln Arg Asn
370 375 380

Cys Leu Lys Pro Asn Met Leu Ser Ser Asn Gly Ala Ser Lys Val Ala
385 390 395 400

Asn Ser Glu Ala Met Ile Leu Asp Lys Asn Leu Glu Ser Val Asn Ser
 405 410 415
 Pro Ile Glu Lys Ser Ser Val Asn Tyr Glu Pro Ser Asn Pro Ser Glu
 420 425 430
 Lys Gly Ser Lys Lys Ile Asn Leu Ser Ser Asp Gln Asn Lys Ser Val
 435 440 445
 Ser Glu Ser Asn Asn Asp Asp Val Met Leu Ile Ser Val Glu Ser Pro
 450 455 460
 Asn Leu Thr Thr Pro Ile Thr Ser Asn Pro Thr Asp Thr Arg Lys Ile
 465 470 475 480
 Thr Ser Gly Asn Ser Ser Asn Ser Pro Asn Ala Glu Val Met Ala Val
 485 490 495
 Gln Lys Lys Leu Asp Ser Ile Ile Asp Leu Thr Lys Glu Gly Leu Ser
 500 505 510
 Asn Cys Asn Thr Glu Ser Pro Val Ser Pro Leu Glu Ser His Ser Lys
 515 520 525
 Ala Ala Ser Asn Ser Lys Glu Thr Thr Pro Leu Ala Gln Asn Ala Val
 530 535 540
 Gln Val Pro Glu Ser Phe Glu His Leu Pro Pro Leu Pro Glu Pro Pro
 545 550 555 560
 Ala Pro Leu Pro Glu Leu Val Asp Lys Thr Arg Asp Thr Leu Pro Pro
 565 570 575
 Gln Lys Pro Glu Leu Lys Val Lys Arg Val Phe Arg Pro Asn Gly Ile
 580 585 590
 Ala Leu Thr Trp Asn Ile Thr Lys Ile Asn Pro Lys Cys Ala Pro Val
 595 600 605
 Glu Ser Tyr His Leu Phe Leu Cys His Glu Asn Ser Asn Asn Lys Leu
 610 615 620
 Ile Trp Lys Lys Ile Gly Glu Ile Lys Ala Leu Pro Leu Pro Met Ala
 625 630 635 640
 Cys Thr Leu Ser Gln Phe Leu Ala Ser Asn Arg Tyr Tyr Phe Thr Val
 645 650 655
 Gln Ser Lys Asp Ile Phe Gly Arg Tyr Gly Pro Phe Cys Asp Ile Lys
 660 665 670

Ser Ile Pro Gly Phe Ser Glu Asn Leu Thr
 675 680

<210> 436
 <211> 3056
 <212> PRT
 <213> Homo sapiens

<400> 436

Met Ser Leu Val Leu Asn Asp Leu Leu Ile Cys Cys Arg Gln Leu Glu
 1 5 10 15

His Asp Arg Ala Thr Glu Arg Lys Lys Glu Val Glu Lys Phe Lys Arg
 20 25 30

Leu Ile Arg Asp Pro Glu Thr Ile Lys His Leu Asp Arg His Ser Asp
 35 40 45

Ser Lys Gln Gly Lys Tyr Leu Asn Trp Asp Ala Val Phe Arg Phe Leu
 50 55 60

Gln Lys Tyr Ile Gln Lys Glu Thr Glu Cys Leu Arg Ile Ala Lys Pro
 65 70 75 80

Asn Val Ser Ala Ser Thr Gln Ala Ser Arg Gln Lys Lys Met Gln Glu
 85 90 95

Ile Ser Ser Leu Val Lys Tyr Phe Ile Lys Cys Ala Asn Arg Arg Ala
 100 105 110

Pro Arg Leu Lys Cys Gln Glu Leu Leu Asn Tyr Ile Met Asp Thr Val
 115 120 125

Lys Asp Ser Ser Asn Gly Ala Ile Tyr Gly Ala Asp Cys Ser Asn Ile
 130 135 140

Leu Leu Lys Asp Ile Leu Ser Val Arg Lys Tyr Trp Cys Glu Ile Ser
 145 150 155 160

Gln Gln Gln Trp Leu Glu Leu Phe Ser Val Tyr Phe Arg Leu Tyr Leu
 165 170 175

Lys Pro Ser Gln Asp Val His Arg Val Leu Val Ala Arg Ile Ile His
 180 185 190

Ala Val Thr Lys Gly Cys Cys Ser Gln Thr Asp Gly Leu Asn Ser Lys
 195 200 205

Phe Leu Asp Phe Phe Ser Lys Ala Ile Gln Cys Ala Arg Gln Glu Lys
 210 215 220

Ser Ser Ser Gly Leu Asn His Ile Leu Ala Ala Leu Thr Ile Phe Leu
 225 230 235 240
 Lys Thr Leu Ala Val Asn Phe Arg Ile Arg Val Cys Glu Leu Gly Asp
 245 250 255
 Glu Ile Leu Pro Thr Leu Leu Tyr Ile Trp Thr Gln His Arg Leu Asn
 260 265 270
 Asp Ser Leu Lys Glu Val Ile Ile Glu Leu Phe Gln Leu Gln Ile Tyr
 275 280 285
 Ile His His Pro Lys Gly Ala Lys Thr Gln Glu Lys Gly Ala Tyr Glu
 290 295 300
 Ser Thr Lys Trp Arg Ser Ile Leu Tyr Asn Leu Tyr Asp Leu Leu Val
 305 310 315 320
 Asn Glu Ile Ser His Ile Gly Ser Arg Gly Lys Tyr Ser Ser Gly Phe
 325 330 335
 Arg Asn Ile Ala Val Lys Glu Asn Leu Ile Glu Leu Met Ala Asp Ile
 340 345 350
 Cys His Gln Val Phe Asn Glu Asp Thr Arg Ser Leu Glu Ile Ser Gln
 355 360 365
 Ser Tyr Thr Thr Thr Gln Arg Glu Ser Ser Asp Tyr Ser Val Pro Cys
 370 375 380
 Lys Arg Lys Lys Ile Glu Leu Gly Trp Glu Val Ile Lys Asp His Leu
 385 390 395 400
 Gln Lys Ser Gln Asn Asp Phe Asp Leu Val Pro Trp Leu Gln Ile Ala
 405 410 415
 Thr Gln Leu Ile Ser Lys Tyr Pro Ala Ser Leu Pro Asn Cys Glu Leu
 420 425 430
 Ser Pro Leu Leu Met Ile Leu Ser Gln Leu Leu Pro Gln Gln Arg His
 435 440 445
 Gly Glu Arg Thr Pro Tyr Val Leu Arg Cys Leu Thr Glu Val Ala Leu
 450 455 460
 Cys Gln Asp Lys Arg Ser Asn Leu Glu Ser Ser Gln Lys Ser Asp Leu
 465 470 475 480
 Leu Lys Leu Trp Asn Lys Ile Trp Cys Ile Thr Phe Arg Gly Ile Ser
 485 490 495

Ser Glu Gln Ile Gln Ala Glu Asn Phe Gly Leu Leu Gly Ala Ile Ile
 500 505 510
 Gln Gly Ser Leu Val Glu Val Asp Arg Glu Phe Trp Lys Leu Phe Thr
 515 520 525
 Gly Ser Ala Cys Arg Pro Ser Cys Pro Ala Val Cys Cys Leu Thr Leu
 530 535 540
 Ala Leu Thr Thr Ser Ile Val Pro Gly Thr Val Lys Met Gly Ile Glu
 545 550 555 560
 Gln Asn Met Cys Glu Val Asn Arg Ser Phe Ser Leu Lys Glu Ser Ile
 565 570 575
 Met Lys Trp Leu Leu Phe Tyr Gln Leu Glu Gly Asp Leu Glu Asn Ser
 580 585 590
 Thr Glu Val Pro Pro Ile Leu His Ser Asn Phe Pro His Leu Val Leu
 595 600 605
 Glu Lys Ile Leu Val Ser Leu Thr Met Lys Asn Cys Lys Ala Ala Met
 610 615 620
 Asn Phe Phe Gln Ser Val Pro Glu Cys Glu His His Gln Lys Asp Lys
 625 630 635 640
 Glu Glu Leu Ser Phe Ser Glu Val Glu Glu Leu Phe Leu Gln Thr Thr
 645 650 655
 Phe Asp Lys Met Asp Phe Leu Thr Ile Val Arg Glu Cys Gly Ile Glu
 660 665 670
 Lys His Gln Ser Ser Ile Gly Phe Ser Val His Gln Asn Leu Lys Glu
 675 680 685
 Ser Leu Asp Arg Cys Leu Leu Gly Leu Ser Glu Gln Leu Leu Asn Asn
 690 695 700
 Tyr Ser Ser Glu Ile Thr Asn Ser Glu Thr Leu Val Arg Cys Ser Arg
 705 710 715 720
 Leu Leu Val Gly Val Leu Gly Cys Tyr Cys Tyr Met Gly Val Ile Ala
 725 730 735
 Glu Glu Glu Ala Tyr Lys Ser Glu Leu Phe Gln Lys Ala Lys Ser Leu
 740 745 750
 Met Gln Cys Ala Gly Glu Ser Ile Thr Leu Phe Lys Asn Lys Thr Asn
 755 760 765

Glu Glu Phe Arg Ile Gly Ser Leu Arg Asn Met Met Gln Leu Cys Thr
 770 775 780
 Arg Cys Leu Ser Asn Cys Thr Lys Lys Ser Pro Asn Lys Ile Ala Ser
 785 790 795 800
 Gly Phe Phe Leu Arg Leu Leu Thr Ser Lys Leu Met Asn Asp Ile Ala
 805 810 815
 Asp Ile Cys Lys Ser Leu Ala Ser Phe Ile Lys Lys Pro Phe Asp Arg
 820 825 830
 Gly Glu Val Glu Ser Met Glu Asp Asp Thr Asn Gly Asn Leu Met Glu
 835 840 845
 Val Glu Asp Gln Ser Ser Met Asn Leu Phe Asn Asp Tyr Pro Asp Ser
 850 855 860
 Ser Val Ser Asp Ala Asn Glu Pro Gly Glu Ser Gln Ser Thr Ile Gly
 865 870 875 880
 Ala Ile Asn Pro Leu Ala Glu Glu Tyr Leu Ser Lys Gln Asp Leu Leu
 885 890 895
 Phe Leu Asp Met Leu Lys Phe Leu Cys Leu Cys Val Thr Thr Ala Gln
 900 905 910
 Thr Asn Thr Val Ser Phe Arg Ala Ala Asp Ile Arg Arg Lys Leu Leu
 915 920 925
 Met Leu Ile Asp Ser Ser Thr Leu Glu Pro Thr Lys Ser Leu His Leu
 930 935 940
 His Met Tyr Leu Met Leu Leu Lys Glu Leu Pro Gly Glu Glu Tyr Pro
 945 950 955 960
 Leu Pro Met Glu Asp Val Leu Glu Leu Leu Lys Pro Leu Ser Asn Val
 965 970 975
 Cys Ser Leu Tyr Arg Arg Asp Gln Asp Val Cys Lys Thr Ile Leu Asn
 980 985 990
 His Val Leu His Val Val Lys Asn Leu Gly Gln Ser Asn Met Asp Ser
 995 1000 1005
 Glu Asn Thr Arg Asp Ala Gln Gly Gln Phe Leu Thr Val Ile Gly
 1010 1015 1020
 Ala Phe Trp His Leu Thr Lys Glu Arg Lys Tyr Ile Phe Ser Val
 1025 1030 1035

Arg	Met	Ala	Leu	Val	Asn	Cys	Leu	Lys	Thr	Leu	Leu	Glu	Ala	Asp
	1040					1045					1050			
Pro	Tyr	Ser	Lys	Trp	Ala	Ile	Leu	Asn	Val	Met	Gly	Lys	Asp	Phe
	1055					1060					1065			
Pro	Val	Asn	Glu	Val	Phe	Thr	Gln	Phe	Leu	Ala	Asp	Asn	His	His
	1070					1075					1080			
Gln	Val	Arg	Met	Leu	Ala	Ala	Glu	Ser	Ile	Asn	Arg	Leu	Phe	Gln
	1085					1090					1095			
Asp	Thr	Lys	Gly	Asp	Ser	Ser	Arg	Leu	Leu	Lys	Ala	Leu	Pro	Leu
	1100					1105					1110			
Lys	Leu	Gln	Gln	Thr	Ala	Phe	Glu	Asn	Ala	Tyr	Leu	Lys	Ala	Gln
	1115					1120					1125			
Glu	Gly	Met	Arg	Glu	Met	Ser	His	Ser	Ala	Glu	Asn	Pro	Glu	Thr
	1130					1135					1140			
Leu	Asp	Glu	Ile	Tyr	Asn	Arg	Lys	Ser	Val	Leu	Leu	Thr	Leu	Ile
	1145					1150					1155			
Ala	Val	Val	Leu	Ser	Cys	Ser	Pro	Ile	Cys	Glu	Lys	Gln	Ala	Leu
	1160					1165					1170			
Phe	Ala	Leu	Cys	Lys	Ser	Val	Lys	Glu	Asn	Gly	Leu	Glu	Pro	His
	1175					1180					1185			
Leu	Val	Lys	Lys	Val	Leu	Glu	Lys	Val	Ser	Glu	Thr	Phe	Gly	Tyr
	1190					1195					1200			
Arg	Arg	Leu	Glu	Asp	Phe	Met	Ala	Ser	His	Leu	Asp	Tyr	Leu	Val
	1205					1210					1215			
Leu	Glu	Trp	Leu	Asn	Leu	Gln	Asp	Thr	Glu	Tyr	Asn	Leu	Ser	Ser
	1220					1225					1230			
Phe	Pro	Phe	Ile	Leu	Leu	Asn	Tyr	Thr	Asn	Ile	Glu	Asp	Phe	Tyr
	1235					1240					1245			
Arg	Ser	Cys	Tyr	Lys	Val	Leu	Ile	Pro	His	Leu	Val	Ile	Arg	Ser
	1250					1255					1260			
His	Phe	Asp	Glu	Val	Lys	Ser	Ile	Ala	Asn	Gln	Ile	Gln	Glu	Asp
	1265					1270					1275			
Trp	Lys	Ser	Leu	Leu	Thr	Asp	Cys	Phe	Pro	Lys	Ile	Leu	Val	Asn
	1280					1285					1290			

Ile	Leu	Pro	Tyr	Phe	Ala	Tyr	Glu	Gly	Thr	Arg	Asp	Ser	Gly	Met
	1295					1300					1305			
Ala	Gln	Gln	Arg	Glu	Thr	Ala	Thr	Lys	Val	Tyr	Asp	Met	Leu	Lys
	1310					1315					1320			
Ser	Glu	Asn	Leu	Leu	Gly	Lys	Gln	Ile	Asp	His	Leu	Phe	Ile	Ser
	1325					1330					1335			
Asn	Leu	Pro	Glu	Ile	Val	Val	Glu	Leu	Leu	Met	Thr	Leu	His	Glu
	1340					1345					1350			
Pro	Ala	Asn	Ser	Ser	Ala	Ser	Gln	Ser	Thr	Asp	Leu	Cys	Asp	Phe
	1355					1360					1365			
Ser	Gly	Asp	Leu	Asp	Pro	Ala	Pro	Asn	Pro	Pro	His	Phe	Pro	Ser
	1370					1375					1380			
His	Val	Ile	Lys	Ala	Thr	Phe	Ala	Tyr	Ile	Ser	Asn	Cys	His	Lys
	1385					1390					1395			
Thr	Lys	Leu	Lys	Ser	Ile	Leu	Glu	Ile	Leu	Ser	Lys	Ser	Pro	Asp
	1400					1405					1410			
Ser	Tyr	Gln	Lys	Ile	Leu	Leu	Ala	Ile	Cys	Glu	Gln	Ala	Ala	Glu
	1415					1420					1425			
Thr	Asn	Asn	Val	Tyr	Lys	Lys	His	Arg	Ile	Leu	Lys	Ile	Tyr	His
	1430					1435					1440			
Leu	Phe	Val	Ser	Leu	Leu	Leu	Lys	Asp	Ile	Lys	Ser	Gly	Leu	Gly
	1445					1450					1455			
Gly	Ala	Trp	Ala	Phe	Val	Leu	Arg	Asp	Val	Ile	Tyr	Thr	Leu	Ile
	1460					1465					1470			
His	Tyr	Ile	Asn	Gln	Arg	Pro	Ser	Cys	Ile	Met	Asp	Val	Ser	Leu
	1475					1480					1485			
Arg	Ser	Phe	Ser	Leu	Cys	Cys	Asp	Leu	Leu	Ser	Gln	Val	Cys	Gln
	1490					1495					1500			
Thr	Ala	Val	Thr	Tyr	Cys	Lys	Asp	Ala	Leu	Glu	Asn	His	Leu	His
	1505					1510					1515			
Val	Ile	Val	Gly	Thr	Leu	Ile	Pro	Leu	Val	Tyr	Glu	Gln	Val	Glu
	1520					1525					1530			
Val	Gln	Lys	Gln	Val	Leu	Asp	Leu	Leu	Lys	Tyr	Leu	Val	Ile	Asp
	1535					1540					1545			

Asn Lys Asp Asn Glu Asn Leu Tyr Ile Thr Ile Lys Leu Leu Asp
 1550 1555 1560
 Pro Phe Pro Asp His Val Val Phe Lys Asp Leu Arg Ile Thr Gln
 1565 1570 1575
 Gln Lys Ile Lys Tyr Ser Arg Gly Pro Phe Ser Leu Leu Glu Glu
 1580 1585 1590
 Ile Asn His Phe Leu Ser Val Ser Val Tyr Asp Ala Leu Pro Leu
 1595 1600 1605
 Thr Arg Leu Glu Gly Leu Lys Asp Leu Arg Arg Gln Leu Glu Leu
 1610 1615 1620
 His Lys Asp Gln Met Val Asp Ile Met Arg Ala Ser Gln Asp Asn
 1625 1630 1635
 Pro Gln Asp Gly Ile Met Val Lys Leu Val Val Asn Leu Leu Gln
 1640 1645 1650
 Leu Ser Lys Met Ala Ile Asn His Thr Gly Glu Lys Glu Val Leu
 1655 1660 1665
 Glu Ala Val Gly Ser Cys Leu Gly Glu Val Gly Pro Ile Asp Phe
 1670 1675 1680
 Ser Thr Ile Ala Ile Gln His Ser Lys Asp Ala Ser Tyr Thr Lys
 1685 1690 1695
 Ala Leu Lys Leu Phe Glu Asp Lys Glu Leu Gln Trp Thr Phe Ile
 1700 1705 1710
 Met Leu Thr Tyr Leu Asn Asn Thr Leu Val Glu Asp Cys Val Lys
 1715 1720 1725
 Val Arg Ser Ala Ala Val Thr Cys Leu Lys Asn Ile Leu Ala Thr
 1730 1735 1740
 Lys Thr Gly His Ser Phe Trp Glu Ile Tyr Lys Met Thr Thr Asp
 1745 1750 1755
 Pro Met Leu Ala Tyr Leu Gln Pro Phe Arg Thr Ser Arg Lys Lys
 1760 1765 1770
 Phe Leu Glu Val Pro Arg Phe Asp Lys Glu Asn Pro Phe Glu Gly
 1775 1780 1785
 Leu Asp Asp Ile Asn Leu Trp Ile Pro Leu Ser Glu Asn His Asp
 1790 1795 1800

Ile	Trp	Ile	Lys	Thr	Leu	Thr	Cys	Ala	Phe	Leu	Asp	Ser	Gly	Gly
	1805					1810					1815			
Thr	Lys	Cys	Glu	Ile	Leu	Gln	Leu	Leu	Lys	Pro	Met	Cys	Glu	Val
	1820					1825					1830			
Lys	Thr	Asp	Phe	Cys	Gln	Thr	Val	Leu	Pro	Tyr	Leu	Ile	His	Asp
	1835					1840					1845			
Ile	Leu	Leu	Gln	Asp	Thr	Asn	Glu	Ser	Trp	Arg	Asn	Leu	Leu	Ser
	1850					1855					1860			
Thr	His	Val	Gln	Gly	Phe	Phe	Thr	Ser	Cys	Leu	Arg	His	Phe	Ser
	1865					1870					1875			
Gln	Thr	Ser	Arg	Ser	Thr	Thr	Pro	Ala	Asn	Leu	Asp	Ser	Glu	Ser
	1880					1885					1890			
Glu	His	Phe	Phe	Arg	Cys	Cys	Leu	Asp	Lys	Lys	Ser	Gln	Arg	Thr
	1895					1900					1905			
Met	Leu	Ala	Val	Val	Asp	Tyr	Met	Arg	Arg	Gln	Lys	Arg	Pro	Ser
	1910					1915					1920			
Ser	Gly	Thr	Ile	Phe	Asn	Asp	Ala	Phe	Trp	Leu	Asp	Leu	Asn	Tyr
	1925					1930					1935			
Leu	Glu	Val	Ala	Lys	Val	Ala	Gln	Ser	Cys	Ala	Ala	His	Phe	Thr
	1940					1945					1950			
Ala	Leu	Leu	Tyr	Ala	Glu	Ile	Tyr	Ala	Asp	Lys	Lys	Ser	Met	Asp
	1955					1960					1965			
Asp	Gln	Glu	Lys	Arg	Ser	Leu	Ala	Phe	Glu	Glu	Gly	Ser	Gln	Ser
	1970					1975					1980			
Thr	Thr	Ile	Ser	Ser	Leu	Ser	Glu	Lys	Ser	Lys	Glu	Glu	Thr	Gly
	1985					1990					1995			
Ile	Ser	Leu	Gln	Asp	Leu	Leu	Leu	Glu	Ile	Tyr	Arg	Ser	Ile	Gly
	2000					2005					2010			
Glu	Pro	Asp	Ser	Leu	Tyr	Gly	Cys	Gly	Gly	Gly	Lys	Met	Leu	Gln
	2015					2020					2025			
Pro	Ile	Thr	Arg	Leu	Arg	Thr	Tyr	Glu	His	Glu	Ala	Met	Trp	Gly
	2030					2035					2040			
Lys	Ala	Leu	Val	Thr	Tyr	Asp	Leu	Glu	Thr	Ala	Ile	Pro	Ser	Ser
	2045					2050					2055			

Thr	Arg 2060	Gln	Ala	Gly	Ile	Ile 2065	Gln	Ala	Leu	Gln	Asn 2070	Leu	Gly	Leu
Cys	His 2075	Ile	Leu	Ser	Val	Tyr 2080	Leu	Lys	Gly	Leu	Asp 2085	Tyr	Glu	Asn
Lys	Asp 2090	Trp	Cys	Pro	Glu	Leu 2095	Glu	Glu	Leu	His	Tyr 2100	Gln	Ala	Ala
Trp	Arg 2105	Asn	Met	Gln	Trp	Asp 2110	His	Cys	Thr	Ser	Val 2115	Ser	Lys	Glu
Val	Glu 2120	Gly	Thr	Ser	Tyr	His 2125	Glu	Ser	Leu	Tyr	Asn 2130	Ala	Leu	Gln
Ser	Leu 2135	Arg	Asp	Arg	Glu	Phe 2140	Ser	Thr	Phe	Tyr	Glu 2145	Ser	Leu	Lys
Tyr	Ala 2150	Arg	Val	Lys	Glu	Val 2155	Glu	Glu	Met	Cys	Lys 2160	Arg	Ser	Leu
Glu	Ser 2165	Val	Tyr	Ser	Leu	Tyr 2170	Pro	Thr	Leu	Ser	Arg 2175	Leu	Gln	Ala
Ile	Gly 2180	Glu	Leu	Glu	Ser	Ile 2185	Gly	Glu	Leu	Phe	Ser 2190	Arg	Ser	Val
Thr	His 2195	Arg	Gln	Leu	Ser	Glu 2200	Val	Tyr	Ile	Lys	Trp 2205	Gln	Lys	His
Ser	Gln 2210	Leu	Leu	Lys	Asp	Ser 2215	Asp	Phe	Ser	Phe	Gln 2220	Glu	Pro	Ile
Met	Ala 2225	Leu	Arg	Thr	Val	Ile 2230	Leu	Glu	Ile	Leu	Met 2235	Glu	Lys	Glu
Met	Asp 2240	Asn	Ser	Gln	Arg	Glu 2245	Cys	Ile	Lys	Asp	Ile 2250	Leu	Thr	Lys
His	Leu 2255	Val	Glu	Leu	Ser	Ile 2260	Leu	Ala	Arg	Thr	Phe 2265	Lys	Asn	Thr
Gln	Leu 2270	Pro	Glu	Arg	Ala	Ile 2275	Phe	Gln	Ile	Lys	Gln 2280	Tyr	Asn	Ser
Val	Ser 2285	Cys	Gly	Val	Ser	Glu 2290	Trp	Gln	Leu	Glu	Glu 2295	Ala	Gln	Val
Phe	Trp 2300	Ala	Lys	Lys	Glu	Gln 2305	Ser	Leu	Ala	Leu	Ser 2310	Ile	Leu	Lys

Gln	Met	Ile	Lys	Lys	Leu	Asp	Ala	Ser	Cys	Ala	Ala	Asn	Asn	Pro
	2315					2320					2325			
Ser	Leu	Lys	Leu	Thr	Tyr	Thr	Glu	Cys	Leu	Arg	Val	Cys	Gly	Asn
	2330					2335					2340			
Trp	Leu	Ala	Glu	Thr	Cys	Leu	Glu	Asn	Pro	Ala	Val	Ile	Met	Gln
	2345					2350					2355			
Thr	Tyr	Leu	Glu	Lys	Ala	Val	Glu	Val	Ala	Gly	Asn	Tyr	Asp	Gly
	2360					2365					2370			
Glu	Ser	Ser	Asp	Glu	Leu	Arg	Asn	Gly	Lys	Met	Lys	Ala	Phe	Leu
	2375					2380					2385			
Ser	Leu	Ala	Arg	Phe	Ser	Asp	Thr	Gln	Tyr	Gln	Arg	Ile	Glu	Asn
	2390					2395					2400			
Tyr	Met	Lys	Ser	Ser	Glu	Phe	Glu	Asn	Lys	Gln	Ala	Leu	Leu	Lys
	2405					2410					2415			
Arg	Ala	Lys	Glu	Glu	Val	Gly	Leu	Leu	Arg	Glu	His	Lys	Ile	Gln
	2420					2425					2430			
Thr	Asn	Arg	Tyr	Thr	Val	Lys	Val	Gln	Arg	Glu	Leu	Glu	Leu	Asp
	2435					2440					2445			
Glu	Leu	Ala	Leu	Arg	Ala	Leu	Lys	Glu	Asp	Arg	Lys	Arg	Phe	Leu
	2450					2455					2460			
Cys	Lys	Ala	Val	Glu	Asn	Tyr	Ile	Asn	Cys	Leu	Leu	Ser	Gly	Glu
	2465					2470					2475			
Glu	His	Asp	Met	Trp	Val	Phe	Arg	Leu	Cys	Ser	Leu	Trp	Leu	Glu
	2480					2485					2490			
Asn	Ser	Gly	Val	Ser	Glu	Val	Asn	Gly	Met	Met	Lys	Arg	Asp	Gly
	2495					2500					2505			
Met	Lys	Ile	Pro	Thr	Tyr	Lys	Phe	Leu	Pro	Leu	Met	Tyr	Gln	Leu
	2510					2515					2520			
Ala	Ala	Arg	Met	Gly	Thr	Lys	Met	Met	Gly	Gly	Leu	Gly	Phe	His
	2525					2530					2535			
Glu	Val	Leu	Asn	Asn	Leu	Ile	Ser	Arg	Ile	Ser	Met	Asp	His	Pro
	2540					2545					2550			
His	His	Thr	Leu	Phe	Ile	Ile	Leu	Ala	Leu	Ala	Asn	Ala	Asn	Arg
	2555					2560					2565			

Asp	Glu	Phe	Leu	Thr	Lys	Pro	Glu	Val	Ala	Arg	Arg	Ser	Arg	Ile
2570						2575					2580			
Thr	Lys	Asn	Val	Pro	Lys	Gln	Ser	Ser	Gln	Leu	Asp	Glu	Asp	Arg
2585						2590					2595			
Thr	Glu	Ala	Ala	Asn	Arg	Ile	Ile	Cys	Thr	Ile	Arg	Ser	Arg	Arg
2600						2605					2610			
Pro	Gln	Met	Val	Arg	Ser	Val	Glu	Ala	Leu	Cys	Asp	Ala	Tyr	Ile
2615						2620					2625			
Ile	Leu	Ala	Asn	Leu	Asp	Ala	Thr	Gln	Trp	Lys	Thr	Gln	Arg	Lys
2630						2635					2640			
Gly	Ile	Asn	Ile	Pro	Ala	Asp	Gln	Pro	Ile	Thr	Lys	Leu	Lys	Asn
2645						2650					2655			
Leu	Glu	Asp	Val	Val	Val	Pro	Thr	Met	Glu	Ile	Lys	Val	Asp	His
2660						2665					2670			
Thr	Gly	Glu	Tyr	Gly	Asn	Leu	Val	Thr	Ile	Gln	Ser	Phe	Lys	Ala
2675						2680					2685			
Glu	Phe	Arg	Leu	Ala	Gly	Gly	Val	Asn	Leu	Pro	Lys	Ile	Ile	Asp
2690						2695					2700			
Cys	Val	Gly	Ser	Asp	Gly	Lys	Glu	Arg	Arg	Gln	Leu	Val	Lys	Gly
2705						2710					2715			
Arg	Asp	Asp	Leu	Arg	Gln	Asp	Ala	Val	Met	Gln	Gln	Val	Phe	Gln
2720						2725					2730			
Met	Cys	Asn	Thr	Leu	Leu	Gln	Arg	Asn	Thr	Glu	Thr	Arg	Lys	Arg
2735						2740					2745			
Lys	Leu	Thr	Ile	Cys	Thr	Tyr	Lys	Val	Val	Pro	Leu	Ser	Gln	Arg
2750						2755					2760			
Ser	Gly	Val	Leu	Glu	Trp	Cys	Thr	Gly	Thr	Val	Pro	Ile	Gly	Glu
2765						2770					2775			
Phe	Leu	Val	Asn	Asn	Glu	Asp	Gly	Ala	His	Lys	Arg	Tyr	Arg	Pro
2780						2785					2790			
Asn	Asp	Phe	Ser	Ala	Phe	Gln	Cys	Gln	Lys	Lys	Met	Met	Glu	Val
2795						2800					2805			
Gln	Lys	Lys	Ser	Phe	Glu	Glu	Lys	Tyr	Glu	Val	Phe	Met	Asp	Val
2810						2815					2820			

Cys Gln Asn Phe Gln Pro Val Phe Arg Tyr Phe Cys Met Glu Lys
 2825 2830 2835
 Phe Leu Asp Pro Ala Ile Trp Phe Glu Lys Arg Leu Ala Tyr Thr
 2840 2845 2850
 Arg Ser Val Ala Thr Ser Ser Ile Val Gly Tyr Ile Leu Gly Leu
 2855 2860 2865
 Gly Asp Arg His Val Gln Asn Ile Leu Ile Asn Glu Gln Ser Ala
 2870 2875 2880
 Glu Leu Val His Ile Asp Leu Gly Val Ala Phe Glu Gln Gly Lys
 2885 2890 2895
 Ile Leu Pro Thr Pro Glu Thr Val Pro Phe Arg Leu Thr Arg Asp
 2900 2905 2910
 Ile Val Asp Gly Met Gly Ile Thr Gly Val Glu Gly Val Phe Arg
 2915 2920 2925
 Arg Cys Cys Glu Lys Thr Met Glu Val Met Arg Asn Ser Gln Glu
 2930 2935 2940
 Thr Leu Leu Thr Ile Val Glu Val Leu Leu Tyr Asp Pro Leu Phe
 2945 2950 2955
 Asp Trp Thr Met Asn Pro Leu Lys Ala Leu Tyr Leu Gln Gln Arg
 2960 2965 2970
 Pro Glu Asp Glu Thr Glu Leu His Pro Thr Leu Asn Ala Asp Asp
 2975 2980 2985
 Gln Glu Cys Lys Arg Asn Leu Ser Asp Ile Asp Gln Ser Phe Asn
 2990 2995 3000
 Lys Val Ala Glu Arg Val Leu Met Arg Leu Gln Glu Lys Leu Lys
 3005 3010 3015
 Gly Val Glu Glu Gly Thr Val Leu Ser Val Gly Gly Gln Val Asn
 3020 3025 3030
 Leu Leu Ile Gln Gln Ala Ile Asp Pro Lys Asn Leu Ser Arg Leu
 3035 3040 3045
 Phe Pro Gly Trp Lys Ala Trp Val
 3050 3055

<210> 437
 <211> 511
 <212> PRT
 <213> Homo sapiens

<400> 437

Met Ala Leu Arg Ala Met Arg Gly Ile Val Asn Gly Ala Ala Pro Glu
 1 5 10 15

Leu Pro Val Pro Thr Gly Gly Pro Ala Val Gly Ala Arg Glu Gln Ala
 20 25 30

Leu Ala Val Ser Arg Asn Tyr Leu Ser Gln Pro Arg Leu Thr Tyr Lys
 35 40 45

Thr Val Ser Gly Val Asn Gly Pro Leu Val Ile Leu Asp His Val Lys
 50 55 60

Phe Pro Arg Tyr Ala Glu Ile Val His Leu Thr Leu Pro Asp Gly Thr
 65 70 75 80

Lys Arg Ser Gly Gln Val Leu Glu Val Ser Gly Ser Lys Ala Val Val
 85 90 95

Gln Val Phe Glu Gly Thr Ser Gly Ile Asp Ala Lys Lys Thr Ser Cys
 100 105 110

Glu Phe Thr Gly Asp Ile Leu Arg Thr Pro Val Ser Glu Asp Met Leu
 115 120 125

Gly Arg Val Phe Asn Gly Ser Gly Lys Pro Ile Asp Arg Gly Pro Val
 130 135 140

Val Leu Ala Glu Asp Phe Leu Asp Ile Met Gly Gln Pro Ile Asn Pro
 145 150 155 160

Gln Cys Arg Ile Tyr Pro Glu Glu Met Ile Gln Thr Gly Ile Ser Ala
 165 170 175

Ile Asp Gly Met Asn Ser Ile Ala Arg Gly Gln Lys Ile Pro Ile Phe
 180 185 190

Ser Ala Ala Gly Leu Pro His Asn Glu Ile Ala Ala Gln Ile Cys Arg
 195 200 205

Gln Ala Gly Leu Val Lys Lys Ser Lys Asp Val Val Asp Tyr Ser Glu
 210 215 220

Glu Asn Phe Ala Ile Val Phe Ala Ala Met Gly Val Asn Met Glu Thr
 225 230 235 240

Ala Arg Phe Phe Lys Ser Asp Phe Glu Glu Asn Gly Ser Met Asp Asn
 245 250 255

Val Cys Leu Phe Leu Asn Leu Ala Asn Asp Pro Thr Ile Glu Arg Ile
 Page 506

260

265

270

Ile Thr Pro Arg Leu Ala Leu Thr Thr Ala Glu Phe Leu Ala Tyr Gln
 275 280 285

Cys Glu Lys His Val Leu Val Ile Leu Thr Asp Met Ser Ser Tyr Ala
 290 295 300

Glu Ala Leu Arg Glu Val Ser Ala Ala Arg Glu Glu Val Pro Gly Arg
 305 310 315 320

Arg Gly Phe Pro Gly Tyr Met Tyr Thr Asp Leu Ala Thr Ile Tyr Glu
 325 330 335

Arg Ala Gly Arg Val Glu Gly Arg Asn Gly Ser Ile Thr Gln Ile Pro
 340 345 350

Ile Leu Thr Met Pro Asn Asp Asp Ile Thr His Pro Ile Pro Asp Leu
 355 360 365

Thr Gly Tyr Ile Thr Glu Gly Gln Ile Tyr Val Asp Arg Gln Leu His
 370 375 380

Asn Arg Gln Ile Tyr Pro Pro Ile Asn Val Leu Pro Ser Leu Ser Arg
 385 390 395 400

Leu Met Lys Ser Ala Ile Gly Glu Gly Met Thr Arg Lys Asp His Ala
 405 410 415

Asp Val Ser Asn Gln Leu Tyr Ala Cys Tyr Ala Ile Gly Lys Asp Val
 420 425 430

Gln Ala Met Lys Ala Val Val Gly Glu Glu Ala Leu Thr Ser Asp Asp
 435 440 445

Leu Leu Tyr Leu Glu Phe Leu Gln Lys Phe Glu Arg Asn Phe Ile Ala
 450 455 460

Gln Gly Pro Tyr Glu Asn Arg Thr Val Phe Glu Thr Leu Asp Ile Gly
 465 470 475 480

Trp Gln Leu Leu Arg Ile Phe Pro Lys Glu Met Leu Lys Arg Ile Pro
 485 490 495

Gln Ser Thr Leu Ser Glu Phe Tyr Pro Arg Asp Ser Ala Lys His
 500 505 510

<210> 438
 <211> 736
 <212> PRT
 <213> Homo sapiens

<400> 438

Met Ser Leu Ser Glu Asn Ser Val Phe Ala Tyr Glu Ser Ser Val His
 1 5 10 15
 Ser Thr Asn Val Leu Leu Ser Leu Asn Asp Gln Arg Lys Lys Asp Val
 20 25 30
 Leu Cys Asp Val Thr Ile Phe Val Glu Gly Gln Arg Phe Arg Ala His
 35 40 45
 Arg Ser Val Leu Ala Ala Cys Ser Ser Tyr Phe His Ser Arg Ile Val
 50 55 60
 Gly Gln Ala Asp Gly Glu Leu Asn Ile Thr Leu Pro Glu Glu Val Thr
 65 70 75 80
 Val Lys Gly Phe Glu Pro Leu Ile Gln Phe Ala Tyr Thr Ala Lys Leu
 85 90 95
 Ile Leu Ser Lys Glu Asn Val Asp Glu Val Cys Lys Cys Val Glu Phe
 100 105 110
 Leu Ser Val His Asn Ile Glu Glu Ser Cys Phe Gln Phe Leu Lys Phe
 115 120 125
 Lys Phe Leu Asp Ser Thr Ala Asp Gln Gln Glu Cys Pro Arg Lys Lys
 130 135 140
 Cys Phe Ser Ser His Cys Gln Lys Thr Asp Leu Lys Leu Ser Leu Leu
 145 150 155 160
 Asp Gln Arg Asp Leu Glu Thr Asp Glu Val Glu Glu Phe Leu Glu Asn
 165 170 175
 Lys Asn Val Gln Thr Pro Gln Cys Lys Leu Arg Arg Tyr Gln Gly Asn
 180 185 190
 Ala Lys Ala Ser Pro Pro Leu Gln Asp Ser Ala Ser Gln Thr Tyr Glu
 195 200 205
 Ser Met Cys Leu Glu Lys Asp Ala Ala Leu Ala Leu Pro Ser Leu Cys
 210 215 220
 Pro Lys Tyr Arg Lys Phe Gln Lys Ala Phe Gly Thr Asp Arg Val Arg
 225 230 235 240
 Thr Gly Glu Ser Ser Val Lys Asp Ile His Ala Ser Val Gln Pro Asn
 245 250 255
 Glu Arg Ser Glu Asn Glu Cys Leu Gly Gly Val Pro Glu Cys Arg Asp
 260 265 270

Leu Gln Val Met Leu Lys Cys Asp Glu Ser Lys Leu Ala Met Glu Pro
 275 280 285
 Glu Glu Thr Lys Lys Asp Pro Ala Ser Gln Cys Pro Thr Glu Lys Ser
 290 295 300
 Glu Val Thr Pro Phe Pro His Asn Ser Ser Ile Asp Pro His Gly Leu
 305 310 315 320
 Tyr Ser Leu Ser Leu Leu His Thr Tyr Asp Gln Tyr Gly Asp Leu Asn
 325 330 335
 Phe Ala Gly Met Gln Asn Thr Thr Val Leu Thr Glu Lys Pro Leu Ser
 340 345 350
 Gly Thr Asp Val Gln Glu Lys Thr Phe Gly Glu Ser Gln Asp Leu Pro
 355 360 365
 Leu Lys Ser Asp Leu Gly Thr Arg Glu Asp Ser Ser Val Ala Ser Ser
 370 375 380
 Asp Arg Ser Ser Val Glu Arg Glu Val Ala Glu His Leu Ala Lys Gly
 385 390 395 400
 Phe Trp Ser Asp Ile Cys Ser Thr Asp Thr Pro Cys Gln Met Gln Leu
 405 410 415
 Ser Pro Ala Val Ala Lys Asp Gly Ser Glu Gln Ile Ser Gln Lys Arg
 420 425 430
 Ser Glu Cys Pro Trp Leu Gly Ile Arg Ile Ser Glu Ser Pro Glu Pro
 435 440 445
 Gly Gln Arg Thr Phe Thr Thr Leu Ser Ser Val Asn Cys Pro Phe Ile
 450 455 460
 Ser Thr Leu Ser Thr Glu Gly Cys Ser Ser Asn Leu Glu Ile Gly Asn
 465 470 475 480
 Asp Asp Tyr Val Ser Glu Pro Gln Gln Glu Pro Cys Pro Tyr Ala Cys
 485 490 495
 Val Ile Ser Leu Gly Asp Asp Ser Glu Thr Asp Thr Glu Gly Asp Ser
 500 505 510
 Glu Ser Cys Ser Ala Arg Glu Gln Glu Cys Glu Val Lys Leu Pro Phe
 515 520 525
 Asn Ala Gln Arg Ile Ile Ser Leu Ser Arg Asn Asp Phe Gln Ser Leu
 530 535 540

Leu Lys Met His Lys Leu Thr Pro Glu Gln Leu Asp Cys Ile His Asp
545 550 555 560

Ile Arg Arg Arg Ser Lys Asn Arg Ile Ala Ala Gln Arg Cys Arg Lys
565 570 575

Arg Lys Leu Asp Cys Ile Gln Asn Leu Glu Ser Glu Ile Glu Lys Leu
580 585 590

Gln Ser Glu Lys Glu Ser Leu Leu Lys Glu Arg Asp His Ile Leu Ser
595 600 605

Thr Leu Gly Glu Thr Lys Gln Asn Leu Thr Gly Leu Cys Gln Lys Val
610 615 620

Cys Lys Glu Ala Ala Leu Ser Gln Glu Gln Ile Gln Ile Leu Ala Lys
625 630 635 640

Tyr Ser Ala Ala Asp Cys Pro Leu Ser Phe Leu Ile Ser Glu Lys Asp
645 650 655

Lys Ser Thr Pro Asp Gly Glu Leu Ala Leu Pro Ser Ile Phe Ser Leu
660 665 670

Ser Asp Arg Pro Pro Ala Val Leu Pro Pro Cys Ala Arg Gly Asn Ser
675 680 685

Glu Pro Gly Tyr Ala Arg Gly Gln Glu Ser Gln Gln Met Ser Thr Ala
690 695 700

Thr Ser Glu Gln Ala Gly Pro Ala Glu Gln Cys Arg Gln Ser Gly Gly
705 710 715 720

Ile Ser Asp Phe Cys Gln Gln Met Thr Asp Lys Cys Thr Thr Asp Glu
725 730 735

<210> 439
<211> 469
<212> PRT
<213> Homo sapiens

<400> 439

Met Met Ser Glu His Asp Leu Ala Asp Val Val Gln Ile Ala Val Glu
1 5 10 15

Asp Leu Ser Pro Asp His Pro Val Val Leu Glu Asn His Val Val Thr
20 25 30

Asp Glu Asp Glu Pro Ala Leu Lys Arg Gln Arg Leu Glu Ile Asn Cys
35 40 45

Gln Asp Pro Ser Ile Lys Ser Phe Leu Tyr Ser Ile Asn Gln Thr Ile
 50 55 60
 Cys Leu Arg Leu Asp Ser Ile Glu Ala Lys Leu Gln Ala Leu Glu Ala
 65 70 75 80
 Thr Cys Lys Ser Leu Glu Glu Lys Leu Asp Leu Val Thr Asn Lys Gln
 85 90 95
 His Ser Pro Ile Gln Val Pro Met Val Ala Gly Ser Pro Leu Gly Ala
 100 105 110
 Thr Gln Thr Cys Asn Lys Val Arg Cys Ala Val Pro Gly Arg Arg Gln
 115 120 125
 Asn Thr Ile Val Val Lys Val Pro Gly Gln Glu Asp Ser His His Glu
 130 135 140
 Asp Gly Glu Ser Gly Ser Glu Ala Ser Asp Ser Val Ser Ser Cys Gly
 145 150 155 160
 Gln Ala Gly Ser Gln Ser Ile Gly Ser Asn Val Thr Leu Ile Thr Leu
 165 170 175
 Asn Ser Glu Glu Asp Tyr Pro Asn Gly Thr Trp Leu Gly Asp Glu Asn
 180 185 190
 Asn Pro Glu Met Arg Val Arg Cys Ala Ile Ile Pro Ser Asp Met Leu
 195 200 205
 His Ile Ser Thr Asn Cys Arg Thr Ala Glu Lys Met Ala Leu Thr Leu
 210 215 220
 Leu Asp Tyr Leu Phe His Arg Glu Val Gln Ala Val Ser Asn Leu Ser
 225 230 235 240
 Gly Gln Gly Lys His Gly Lys Lys Gln Leu Asp Pro Leu Thr Ile Tyr
 245 250 255
 Gly Ile Arg Cys His Leu Phe Tyr Lys Phe Gly Ile Thr Glu Ser Asp
 260 265 270
 Trp Tyr Arg Ile Lys Gln Ser Ile Asp Ser Lys Cys Arg Thr Ala Trp
 275 280 285
 Arg Arg Lys Gln Arg Gly Gln Ser Leu Ala Val Lys Ser Phe Ser Arg
 290 295 300
 Arg Thr Pro Asn Ser Ser Ser Tyr Cys Pro Ser Glu Pro Met Met Ser
 305 310 315 320

Thr Pro Pro Pro Ala Ser Glu Leu Pro Gln Pro Gln Pro Gln Pro Gln
 325 330 335

Ala Leu His Tyr Ala Leu Ala Asn Ala Gln Gln Val Gln Ile His Gln
 340 345 350

Ile Gly Glu Asp Gly Gln Val Gln Val Ile Pro Gln Gly His Leu His
 355 360 365

Ile Ala Gln Val Pro Gln Gly Glu Gln Val Gln Ile Thr Gln Asp Ser
 370 375 380

Glu Gly Asn Leu Gln Ile His His Val Gly Gln Asp Gly Gln Val Leu
 385 390 395 400

Gln Gly Ala Gln Leu Ile Ala Val Ala Ser Ser Asp Pro Ala Ala Ala
 405 410 415

Gly Val Asp Gly Ser Pro Leu Gln Gly Ser Asp Ile Gln Val Gln Tyr
 420 425 430

Val Gln Leu Ala Pro Val Ser Asp His Thr Ala Gly Ala Gln Thr Ala
 435 440 445

Glu Ala Leu Gln Pro Thr Leu Gln Pro Glu Met Gln Leu Glu His Gly
 450 455 460

Ala Ile Gln Ile Gln
 465

<210> 440
 <211> 2168
 <212> PRT
 <213> Homo sapiens

<400> 440

Met Glu Ser Gly Glu Arg Leu Pro Ser Ser Ala Ala Ser Ser Thr Thr
 1 5 10 15

Pro Thr Ser Ser Ser Thr Pro Ser Val Ala Ser Val Val Ser Lys Gly
 20 25 30

Gly Leu Ser Thr Gly Val Ala Ser Leu Ser Ser Thr Ile Asn Pro Cys
 35 40 45

Gly His Leu Phe Arg Thr Ala Gly Asp Gln Pro Phe Asn Leu Ser Thr
 50 55 60

Val Ser Ser Ala Phe Pro Met Val Ser His Pro Val Phe Gly Leu His
 65 70 75 80

Ser Ala Ser Ser Gly His Ser Glu Phe Gly Gly Leu Gly Thr Leu Gly
 85 90 95

Thr Pro Thr Ala Leu Ala Ala His Pro Gln Leu Ala Ser Phe Pro Gly
 100 105 110

Ala Glu Trp Trp Arg Thr Thr Asp Ala His Thr Arg Thr Gly Ala Thr
 115 120 125

Phe Phe Pro Pro Leu Leu Gly Ile Pro Pro Leu Phe Ala Pro Pro Ala
 130 135 140

Gln Asn His Asp Ser Ser Ser Phe His Ser Arg Thr Ser Gly Lys Ser
 145 150 155 160

Asn Arg Asn Gly Pro Glu Lys Gly Val Asn Gly Ser Ile Asn Gly Ser
 165 170 175

Asn Thr Ser Ser Val Ile Gly Ile Asn Thr Ser Val Leu Ser Thr Thr
 180 185 190

Ala Ser Ser Ser Met Gly Gln Thr Lys Ser Thr Ser Ser Gly Gly Gly
 195 200 205

Asn Arg Lys Cys Asn Gln Glu Gln Ser Lys Asn Gln Pro Leu Asp Ala
 210 215 220

Arg Val Asp Lys Ile Lys Asp Lys Lys Pro Arg Lys Lys Ala Met Glu
 225 230 235 240

Ser Ser Ser Asn Ser Asp Ser Asp Ser Gly Thr Ser Ser Asp Thr Ser
 245 250 255

Ser Glu Gly Ile Ser Ser Ser Asp Ser Asp Asp Leu Glu Glu Asp Glu
 260 265 270

Glu Glu Glu Asp Gln Ser Ile Glu Glu Ser Glu Asp Asp Asp Ser Asp
 275 280 285

Ser Glu Ser Glu Ala Gln His Lys Ser Asn Asn Gln Val Leu Leu His
 290 295 300

Gly Ile Ser Asp Pro Lys Ala Asp Gly Gln Lys Ala Thr Glu Lys Ala
 305 310 315 320

Gln Glu Lys Arg Ile His Gln Pro Leu Pro Leu Ala Ser Glu Ser Gln
 325 330 335

Thr His Ser Phe Gln Ser Gln Gln Lys Gln Pro Gln Val Leu Ser Gln
 340 345 350

Gln Leu Pro Phe Ile Phe Gln Ser Ser Gln Ala Lys Glu Glu Ser Val
 355 360 365
 Asn Lys His Thr Ser Val Ile Gln Ser Thr Gly Leu Val Ser Asn Val
 370 375 380
 Lys Pro Leu Ser Leu Val Asn Gln Ala Lys Lys Glu Thr Tyr Met Lys
 385 390 395 400
 Leu Ile Val Pro Ser Pro Asp Val Leu Lys Ala Gly Asn Lys Asn Thr
 405 410 415
 Ser Glu Glu Ser Ser Leu Leu Thr Ser Glu Leu Arg Ser Lys Arg Glu
 420 425 430
 Gln Tyr Lys Gln Ala Phe Pro Ser Gln Leu Lys Lys Gln Glu Ser Ser
 435 440 445
 Lys Ser Leu Lys Lys Val Ile Ala Ala Leu Ser Asn Pro Lys Ala Thr
 450 455 460
 Ser Ser Ser Pro Ala His Pro Lys Gln Thr Leu Glu Asn Asn His Pro
 465 470 475 480
 Asn Pro Phe Leu Thr Asn Ala Leu Leu Gly Asn His Gln Pro Asn Gly
 485 490 495
 Val Ile Gln Ser Val Ile Gln Glu Ala Pro Leu Ala Leu Thr Thr Lys
 500 505 510
 Thr Lys Met Gln Ser Lys Ile Asn Glu Asn Ile Ala Ala Ala Ser Ser
 515 520 525
 Thr Pro Phe Ser Ser Pro Val Asn Leu Ser Thr Ser Gly Arg Arg Thr
 530 535 540
 Pro Gly Asn Gln Thr Pro Val Met Pro Ser Ala Ser Pro Ile Leu His
 545 550 555 560
 Ser Gln Gly Lys Glu Lys Ala Val Ser Asn Asn Val Asn Pro Val Lys
 565 570 575
 Thr Gln His His Ser His Pro Ala Lys Ser Leu Val Glu Gln Phe Arg
 580 585 590
 Gly Thr Asp Ser Asp Ile Pro Ser Ser Lys Asp Ser Glu Asp Ser Asn
 595 600 605
 Glu Asp Glu Glu Glu Asp Asp Glu Glu Glu Asp Glu Glu Asp Asp Glu
 610 615 620

Asp Asp Glu Ser Asp Asp Ser Gln Ser Glu Ser Asp Ser Asn Ser Glu
 625 630 635 640

Ser Asp Thr Glu Gly Ser Glu Glu Glu Asp Asp Asp Asp Lys Asp Gln
 645 650 655

Asp Glu Ser Asp Ser Asp Thr Glu Gly Glu Lys Thr Ser Met Lys Leu
 660 665 670

Asn Lys Thr Thr Ser Ser Val Lys Ser Pro Ser Met Ser Leu Thr Gly
 675 680 685

His Ser Thr Pro Arg Asn Leu His Ile Ala Lys Ala Pro Gly Ser Ala
 690 695 700

Pro Ala Ala Leu Cys Ser Glu Ser Gln Ser Pro Ala Phe Leu Gly Thr
 705 710 715 720

Ser Ser Ser Thr Leu Thr Ser Ser Pro His Ser Gly Thr Ser Lys Arg
 725 730 735

Arg Arg Val Thr Asp Glu Arg Glu Leu Arg Ile Pro Leu Glu Tyr Gly
 740 745 750

Trp Gln Arg Glu Thr Arg Ile Arg Asn Phe Gly Gly Arg Leu Gln Gly
 755 760 765

Glu Val Ala Tyr Tyr Ala Pro Cys Gly Lys Lys Leu Arg Gln Tyr Pro
 770 775 780

Glu Val Ile Lys Tyr Leu Ser Arg Asn Gly Ile Met Asp Ile Ser Arg
 785 790 795 800

Asp Asn Phe Ser Phe Ser Ala Lys Ile Arg Val Gly Asp Phe Tyr Glu
 805 810 815

Ala Arg Asp Gly Pro Gln Gly Met Gln Trp Cys Leu Leu Lys Glu Glu
 820 825 830

Asp Val Ile Pro Arg Ile Arg Ala Met Glu Gly Arg Arg Gly Arg Pro
 835 840 845

Pro Asn Pro Asp Arg Gln Arg Ala Arg Glu Glu Ser Arg Met Arg Arg
 850 855 860

Arg Lys Gly Arg Pro Pro Asn Val Gly Asn Ala Glu Phe Leu Asp Asn
 865 870 875 880

Ala Asp Ala Lys Leu Leu Arg Lys Leu Gln Ala Gln Glu Ile Ala Arg
 885 890 895

Gln Ala Ala Gln Ile Lys Leu Leu Arg Lys Leu Gln Lys Gln Glu Gln
 900 905 910

Ala Arg Val Ala Lys Glu Ala Lys Lys Gln Gln Ala Ile Met Ala Ala
 915 920 925

Glu Glu Lys Arg Lys Gln Lys Glu Gln Ile Lys Ile Met Lys Gln Gln
 930 935 940

Glu Lys Ile Lys Arg Ile Gln Gln Ile Arg Met Glu Lys Glu Leu Arg
 945 950 955 960

Ala Gln Gln Ile Leu Glu Ala Lys Lys Lys Lys Lys Glu Glu Ala Ala
 965 970 975

Asn Ala Lys Leu Leu Glu Ala Glu Lys Arg Ile Lys Glu Lys Glu Met
 980 985 990

Arg Arg Gln Gln Ala Val Leu Leu Lys His Gln Glu Arg Glu Arg Arg
 995 1000 1005

Arg Gln His Met Met Leu Met Lys Ala Met Glu Ala Arg Lys Lys
 1010 1015 1020

Ala Glu Glu Lys Glu Arg Leu Lys Gln Glu Lys Arg Asp Glu Lys
 1025 1030 1035

Arg Leu Asn Lys Glu Arg Lys Leu Glu Gln Arg Arg Leu Glu Leu
 1040 1045 1050

Glu Met Ala Lys Glu Leu Lys Lys Pro Asn Glu Asp Met Cys Leu
 1055 1060 1065

Ala Asp Gln Lys Pro Leu Pro Glu Leu Pro Arg Ile Pro Gly Leu
 1070 1075 1080

Val Leu Ser Gly Ser Thr Phe Ser Asp Cys Leu Met Val Val Gln
 1085 1090 1095

Phe Leu Arg Asn Phe Gly Lys Val Leu Gly Phe Asp Val Asn Ile
 1100 1105 1110

Asp Val Pro Asn Leu Ser Val Leu Gln Glu Gly Leu Leu Asn Ile
 1115 1120 1125

Gly Asp Ser Met Gly Glu Val Gln Asp Leu Leu Val Arg Leu Leu
 1130 1135 1140

Ser Ala Ala Val Cys Asp Pro Gly Leu Ile Thr Gly Tyr Lys Ala
 1145 1150 1155

Lys Thr Ala Leu Gly Glu His Leu Leu Asn Val Gly Val Asn Arg
 1160 1165 1170
 Asp Asn Val Ser Glu Ile Leu Gln Ile Phe Met Glu Ala His Cys
 1175 1180 1185
 Gly Gln Thr Glu Leu Thr Glu Ser Leu Lys Thr Lys Ala Phe Gln
 1190 1195 1200
 Ala His Thr Pro Ala Gln Lys Ala Ser Val Leu Ala Phe Leu Ile
 1205 1210 1215
 Asn Glu Leu Ala Cys Ser Lys Ser Val Val Ser Glu Ile Asp Lys
 1220 1225 1230
 Asn Ile Asp Tyr Met Ser Asn Leu Arg Arg Asp Lys Trp Val Val
 1235 1240 1245
 Glu Gly Lys Leu Arg Lys Leu Arg Ile Ile His Ala Lys Lys Thr
 1250 1255 1260
 Gly Lys Arg Asp Thr Ser Gly Gly Ile Asp Leu Gly Glu Glu Gln
 1265 1270 1275
 His Pro Leu Gly Thr Pro Thr Pro Gly Arg Lys Arg Arg Arg Lys
 1280 1285 1290
 Gly Gly Asp Ser Asp Tyr Asp Asp Asp Asp Asp Asp Ser Asp
 1295 1300 1305
 Asp Gln Gly Asp Glu Asp Asp Glu Asp Glu Glu Asp Lys Glu Asp
 1310 1315 1320
 Lys Lys Gly Lys Lys Thr Asp Ile Cys Glu Asp Glu Asp Glu Gly
 1325 1330 1335
 Asp Gln Ala Ala Ser Val Glu Glu Leu Glu Lys Gln Ile Glu Lys
 1340 1345 1350
 Leu Ser Lys Gln Gln Ser Gln Tyr Arg Arg Lys Leu Phe Asp Ala
 1355 1360 1365
 Ser His Ser Leu Arg Ser Val Met Phe Gly Gln Asp Arg Tyr Arg
 1370 1375 1380
 Arg Arg Tyr Trp Ile Leu Pro Gln Cys Gly Gly Ile Phe Val Glu
 1385 1390 1395
 Gly Met Glu Ser Gly Glu Gly Leu Glu Glu Ile Ala Lys Glu Arg
 1400 1405 1410

Glu	Lys	Leu	Lys	Lys	Ala	Glu	Ser	Val	Gln	Ile	Lys	Glu	Glu	Met
	1415					1420					1425			
Phe	Glu	Thr	Ser	Gly	Asp	Ser	Leu	Asn	Cys	Ser	Asn	Thr	Asp	His
	1430					1435					1440			
Cys	Glu	Gln	Lys	Glu	Asp	Leu	Lys	Glu	Lys	Asp	Asn	Thr	Asn	Leu
	1445					1450					1455			
Phe	Leu	Gln	Lys	Pro	Gly	Ser	Phe	Ser	Lys	Leu	Ser	Lys	Leu	Leu
	1460					1465					1470			
Glu	Val	Ala	Lys	Met	Pro	Pro	Glu	Ser	Glu	Val	Met	Thr	Pro	Lys
	1475					1480					1485			
Pro	Asn	Ala	Gly	Ala	Asn	Gly	Cys	Thr	Leu	Ser	Tyr	Gln	Asn	Ser
	1490					1495					1500			
Gly	Lys	His	Ser	Leu	Gly	Ser	Val	Gln	Ser	Thr	Ala	Thr	Gln	Ser
	1505					1510					1515			
Asn	Val	Glu	Lys	Ala	Asp	Ser	Asn	Asn	Leu	Phe	Asn	Thr	Gly	Ser
	1520					1525					1530			
Ser	Gly	Pro	Gly	Lys	Phe	Tyr	Ser	Pro	Leu	Pro	Asn	Asp	Gln	Leu
	1535					1540					1545			
Leu	Lys	Thr	Leu	Thr	Glu	Lys	Asn	Arg	Gln	Trp	Phe	Ser	Leu	Leu
	1550					1555					1560			
Pro	Arg	Thr	Pro	Cys	Asp	Asp	Thr	Ser	Leu	Thr	His	Ala	Asp	Met
	1565					1570					1575			
Ser	Thr	Ala	Ser	Leu	Val	Thr	Pro	Gln	Ser	Gln	Pro	Pro	Ser	Lys
	1580					1585					1590			
Ser	Pro	Ser	Pro	Thr	Pro	Ala	Pro	Leu	Gly	Ser	Ser	Ala	Gln	Asn
	1595					1600					1605			
Pro	Val	Gly	Leu	Asn	Pro	Phe	Ala	Leu	Ser	Pro	Leu	Gln	Val	Lys
	1610					1615					1620			
Gly	Gly	Val	Ser	Met	Met	Gly	Leu	Gln	Phe	Cys	Gly	Trp	Pro	Thr
	1625					1630					1635			
Gly	Val	Val	Thr	Ser	Asn	Ile	Pro	Phe	Thr	Ser	Ser	Val	Pro	Ser
	1640					1645					1650			
Leu	Gly	Ser	Gly	Leu	Gly	Leu	Ser	Glu	Gly	Asn	Gly	Asn	Ser	Phe
	1655					1660					1665			

Leu	Thr	Ser	Asn	Val	Ala	Ser	Ser	Lys	Ser	Glu	Ser	Pro	Val	Pro
	1670					1675					1680			
Gln	Asn	Glu	Lys	Ala	Thr	Ser	Ala	Gln	Pro	Ala	Ala	Val	Glu	Val
	1685					1690					1695			
Ala	Lys	Pro	Val	Asp	Phe	Pro	Ser	Pro	Lys	Pro	Ile	Pro	Glu	Glu
	1700					1705					1710			
Met	Gln	Phe	Gly	Trp	Trp	Arg	Ile	Ile	Asp	Pro	Glu	Asp	Leu	Lys
	1715					1720					1725			
Ala	Leu	Leu	Lys	Val	Leu	His	Leu	Arg	Gly	Ile	Arg	Glu	Lys	Ala
	1730					1735					1740			
Leu	Gln	Lys	Gln	Ile	Gln	Lys	His	Leu	Asp	Tyr	Ile	Thr	Gln	Ala
	1745					1750					1755			
Cys	Leu	Lys	Asn	Lys	Asp	Val	Ala	Ile	Ile	Glu	Leu	Asn	Glu	Asn
	1760					1765					1770			
Glu	Glu	Asn	Gln	Val	Thr	Arg	Asp	Ile	Val	Glu	Asn	Trp	Ser	Val
	1775					1780					1785			
Glu	Glu	Gln	Ala	Met	Glu	Met	Asp	Leu	Ser	Val	Leu	Gln	Gln	Val
	1790					1795					1800			
Glu	Asp	Leu	Glu	Arg	Arg	Val	Ala	Ser	Ala	Ser	Leu	Gln	Val	Lys
	1805					1810					1815			
Gly	Trp	Met	Cys	Pro	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Asp	Leu	Val
	1820					1825					1830			
Tyr	Phe	Glu	His	Lys	Ser	Phe	Thr	Lys	Leu	Cys	Lys	Glu	His	Asp
	1835					1840					1845			
Gly	Glu	Phe	Thr	Gly	Glu	Asp	Glu	Ser	Ser	Ala	His	Ala	Leu	Glu
	1850					1855					1860			
Arg	Lys	Ser	Asp	Asn	Pro	Leu	Asp	Ile	Ala	Val	Thr	Arg	Leu	Ala
	1865					1870					1875			
Asp	Leu	Glu	Arg	Asn	Ile	Glu	Arg	Arg	Ile	Glu	Glu	Asp	Ile	Ala
	1880					1885					1890			
Pro	Gly	Leu	Arg	Val	Trp	Arg	Arg	Ala	Leu	Ser	Glu	Ala	Arg	Ser
	1895					1900					1905			
Ala	Ala	Gln	Val	Ala	Leu	Cys	Ile	Gln	Gln	Leu	Gln	Lys	Ser	Ile
	1910					1915					1920			

Ala	Trp	Glu	Lys	Ser	Ile	Met	Lys	Val	Tyr	Cys	Gln	Ile	Cys	Arg
1925						1930					1935			
Lys	Gly	Asp	Asn	Glu	Glu	Leu	Leu	Leu	Leu	Cys	Asp	Gly	Cys	Asp
1940						1945					1950			
Lys	Gly	Cys	His	Thr	Tyr	Cys	His	Arg	Pro	Lys	Ile	Thr	Thr	Ile
1955						1960					1965			
Pro	Asp	Gly	Asp	Trp	Phe	Cys	Pro	Ala	Cys	Ile	Ala	Lys	Ala	Ser
1970						1975					1980			
Gly	Gln	Thr	Leu	Lys	Ile	Lys	Lys	Leu	His	Val	Lys	Gly	Lys	Lys
1985						1990					1995			
Thr	Asn	Glu	Ser	Lys	Lys	Gly	Lys	Lys	Val	Thr	Leu	Thr	Gly	Asp
2000						2005					2010			
Thr	Glu	Asp	Glu	Asp	Ser	Ala	Ser	Thr	Ser	Ser	Ser	Leu	Lys	Arg
2015						2020					2025			
Gly	Asn	Lys	Asp	Leu	Lys	Lys	Arg	Lys	Met	Glu	Glu	Asn	Thr	Ser
2030						2035					2040			
Ile	Asn	Leu	Ser	Lys	Gln	Glu	Ser	Phe	Thr	Ser	Val	Lys	Lys	Pro
2045						2050					2055			
Lys	Arg	Asp	Asp	Ser	Lys	Asp	Leu	Ala	Leu	Cys	Ser	Met	Ile	Leu
2060						2065					2070			
Thr	Glu	Met	Glu	Thr	His	Glu	Asp	Ala	Trp	Pro	Phe	Leu	Leu	Pro
2075						2080					2085			
Val	Asn	Leu	Lys	Leu	Val	Pro	Gly	Tyr	Lys	Lys	Val	Ile	Lys	Lys
2090						2095					2100			
Pro	Met	Asp	Phe	Ser	Thr	Ile	Arg	Glu	Lys	Leu	Ser	Ser	Gly	Gln
2105						2110					2115			
Tyr	Pro	Asn	Leu	Glu	Thr	Phe	Ala	Leu	Asp	Val	Arg	Leu	Val	Phe
2120						2125					2130			
Asp	Asn	Cys	Glu	Thr	Phe	Asn	Glu	Asp	Asp	Ser	Asp	Ile	Gly	Arg
2135						2140					2145			
Ala	Gly	His	Asn	Met	Arg	Lys	Tyr	Phe	Glu	Lys	Lys	Trp	Thr	Asp
2150						2155					2160			
Thr	Phe	Lys	Val	Ser										
2165														

<210> 441
 <211> 239
 <212> PRT
 <213> Homo sapiens

<400> 441

Met Ala His Ala Gly Arg Thr Gly Tyr Asp Asn Arg Glu Ile Val Met
 1 5 10 15

Lys Tyr Ile His Tyr Lys Leu Ser Gln Arg Gly Tyr Glu Trp Asp Ala
 20 25 30

Gly Asp Val Gly Ala Ala Pro Pro Gly Ala Ala Pro Ala Pro Gly Ile
 35 40 45

Phe Ser Ser Gln Pro Gly His Thr Pro His Pro Ala Ala Ser Arg Asp
 50 55 60

Pro Val Ala Arg Thr Ser Pro Leu Gln Thr Pro Ala Ala Pro Gly Ala
 65 70 75 80

Ala Ala Gly Pro Ala Leu Ser Pro Val Pro Pro Val Val His Leu Thr
 85 90 95

Leu Arg Gln Ala Gly Asp Asp Phe Ser Arg Arg Tyr Arg Arg Asp Phe
 100 105 110

Ala Glu Met Ser Ser Gln Leu His Leu Thr Pro Phe Thr Ala Arg Gly
 115 120 125

Arg Phe Ala Thr Val Val Glu Glu Leu Phe Arg Asp Gly Val Asn Trp
 130 135 140

Gly Arg Ile Val Ala Phe Phe Glu Phe Gly Gly Val Met Cys Val Glu
 145 150 155 160

Ser Val Asn Arg Glu Met Ser Pro Leu Val Asp Asn Ile Ala Leu Trp
 165 170 175

Met Thr Glu Tyr Leu Asn Arg His Leu His Thr Trp Ile Gln Asp Asn
 180 185 190

Gly Gly Trp Asp Ala Phe Val Glu Leu Tyr Gly Pro Ser Met Arg Pro
 195 200 205

Leu Phe Asp Phe Ser Trp Leu Ser Leu Lys Thr Leu Leu Ser Leu Ala
 210 215 220

Leu Val Gly Ala Cys Ile Thr Leu Gly Ala Tyr Leu Gly His Lys
 225 230 235

<210> 442

<211> 120
 <212> PRT
 <213> Homo sapiens

<400> 442

Met Glu Ser Lys Glu Glu Leu Ala Ala Asn Asn Leu Asn Gly Glu Asn
 1 5 10 15

Ala Gln Gln Glu Asn Glu Gly Gly Glu Gln Ala Pro Thr Gln Asn Glu
 20 25 30

Glu Glu Ser Arg His Leu Gly Gly Gly Glu Gly Gln Lys Pro Gly Gly
 35 40 45

Asn Ile Arg Arg Gly Arg Val Arg Arg Leu Val Pro Asn Phe Arg Trp
 50 55 60

Ala Ile Pro Asn Arg His Ile Glu His Asn Glu Ala Arg Asp Asp Val
 65 70 75 80

Glu Arg Phe Val Gly Gln Met Met Glu Ile Lys Arg Lys Thr Arg Glu
 85 90 95

Gln Gln Met Arg His Tyr Met Arg Phe Gln Thr Pro Glu Pro Asp Asn
 100 105 110

His Tyr Asp Phe Cys Leu Ile Pro
 115 120

<210> 443
 <211> 662
 <212> PRT
 <213> Homo sapiens

<400> 443

Met Lys Lys Phe Ser Arg Met Pro Lys Ser Glu Gly Gly Ser Gly Gly
 1 5 10 15

Gly Ala Ala Gly Gly Gly Ala Gly Gly Ala Gly Ala Gly Ala Gly Cys
 20 25 30

Gly Ser Gly Gly Ser Ser Val Gly Val Arg Val Phe Ala Val Gly Arg
 35 40 45

His Gln Val Thr Leu Glu Glu Ser Leu Ala Glu Gly Gly Phe Ser Thr
 50 55 60

Val Phe Leu Val Arg Thr His Gly Gly Ile Arg Cys Ala Leu Lys Arg
 65 70 75 80

Met Tyr Val Asn Asn Met Pro Asp Leu Asn Val Cys Lys Arg Glu Ile
 85 90 95

Thr Ile Met Lys Glu Leu Ser Gly His Lys Asn Ile Val Gly Tyr Leu
 100 105 110
 Asp Cys Ala Val Asn Ser Ile Ser Asp Asn Val Trp Glu Val Leu Ile
 115 120 125
 Leu Met Glu Tyr Cys Arg Ala Gly Gln Val Val Asn Gln Met Asn Lys
 130 135 140
 Lys Leu Gln Thr Gly Phe Thr Glu Pro Glu Val Leu Gln Ile Phe Cys
 145 150 155 160
 Asp Thr Cys Glu Ala Val Ala Arg Leu His Gln Cys Lys Thr Pro Ile
 165 170 175
 Ile His Arg Asp Leu Lys Val Glu Asn Ile Leu Leu Asn Asp Gly Gly
 180 185 190
 Asn Tyr Val Leu Cys Asp Phe Gly Ser Ala Thr Asn Lys Phe Leu Asn
 195 200 205
 Pro Gln Lys Asp Gly Val Asn Val Val Glu Glu Glu Ile Lys Lys Tyr
 210 215 220
 Thr Thr Leu Ser Tyr Arg Ala Pro Glu Met Ile Asn Leu Tyr Gly Gly
 225 230 235 240
 Lys Pro Ile Thr Thr Lys Ala Asp Ile Trp Ala Leu Gly Cys Leu Leu
 245 250 255
 Tyr Lys Leu Cys Phe Phe Thr Leu Pro Phe Gly Glu Ser Gln Val Ala
 260 265 270
 Ile Cys Asp Gly Asn Phe Thr Ile Pro Asp Asn Ser Arg Tyr Ser Arg
 275 280 285
 Asn Ile His Cys Leu Ile Arg Phe Met Leu Glu Pro Asp Pro Glu His
 290 295 300
 Arg Pro Asp Ile Phe Gln Val Ser Tyr Phe Ala Phe Lys Phe Ala Lys
 305 310 315 320
 Lys Asp Cys Pro Val Ser Asn Ile Asn Asn Ser Ser Ile Pro Ser Ala
 325 330 335
 Leu Pro Glu Pro Met Thr Ala Ser Glu Ala Ala Ala Arg Lys Ser Gln
 340 345 350
 Ile Lys Ala Arg Ile Thr Asp Thr Ile Gly Pro Thr Glu Thr Ser Ile
 355 360 365

Ala Pro Arg Gln Arg Pro Lys Ala Asn Ser Ala Thr Thr Ala Thr Pro
 370 375 380
 Ser Val Leu Thr Ile Gln Ser Ser Ala Thr Pro Val Lys Val Leu Ala
 385 390 395 400
 Pro Gly Glu Phe Gly Asn His Arg Pro Lys Gly Ala Leu Arg Pro Gly
 405 410 415
 Asn Gly Pro Glu Ile Leu Leu Gly Gln Gly Pro Pro Gln Gln Pro Pro
 420 425 430
 Gln Gln His Arg Val Leu Gln Gln Leu Gln Gln Gly Asp Trp Arg Leu
 435 440 445
 Gln Gln Leu His Leu Gln His Arg His Pro His Gln Gln Gln Gln Gln
 450 455 460
 Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 465 470 475 480
 Gln Gln Gln Gln Gln Gln His His His His His His His His Leu Leu
 485 490 495
 Gln Asp Ala Tyr Met Gln Gln Tyr Gln His Ala Thr Gln Gln Gln Gln
 500 505 510
 Met Leu Gln Gln Gln Phe Leu Met His Ser Val Tyr Gln Pro Gln Pro
 515 520 525
 Ser Ala Ser Gln Tyr Pro Thr Met Met Pro Gln Tyr Gln Gln Ala Phe
 530 535 540
 Phe Gln Gln Gln Met Leu Ala Gln His Gln Pro Ser Gln Gln Gln Ala
 545 550 555 560
 Ser Pro Glu Tyr Leu Thr Ser Pro Gln Glu Phe Ser Pro Ala Leu Val
 565 570 575
 Ser Tyr Thr Ser Ser Leu Pro Ala Gln Val Gly Thr Ile Met Asp Ser
 580 585 590
 Ser Tyr Ser Ala Asn Arg Ser Val Ala Asp Lys Glu Ala Ile Ala Asn
 595 600 605
 Phe Thr Asn Gln Lys Asn Ile Ser Asn Pro Pro Asp Met Ser Gly Trp
 610 615 620
 Asn Pro Phe Gly Glu Asp Asn Phe Ser Lys Leu Thr Glu Glu Glu Leu
 625 630 635 640

Leu Asp Arg Glu Phe Asp Leu Leu Arg Ser Ser Lys Gly His Leu Lys
645 650 655

Ala Tyr Phe Ala Ser Gln
660

<210> 444
<211> 1058
<212> PRT
<213> Homo sapiens
<400> 444

Met Arg Arg Lys Gly Arg Cys His Arg Gly Ser Ala Ala Arg His Pro
1 5 10 15

Ser Ser Pro Cys Ser Val Lys His Ser Pro Thr Arg Glu Thr Leu Thr
20 25 30

Tyr Ala Gln Ala Gln Arg Met Val Glu Ile Glu Ile Glu Gly Arg Leu
35 40 45

His Arg Ile Ser Ile Phe Asp Pro Leu Glu Ile Ile Leu Glu Asp Asp
50 55 60

Leu Thr Ala Gln Glu Met Ser Glu Cys Asn Ser Asn Lys Glu Asn Ser
65 70 75 80

Glu Arg Pro Pro Val Cys Leu Arg Thr Lys Arg His Lys Asn Asn Arg
85 90 95

Val Lys Lys Lys Asn Glu Ala Leu Pro Ser Ala His Gly Thr Pro Ala
100 105 110

Ser Ala Ser Ala Leu Pro Glu Pro Lys Val Arg Ile Val Glu Tyr Ser
115 120 125

Pro Pro Ser Ala Pro Arg Arg Pro Pro Val Tyr Tyr Lys Phe Ile Glu
130 135 140

Lys Ser Ala Glu Glu Leu Asp Asn Glu Val Glu Tyr Asp Met Asp Glu
145 150 155 160

Glu Asp Tyr Ala Trp Leu Glu Ile Val Asn Glu Lys Arg Lys Gly Asp
165 170 175

Cys Val Pro Ala Val Ser Gln Ser Met Phe Glu Phe Leu Met Asp Arg
180 185 190

Phe Glu Lys Glu Ser His Cys Glu Asn Gln Lys Gln Gly Glu Gln Gln
195 200 205

Ser Leu Ile Asp Glu Asp Ala Val Cys Cys Ile Cys Met Asp Gly Glu
 210 215 220
 Cys Gln Asn Ser Asn Val Ile Leu Phe Cys Asp Met Cys Asn Leu Ala
 225 230 235
 Val His Gln Glu Cys Tyr Gly Val Pro Tyr Ile Pro Glu Gly Gln Trp
 245 250 255
 Leu Cys Arg His Cys Leu Gln Ser Arg Ala Arg Pro Ala Asp Cys Val
 260 265 270
 Leu Cys Pro Asn Lys Gly Gly Ala Phe Lys Lys Thr Asp Asp Asp Arg
 275 280 285
 Trp Gly His Val Val Cys Ala Leu Trp Ile Pro Glu Val Gly Phe Ala
 290 295 300
 Asn Thr Val Phe Ile Glu Pro Ile Asp Gly Val Arg Asn Ile Pro Pro
 305 310 315 320
 Ala Arg Trp Lys Leu Thr Cys Tyr Leu Cys Lys Gln Lys Gly Val Gly
 325 330 335
 Ala Cys Ile Gln Cys His Lys Ala Asn Cys Tyr Thr Ala Phe His Val
 340 345 350
 Thr Cys Ala Gln Lys Ala Gly Leu Tyr Met Lys Met Glu Pro Val Lys
 355 360 365
 Glu Leu Thr Gly Gly Gly Thr Thr Phe Ser Val Arg Lys Thr Ala Tyr
 370 375 380
 Cys Asp Val His Thr Pro Pro Gly Cys Thr Arg Arg Pro Leu Asn Ile
 385 390 395 400
 Tyr Gly Asp Val Glu Met Lys Asn Gly Val Cys Arg Lys Glu Ser Ser
 405 410 415
 Val Lys Thr Val Arg Ser Thr Ser Lys Val Arg Lys Lys Ala Lys Lys
 420 425 430
 Ala Lys Lys Ala Leu Ala Glu Pro Cys Ala Val Leu Pro Thr Val Cys
 435 440 445
 Ala Pro Tyr Ile Pro Pro Gln Arg Leu Asn Arg Ile Ala Asn Gln Val
 450 455 460
 Ala Ile Gln Arg Lys Lys Gln Phe Val Glu Arg Ala His Ser Tyr Trp
 465 470 475 480

Leu Leu Lys Arg Leu Ser Arg Asn Gly Ala Pro Leu Leu Arg Arg Leu
 485 490 495

Gln Ser Ser Leu Gln Ser Gln Arg Ser Ser Gln Gln Arg Glu Asn Asp
 500 505 510

Glu Glu Met Lys Ala Ala Lys Glu Lys Leu Lys Tyr Trp Gln Arg Leu
 515 520 525

Arg His Asp Leu Glu Arg Ala Arg Leu Leu Ile Glu Leu Leu Arg Lys
 530 535 540

Arg Glu Lys Leu Lys Arg Glu Gln Val Lys Val Glu Gln Val Ala Met
 545 550 555 560

Glu Leu Arg Leu Thr Pro Leu Thr Val Leu Leu Arg Ser Val Leu Asp
 565 570 575

Gln Leu Gln Asp Lys Asp Pro Ala Arg Ile Phe Ala Gln Pro Val Ser
 580 585 590

Leu Lys Glu Val Pro Asp Tyr Leu Asp His Ile Lys His Pro Met Asp
 595 600 605

Phe Ala Thr Met Arg Lys Arg Leu Glu Ala Gln Gly Tyr Lys Asn Leu
 610 615 620

His Glu Phe Glu Glu Asp Phe Asp Leu Ile Ile Asp Asn Cys Met Lys
 625 630 635 640

Tyr Asn Ala Arg Asp Thr Val Phe Tyr Arg Ala Ala Val Arg Leu Arg
 645 650 655

Asp Gln Gly Gly Val Val Leu Arg Gln Ala Arg Arg Glu Val Asp Ser
 660 665 670

Ile Gly Leu Glu Glu Ala Ser Gly Met His Leu Pro Glu Arg Pro Ala
 675 680 685

Ala Ala Pro Arg Arg Pro Phe Ser Trp Glu Asp Val Asp Arg Leu Leu
 690 695 700

Asp Pro Ala Asn Arg Ala His Leu Gly Leu Glu Glu Gln Leu Arg Glu
 705 710 715 720

Leu Leu Asp Met Leu Asp Leu Thr Cys Ala Met Lys Ser Ser Gly Ser
 725 730 735

Arg Ser Lys Arg Ala Lys Leu Leu Lys Lys Glu Ile Ala Leu Leu Arg
 740 745 750

Asn Lys Leu Ser Gln Gln His Ser Gln Pro Leu Pro Thr Gly Pro Gly
 755 760 765
 Leu Glu Gly Phe Glu Glu Asp Gly Ala Ala Leu Gly Pro Glu Ala Gly
 770 775 780
 Glu Glu Val Leu Pro Arg Leu Glu Thr Leu Leu Gln Pro Arg Lys Arg
 785 790 795 800
 Ser Arg Ser Thr Cys Gly Asp Ser Glu Val Glu Glu Glu Ser Pro Gly
 805 810 815
 Lys Arg Leu Asp Ala Gly Leu Thr Asn Gly Phe Gly Gly Ala Arg Ser
 820 825 830
 Glu Gln Glu Pro Gly Gly Gly Leu Gly Arg Lys Ala Thr Pro Arg Arg
 835 840 845
 Arg Cys Ala Ser Glu Ser Ser Ile Ser Ser Ser Asn Ser Pro Leu Cys
 850 855 860
 Asp Ser Ser Phe Asn Ala Pro Lys Cys Gly Arg Gly Lys Pro Ala Leu
 865 870 875 880
 Val Arg Arg His Thr Leu Glu Asp Arg Ser Glu Leu Ile Ser Cys Ile
 885 890 895
 Glu Asn Gly Asn Tyr Ala Lys Ala Ala Arg Ile Ala Ala Glu Val Gly
 900 905 910
 Gln Ser Ser Met Trp Ile Ser Thr Asp Ala Ala Ala Ser Val Leu Glu
 915 920 925
 Pro Leu Lys Val Val Trp Ala Lys Cys Ser Gly Tyr Pro Ser Tyr Pro
 930 935 940
 Ala Leu Ile Ile Asp Pro Lys Met Pro Arg Val Pro Gly His His Asn
 945 950 955 960
 Gly Val Thr Ile Pro Ala Pro Pro Leu Asp Val Leu Lys Ile Gly Glu
 965 970 975
 His Met Gln Thr Lys Ser Asp Glu Lys Leu Phe Leu Val Leu Phe Phe
 980 985 990
 Asp Asn Lys Arg Ser Trp Gln Trp Leu Pro Lys Ser Lys Met Val Pro
 995 1000 1005
 Leu Gly Ile Asp Glu Thr Ile Asp Lys Leu Lys Met Met Glu Gly
 1010 1015 1020

Arg Asn Ser Ser Ile Arg Lys Ala Val Arg Ile Ala Phe Asp Arg
 1025 1030 1035

Ala Met Asn His Leu Ser Arg Val His Gly Glu Pro Thr Ser Asp
 1040 1045 1050

Leu Ser Asp Ile Asp
 1055

<210> 445
 <211> 722
 <212> PRT
 <213> Homo sapiens

<400> 445

Met Ser Ala Glu Ser Gly Pro Gly Thr Arg Leu Arg Asn Leu Pro Val
 1 5 10 15

Met Gly Asp Gly Leu Glu Thr Ser Gln Met Ser Thr Thr Gln Ala Gln
 20 25 30

Ala Gln Pro Gln Pro Ala Asn Ala Ala Ser Thr Asn Pro Pro Pro Pro
 35 40 45

Glu Thr Ser Asn Pro Asn Lys Pro Lys Arg Gln Thr Asn Gln Leu Gln
 50 55 60

Tyr Leu Leu Arg Val Val Leu Lys Thr Leu Trp Lys His Gln Phe Ala
 65 70 75 80

Trp Pro Phe Gln Gln Pro Val Asp Ala Val Lys Leu Asn Leu Pro Asp
 85 90 95

Tyr Tyr Lys Ile Ile Lys Thr Pro Met Asp Met Gly Thr Ile Lys Lys
 100 105 110

Arg Leu Glu Asn Asn Tyr Tyr Trp Asn Ala Gln Glu Cys Ile Gln Asp
 115 120 125

Phe Asn Thr Met Phe Thr Asn Cys Tyr Ile Tyr Asn Lys Pro Gly Asp
 130 135 140

Asp Ile Val Leu Met Ala Glu Ala Leu Glu Lys Leu Phe Leu Gln Lys
 145 150 155 160

Ile Asn Glu Leu Pro Thr Glu Glu Thr Glu Ile Met Ile Val Gln Ala
 165 170 175

Lys Gly Arg Gly Arg Gly Arg Lys Glu Thr Gly Thr Ala Lys Pro Gly
 180 185 190

Val Ser Thr Val Pro Asn Thr Thr Gln Ala Ser Thr Pro Pro Gln Thr
 Page 529

195

200

205

Gln Thr Pro Gln Pro Asn Pro Pro Pro Val Gln Ala Thr Pro His Pro
 210 215 220

Phe Pro Ala Val Thr Pro Asp Leu Ile Val Gln Thr Pro Val Met Thr
 225 230 235 240

Val Val Pro Pro Gln Pro Leu Gln Thr Pro Pro Pro Val Pro Pro Gln
 245 250 255

Pro Gln Pro Pro Pro Ala Pro Ala Pro Gln Pro Val Gln Ser His Pro
 260 265 270

Pro Ile Ile Ala Ala Thr Pro Gln Pro Val Lys Thr Lys Lys Gly Val
 275 280 285

Lys Arg Lys Ala Asp Thr Thr Thr Pro Thr Thr Ile Asp Pro Ile His
 290 295 300

Glu Pro Pro Ser Leu Pro Pro Glu Pro Lys Thr Thr Lys Leu Gly Gln
 305 310 315 320

Arg Arg Glu Ser Ser Arg Pro Val Lys Pro Pro Lys Lys Asp Val Pro
 325 330 335

Asp Ser Gln Gln His Pro Ala Pro Glu Lys Ser Ser Lys Val Ser Glu
 340 345 350

Gln Leu Lys Cys Cys Ser Gly Ile Leu Lys Glu Met Phe Ala Lys Lys
 355 360 365

His Ala Ala Tyr Ala Trp Pro Phe Tyr Lys Pro Val Asp Val Glu Ala
 370 375 380

Leu Gly Leu His Asp Tyr Cys Asp Ile Ile Lys His Pro Met Asp Met
 385 390 395 400

Ser Thr Ile Lys Ser Lys Leu Glu Ala Arg Glu Tyr Arg Asp Ala Gln
 405 410 415

Glu Phe Gly Ala Asp Val Arg Leu Met Phe Ser Asn Cys Tyr Lys Tyr
 420 425 430

Asn Pro Pro Asp His Glu Val Val Ala Met Ala Arg Lys Leu Gln Asp
 435 440 445

Val Phe Glu Met Arg Phe Ala Lys Met Pro Asp Glu Pro Glu Glu Pro
 450 455 460

Val Val Ala Val Ser Ser Pro Ala Val Pro Pro Pro Thr Lys Val Val

465 470 475 480
 Ala Pro Pro Ser Ser Ser Asp Ser Ser Ser Asp Ser Ser Ser Asp Ser
 485 490 495
 Asp Ser Ser Thr Asp Asp Ser Glu Glu Glu Arg Ala Gln Arg Leu Ala
 500 505 510
 Glu Leu Gln Glu Gln Leu Lys Ala Val His Glu Gln Leu Ala Ala Leu
 515 520 525
 Ser Gln Pro Gln Gln Asn Lys Pro Lys Lys Lys Glu Lys Asp Lys Lys
 530 535 540
 Glu Lys Lys Lys Glu Lys His Lys Arg Lys Glu Glu Val Glu Glu Asn
 545 550 555 560
 Lys Lys Ser Lys Ala Lys Glu Pro Pro Pro Lys Lys Thr Lys Lys Asn
 565 570 575
 Asn Ser Ser Asn Ser Asn Val Ser Lys Lys Glu Pro Ala Pro Met Lys
 580 585 590
 Ser Lys Pro Pro Pro Thr Tyr Glu Ser Glu Glu Glu Asp Lys Cys Lys
 595 600 605
 Pro Met Ser Tyr Glu Glu Lys Arg Gln Leu Ser Leu Asp Ile Asn Lys
 610 615 620
 Leu Pro Gly Glu Lys Leu Gly Arg Val Val His Ile Ile Gln Ser Arg
 625 630 635 640
 Glu Pro Ser Leu Lys Asn Ser Asn Pro Asp Glu Ile Glu Ile Asp Phe
 645 650 655
 Glu Thr Leu Lys Pro Ser Thr Leu Arg Glu Leu Glu Arg Tyr Val Thr
 660 665 670
 Ser Cys Leu Arg Lys Lys Arg Lys Pro Gln Ala Glu Lys Val Asp Val
 675 680 685
 Ile Ala Gly Ser Ser Lys Met Lys Gly Phe Ser Ser Ser Glu Ser Glu
 690 695 700
 Ser Ser Ser Glu Ser Ser Ser Asp Ser Glu Asp Ser Glu Thr Gly
 705 710 715 720
 Pro Ala

<210> 446

<211> 171
 <212> PRT
 <213> Homo sapiens

<400> 446

Met His Pro Phe Tyr Thr Arg Ala Ala Thr Met Ile Gly Glu Ile Ala
 1 5 10 15

Ala Ala Val Ser Phe Ile Ser Lys Phe Leu Arg Thr Lys Gly Leu Thr
 20 25 30

Ser Glu Arg Gln Leu Gln Thr Phe Ser Gln Ser Leu Gln Glu Leu Leu
 35 40 45

Ala Glu His Tyr Lys His His Trp Phe Pro Glu Lys Pro Cys Lys Gly
 50 55 60

Ser Gly Tyr Arg Cys Ile Arg Ile Asn His Lys Met Asp Pro Leu Ile
 65 70 75 80

Gly Gln Ala Ala Gln Arg Ile Gly Leu Ser Ser Gln Glu Leu Phe Arg
 85 90 95

Leu Leu Pro Ser Glu Leu Thr Leu Trp Val Asp Pro Tyr Glu Val Ser
 100 105 110

Tyr Arg Ile Gly Glu Asp Gly Ser Ile Cys Val Leu Tyr Glu Ala Ser
 115 120 125

Pro Ala Gly Gly Ser Thr Gln Asn Ser Thr Asn Val Gln Met Val Asp
 130 135 140

Ser Arg Ile Ser Cys Lys Glu Glu Leu Leu Leu Gly Arg Thr Ser Pro
 145 150 155 160

Ser Lys Asn Tyr Asn Met Met Thr Val Ser Gly
 165 170

<210> 447
 <211> 291
 <212> PRT
 <213> Homo sapiens

<400> 447

Met Ser Gln Glu Gly Val Glu Leu Glu Lys Ser Val Arg Arg Leu Arg
 1 5 10 15

Glu Lys Phe His Gly Lys Val Ser Ser Lys Lys Ala Gly Ala Leu Met
 20 25 30

Arg Lys Phe Gly Ser Asp His Thr Gly Val Gly Arg Ser Ile Val Tyr
 35 40 45

Gly Val Lys Gln Lys Asp Gly Gln Glu Leu Ser Asn Asp Leu Asp Ala
50 55 60

Gln Asp Pro Pro Glu Asp Met Lys Gln Asp Arg Asp Ile Gln Ala Val
65 70 75 80

Ala Thr Ser Leu Leu Pro Leu Thr Glu Ala Asn Leu Arg Met Phe Gln
85 90 95

Arg Ala Gln Asp Asp Leu Ile Pro Ala Val Asp Arg Gln Phe Ala Cys
100 105 110

Ser Ser Cys Asp His Val Trp Trp Arg Arg Val Pro Gln Arg Lys Glu
115 120 125

Val Ser Arg Cys Arg Lys Cys Arg Lys Arg Tyr Glu Pro Val Pro Ala
130 135 140

Asp Lys Met Trp Gly Leu Ala Glu Phe His Cys Pro Lys Cys Arg His
145 150 155 160

Asn Phe Arg Gly Trp Ala Gln Met Gly Ser Pro Ser Pro Cys Tyr Gly
165 170 175

Cys Gly Phe Pro Val Tyr Pro Thr Arg Ile Leu Pro Pro Arg Trp Asp
180 185 190

Arg Asp Pro Asp Arg Arg Ser Thr His Thr His Ser Cys Ser Ala Ala
195 200 205

Asp Cys Tyr Asn Arg Arg Glu Pro His Val Pro Gly Thr Ser Cys Ala
210 215 220

His Pro Lys Ser Arg Lys Gln Asn His Leu Pro Lys Val Leu His Pro
225 230 235 240

Ser Asn Pro His Ile Ser Ser Gly Ser Thr Val Ala Thr Cys Leu Ser
245 250 255

Gln Gly Gly Leu Leu Glu Asp Leu Asp Asn Leu Ile Leu Glu Asp Leu
260 265 270

Lys Glu Glu Glu Glu Glu Glu Glu Val Glu Asp Glu Glu Gly Gly
275 280 285

Pro Arg Glu
290

<210> 448
<211> 166
<212> PRT

<213> Homo sapiens

<400> 448

Met Glu Ala Gly Pro His Pro Arg Pro Gly His Cys Cys Lys Pro Gly
 1 5 10 15

Gly Arg Leu Asp Met Asn His Gly Phe Val His His Ile Arg Arg Asn
 20 25 30

Gln Ile Ala Arg Asp Asp Tyr Asp Lys Lys Val Lys Gln Ala Ala Lys
 35 40 45

Glu Lys Val Arg Arg Arg His Thr Pro Ala Pro Thr Arg Pro Arg Lys
 50 55 60

Pro Asp Leu Gln Val Tyr Leu Pro Arg His Arg Asp Val Ser Ala His
 65 70 75 80

Pro Arg Asn Pro Asp Tyr Glu Glu Ser Gly Glu Ser Ser Ser Ser Gly
 85 90 95

Gly Ser Glu Leu Glu Pro Ser Gly His Gln Leu Phe Cys Leu Glu Tyr
 100 105 110

Glu Ala Asp Ser Gly Glu Val Thr Ser Val Ile Val Tyr Gln Gly Asp
 115 120 125

Asp Pro Gly Lys Val Ser Glu Lys Val Ser Ala His Thr Pro Leu Asp
 130 135 140

Pro Pro Met Arg Glu Ala Leu Lys Leu Arg Ile Gln Glu Glu Ile Ala
 145 150 155 160

Lys Arg Gln Ser Gln His
 165

<210> 449

<211> 357

<212> PRT

<213> Homo sapiens

<400> 449

Met Ala Arg Glu Asn Gly Glu Ser Ser Ser Ser Trp Lys Lys Gln Ala
 1 5 10 15

Glu Asp Ile Lys Lys Ile Phe Glu Phe Lys Glu Thr Leu Gly Thr Gly
 20 25 30

Ala Phe Ser Glu Val Val Leu Ala Glu Glu Lys Ala Thr Gly Lys Leu
 35 40 45

Phe Ala Val Lys Cys Ile Pro Lys Lys Ala Leu Lys Gly Lys Glu Ser
 Page 534

50

55

60

Ser Ile Glu Asn Glu Ile Ala Val Leu Arg Lys Ile Lys His Glu Asn
65 70 75 80

Ile Val Ala Leu Glu Asp Ile Tyr Glu Ser Pro Asn His Leu Tyr Leu
85 90 95

Val Met Gln Leu Val Ser Gly Gly Glu Leu Phe Asp Arg Ile Val Glu
100 105 110

Lys Gly Phe Tyr Thr Glu Lys Asp Ala Ser Thr Leu Ile Arg Gln Val
115 120 125

Leu Asp Ala Val Tyr Tyr Leu His Arg Met Gly Ile Val His Arg Asp
130 135 140

Leu Lys Pro Glu Asn Leu Leu Tyr Tyr Ser Gln Asp Glu Glu Ser Lys
145 150 155 160

Ile Met Ile Ser Asp Phe Gly Leu Ser Lys Met Glu Gly Lys Gly Asp
165 170 175

Val Met Ser Thr Ala Cys Gly Thr Pro Gly Tyr Val Ala Pro Glu Val
180 185 190

Leu Ala Gln Lys Pro Tyr Ser Lys Ala Val Asp Cys Trp Ser Ile Gly
195 200 205

Val Ile Ala Tyr Ile Leu Leu Cys Gly Tyr Pro Pro Phe Tyr Asp Glu
210 215 220

Asn Asp Ser Lys Leu Phe Glu Gln Ile Leu Lys Ala Glu Tyr Glu Phe
225 230 235 240

Asp Ser Pro Tyr Trp Asp Asp Ile Ser Asp Ser Ala Lys Asp Phe Ile
245 250 255

Arg Asn Leu Met Glu Lys Asp Pro Asn Lys Arg Tyr Thr Cys Glu Gln
260 265 270

Ala Ala Arg His Pro Trp Ile Ala Gly Asp Thr Ala Leu Asn Lys Asn
275 280 285

Ile His Glu Ser Val Ser Ala Gln Ile Arg Lys Asn Phe Ala Lys Ser
290 295 300

Lys Trp Arg Gln Ala Phe Asn Ala Thr Ala Val Val Arg His Met Arg
305 310 315 320

Lys Leu His Leu Gly Ser Ser Leu Asp Ser Ser Asn Ala Ser Val Ser
Page 535

Ser Ser Leu Ser Leu Ala Ser Gln Lys Asp Cys Ala Tyr Val Ala Lys
340 345 350

Pro Glu Ser Leu Ser
355

<210> 450
<211> 495
<212> PRT
<213> Homo sapiens

<400> 450

Met Ala Thr Thr Ala Thr Cys Thr Arg Phe Thr Asp Asp Tyr Gln Leu
1 5 10 15

Phe Glu Glu Leu Gly Lys Gly Ala Phe Ser Val Val Arg Arg Cys Val
20 25 30

Lys Lys Thr Ser Thr Gln Glu Tyr Ala Ala Lys Ile Ile Asn Thr Lys
35 40 45

Lys Leu Ser Ala Arg Asp His Gln Lys Leu Glu Arg Glu Ala Arg Ile
50 55 60

Cys Arg Leu Leu Lys His Pro Asn Ile Val Arg Leu His Asp Ser Ile
65 70 75 80

Ser Glu Glu Gly Phe His Tyr Leu Val Phe Asp Leu Val Thr Gly Gly
85 90 95

Glu Leu Phe Glu Asp Ile Val Ala Arg Glu Tyr Tyr Ser Glu Ala Asp
100 105 110

Ala Ser His Cys Ile His Gln Ile Leu Glu Ser Val Asn His Ile His
115 120 125

Gln His Asp Ile Val His Arg Asp Leu Lys Pro Glu Asn Leu Leu Leu
130 135 140

Ala Ser Lys Cys Lys Gly Ala Ala Val Lys Leu Ala Asp Phe Gly Leu
145 150 155 160

Ala Ile Glu Val Gln Gly Glu Gln Gln Ala Trp Phe Gly Phe Ala Gly
165 170 175

Thr Pro Gly Tyr Leu Ser Pro Glu Val Leu Arg Lys Asp Pro Tyr Gly
180 185 190

Lys Pro Val Asp Ile Trp Ala Cys Gly Val Ile Leu Tyr Ile Leu Leu
195 200 205

Val Gly Tyr Pro Pro Phe Trp Asp Glu Asp Gln His Lys Leu Tyr Gln
 210 215 220
 Gln Ile Lys Ala Gly Ala Tyr Asp Phe Pro Ser Pro Glu Trp Asp Thr
 225 230 235 240
 Val Thr Pro Glu Ala Lys Asn Leu Ile Asn Gln Met Leu Thr Ile Asn
 245 250 255
 Pro Ala Lys Arg Ile Thr Ala Asp Gln Ala Leu Lys His Pro Trp Val
 260 265 270
 Cys Gln Arg Ser Thr Val Ala Ser Met Met His Arg Gln Glu Thr Val
 275 280 285
 Glu Cys Leu Arg Lys Phe Asn Ala Arg Arg Lys Leu Lys Gly Ala Ile
 290 295 300
 Leu Thr Thr Met Leu Val Ser Arg Asn Phe Ser Ala Ala Lys Ser Leu
 305 310 315 320
 Leu Asn Lys Lys Ser Asp Gly Gly Val Lys Glu Pro Gln Thr Thr Val
 325 330 335
 Val His Asn Ala Thr Asp Gly Ile Lys Gly Ser Thr Glu Ser Cys Asn
 340 345 350
 Thr Thr Thr Glu Asp Glu Asp Leu Lys Val Arg Lys Gln Glu Ile Ile
 355 360 365
 Lys Ile Thr Glu Gln Leu Ile Glu Ala Ile Asn Asn Gly Asp Phe Glu
 370 375 380
 Ala Tyr Thr Lys Ile Cys Asp Pro Gly Leu Thr Ser Phe Glu Pro Glu
 385 390 395 400
 Ala Leu Gly Asn Leu Val Glu Gly Met Asp Phe His Lys Phe Tyr Phe
 405 410 415
 Glu Asn Leu Leu Ser Lys Asn Ser Lys Pro Ile His Thr Thr Ile Leu
 420 425 430
 Asn Pro His Val His Val Ile Gly Glu Asp Ala Ala Cys Ile Ala Tyr
 435 440 445
 Ile Arg Leu Thr Gln Tyr Ile Asp Gly Gln Gly Arg Pro Arg Thr Ser
 450 455 460
 Gln Ser Glu Glu Thr Arg Val Trp His Arg Arg Asp Gly Lys Trp Leu
 465 470 475 480

Asn Val His Tyr His Cys Ser Gly Ala Pro Ala Ala Pro Leu Gln
485 490 495

```
<210> 451
<211> 475
<212> PRT
<213> Homo sapiens
```

<400> 451

Met Ala Asp Met Gln Asn Leu Val Glu Arg Leu Glu Arg Ala Val Gly
1 5 10 15

Arg Leu Glu Ala Val Ser His Thr Ser Asp Met His Arg Gly Tyr Ala
20 25 30

Asp Ser Pro Ser Lys Ala Gly Ala Ala Pro Tyr Val Gln Ala Phe Asp
35 40 45

Ser Leu Leu Ala Gly Pro Val Ala Glu Tyr Leu Lys Ile Ser Lys Glu
50 55 60

Ile Gly Gly Asp Val Gln Lys His Ala Glu Met Val His Thr Gly Leu
65 70 75 80

Lys Leu Glu Arg Ala Leu Leu Val Thr Ala Ser Gln Cys Gln Gln Pro
85 90 95

Ala Glu Asn Lys Leu Ser Asp Leu Leu Ala Pro Ile Ser Glu Gln Ile
100 105 110

Lys Glu Val Ile Thr Phe Arg Glu Lys Asn Arg Gly Ser Lys Leu Phe
115 120 125

Asn His Leu Ser Ala Val Ser Glu Ser Ile Gln Ala Leu Gly Trp Val
130 135 140

Ala Met Ala Pro Lys Pro Gly Pro Tyr Val Lys Glu Met Asn Asp Ala
145 150 155 160

Ala Met Phe Tyr Thr Asn Arg Val Leu Lys Glu Tyr Lys Asp Val Asp
165 170 175

Lys Lys His Val Asp Trp Val Lys Ala Tyr Leu Ser Ile Trp Thr Glu
180 185 190

Leu Gln Ala Tyr Ile Lys Glu Phe His Thr Thr Gly Leu Ala Trp Ser
195 200 205

Lys Thr Gly Pro Val Ala Lys Glu Leu Ser Gly Leu Pro Ser Gly Pro
210 215 220

Ser Ala Gly Ser Cys Pro Pro Pro Pro Pro Pro Cys Pro Pro Pro Pro
 225 230 235 240
 Pro Val Ser Thr Ile Ser Cys Ser Tyr Glu Ser Ala Ser Arg Ser Ser
 245 250 255
 Leu Phe Ala Gln Ile Asn Gln Gly Glu Ser Ile Thr His Ala Leu Lys
 260 265 270
 His Val Ser Asp Asp Met Lys Thr His Lys Asn Pro Ala Leu Lys Ala
 275 280 285
 Gln Ser Gly Pro Val Arg Ser Gly Pro Lys Pro Phe Ser Ala Pro Lys
 290 295 300
 Pro Gln Thr Ser Pro Ser Pro Lys Arg Ala Thr Lys Lys Glu Pro Ala
 305 310 315 320
 Val Leu Glu Leu Glu Gly Lys Lys Trp Arg Val Glu Asn Gln Glu Asn
 325 330 335
 Val Ser Asn Leu Val Ile Glu Asp Thr Glu Leu Lys Gln Val Ala Tyr
 340 345 350
 Ile Tyr Lys Cys Val Asn Thr Thr Leu Gln Ile Lys Gly Lys Ile Asn
 355 360 365
 Ser Ile Thr Val Asp Asn Cys Lys Lys Leu Gly Leu Val Phe Asp Asp
 370 375 380
 Val Val Gly Ile Val Glu Ile Ile Asn Ser Lys Asp Val Lys Val Gln
 385 390 395 400
 Val Met Gly Lys Val Pro Thr Ile Ser Ile Asn Lys Thr Asp Gly Cys
 405 410 415
 His Ala Tyr Leu Ser Lys Asn Ser Leu Asp Cys Glu Ile Val Ser Ala
 420 425 430
 Lys Ser Ser Glu Met Asn Val Leu Ile Pro Thr Glu Gly Gly Asp Phe
 435 440 445
 Asn Glu Phe Pro Val Pro Glu Gln Phe Lys Thr Leu Trp Asn Gly Gln
 450 455 460
 Lys Leu Val Thr Thr Val Thr Glu Ile Ala Gly
 465 470 475

<210> 452
 <211> 703
 <212> PRT

<213> Homo sapiens

<400> 452

Met Ala Asp Arg Arg Arg Gln Arg Ala Ser Gln Asp Thr Glu Asp Glu
 1 5 10 15
 Glu Ser Gly Ala Ser Gly Ser Asp Ser Gly Gly Ser Pro Leu Arg Gly
 20 25 30
 Gly Gly Ser Cys Ser Gly Ser Ala Gly Gly Gly Gly Ser Gly Ser Leu
 35 40 45
 Pro Ser Gln Arg Gly Gly Arg Thr Gly Ala Leu His Leu Arg Arg Val
 50 55 60
 Glu Ser Gly Gly Ala Lys Ser Ala Glu Glu Ser Glu Cys Glu Ser Glu
 65 70 75 80
 Asp Gly Ile Glu Gly Asp Ala Val Leu Ser Asp Tyr Glu Ser Ala Glu
 85 90 95
 Asp Ser Glu Gly Glu Glu Gly Glu Tyr Ser Glu Glu Glu Asn Ser Lys
 100 105 110
 Val Glu Leu Lys Ser Glu Ala Asn Asp Ala Val Asn Ser Ser Thr Lys
 115 120 125
 Glu Glu Lys Gly Glu Glu Lys Pro Asp Thr Lys Ser Thr Val Thr Gly
 130 135 140
 Glu Arg Gln Ser Gly Asp Gly Gln Glu Ser Thr Glu Pro Val Glu Asn
 145 150 155 160
 Lys Val Gly Lys Lys Gly Pro Lys His Leu Asp Asp Asp Glu Asp Arg
 165 170 175
 Lys Asn Pro Ala Tyr Ile Pro Arg Lys Gly Leu Phe Phe Glu His Asp
 180 185 190
 Leu Arg Gly Gln Thr Gln Glu Glu Glu Val Arg Pro Lys Gly Arg Gln
 195 200 205
 Arg Lys Leu Trp Lys Asp Glu Gly Arg Trp Glu His Asp Lys Phe Arg
 210 215 220
 Glu Asp Glu Gln Ala Pro Lys Ser Arg Gln Glu Leu Ile Ala Leu Tyr
 225 230 235 240
 Gly Tyr Asp Ile Arg Ser Ala His Asn Pro Asp Asp Ile Lys Pro Arg
 245 250 255

Arg Ile Arg Lys₂₆₀ Pro Arg Tyr Gly Ser₂₆₅ Pro Pro Gln Arg Asp₂₇₀ Pro Asn
 Trp Asn Gly₂₇₅ Glu Arg Leu Asn Lys₂₈₀ Ser His Arg His Gln₂₈₅ Gly Leu Gly
 Gly Thr₂₉₀ Leu Pro Pro Arg Thr₂₉₅ Phe Ile Asn Arg Asn₃₀₀ Ala Ala Gly Thr
 Gly₃₀₅ Arg Met Ser Ala Pro₃₁₀ Arg Asn Tyr Ser Arg₃₁₅ Ser Gly Gly Phe Lys₃₂₀
 Glu Gly Arg Ala Gly₃₂₅ Phe Arg Pro Val Glu₃₃₀ Ala Gly Gly Gln His₃₃₅ Gly
 Gly Arg Ser Gly₃₄₀ Glu Thr Val Lys His₃₄₅ Glu Ile Ser Tyr Arg₃₅₀ Ser Arg
 Arg Leu Glu₃₅₅ Gln Thr Ser Val Arg₃₆₀ Asp Pro Ser Pro Glu₃₆₅ Ala Asp Ala
 Pro Val₃₇₀ Leu Gly Ser Pro Glu₃₇₅ Lys Glu Glu Ala Ala₃₈₀ Ser Glu Pro Pro
 Ala₃₈₅ Ala Ala Pro Asp Ala₃₉₀ Ala Pro Pro Pro Pro₃₉₅ Asp Arg Pro Ile Glu₄₀₀
 Lys Lys Ser Tyr Ser₄₀₅ Arg Ala Arg Arg Thr₄₁₀ Arg Thr Lys Val Gly₄₁₅ Asp
 Ala Val Lys Leu₄₂₀ Ala Glu Glu Val Pro₄₂₅ Pro Pro Pro Glu Gly₄₃₀ Leu Ile
 Pro Ala Pro₄₃₅ Pro Val Pro Glu Thr₄₄₀ Thr Pro Thr Pro₄₄₅ Thr Lys Thr
 Gly Thr₄₅₀ Trp Glu Ala Pro Val₄₅₅ Asp Ser Ser Thr Ser₄₆₀ Gly Leu Glu Gln
 Asp₄₆₅ Val Ala Gln Leu Asn₄₇₀ Ile Ala Glu Gln Asn₄₇₅ Trp Ser Pro Gly Gln₄₈₀
 Pro Ser Phe Leu Gln₄₈₅ Pro Arg Glu Leu Arg₄₉₀ Gly Met Pro Asn His₄₉₅ Ile
 His Met Gly Ala₅₀₀ Gly Pro Pro Pro Gln₅₀₅ Phe Asn Arg Met Glu₅₁₀ Glu Met
 Gly Val Gln₅₁₅ Gly Gly Arg Ala Lys₅₂₀ Arg Tyr Ser Ser Gln₅₂₅ Arg Gln Arg

Pro Val Pro Glu Pro Pro Ala Pro Pro Val His Ile Ser Ile Met Glu
530 535 540

Gly His Tyr Tyr Asp Pro Leu Gln Phe Gln Gly Pro Ile Tyr Thr His
545 550 555 560

Gly Asp Ser Pro Ala Pro Leu Pro Pro Gln Gly Met Leu Val Gln Pro
565 570 575

Gly Met Asn Leu Pro His Pro Gly Leu His Pro His Gln Thr Pro Ala
580 585 590

Pro Leu Pro Asn Pro Gly Leu Tyr Pro Pro Pro Val Ser Met Ser Pro
595 600 605

Gly Gln Pro Pro Pro Gln Gln Leu Leu Ala Pro Thr Tyr Phe Ser Ala
610 615 620

Pro Gly Val Met Asn Phe Gly Asn Pro Ser Tyr Pro Tyr Ala Pro Gly
625 630 635 640

Ala Leu Pro Pro Pro Pro Pro Pro His Leu Tyr Pro Asn Thr Gln Ala
645 650 655

Pro Ser Gln Val Tyr Gly Gly Val Thr Tyr Tyr Asn Pro Ala Gln Gln
660 665 670

Gln Val Gln Pro Lys Pro Ser Pro Pro Arg Arg Thr Pro Gln Pro Val
675 680 685

Thr Ile Lys Pro Pro Pro Pro Glu Val Val Ser Arg Gly Ser Ser
690 695 700

<210> 453
<211> 496
<212> PRT
<213> Homo sapiens

<400> 453

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser
1 5 10 15

Glu Asp Leu Ala Ser Leu Lys Phe Leu Ser Leu Asp Tyr Ile Pro Gln
20 25 30

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
Page 542

65 70 75 80
 Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
 85 90 95
 Gln Ile Ser Ala Tyr Arg Phe His Phe Cys Arg Met Ser Trp Ala Glu
 100 105 110
 Ala Asn Ser Gln Cys Gln Thr Gln Ser Val Pro Phe Trp Arg Arg Val
 115 120 125
 Asp His Leu Leu Ile Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
 130 135 140
 Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
 145 150 155 160
 Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
 165 170 175
 Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
 180 185 190
 Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
 195 200 205
 Asp Tyr Glu Glu Phe Ser Lys Gly Glu Glu Leu Cys Gly Val Met Thr
 210 215 220
 Ile Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp
 225 230 235 240
 Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile
 245 250 255
 Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His
 260 265 270
 Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr
 275 280 285
 Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys
 290 295 300
 Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp
 305 310 315 320
 His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp
 325 330 335
 Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu
 Page 543

340

345

350

Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys
 355 360 365

Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys
 370 375 380

Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met
 385 390 395 400

Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe
 405 410 415

Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser Tyr Arg Asn Pro
 420 425 430

Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu
 435 440 445

Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn
 450 455 460

Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met
 465 470 475 480

Pro Gln Pro Thr Phe Thr Leu Arg Lys Lys Leu Val Phe Pro Ser Asp
 485 490 495

<210> 454
 <211> 251
 <212> PRT
 <213> Homo sapiens

<400> 454

Met Glu Leu Ser Ala Ile Gly Glu Gln Val Phe Ala Val Glu Ser Ile
 1 5 10 15

Arg Lys Lys Arg Val Arg Lys Gly Lys Val Glu Tyr Leu Val Lys Trp
 20 25 30

Lys Gly Trp Pro Pro Lys Tyr Ser Thr Trp Glu Pro Glu Glu His Ile
 35 40 45

Leu Asp Pro Arg Leu Val Met Ala Tyr Glu Glu Lys Glu Glu Arg Asp
 50 55 60

Arg Ala Ser Gly Tyr Arg Lys Arg Gly Pro Lys Pro Lys Arg Leu Leu
 65 70 75 80

Leu Gln Arg Leu Tyr Ser Met Asp Leu Arg Ser Ser His Lys Ala Lys
 85 90 95

Gly Lys Glu Lys₁₀₀ Leu Cys Phe Ser Leu₁₀₅ Thr Cys Pro Leu Gly₁₁₀ Ser Gly

Ser Pro Glu₁₁₅ Gly Val Val Lys Ala₁₂₀ Gly Ala Pro Glu₁₂₅ Leu Val Asp Lys

Gly Pro₁₃₀ Leu Val Pro Thr Leu₁₃₅ Pro Phe Pro Leu Arg₁₄₀ Lys Pro Arg Lys

Ala His Lys Tyr Leu Arg₁₅₀ Leu Ser Arg Lys Lys₁₅₅ Phe Pro Pro Arg Gly₁₆₀

Pro Asn Leu Glu Ser₁₆₅ His Ser His Arg Arg₁₇₀ Glu Leu Phe Leu Gln₁₇₅ Glu

Pro Pro Ala Pro₁₈₀ Asp Val Leu Gln Ala₁₈₅ Ala Gly Glu Trp Glu₁₉₀ Pro Ala

Ala Gln Pro₁₉₅ Pro Glu Glu Glu Ala₂₀₀ Asp Ala Asp Leu Ala₂₀₅ Glu Gly Pro

Pro Pro Trp Thr Pro Ala Leu₂₁₅ Pro Ser Ser Glu Val₂₂₀ Thr Val Thr Asp

Ile Thr Ala Asn Ser Ile₂₃₀ Thr Val Thr Phe Arg₂₃₅ Glu Ala Gln Ala₂₄₀ Ala

Glu Gly Phe Phe Arg₂₄₅ Asp Arg Ser Gly Lys₂₅₀ Phe

<210> 455
<211> 292
<212> PRT
<213> Homo sapiens

<400> 455

Met Glu Leu Leu Cys₅ Cys Glu Gly Thr Arg₁₀ His Ala Pro Arg Ala₁₅ Gly

Pro Asp Pro Arg₂₀ Leu Leu Gly Asp Gln₂₅ Arg Val Leu Gln₃₀ Ser Leu Leu

Arg Leu Glu₃₅ Glu Arg Tyr Val Pro₄₀ Arg Ala Ser Tyr Phe₄₅ Gln Cys Val

Gln Arg Glu Ile Lys Pro His₅₅ Met Arg Lys Met Leu₆₀ Ala Tyr Trp Met

Leu Glu Val Cys Glu Glu₇₀ Gln Arg Cys Glu Glu₇₅ Glu Val Phe Pro Leu₈₀

Ala Met Asn Tyr Leu Asp Arg Tyr Leu Ser Cys Val Pro Thr Arg Lys
 85 90 95

Ala Gln Leu Gln Leu Leu Gly Ala Val Cys Met Leu Leu Ala Ser Lys
 100 105 110

Leu Arg Glu Thr Thr Pro Leu Thr Ile Glu Lys Leu Cys Ile Tyr Thr
 115 120 125

Asp His Ala Val Ser Pro Arg Gln Leu Arg Asp Trp Glu Val Leu Val
 130 135 140

Leu Gly Lys Leu Lys Trp Asp Leu Ala Ala Val Ile Ala His Asp Phe
 145 150 155 160

Leu Ala Phe Ile Leu His Arg Leu Ser Leu Pro Arg Asp Arg Gln Ala
 165 170 175

Leu Val Lys Lys His Ala Gln Thr Phe Leu Ala Leu Cys Ala Thr Asp
 180 185 190

Tyr Thr Phe Ala Met Tyr Pro Pro Ser Met Ile Ala Thr Gly Ser Ile
 195 200 205

Gly Ala Ala Val Gln Gly Leu Gly Ala Cys Ser Met Ser Gly Asp Glu
 210 215 220

Leu Thr Glu Leu Leu Ala Gly Ile Thr Gly Thr Glu Val Asp Cys Leu
 225 230 235 240

Arg Ala Cys Gln Glu Gln Ile Glu Ala Ala Leu Arg Glu Ser Leu Arg
 245 250 255

Glu Ala Ser Gln Thr Ser Ser Ser Pro Ala Pro Lys Ala Pro Arg Gly
 260 265 270

Ser Ser Ser Gln Gly Pro Ser Gln Thr Ser Thr Pro Thr Asp Val Thr
 275 280 285

Ala Ile His Leu
 290

<210> 456
 <211> 344
 <212> PRT
 <213> Homo sapiens

<400> 456

Met Lys Asp Leu Gly Ala Glu His Leu Ala Gly His Glu Gly Val Gln
 1 5 10 15

Leu Leu Gly Leu Leu Asn Val Tyr Leu Glu Gln Glu Glu Arg Phe Gln
 20 25 30
 Pro Arg Glu Lys Gly Leu Ser Leu Ile Glu Ala Thr Pro Glu Asn Asp
 35 40 45
 Asn Thr Leu Cys Pro Gly Leu Arg Asn Ala Lys Val Glu Asp Leu Arg
 50 55 60
 Ser Leu Ala Asn Phe Phe Gly Ser Cys Thr Glu Thr Phe Val Leu Ala
 65 70 75 80
 Val Asn Ile Leu Asp Arg Phe Leu Ala Leu Met Lys Val Lys Pro Lys
 85 90 95
 His Leu Ser Cys Ile Gly Val Cys Ser Phe Leu Leu Ala Ala Arg Ile
 100 105 110
 Val Glu Glu Asp Cys Asn Ile Pro Ser Thr His Asp Val Ile Arg Ile
 115 120 125
 Ser Gln Cys Lys Cys Thr Ala Ser Asp Ile Lys Arg Met Glu Lys Ile
 130 135 140
 Ile Ser Glu Lys Leu His Tyr Glu Leu Glu Ala Thr Thr Ala Leu Asn
 145 150 155 160
 Phe Leu His Leu Tyr His Thr Ile Ile Leu Cys His Thr Ser Glu Arg
 165 170 175
 Lys Glu Ile Leu Ser Leu Asp Lys Leu Glu Ala Gln Leu Lys Ala Cys
 180 185 190
 Asn Cys Arg Leu Ile Phe Ser Lys Ala Lys Pro Ser Val Leu Ala Leu
 195 200 205
 Cys Leu Leu Asn Leu Glu Val Glu Thr Leu Lys Ser Val Glu Leu Leu
 210 215 220
 Glu Ile Leu Leu Leu Val Lys Lys His Ser Lys Ile Asn Asp Thr Glu
 225 230 235 240
 Phe Phe Tyr Trp Arg Glu Leu Val Ser Lys Cys Leu Ala Glu Tyr Ser
 245 250 255
 Ser Pro Glu Cys Cys Lys Pro Asp Leu Lys Lys Leu Val Trp Ile Val
 260 265 270
 Ser Arg Arg Thr Ala Gln Asn Leu His Asn Ser Tyr Tyr Ser Val Pro
 275 280 285

Glu Leu Pro Thr Ile Pro Glu Gly Gly Cys Phe Asp Glu Ser Glu Ser
 290 295 300

Glu Asp Ser Cys Glu Asp Met Ser Cys Gly Glu Glu Ser Leu Ser Ser
 305 310 315 320

Ser Pro Pro Ser Asp Gln Glu Cys Thr Phe Phe Phe Asn Phe Lys Val
 325 330 335

Ala Gln Thr Leu Cys Phe Pro Ser
 340

<210> 457
 <211> 663
 <212> PRT
 <213> Homo sapiens
 <400> 457

Met Ala Ser Gly Arg Gly Ala Ser Ser Arg Trp Phe Phe Thr Arg Glu
 1 5 10 15

Gln Leu Glu Asn Thr Pro Ser Arg Arg Cys Gly Val Glu Ala Asp Lys
 20 25 30

Glu Leu Ser Cys Arg Gln Gln Ala Ala Asn Leu Ile Gln Glu Met Gly
 35 40 45

Gln Arg Leu Asn Val Ser Gln Leu Thr Ile Asn Thr Ala Ile Val Tyr
 50 55 60

Met His Arg Phe Tyr Met His His Ser Phe Thr Lys Phe Asn Lys Asn
 65 70 75 80

Ile Ile Ser Ser Thr Ala Leu Phe Leu Ala Ala Lys Val Glu Glu Gln
 85 90 95

Ala Arg Lys Leu Glu His Val Ile Lys Val Ala His Ala Cys Leu His
 100 105 110

Pro Leu Glu Pro Leu Leu Asp Thr Lys Cys Asp Ala Tyr Leu Gln Gln
 115 120 125

Thr Gln Glu Leu Val Ile Leu Glu Thr Ile Met Leu Gln Thr Leu Gly
 130 135 140

Phe Glu Ile Thr Ile Glu His Pro His Thr Asp Val Val Lys Cys Thr
 145 150 155 160

Gln Leu Val Arg Ala Ser Lys Asp Leu Ala Gln Thr Ser Tyr Phe Met
 165 170 175

Ala Thr Asn Ser Leu His Leu Thr Thr Phe Cys Leu Gln Tyr Lys Pro
 Page 548

180

185

190

Thr Val Ile Ala Cys Val Cys Ile His Leu Ala Cys Lys Trp Ser Asn
 195 200 205

Trp Glu Ile Pro Val Ser Thr Asp Gly Lys His Trp Trp Glu Tyr Val
 210 215 220

Asp Pro Thr Val Thr Leu Glu Leu Leu Asp Glu Leu Thr His Glu Phe
 225 230 235 240

Leu Gln Ile Leu Glu Lys Thr Pro Asn Arg Leu Lys Lys Ile Arg Asn
 245 250 255

Trp Arg Ala Asn Gln Ala Ala Arg Lys Pro Lys Val Asp Gly Gln Val
 260 265 270

Ser Glu Thr Pro Leu Leu Gly Ser Ser Leu Val Gln Asn Ser Ile Leu
 275 280 285

Val Asp Ser Val Thr Gly Val Pro Thr Asn Pro Ser Phe Gln Lys Pro
 290 295 300

Ser Thr Ser Ala Phe Pro Ala Pro Val Pro Leu Asn Ser Gly Asn Ile
 305 310 315 320

Ser Val Gln Asp Ser His Thr Ser Asp Asn Leu Ser Met Leu Ala Thr
 325 330 335

Gly Met Pro Ser Thr Ser Tyr Gly Leu Ser Ser His Gln Glu Trp Pro
 340 345 350

Gln His Gln Asp Ser Ala Arg Thr Glu Gln Leu Tyr Ser Gln Lys Gln
 355 360 365

Glu Thr Ser Leu Ser Gly Ser Gln Tyr Asn Ile Asn Phe Gln Gln Gly
 370 375 380

Pro Ser Ile Ser Leu His Ser Gly Leu His His Arg Pro Asp Lys Ile
 385 390 395 400

Ser Asp His Ser Ser Val Lys Gln Glu Tyr Thr His Lys Ala Gly Ser
 405 410 415

Ser Lys His His Gly Pro Ile Ser Thr Thr Pro Gly Ile Ile Pro Gln
 420 425 430

Lys Met Ser Leu Asp Lys Tyr Arg Glu Lys Arg Lys Leu Glu Thr Leu
 435 440 445

Asp Leu Asp Val Arg Asp His Tyr Ile Ala Ala Gln Val Glu Gln Gln
 Page 549

450

455

460

His Lys Gln Gly Gln Ser Gln Ala Ala Ser Ser Ser Ser Val Thr Ser
 465 470 475 480

Pro Ile Lys Met Lys Ile Pro Ile Ala Asn Thr Glu Lys Tyr Met Ala
 485 490 495

Asp Lys Lys Glu Lys Ser Gly Ser Leu Lys Leu Arg Ile Pro Ile Pro
 500 505 510

Pro Thr Asp Lys Ser Ala Ser Lys Glu Glu Leu Lys Met Lys Ile Lys
 515 520 525

Val Ser Ser Ser Glu Arg His Ser Ser Ser Asp Glu Gly Ser Gly Lys
 530 535 540

Ser Lys His Ser Ser Pro His Ile Ser Arg Asp His Lys Glu Lys His
 545 550 555 560

Lys Glu His Pro Ser Ser Arg His His Thr Ser Ser His Lys His Ser
 565 570 575

His Ser His Ser Gly Ser Ser Ser Gly Gly Ser Lys His Ser Ala Asp
 580 585 590

Gly Ile Pro Pro Thr Val Leu Arg Ser Pro Val Gly Leu Ser Ser Asp
 595 600 605

Gly Ile Ser Ser Ser Ser Ser Ser Ser Arg Lys Arg Leu His Val Asn
 610 615 620

Asp Ala Ser His Asn His His Ser Lys Met Ser Lys Ser Ser Lys Ser
 625 630 635 640

Ser Gly Gly Leu Arg Thr Ser Gln His Pro Arg Glu Thr Gly Gln Glu
 645 650 655

Ala Ser Gly Asp Gln Arg Ser
 660

<210> 458
 <211> 378
 <212> PRT
 <213> Homo sapiens

<400> 458

Met Asp Leu Gly Lys Pro Met Lys Ser Val Leu Val Val Ala Leu Leu
 1 5 10 15

Val Ile Phe Gln Val Cys Leu Cys Gln Asp Glu Val Thr Asp Asp Tyr
 20 25 30

Ile Gly Asp Asn Thr Thr Val Asp Tyr Thr Leu Phe Glu Ser Leu Cys
 35 40 45
 Ser Lys Lys Asp Val Arg Asn Phe Lys Ala Trp Phe Leu Pro Ile Met
 50 55 60
 Tyr Ser Ile Ile Cys Phe Val Gly Leu Leu Gly Asn Gly Leu Val Val
 65 70 75 80
 Leu Thr Tyr Ile Tyr Phe Lys Arg Leu Lys Thr Met Thr Asp Thr Tyr
 85 90 95
 Leu Leu Asn Leu Ala Val Ala Asp Ile Leu Phe Leu Leu Thr Leu Pro
 100 105 110
 Phe Trp Ala Tyr Ser Ala Ala Lys Ser Trp Val Phe Gly Val His Phe
 115 120 125
 Cys Lys Leu Ile Phe Ala Ile Tyr Lys Met Ser Phe Phe Ser Gly Met
 130 135 140
 Leu Leu Leu Leu Cys Ile Ser Ile Asp Arg Tyr Val Ala Ile Val Gln
 145 150 155 160
 Ala Val Ser Ala His Arg His Arg Ala Arg Val Leu Leu Ile Ser Lys
 165 170 175
 Leu Ser Cys Val Gly Ile Trp Ile Leu Ala Thr Val Leu Ser Ile Pro
 180 185 190
 Glu Leu Leu Tyr Ser Asp Leu Gln Arg Ser Ser Ser Glu Gln Ala Met
 195 200 205
 Arg Cys Ser Leu Ile Thr Glu His Val Glu Ala Phe Ile Thr Ile Gln
 210 215 220
 Val Ala Gln Met Val Ile Gly Phe Leu Val Pro Leu Leu Ala Met Ser
 225 230 235 240
 Phe Cys Tyr Leu Val Ile Ile Arg Thr Leu Leu Gln Ala Arg Asn Phe
 245 250 255
 Glu Arg Asn Lys Ala Ile Lys Val Ile Ile Ala Val Val Val Val Phe
 260 265 270
 Ile Val Phe Gln Leu Pro Tyr Asn Gly Val Val Leu Ala Gln Thr Val
 275 280 285
 Ala Asn Phe Asn Ile Thr Ser Ser Thr Cys Glu Leu Ser Lys Gln Leu
 290 295 300

Asn Ile Ala Tyr Asp Val Thr Tyr Ser Leu Ala Cys Val Arg Cys Cys
305 310 315 320

Val Asn Pro Phe Leu Tyr Ala Phe Ile Gly Val Lys Phe Arg Asn Asp
325 330 335

Leu Phe Lys Leu Phe Lys Asp Leu Gly Cys Leu Ser Gln Glu Gln Leu
340 345 350

Arg Gln Trp Ser Ser Cys Arg His Ile Arg Arg Ser Ser Met Ser Val
355 360 365

Glu Ala Glu Thr Thr Thr Thr Phe Ser Pro
370 375

<210> 459
<211> 281
<212> PRT
<213> Homo sapiens

<400> 459

Met Ser Ala Gln Glu Ser Cys Leu Ser Leu Ile Lys Tyr Phe Leu Phe
1 5 10 15

Val Phe Asn Leu Phe Phe Phe Val Leu Gly Ser Leu Ile Phe Cys Phe
20 25 30

Gly Ile Trp Ile Leu Ile Asp Lys Thr Ser Phe Val Ser Phe Val Gly
35 40 45

Leu Ala Phe Val Pro Leu Gln Ile Trp Ser Lys Val Leu Ala Ile Ser
50 55 60

Gly Ile Phe Thr Met Gly Ile Ala Leu Leu Gly Cys Val Gly Ala Leu
65 70 75 80

Lys Glu Leu Arg Cys Leu Leu Gly Leu Tyr Phe Gly Met Leu Leu Leu
85 90 95

Leu Phe Ala Thr Gln Ile Thr Leu Gly Ile Leu Ile Ser Thr Gln Arg
100 105 110

Ala Gln Leu Glu Arg Ser Leu Arg Asp Val Val Glu Lys Thr Ile Gln
115 120 125

Lys Tyr Gly Thr Asn Pro Glu Glu Thr Ala Ala Glu Glu Ser Trp Asp
130 135 140

Tyr Val Gln Phe Gln Leu Arg Cys Cys Gly Trp His Tyr Pro Gln Asp
145 150 155 160

Trp Phe Gln Val Leu Ile Leu Arg Gly Asn Gly Ser Glu Ala His Arg
165 170 175

Val Pro Cys Ser Cys Tyr Asn Leu Ser Ala Thr Asn Asp Ser Thr Ile
180 185 190

Leu Asp Lys Val Ile Leu Pro Gln Leu Ser Arg Leu Gly His Leu Ala
195 200 205

Arg Ser Arg His Ser Ala Asp Ile Cys Ala Val Pro Ala Glu Ser His
210 215 220

Ile Tyr Arg Glu Gly Cys Ala Gln Gly Leu Gln Lys Trp Leu His Asn
225 230 235 240

Asn Leu Ile Ser Ile Val Gly Ile Cys Leu Gly Val Gly Leu Leu Glu
245 250 255

Leu Gly Phe Met Thr Leu Ser Ile Phe Leu Cys Arg Asn Leu Asp His
260 265 270

Val Tyr Asn Arg Leu Ala Arg Tyr Arg
275 280

<210> 460
<211> 652
<212> PRT
<213> Homo sapiens

<400> 460

Met Ala Thr Ser Met Gly Leu Leu Leu Leu Leu Leu Leu Thr
1 5 10 15

Gln Pro Gly Ala Gly Thr Gly Ala Asp Thr Glu Ala Val Val Cys Val
20 25 30

Gly Thr Ala Cys Tyr Thr Ala His Ser Gly Lys Leu Ser Ala Ala Glu
35 40 45

Ala Gln Asn His Cys Asn Gln Asn Gly Gly Asn Leu Ala Thr Val Lys
50 55 60

Ser Lys Glu Glu Ala Gln His Val Gln Arg Val Leu Ala Gln Leu Leu
65 70 75 80

Arg Arg Glu Ala Ala Leu Thr Ala Arg Met Ser Lys Phe Trp Ile Gly
85 90 95

Leu Gln Arg Glu Lys Gly Lys Cys Leu Asp Pro Ser Leu Pro Leu Lys
100 105 110

Gly Phe Ser Trp Val Gly Gly Gly Glu Asp Thr Pro Tyr Ser Asn Trp
 115 120 125
 His Lys Glu Leu Arg Asn Ser Cys Ile Ser Lys Arg Cys Val Ser Leu
 130 135 140
 Leu Leu Asp Leu Ser Gln Pro Leu Leu Pro Ser Arg Leu Pro Lys Trp
 145 150 155 160
 Ser Glu Gly Pro Cys Gly Ser Pro Gly Ser Pro Gly Ser Asn Ile Glu
 165 170 175
 Gly Phe Val Cys Lys Phe Ser Phe Lys Gly Met Cys Arg Pro Leu Ala
 180 185 190
 Leu Gly Gly Pro Gly Gln Val Thr Tyr Thr Thr Pro Phe Gln Thr Thr
 195 200 205
 Ser Ser Ser Leu Glu Ala Val Pro Phe Ala Ser Ala Ala Asn Val Ala
 210 215 220
 Cys Gly Glu Gly Asp Lys Asp Glu Thr Gln Ser His Tyr Phe Leu Cys
 225 230 235 240
 Lys Glu Lys Ala Pro Asp Val Phe Asp Trp Gly Ser Ser Gly Pro Leu
 245 250 255
 Cys Val Ser Pro Lys Tyr Gly Cys Asn Phe Asn Asn Gly Gly Cys His
 260 265 270
 Gln Asp Cys Phe Glu Gly Gly Asp Gly Ser Phe Leu Cys Gly Cys Arg
 275 280 285
 Pro Gly Phe Arg Leu Leu Asp Asp Leu Val Thr Cys Ala Ser Arg Asn
 290 295 300
 Pro Cys Ser Ser Ser Pro Cys Arg Gly Gly Ala Thr Cys Val Leu Gly
 305 310 315 320
 Pro His Gly Lys Asn Tyr Thr Cys Arg Cys Pro Gln Gly Tyr Gln Leu
 325 330 335
 Asp Ser Ser Gln Leu Asp Cys Val Asp Val Asp Glu Cys Gln Asp Ser
 340 345 350
 Pro Cys Ala Gln Glu Cys Val Asn Thr Pro Gly Gly Phe Arg Cys Glu
 355 360 365
 Cys Trp Val Gly Tyr Glu Pro Gly Gly Pro Gly Glu Gly Ala Cys Gln
 370 375 380

Asp Val Asp Glu Cys Ala Leu Gly Arg Ser Pro Cys Ala Gln Gly Cys
 385 390 395 400
 Thr Asn Thr Asp Gly Ser Phe His Cys Ser Cys Glu Glu Gly Tyr Val
 405 410 415
 Leu Ala Gly Glu Asp Gly Thr Gln Cys Gln Asp Val Asp Glu Cys Val
 420 425 430
 Gly Pro Gly Gly Pro Leu Cys Asp Ser Leu Cys Phe Asn Thr Gln Gly
 435 440 445
 Ser Phe His Cys Gly Cys Leu Pro Gly Trp Val Leu Ala Pro Asn Gly
 450 455 460
 Val Ser Cys Thr Met Gly Pro Val Ser Leu Gly Pro Pro Ser Gly Pro
 465 470 475 480
 Pro Asp Glu Glu Asp Lys Gly Glu Lys Glu Gly Ser Thr Val Pro Arg
 485 490 495
 Ala Ala Thr Ala Ser Pro Thr Arg Gly Pro Glu Gly Thr Pro Lys Ala
 500 505 510
 Thr Pro Thr Thr Ser Arg Pro Ser Leu Ser Ser Asp Ala Pro Ile Thr
 515 520 525
 Ser Ala Pro Leu Lys Met Leu Ala Pro Ser Gly Ser Pro Gly Val Trp
 530 535 540
 Arg Glu Pro Ser Ile His His Ala Thr Ala Ala Ser Gly Pro Gln Glu
 545 550 555 560
 Pro Ala Gly Gly Asp Ser Ser Val Ala Thr Gln Asn Asn Asp Gly Thr
 565 570 575
 Asp Gly Gln Lys Leu Leu Leu Phe Tyr Ile Leu Gly Thr Val Val Ala
 580 585 590
 Ile Leu Leu Leu Leu Ala Leu Ala Leu Gly Leu Leu Val Tyr Arg Lys
 595 600 605
 Arg Arg Ala Lys Arg Glu Glu Lys Lys Glu Lys Lys Pro Gln Asn Ala
 610 615 620
 Ala Asp Ser Tyr Ser Trp Val Pro Glu Arg Ala Glu Ser Arg Ala Met
 625 630 635 640
 Glu Asn Gln Tyr Ser Pro Thr Pro Gly Thr Asp Cys
 645 650

<210> 461
 <211> 742
 <212> PRT
 <213> Homo sapiens

<400> 461

Met Gly Gly Arg Val Phe Leu Ala Phe Cys Val Trp Leu Thr Leu Pro
 1 5 10 15

Gly Ala Glu Thr Gln Asp Ser Arg Gly Cys Ala Arg Trp Cys Pro Gln
 20 25 30

Asn Ser Ser Cys Val Asn Ala Thr Ala Cys Arg Cys Asn Pro Gly Phe
 35 40 45

Ser Ser Phe Ser Glu Ile Ile Thr Thr Pro Thr Glu Thr Cys Asp Asp
 50 55 60

Ile Asn Glu Cys Ala Thr Pro Ser Lys Val Ser Cys Gly Lys Phe Ser
 65 70 75 80

Asp Cys Trp Asn Thr Glu Gly Ser Tyr Asp Cys Val Cys Ser Pro Gly
 85 90 95

Tyr Glu Pro Val Ser Gly Ala Lys Thr Phe Lys Asn Glu Ser Glu Asn
 100 105 110

Thr Cys Gln Asp Val Asp Glu Cys Ser Ser Gly Gln His Gln Cys Asp
 115 120 125

Ser Ser Thr Val Cys Phe Asn Thr Val Gly Ser Tyr Ser Cys Arg Cys
 130 135 140

Arg Pro Gly Trp Lys Pro Arg His Gly Ile Pro Asn Asn Gln Lys Asp
 145 150 155 160

Thr Val Cys Glu Asp Met Thr Phe Ser Thr Trp Thr Pro Pro Pro Gly
 165 170 175

Val His Ser Gln Thr Leu Ser Arg Phe Phe Asp Lys Val Gln Asp Leu
 180 185 190

Gly Arg Asp Ser Lys Thr Ser Ser Ala Glu Val Thr Ile Gln Asn Val
 195 200 205

Ile Lys Leu Val Asp Glu Leu Met Glu Ala Pro Gly Asp Val Glu Ala
 210 215 220

Leu Ala Pro Pro Val Arg His Leu Ile Ala Thr Gln Leu Leu Ser Asn
 225 230 235 240

Leu Glu Asp Ile Met Arg Ile Leu Ala Lys Ser Leu Pro Lys Gly Pro
 Page 556

Phe Thr Tyr Ile Ser Pro Ser Asn Thr Glu Leu Thr Leu Met Ile Gln
260 265 270

Glu Arg Gly Asp Lys Asn Val Thr Met Gly Gln Ser Ser Ala Arg Met
275 280 285

Lys Leu Asn Trp Ala Val Ala Ala Gly Ala Glu Asp Pro Gly Pro Ala
290 295 300

Val Ala Gly Ile Leu Ser Ile Gln Asn Met Thr Thr Leu Leu Ala Asn
305 310 315 320

Ala Ser Leu Asn Leu His Ser Lys Lys Gln Ala Glu Leu Glu Glu Ile
325 330 335

Tyr Glu Ser Ser Ile Arg Gly Val Gln Leu Arg Arg Leu Ser Ala Val
340 345 350

Asn Ser Ile Phe Leu Ser His Asn Asn Thr Lys Glu Leu Asn Ser Pro
355 360 365

Ile Leu Phe Ala Phe Ser His Leu Glu Ser Ser Asp Gly Glu Ala Gly
370 375 380

Arg Asp Pro Pro Ala Lys Asp Val Met Pro Gly Pro Arg Gln Glu Leu
385 390 395 400

Leu Cys Ala Phe Trp Lys Ser Asp Ser Asp Arg Gly Gly His Trp Ala
405 410 415

Thr Glu Gly Cys Gln Val Leu Gly Ser Lys Asn Gly Ser Thr Thr Cys
420 425 430

Gln Cys Ser His Leu Ser Ser Phe Ala Ile Leu Met Ala His Tyr Asp
435 440 445

Val Glu Asp Trp Lys Leu Thr Leu Ile Thr Arg Val Gly Leu Ala Leu
450 455 460

Ser Leu Phe Cys Leu Leu Leu Cys Ile Leu Thr Phe Leu Leu Val Arg
465 470 475 480

Pro Ile Gln Gly Ser Arg Thr Thr Ile His Leu His Leu Cys Ile Cys
485 490 495

Leu Phe Val Gly Ser Thr Ile Phe Leu Ala Gly Ile Glu Asn Glu Gly
500 505 510

Gly Gln Val Gly Leu Arg Cys Arg Leu Val Ala Gly Leu Leu His Tyr

515

520

525

Cys Phe Leu Ala Ala Phe Cys Trp Met Ser Leu Glu Gly Leu Glu Leu
 530 535 540

Tyr Phe Leu Val Val Arg Val Phe Gln Gly Gln Gly Leu Ser Thr Arg
 545 550 555 560

Trp Leu Cys Leu Ile Gly Tyr Gly Val Pro Leu Leu Ile Val Gly Val
 565 570 575

Ser Ala Ala Ile Tyr Ser Lys Gly Tyr Gly Arg Pro Arg Tyr Cys Trp
 580 585 590

Leu Asp Phe Glu Gln Gly Phe Leu Trp Ser Phe Leu Gly Pro Val Thr
 595 600 605

Phe Ile Ile Leu Cys Asn Ala Val Ile Phe Val Thr Thr Val Trp Lys
 610 615 620

Leu Thr Gln Lys Phe Ser Glu Ile Asn Pro Asp Met Lys Lys Leu Lys
 625 630 635 640

Lys Ala Arg Ala Leu Thr Ile Thr Ala Ile Ala Gln Leu Phe Leu Leu
 645 650 655

Gly Cys Thr Trp Val Phe Gly Leu Phe Ile Phe Asp Asp Arg Ser Leu
 660 665 670

Val Leu Thr Tyr Val Phe Thr Ile Leu Asn Cys Leu Gln Gly Ala Phe
 675 680 685

Leu Tyr Leu Leu His Cys Leu Leu Asn Lys Lys Val Arg Glu Glu Tyr
 690 695 700

Arg Lys Trp Ala Cys Leu Val Ala Gly Gly Ser Lys Tyr Ser Glu Phe
 705 710 715 720

Thr Ser Thr Thr Ser Gly Thr Gly His Asn Gln Thr Arg Ala Leu Arg
 725 730 735

Ala Ser Glu Ser Gly Ile
 740

<210> 462
 <211> 213
 <212> PRT
 <213> Homo sapiens

<400> 462

Met Pro Asp Glu Asn Ile Phe Leu Phe Val Pro Asn Leu Ile Gly Tyr
 1 5 10 15

Ala Arg Ile Val Phe Ala Ile Ile Ser Phe Tyr Phe Met Pro Cys Cys
20 25 30

Pro Leu Thr Ala Ser Ser Phe Tyr Leu Leu Ser Gly Leu Leu Asp Ala
35 40 45

Phe Asp Gly His Ala Ala Arg Ala Leu Asn Gln Gly Thr Arg Phe Gly
50 55 60

Ala Met Leu Asp Met Leu Thr Asp Arg Cys Ser Thr Met Cys Leu Leu
65 70 75 80

Val Asn Leu Ala Leu Leu Tyr Pro Gly Ala Thr Leu Phe Phe Gln Ile
85 90 95

Ser Met Ser Leu Asp Val Ala Ser His Trp Leu His Leu His Ser Ser
100 105 110

Val Val Arg Gly Ser Glu Ser His Lys Met Ile Asp Leu Ser Gly Asn
115 120 125

Pro Val Leu Arg Ile Tyr Tyr Thr Ser Arg Pro Ala Leu Phe Thr Leu
130 135 140

Cys Ala Gly Asn Glu Leu Phe Tyr Cys Leu Leu Tyr Leu Phe His Phe
145 150 155 160

Ser Glu Gly Pro Leu Val Gly Ser Val Gly Leu Phe Arg Met Gly Leu
165 170 175

Trp Val Thr Ala Pro Ile Ala Leu Leu Lys Ser Leu Ile Ser Val Ile
180 185 190

His Leu Ile Thr Ala Ala Arg Asn Met Ala Ala Leu Asp Ala Ala Asp
195 200 205

Arg Ala Lys Lys Lys
210

<210> 463
<211> 1584
<212> PRT
<213> Homo sapiens

<400> 463

Met Ser Leu Thr Ser Trp Phe Leu Val Ser Ser Gly Gly Thr Arg His
1 5 10 15

Arg Leu Pro Arg Glu Met Ile Phe Val Gly Arg Asp Asp Cys Glu Leu
20 25 30

Met Leu Gln Ser Arg Ser Val Asp Lys Gln His Ala Val Ile Asn Tyr
 35 40 45
 Asp Ala Ser Thr Asp Glu His Leu Val Lys Asp Leu Gly Ser Leu Asn
 50 55 60
 Gly Thr Phe Val Asn Asp Val Arg Ile Pro Glu Gln Thr Tyr Ile Thr
 65 70 75 80
 Leu Lys Leu Glu Asp Lys Leu Arg Phe Gly Tyr Asp Thr Asn Leu Phe
 85 90 95
 Thr Val Val Gln Gly Glu Met Arg Val Pro Glu Glu Ala Leu Lys His
 100 105 110
 Glu Lys Phe Thr Ile Gln Leu Gln Leu Ser Gln Lys Ser Ser Glu Ser
 115 120 125
 Glu Leu Ser Lys Ser Ala Ser Ala Lys Ser Ile Asp Ser Lys Val Ala
 130 135 140
 Asp Ala Ala Thr Glu Val Gln His Lys Thr Thr Glu Ala Leu Lys Ser
 145 150 155 160
 Glu Glu Lys Ala Met Asp Ile Ser Ala Met Pro Arg Gly Thr Pro Leu
 165 170 175
 Tyr Gly Gln Pro Ser Trp Trp Gly Asp Asp Glu Val Asp Glu Lys Arg
 180 185 190
 Ala Phe Lys Thr Asn Gly Lys Pro Glu Glu Lys Asn His Glu Ala Gly
 195 200 205
 Thr Ser Gly Cys Gly Ile Asp Ala Lys Gln Val Glu Glu Gln Ser Ala
 210 215 220
 Ala Ala Asn Glu Glu Val Leu Phe Pro Phe Cys Arg Glu Pro Ser Tyr
 225 230 235 240
 Phe Glu Ile Pro Thr Lys Glu Phe Gln Gln Pro Ser Gln Ile Thr Glu
 245 250 255
 Ser Thr Ile His Glu Ile Pro Thr Lys Asp Thr Pro Ser Ser His Ile
 260 265 270
 Thr Gly Ala Gly His Ala Ser Phe Thr Ile Glu Phe Asp Asp Ser Thr
 275 280 285
 Pro Gly Lys Val Thr Ile Arg Asp His Val Thr Lys Phe Thr Ser Asp
 290 295 300

Gln Arg His Lys Ser Lys Lys Ser Ser Pro Gly Thr Gln Asp Leu Leu
 305 310 315 320
 Gly Ile Gln Thr Gly Met Met Ala Pro Glu Asn Lys Val Ala Asp Trp
 325 330 335
 Leu Ala Gln Asn Asn Pro Pro Gln Met Leu Trp Glu Arg Thr Glu Glu
 340 345 350
 Asp Ser Lys Ser Ile Lys Ser Asp Val Pro Val Tyr Leu Lys Arg Leu
 355 360 365
 Lys Gly Asn Lys His Asp Asp Gly Thr Gln Ser Asp Ser Glu Asn Ala
 370 375 380
 Gly Ala His Arg Arg Cys Ser Lys Arg Ala Thr Leu Glu Glu His Leu
 385 390 395 400
 Arg Arg His His Ser Glu His Lys Lys Leu Gln Lys Val Gln Ala Thr
 405 410 415
 Glu Lys His Gln Asp Gln Ala Val Thr Ser Ser Ala His His Arg Gly
 420 425 430
 Gly His Gly Val Pro His Gly Lys Leu Leu Lys Gln Lys Ser Glu Glu
 435 440 445
 Pro Ser Val Ser Ile Pro Phe Leu Gln Thr Ala Leu Leu Arg Ser Ser
 450 455 460
 Gly Ser Leu Gly His Arg Pro Ser Gln Glu Met Asp Lys Met Leu Lys
 465 470 475 480
 Asn Gln Ala Thr Ser Ala Thr Ser Glu Lys Asp Asn Asp Asp Asp Gln
 485 490 495
 Ser Asp Lys Gly Thr Tyr Thr Ile Glu Leu Glu Asn Pro Asn Ser Glu
 500 505 510
 Glu Val Glu Ala Arg Lys Met Ile Asp Lys Val Phe Gly Val Asp Asp
 515 520 525
 Asn Gln Asp Tyr Asn Arg Pro Val Ile Asn Glu Lys His Lys Asp Leu
 530 535 540
 Ile Lys Asp Trp Ala Leu Ser Ser Ala Ala Ala Val Met Glu Glu Arg
 545 550 555 560
 Lys Pro Leu Thr Thr Ser Gly Phe His His Ser Glu Glu Gly Thr Ser
 565 570 575

Ser Ser Gly Ser Lys Arg Trp Val Ser Gln Trp Ala Ser Leu Ala Ala
 580 585 590
 Asn His Thr Arg His Asp Gln Glu Glu Arg Ile Met Glu Phe Ser Ala
 595 600 605
 Pro Leu Pro Leu Glu Asn Glu Thr Glu Ile Ser Glu Ser Gly Met Thr
 610 615 620
 Val Arg Ser Thr Gly Ser Ala Thr Ser Leu Ala Ser Gln Gly Glu Arg
 625 630 635 640
 Arg Arg Arg Thr Leu Pro Gln Leu Pro Asn Glu Glu Lys Ser Leu Glu
 645 650 655
 Ser His Arg Ala Lys Val Val Thr Gln Arg Ser Glu Ile Gly Glu Lys
 660 665 670
 Gln Asp Thr Glu Leu Gln Glu Lys Glu Thr Pro Thr Gln Val Tyr Gln
 675 680 685
 Lys Asp Lys Gln Asp Ala Asp Arg Pro Leu Ser Lys Met Asn Arg Ala
 690 695 700
 Val Asn Gly Glu Thr Leu Lys Thr Gly Gly Asp Asn Lys Thr Leu Leu
 705 710 715 720
 His Leu Gly Ser Ser Ala Pro Gly Lys Glu Lys Ser Glu Thr Asp Lys
 725 730 735
 Glu Thr Ser Leu Val Lys Gln Thr Leu Ala Lys Leu Gln Gln Gln Glu
 740 745 750
 Gln Arg Glu Glu Ala Gln Trp Thr Pro Thr Lys Leu Ser Ser Lys Asn
 755 760 765
 Val Ser Gly Gln Thr Asp Lys Cys Arg Glu Glu Thr Phe Lys Gln Glu
 770 775 780
 Ser Gln Pro Pro Glu Lys Asn Ser Gly His Ser Thr Ser Lys Gly Asp
 785 790 795 800
 Arg Val Ala Gln Ser Glu Ser Lys Arg Arg Lys Ala Glu Glu Ile Leu
 805 810 815
 Lys Ser Gln Thr Pro Lys Gly Gly Asp Lys Lys Glu Ser Ser Lys Ser
 820 825 830
 Leu Val Arg Gln Gly Ser Phe Thr Ile Glu Lys Pro Ser Pro Asn Ile
 835 840 845

Pro Ile Glu Leu Ile Pro His Ile Asn Lys Gln Thr Ser Ser Thr Pro
 850 855 860
 Ser Ser Leu Ala Leu Thr Ser Ala Ser Arg Ile Arg Glu Arg Ser Glu
 865 870 875 880
 Ser Leu Asp Pro Asp Ser Ser Met Asp Thr Thr Leu Ile Leu Lys Asp
 885 890 895
 Thr Glu Ala Val Met Ala Phe Leu Glu Ala Lys Leu Arg Glu Asp Asn
 900 905 910
 Lys Thr Asp Glu Gly Pro Asp Thr Pro Ser Tyr Asn Arg Asp Asn Ser
 915 920 925
 Ile Ser Pro Glu Ser Asp Val Asp Thr Ala Ser Thr Ile Ser Leu Val
 930 935 940
 Thr Gly Glu Thr Glu Arg Lys Ser Thr Gln Lys Arg Lys Ser Phe Thr
 945 950 955 960
 Ser Leu Tyr Lys Asp Arg Cys Ser Thr Gly Ser Pro Ser Lys Asp Val
 965 970 975
 Thr Lys Ser Ser Ser Ser Gly Ala Arg Glu Lys Met Glu Lys Lys Thr
 980 985 990
 Lys Ser Arg Ser Thr Asp Val Gly Ser Arg Ala Asp Gly Arg Lys Phe
 995 1000 1005
 Val Gln Ser Ser Gly Arg Ile Arg Gln Pro Ser Val Asp Leu Thr
 1010 1015 1020
 Asp Asp Asp Gln Thr Ser Ser Val Pro His Ser Ala Ile Ser Asp
 1025 1030 1035
 Ile Met Ser Ser Asp Gln Glu Thr Tyr Ser Cys Lys Pro His Gly
 1040 1045 1050
 Arg Thr Pro Leu Thr Ser Ala Asp Glu His Val His Ser Lys Leu
 1055 1060 1065
 Glu Gly Ser Lys Val Thr Lys Ser Lys Thr Ser Pro Val Val Ser
 1070 1075 1080
 Gly Ser Ser Ser Lys Ser Thr Thr Leu Pro Arg Pro Arg Pro Thr
 1085 1090 1095
 Arg Thr Ser Leu Leu Arg Arg Ala Arg Leu Gly Glu Ala Ser Asp
 1100 1105 1110

Ser	Glu	Leu	Ala	Asp	Ala	Asp	Lys	Ala	Ser	Val	Ala	Ser	Glu	Val
	1115					1120					1125			
Ser	Thr	Thr	Ser	Ser	Thr	Ser	Lys	Pro	Pro	Thr	Gly	Arg	Arg	Asn
	1130					1135					1140			
Ile	Ser	Arg	Ile	Asp	Leu	Leu	Ala	Gln	Pro	Arg	Arg	Thr	Arg	Leu
	1145					1150					1155			
Gly	Ser	Leu	Ser	Ala	Arg	Ser	Asp	Ser	Glu	Ala	Thr	Ile	Ser	Arg
	1160					1165					1170			
Ser	Ser	Ala	Ser	Ser	Arg	Thr	Ala	Glu	Ala	Ile	Ile	Arg	Ser	Gly
	1175					1180					1185			
Ala	Arg	Leu	Val	Pro	Ser	Asp	Lys	Phe	Ser	Pro	Arg	Ile	Arg	Ala
	1190					1195					1200			
Asn	Ser	Ile	Ser	Arg	Leu	Ser	Asp	Ser	Lys	Val	Lys	Ser	Met	Thr
	1205					1210					1215			
Ser	Ala	His	Gly	Ser	Ala	Ser	Val	Asn	Ser	Arg	Trp	Arg	Arg	Phe
	1220					1225					1230			
Pro	Thr	Asp	Tyr	Ala	Ser	Thr	Ser	Glu	Asp	Glu	Phe	Gly	Ser	Asn
	1235					1240					1245			
Arg	Asn	Ser	Pro	Lys	His	Thr	Arg	Leu	Arg	Thr	Ser	Pro	Ala	Leu
	1250					1255					1260			
Lys	Thr	Thr	Arg	Leu	Gln	Ser	Ala	Gly	Ser	Ala	Met	Pro	Thr	Ser
	1265					1270					1275			
Ser	Ser	Phe	Lys	His	Arg	Ile	Lys	Glu	Gln	Glu	Asp	Tyr	Ile	Arg
	1280					1285					1290			
Asp	Trp	Thr	Ala	His	Arg	Glu	Glu	Ile	Ala	Arg	Ile	Ser	Gln	Asp
	1295					1300					1305			
Leu	Ala	Leu	Ile	Ala	Arg	Glu	Ile	Asn	Asp	Val	Ala	Gly	Glu	Ile
	1310					1315					1320			
Asp	Ser	Val	Thr	Ser	Ser	Gly	Thr	Ala	Pro	Ser	Thr	Thr	Val	Ser
	1325					1330					1335			
Thr	Ala	Ala	Thr	Thr	Pro	Gly	Ser	Ala	Ile	Asp	Thr	Arg	Glu	Glu
	1340					1345					1350			
Leu	Val	Asp	Arg	Val	Phe	Asp	Glu	Ser	Leu	Asn	Phe	Arg	Lys	Ile
	1355					1360					1365			

Pro Pro Leu Val His Ser Lys Thr Pro Glu Gly Asn Asn Gly Arg
 1370 1375 1380
 Ser Gly Asp Pro Arg Pro Gln Ala Ala Glu Pro Pro Asp His Leu
 1385 1390 1395
 Thr Ile Thr Arg Arg Arg Thr Trp Ser Arg Asp Glu Val Met Gly
 1400 1405 1410
 Asp Asn Leu Leu Leu Ser Ser Val Phe Gln Phe Ser Lys Lys Ile
 1415 1420 1425
 Arg Gln Ser Ile Asp Lys Thr Ala Gly Lys Ile Arg Ile Leu Phe
 1430 1435 1440
 Lys Asp Lys Asp Arg Asn Trp Asp Asp Ile Glu Ser Lys Leu Arg
 1445 1450 1455
 Ala Glu Ser Glu Val Pro Ile Val Lys Thr Ser Ser Met Glu Ile
 1460 1465 1470
 Ser Ser Ile Leu Gln Glu Leu Lys Arg Val Glu Lys Gln Leu Gln
 1475 1480 1485
 Ala Ile Asn Ala Met Ile Asp Pro Asp Gly Thr Leu Glu Ala Leu
 1490 1495 1500
 Asn Asn Met Gly Phe Pro Ser Ala Met Leu Pro Ser Pro Pro Lys
 1505 1510 1515
 Gln Lys Ser Ser Pro Val Asn Asn His His Ser Pro Gly Gln Thr
 1520 1525 1530
 Pro Thr Leu Gly Gln Pro Glu Ala Arg Ala Leu His Pro Ala Ala
 1535 1540 1545
 Val Ser Ala Ala Ala Glu Phe Glu Asn Ala Glu Ser Glu Ala Asp
 1550 1555 1560
 Phe Ser Ile His Phe Asn Arg Phe Asn Pro Asp Gly Glu Glu Glu
 1565 1570 1575
 Asp Val Thr Val Gln Glu
 1580

<210> 464
 <211> 757
 <212> PRT
 <213> Homo sapiens

<400> 464

Met Ala Leu Gly Glu Glu Lys Ala Glu Ala Glu Ala Ser Glu Asp Thr
 1 5 10 15
 Lys Ala Gln Ser Tyr Gly Arg Gly Ser Cys Arg Glu Arg Glu Leu Asp
 20 25 30
 Ile Pro Gly Pro Met Ser Gly Glu Gln Pro Pro Arg Leu Glu Ala Glu
 35 40 45
 Gly Gly Leu Ile Ser Pro Val Trp Gly Ala Glu Gly Ile Pro Ala Pro
 50 55 60
 Thr Cys Trp Ile Gly Thr Asp Pro Gly Gly Pro Ser Arg Ala His Gln
 65 70 75 80
 Pro Gln Ala Ser Asp Ala Asn Arg Glu Pro Val Ala Glu Arg Ser Glu
 85 90 95
 Pro Ala Leu Ser Gly Leu Pro Pro Ala Thr Met Gly Ser Gly Asp Leu
 100 105 110
 Leu Leu Ser Gly Glu Ser Gln Val Glu Lys Thr Lys Leu Ser Ser Ser
 115 120 125
 Glu Glu Phe Pro Gln Thr Leu Ser Leu Pro Arg Thr Thr Thr Ile Cys
 130 135 140
 Ser Gly His Asp Ala Asp Thr Glu Asp Asp Pro Ser Leu Ala Asp Leu
 145 150 155 160
 Pro Gln Ala Leu Asp Leu Ser Gln Gln Pro His Ser Ser Gly Leu Ser
 165 170 175
 Cys Leu Ser Gln Trp Lys Ser Val Leu Ser Pro Gly Ser Ala Ala Gln
 180 185 190
 Pro Ser Ser Cys Ser Ile Ser Ala Ser Ser Thr Gly Ser Ser Leu Gln
 195 200 205
 Gly His Gln Glu Arg Ala Glu Pro Arg Gly Gly Ser Leu Ala Lys Val
 210 215 220
 Ser Ser Ser Leu Glu Pro Val Val Pro Gln Glu Pro Ser Ser Val Val
 225 230 235 240
 Gly Leu Gly Pro Arg Pro Gln Trp Ser Pro Gln Pro Val Phe Ser Gly
 245 250 255
 Gly Asp Ala Ser Gly Leu Gly Arg Arg Arg Leu Ser Phe Gln Ala Glu
 260 265 270

Tyr Trp Ala Cys Val Leu Pro Asp Ser Leu Pro Pro Ser Pro Asp Arg
 275 280 285
 His Ser Pro Leu Trp Asn Pro Asn Lys Glu Tyr Glu Asp Leu Leu Asp
 290 295 300
 Tyr Thr Tyr Pro Leu Arg Pro Gly Pro Gln Leu Pro Lys His Leu Asp
 305 310 315 320
 Ser Arg Val Pro Ala Asp Pro Val Leu Gln Asp Ser Gly Val Asp Leu
 325 330 335
 Asp Ser Phe Ser Val Ser Pro Ala Ser Thr Leu Lys Ser Pro Thr Asn
 340 345 350
 Val Ser Pro Asn Cys Pro Pro Ala Glu Ala Thr Ala Leu Pro Phe Ser
 355 360 365
 Gly Pro Arg Glu Pro Ser Leu Lys Gln Trp Pro Ser Arg Val Pro Gln
 370 375 380
 Lys Gln Gly Gly Met Gly Leu Ala Ser Trp Ser Gln Leu Ala Ser Thr
 385 390 395 400
 Pro Arg Ala Pro Gly Ser Arg Asp Ala Arg Trp Glu Arg Arg Glu Pro
 405 410 415
 Ala Leu Arg Gly Ala Lys Asp Arg Leu Thr Ile Gly Lys His Leu Asp
 420 425 430
 Met Gly Ser Pro Gln Leu Arg Thr Arg Asp Arg Gly Trp Pro Ser Pro
 435 440 445
 Arg Pro Glu Arg Glu Lys Arg Thr Ser Gln Ser Ala Arg Arg Pro Thr
 450 455 460
 Cys Thr Glu Ser Arg Trp Lys Ser Glu Glu Glu Val Glu Ser Asp Asp
 465 470 475 480
 Glu Tyr Leu Ala Leu Pro Ala Arg Leu Thr Gln Val Ser Ser Leu Val
 485 490 495
 Ser Tyr Leu Gly Ser Ile Ser Thr Leu Val Thr Leu Pro Thr Gly Asp
 500 505 510
 Ile Lys Gly Gln Ser Pro Leu Glu Val Ser Asp Ser Asp Gly Pro Ala
 515 520 525
 Ser Phe Pro Ser Ser Ser Ser Gln Ser Gln Leu Pro Pro Gly Ala Ala
 530 535 540

Leu Gln Gly Ser Gly Asp Pro Glu Gly Gln Asn Pro Cys Phe Leu Arg
 545 550 555 560

Ser Phe Val Arg Ala His Asp Ser Ala Gly Glu Gly Ser Leu Gly Ser
 565 570 575

Ser Gln Ala Leu Gly Val Ser Ser Gly Leu Leu Lys Thr Arg Pro Ser
 580 585 590

Leu Pro Ala Arg Leu Asp Arg Trp Pro Phe Ser Asp Pro Asp Val Glu
 595 600 605

Gly Gln Leu Pro Arg Lys Gly Gly Glu Gln Gly Lys Glu Ser Leu Val
 610 615 620

Gln Cys Val Lys Thr Phe Cys Cys Gln Leu Glu Glu Leu Ile Cys Trp
 625 630 635 640

Leu Tyr Asn Val Ala Asp Val Thr Asp His Gly Thr Ala Ala Arg Ser
 645 650 655

Asn Leu Thr Ser Leu Lys Ser Ser Leu Gln Leu Tyr Arg Gln Phe Lys
 660 665 670

Lys Asp Ile Asp Glu His Gln Ser Leu Thr Glu Ser Val Leu Gln Lys
 675 680 685

Gly Glu Ile Leu Leu Gln Cys Leu Leu Glu Asn Thr Pro Val Leu Glu
 690 695 700

Asp Val Leu Gly Arg Ile Ala Lys Gln Ser Gly Glu Leu Glu Ser His
 705 710 715 720

Ala Asp Arg Leu Tyr Asp Ser Ile Leu Ala Ser Leu Asp Met Leu Ala
 725 730 735

Gly Cys Thr Leu Ile Pro Asp Lys Lys Pro Met Ala Ala Met Glu His
 740 745 750

Pro Cys Glu Gly Val
 755

<210> 465
 <211> 1966
 <212> PRT
 <213> Homo sapiens

<400> 465

Met Lys Ala Ala Asp Thr Val Ile Leu Trp Ala Arg Ser Lys Asn Asp
 1 5 10 15

Gln Leu Arg Ile Ser Phe Pro Pro Gly Leu Cys Trp Gly Asp Arg Met
 Page 568

20

25

30

Pro Asp Lys Asp Asp Ile Arg Leu Leu Pro Ser Ala Leu Gly Val Lys
35 40 45

Lys Arg Lys Arg Gly Pro Lys Lys Gln Lys Glu Asn Lys Pro Gly Lys
50 55 60

Pro Arg Lys Arg Lys Lys Arg Asp Ser Glu Glu Glu Phe Gly Ser Glu
65 70 75 80

Arg Asp Glu Tyr Arg Glu Lys Ser Glu Ser Gly Gly Ser Glu Tyr Gly
85 90 95

Thr Gly Pro Gly Arg Lys Arg Arg Arg Lys His Arg Glu Lys Lys Glu
100 105 110

Lys Lys Thr Lys Arg Arg Lys Lys Gly Glu Gly Asp Gly Gly Gln Lys
115 120 125

Gln Val Glu Gln Lys Ser Ser Ala Thr Leu Leu Leu Thr Trp Gly Leu
130 135 140

Glu Asp Val Glu His Val Phe Ser Glu Glu Asp Tyr His Thr Leu Thr
145 150 155 160

Asn Tyr Lys Ala Phe Ser Gln Phe Met Arg Pro Leu Ile Ala Lys Lys
165 170 175

Asn Pro Lys Ile Pro Met Ser Lys Met Met Thr Ile Leu Gly Ala Lys
180 185 190

Trp Arg Glu Phe Ser Ala Asn Asn Pro Phe Lys Gly Ser Ala Ala Ala
195 200 205

Val Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Ala Glu Gln Val
210 215 220

Ser Ala Ala Val Ser Ser Ala Thr Pro Ile Ala Pro Ser Gly Pro Pro
225 230 235 240

Ala Leu Pro Pro Pro Pro Ala Ala Asp Ile Gln Pro Pro Pro Ile Arg
245 250 255

Arg Ala Lys Thr Lys Glu Gly Lys Gly Pro Gly His Lys Arg Arg Ser
260 265 270

Lys Ser Pro Arg Val Pro Asp Gly Arg Lys Lys Leu Arg Gly Lys Lys
275 280 285

Met Ala Pro Leu Lys Ile Lys Leu Gly Leu Leu Gly Gly Lys Arg Lys

290

295

300

Lys Gly Gly Ser Tyr Val Phe Gln Ser Asp Glu Gly Pro Glu Pro Glu
 305 310 315 320

Ala Glu Glu Ser Asp Leu Asp Ser Gly Ser Val His Ser Ala Ser Gly
 325 330 335

Arg Pro Asp Gly Pro Val Arg Thr Lys Lys Leu Lys Arg Gly Arg Pro
 340 345 350

Gly Arg Lys Lys Lys Lys Val Leu Gly Cys Pro Ala Val Ala Gly Glu
 355 360 365

Glu Glu Val Asp Gly Tyr Glu Thr Asp His Gln Asp Tyr Cys Glu Val
 370 375 380

Cys Gln Gln Gly Gly Glu Ile Ile Leu Cys Asp Thr Cys Pro Arg Ala
 385 390 395 400

Tyr His Leu Val Cys Leu Asp Pro Glu Leu Asp Arg Ala Pro Glu Gly
 405 410 415

Lys Trp Ser Cys Pro His Cys Glu Lys Glu Gly Val Gln Trp Glu Ala
 420 425 430

Lys Glu Glu Glu Glu Glu Tyr Glu Glu Glu Gly Glu Glu Glu Gly Glu
 435 440 445

Lys Glu Glu Glu Asp Asp His Met Glu Tyr Cys Arg Val Cys Lys Asp
 450 455 460

Gly Gly Glu Leu Leu Cys Cys Asp Ala Cys Ile Ser Ser Tyr His Ile
 465 470 475 480

His Cys Leu Asn Pro Pro Leu Pro Asp Ile Pro Asn Gly Glu Trp Leu
 485 490 495

Cys Pro Arg Cys Thr Cys Pro Val Leu Lys Gly Arg Val Gln Lys Ile
 500 505 510

Leu His Trp Arg Trp Gly Glu Pro Pro Val Ala Val Pro Ala Pro Gln
 515 520 525

Gln Ala Asp Gly Asn Pro Asp Val Pro Pro Pro Arg Pro Leu Gln Gly
 530 535 540

Arg Ser Glu Arg Glu Phe Phe Val Lys Trp Val Gly Leu Ser Tyr Trp
 545 550 555 560

His Cys Ser Trp Ala Lys Glu Leu Gln Leu Glu Ile Phe His Leu Val
 Page 570

Met Tyr Arg Asn Tyr Gln Arg Lys Asn Asp Met Asp Glu Pro Pro Pro
580 585 590

Leu Asp Tyr Gly Ser Gly Glu Asp Asp Gly Lys Ser Asp Lys Arg Lys
595 600 605

Val Lys Asp Pro His Tyr Ala Glu Met Glu Glu Lys Tyr Tyr Arg Phe
610 615 620

Gly Ile Lys Pro Glu Trp Met Thr Val His Arg Ile Ile Asn His Ser
625 630 635 640

Val Asp Lys Lys Gly Asn Tyr His Tyr Leu Val Lys Trp Arg Asp Leu
645 650 655

Pro Tyr Asp Gln Ser Thr Trp Glu Glu Asp Glu Met Asn Ile Pro Glu
660 665 670

Tyr Glu Glu His Lys Gln Ser Tyr Trp Arg His Arg Glu Leu Ile Met
675 680 685

Gly Glu Asp Pro Ala Gln Pro Arg Lys Tyr Lys Lys Lys Lys Glu
690 695 700

Leu Gln Gly Asp Gly Pro Pro Ser Ser Pro Thr Asn Asp Pro Thr Val
705 710 715 720

Lys Tyr Glu Thr Gln Pro Arg Phe Ile Thr Ala Thr Gly Gly Thr Leu
725 730 735

His Met Tyr Gln Leu Glu Gly Leu Asn Trp Leu Arg Phe Ser Trp Ala
740 745 750

Gln Gly Thr Asp Thr Ile Leu Ala Asp Glu Met Gly Leu Gly Lys Thr
755 760 765

Ile Gln Thr Ile Val Phe Leu Tyr Ser Leu Tyr Lys Glu Gly His Thr
770 775 780

Lys Gly Pro Phe Leu Val Ser Ala Pro Leu Ser Thr Ile Ile Asn Trp
785 790 795 800

Glu Arg Glu Phe Gln Met Trp Ala Pro Lys Phe Tyr Val Val Thr Tyr
805 810 815

Thr Gly Asp Lys Asp Ser Arg Ala Ile Ile Arg Glu Asn Glu Phe Ser
820 825 830

Phe Glu Asp Asn Ala Ile Lys Gly Gly Lys Lys Ala Phe Lys Met Lys
Page 571

835

840

845

Arg Glu Ala Gln Val Lys Phe His Val Leu Leu Thr Ser Tyr Glu Leu
 850 855 860

Ile Thr Ile Asp Gln Ala Ala Leu Gly Ser Ile Arg Trp Ala Cys Leu
 865 870 875 880

Val Val Asp Glu Ala His Arg Leu Lys Asn Asn Gln Ser Lys Phe Phe
 885 890 895

Arg Val Leu Asn Gly Tyr Lys Ile Asp His Lys Leu Leu Leu Thr Gly
 900 905 910

Thr Pro Leu Gln Asn Asn Leu Glu Glu Leu Phe His Leu Leu Asn Phe
 915 920 925

Leu Thr Pro Glu Arg Phe Asn Asn Leu Glu Gly Phe Leu Glu Glu Phe
 930 935 940

Ala Asp Ile Ser Lys Glu Asp Gln Ile Lys Lys Leu His Asp Leu Leu
 945 950 955 960

Gly Pro His Met Leu Arg Arg Leu Lys Ala Asp Val Phe Lys Asn Met
 965 970 975

Pro Ala Lys Thr Glu Leu Ile Val Arg Val Glu Leu Ser Pro Met Gln
 980 985 990

Lys Lys Tyr Tyr Lys Tyr Ile Leu Thr Arg Asn Phe Glu Ala Leu Asn
 995 1000 1005

Ser Arg Gly Gly Gly Asn Gln Val Ser Leu Leu Asn Ile Met Met
 1010 1015 1020

Asp Leu Lys Lys Cys Cys Asn His Pro Tyr Leu Phe Pro Val Ala
 1025 1030 1035

Ala Met Glu Ser Pro Lys Leu Pro Ser Gly Ala Tyr Glu Gly Gly
 1040 1045 1050

Ala Leu Ile Lys Ser Ser Gly Lys Leu Met Leu Leu Gln Lys Met
 1055 1060 1065

Leu Arg Lys Leu Lys Glu Gln Gly His Arg Val Leu Ile Phe Ser
 1070 1075 1080

Gln Met Thr Lys Met Leu Asp Leu Leu Glu Asp Phe Leu Asp Tyr
 1085 1090 1095

Glu Gly Tyr Lys Tyr Glu Arg Ile Asp Gly Gly Ile Thr Gly Ala

1100						1105						1110					
Leu	Arg 1115	Gln	Glu	Ala	Ile	Asp 1120	Arg	Phe	Asn	Ala	Pro 1125	Gly	Ala	Gln			
Gln	Phe 1130	Cys	Phe	Leu	Leu	Ser 1135	Thr	Arg	Ala	Gly	Gly 1140	Leu	Gly	Ile			
Asn	Leu 1145	Ala	Thr	Ala	Asp	Thr 1150	Val	Ile	Ile	Phe	Asp 1155	Ser	Asp	Trp			
Asn	Pro 1160	His	Asn	Asp	Ile	Gln 1165	Ala	Phe	Ser	Arg	Ala 1170	His	Arg	Ile			
Gly	Gln 1175	Ala	Asn	Lys	Val	Met 1180	Ile	Tyr	Arg	Phe	Val 1185	Thr	Arg	Ala			
Ser	Val 1190	Glu	Glu	Arg	Ile	Thr 1195	Gln	Val	Ala	Lys	Arg 1200	Lys	Met	Met			
Leu	Thr 1205	His	Leu	Val	Val	Arg 1210	Pro	Gly	Leu	Gly	Ser 1215	Lys	Ala	Gly			
Ser	Met 1220	Ser	Lys	Gln	Glu	Leu 1225	Asp	Asp	Ile	Leu	Lys 1230	Phe	Gly	Thr			
Glu	Glu 1235	Leu	Phe	Lys	Asp	Glu 1240	Asn	Glu	Gly	Glu	Asn 1245	Lys	Glu	Glu			
Asp	Ser 1250	Ser	Val	Ile	His	Tyr 1255	Asp	Asn	Glu	Ala	Ile 1260	Ala	Arg	Leu			
Leu	Asp 1265	Arg	Asn	Gln	Asp	Ala 1270	Thr	Glu	Asp	Thr	Asp 1275	Val	Gln	Asn			
Met	Asn 1280	Glu	Tyr	Leu	Ser	Ser 1285	Phe	Lys	Val	Ala	Gln 1290	Tyr	Val	Val			
Arg	Glu 1295	Glu	Asp	Lys	Ile	Glu 1300	Glu	Ile	Glu	Arg	Glu 1305	Ile	Ile	Lys			
Gln	Glu 1310	Glu	Asn	Val	Asp	Pro 1315	Asp	Tyr	Trp	Glu	Lys 1320	Leu	Leu	Arg			
His	His 1325	Tyr	Glu	Gln	Gln	Gln 1330	Glu	Asp	Leu	Ala	Arg 1335	Asn	Leu	Gly			
Lys	Gly 1340	Lys	Arg	Val	Arg	Lys 1345	Gln	Val	Asn	Tyr	Asn 1350	Asp	Ala	Ala			
Gln	Glu	Asp	Gln	Asp	Asn	Gln	Ser	Glu	Tyr	Ser	Val	Gly	Ser	Glu			

1355

1360

1365

Glu	Glu	Asp	Glu	Asp	Phe	Asp	Glu	Arg	Pro	Glu	Gly	Arg	Arg	Gln
1370						1375					1380			
Ser	Lys	Arg	Gln	Leu	Arg	Asn	Glu	Lys	Asp	Lys	Pro	Leu	Pro	Pro
1385						1390					1395			
Leu	Leu	Ala	Arg	Val	Gly	Gly	Asn	Ile	Glu	Val	Leu	Gly	Phe	Asn
1400						1405					1410			
Thr	Arg	Gln	Arg	Lys	Ala	Phe	Leu	Asn	Ala	Val	Met	Arg	Trp	Gly
1415						1420					1425			
Met	Pro	Pro	Gln	Asp	Ala	Phe	Thr	Thr	Gln	Trp	Leu	Val	Arg	Asp
1430						1435					1440			
Leu	Arg	Gly	Lys	Thr	Glu	Lys	Glu	Phe	Lys	Ala	Tyr	Val	Ser	Leu
1445						1450					1455			
Phe	Met	Arg	His	Leu	Cys	Glu	Pro	Gly	Ala	Asp	Gly	Ser	Glu	Thr
1460						1465					1470			
Phe	Ala	Asp	Gly	Val	Pro	Arg	Glu	Gly	Leu	Ser	Arg	Gln	Gln	Val
1475						1480					1485			
Leu	Thr	Arg	Ile	Gly	Val	Met	Ser	Leu	Val	Lys	Lys	Lys	Val	Gln
1490						1495					1500			
Glu	Phe	Glu	His	Ile	Asn	Gly	Arg	Trp	Ser	Met	Pro	Glu	Leu	Met
1505						1510					1515			
Pro	Asp	Pro	Ser	Ala	Asp	Ser	Lys	Arg	Ser	Ser	Arg	Ala	Ser	Ser
1520						1525					1530			
Pro	Thr	Lys	Thr	Ser	Pro	Thr	Thr	Pro	Glu	Ala	Ser	Ala	Thr	Asn
1535						1540					1545			
Ser	Pro	Cys	Thr	Ser	Lys	Pro	Ala	Thr	Pro	Ala	Pro	Ser	Glu	Lys
1550						1555					1560			
Gly	Glu	Gly	Ile	Arg	Thr	Pro	Leu	Glu	Lys	Glu	Glu	Ala	Glu	Asn
1565						1570					1575			
Gln	Glu	Glu	Lys	Pro	Glu	Lys	Asn	Ser	Arg	Ile	Gly	Glu	Lys	Met
1580						1585					1590			
Glu	Thr	Glu	Ala	Asp	Ala	Pro	Ser	Pro	Ala	Pro	Ser	Leu	Gly	Glu
1595						1600					1605			
Arg	Leu	Glu	Pro	Arg	Lys	Ile	Pro	Leu	Glu	Asp	Glu	Val	Pro	Gly

1610														
						1615						1620		
Val	Pro	Gly	Glu	Met	Glu	Pro	Glu	Pro	Gly	Tyr	Arg	Gly	Asp	Arg
	1625					1630					1635			
Glu	Lys	Ser	Glu	Asp	Val	Lys	Gly	Asp	Arg	Glu	Leu	Arg	Pro	Gly
	1640					1645					1650			
Pro	Arg	Asp	Glu	Pro	Arg	Ser	Asn	Gly	Arg	Arg	Glu	Glu	Lys	Thr
	1655					1660					1665			
Glu	Lys	Pro	Arg	Phe	Met	Phe	Asn	Ile	Ala	Asp	Gly	Gly	Phe	Thr
	1670					1675					1680			
Glu	Leu	His	Thr	Leu	Trp	Gln	Asn	Glu	Glu	Arg	Ala	Ala	Ile	Ser
	1685					1690					1695			
Ser	Gly	Lys	Leu	Asn	Glu	Ile	Trp	His	Arg	Arg	His	Asp	Tyr	Trp
	1700					1705					1710			
Leu	Leu	Ala	Gly	Ile	Val	Leu	His	Gly	Tyr	Ala	Arg	Trp	Gln	Asp
	1715					1720					1725			
Ile	Gln	Asn	Asp	Ala	Gln	Phe	Ala	Ile	Ile	Asn	Glu	Pro	Phe	Lys
	1730					1735					1740			
Thr	Glu	Ala	Asn	Lys	Gly	Asn	Phe	Leu	Glu	Met	Lys	Asn	Lys	Phe
	1745					1750					1755			
Leu	Ala	Arg	Arg	Phe	Lys	Leu	Leu	Glu	Gln	Ala	Leu	Val	Ile	Glu
	1760					1765					1770			
Glu	Gln	Leu	Arg	Arg	Ala	Ala	Tyr	Leu	Asn	Leu	Ser	Gln	Glu	Pro
	1775					1780					1785			
Ala	His	Pro	Ala	Met	Ala	Leu	His	Ala	Arg	Phe	Ala	Glu	Ala	Glu
	1790					1795					1800			
Cys	Leu	Ala	Glu	Ser	His	Gln	His	Leu	Ser	Lys	Glu	Ser	Leu	Ala
	1805					1810					1815			
Gly	Asn	Lys	Pro	Ala	Asn	Ala	Val	Leu	His	Lys	Val	Leu	Asn	Gln
	1820					1825					1830			
Leu	Glu	Glu	Leu	Leu	Ser	Asp	Met	Lys	Ala	Asp	Val	Thr	Arg	Leu
	1835					1840					1845			
Pro	Ala	Thr	Leu	Ser	Arg	Ile	Pro	Pro	Ile	Ala	Ala	Arg	Leu	Gln
	1850					1855					1860			
Met	Ser	Glu	Arg	Ser	Ile	Leu	Ser	Arg	Leu	Ala	Ser	Lys	Gly	Thr

1865

1870

1875

Glu Pro His Pro Thr Pro Ala Tyr Pro Pro Gly Pro Tyr Ala Thr
1880 1885 1890

Pro Pro Gly Tyr Gly Ala Ala Phe Ser Ala Ala Pro Val Gly Ala
1895 1900 1905

Leu Ala Ala Ala Gly Ala Asn Tyr Ser Gln Met Pro Ala Gly Ser
1910 1915 1920

Phe Ile Thr Ala Ala Thr Asn Gly Pro Pro Val Leu Val Lys Lys
1925 1930 1935

Glu Lys Glu Met Val Gly Ala Leu Val Ser Asp Gly Leu Asp Arg
1940 1945 1950

Lys Glu Pro Arg Ala Gly Glu Val Ile Cys Ile Asp Asp
1955 1960 1965

<210> 466
<211> 199
<212> PRT
<213> Homo sapiens

<400> 466

Met Ser Asn Met Glu Lys His Leu Phe Asn Leu Lys Phe Ala Ala Lys
1 5 10 15

Glu Leu Ser Arg Ser Ala Lys Lys Cys Asp Lys Glu Glu Lys Ala Glu
20 25 30

Lys Ala Lys Ile Lys Lys Ala Ile Gln Lys Gly Asn Met Glu Val Ala
35 40 45

Arg Ile His Ala Glu Asn Ala Ile Arg Gln Lys Asn Gln Ala Val Asn
50 55 60

Phe Leu Arg Met Ser Ala Arg Val Asp Ala Val Ala Ala Arg Val Gln
65 70 75 80

Thr Ala Val Thr Met Gly Lys Val Thr Lys Ser Met Ala Gly Val Val
85 90 95

Lys Ser Met Asp Ala Thr Leu Lys Thr Met Asn Leu Glu Lys Ile Ser
100 105 110

Ala Leu Met Asp Lys Phe Glu His Gln Phe Glu Thr Leu Asp Val Gln
115 120 125

Thr Gln Gln Met Glu Asp Thr Met Ser Ser Thr Thr Thr Leu Thr Thr
130 135 140

Pro Gln Asn Gln Val Asp Met Leu Leu Gln Glu Met Ala Asp Glu Ala
145 150 155 160

Gly Leu Asp Leu Asn Met Glu Leu Pro Gln Gly Gln Thr Gly Ser Val
165 170 175

Gly Thr Ser Val Ala Ser Ala Glu Gln Asp Glu Leu Ser Gln Arg Leu
180 185 190

Ala Arg Leu Arg Asp Gln Val
195

<210> 467
<211> 453
<212> PRT
<213> Homo sapiens

<400> 467

Met Trp Ser Pro Glu Arg Glu Ala Glu Ala Pro Ala Gly Gly Asp Pro
1 5 10 15

Ala Gly Leu Leu Pro Pro Glu Trp Glu Glu Asp Glu Glu Arg Met Ser
20 25 30

Phe Leu Phe Ser Ala Phe Lys Arg Ser Arg Glu Val Asn Ser Thr Asp
35 40 45

Trp Asp Ser Lys Met Gly Phe Trp Ala Pro Leu Val Leu Ser His Ser
50 55 60

Arg Arg Gln Gly Val Val Arg Leu Arg Leu Arg Asp Leu Gln Glu Ala
65 70 75 80

Phe Gln Arg Lys Gly Ser Val Pro Leu Gly Leu Ala Thr Val Leu Gln
85 90 95

Asp Leu Leu Arg Arg Gly Glu Leu Gln Arg Glu Ser Asp Phe Met Ala
100 105 110

Ser Val Asp Ser Ser Trp Ile Ser Trp Gly Val Gly Val Phe Leu Leu
115 120 125

Lys Pro Leu Lys Trp Thr Leu Ser Asn Met Leu Gly Asp Asn Lys Val
130 135 140

Pro Ala Glu Glu Val Leu Val Ala Val Glu Leu Leu Lys Glu Lys Ala
145 150 155 160

Glu Glu Val Tyr Arg Leu Tyr Gln Asn Ser Pro Leu Ser Ser His Pro
165 170 175

Val Val Ala Leu Ser Glu Leu Ser Thr Leu Cys Ala Asn Ser Cys Pro
 180 185 190
 Asp Glu Arg Thr Phe Tyr Leu Val Leu Leu Gln Leu Gln Lys Glu Lys
 195 200 205
 Arg Val Thr Val Leu Glu Gln Asn Gly Glu Lys Ile Val Lys Phe Ala
 210 215 220
 Arg Gly Pro Arg Ala Lys Val Ser Pro Val Asn Asp Val Asp Val Gly
 225 230 235 240
 Val Tyr Gln Leu Met Gln Ser Glu Gln Leu Leu Ser Arg Lys Val Glu
 245 250 255
 Ser Leu Ser Gln Glu Ala Glu Arg Cys Lys Glu Glu Ala Arg Arg Ala
 260 265 270
 Cys Arg Ala Gly Lys Lys Gln Leu Ala Leu Arg Ser Leu Lys Ala Lys
 275 280 285
 Gln Arg Thr Glu Lys Arg Ile Glu Ala Leu His Ala Lys Leu Asp Thr
 290 295 300
 Val Gln Gly Ile Leu Asp Arg Ile Tyr Ala Ser Gln Thr Asp Gln Met
 305 310 315 320
 Val Phe Asn Ala Tyr Gln Ala Gly Val Gly Ala Leu Lys Leu Ser Met
 325 330 335
 Lys Asp Val Thr Val Glu Lys Ala Glu Ser Leu Val Asp Gln Ile Gln
 340 345 350
 Glu Leu Cys Asp Thr Gln Asp Glu Val Ser Gln Thr Leu Ala Gly Gly
 355 360 365
 Val Thr Asn Gly Leu Asp Phe Asp Ser Glu Glu Leu Glu Lys Glu Leu
 370 375 380
 Asp Ile Leu Leu Gln Asp Thr Thr Lys Glu Pro Leu Asp Leu Pro Asp
 385 390 395 400
 Asn Pro Arg Asn Arg His Phe Thr Asn Ser Val Pro Asn Pro Arg Ile
 405 410 415
 Ser Asp Ala Glu Leu Glu Ala Glu Leu Glu Lys Leu Ser Leu Ser Glu
 420 425 430
 Gly Gly Leu Val Pro Ser Ser Lys Ser Pro Lys Arg Gln Leu Glu Pro
 435 440 445

Thr Leu Lys Pro Leu
450

<210> 468
<211> 352
<212> PRT
<213> Homo sapiens

<400> 468

Met Lys Pro Ala Leu Leu Glu Val Met Arg Met Asn Arg Ile Cys Arg
1 5 10 15

Met Val Leu Ala Thr Cys Leu Gly Ser Phe Ile Leu Val Ile Phe Tyr
20 25 30

Phe Gln Ser Met Leu His Pro Val Met Arg Arg Asn Pro Phe Gly Val
35 40 45

Asp Ile Cys Cys Arg Lys Gly Ser Arg Ser Pro Leu Gln Glu Leu Tyr
50 55 60

Asn Pro Ile Gln Leu Glu Leu Ser Asn Thr Ala Val Leu His Gln Met
65 70 75 80

Arg Arg Asp Gln Val Thr Asp Thr Cys Arg Ala Asn Ser Ala Thr Ser
85 90 95

Arg Lys Arg Arg Val Leu Thr Pro Asn Asp Leu Lys His Leu Val Val
100 105 110

Asp Glu Asp His Glu Leu Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys
115 120 125

Thr Asn Trp Lys Arg Leu Met Met Val Leu Thr Gly Arg Gly Lys Tyr
130 135 140

Ser Asp Pro Met Glu Ile Pro Ala Asn Glu Ala His Val Ser Ala Asn
145 150 155 160

Leu Lys Thr Leu Asn Gln Tyr Ser Ile Pro Glu Ile Asn His Arg Leu
165 170 175

Lys Ser Tyr Met Lys Phe Leu Phe Val Arg Glu Pro Phe Glu Arg Leu
180 185 190

Val Ser Ala Tyr Arg Asn Lys Phe Thr Gln Lys Tyr Asn Ile Ser Phe
195 200 205

His Lys Arg Tyr Gly Thr Lys Ile Ile Lys Arg Gln Arg Lys Asn Ala
210 215 220

Thr Gln Glu Ala Leu Arg Lys Gly Asp Asp Val Lys Phe Glu Glu Phe
225 230 235 240

Val Ala Tyr Leu Ile Asp Pro His Thr Gln Arg Glu Glu Pro Phe Asn
245 250 255

Glu His Trp Gln Thr Val Tyr Ser Leu Cys His Pro Cys His Ile His
260 265 270

Tyr Asp Leu Val Gly Lys Tyr Glu Thr Leu Glu Glu Asp Ser Asn Tyr
275 280 285

Val Leu Gln Leu Ala Gly Val Gly Ser Tyr Leu Lys Phe Pro Thr Tyr
290 295 300

Ala Lys Ser Thr Arg Thr Thr Asp Glu Met Thr Thr Glu Phe Phe Gln
305 310 315 320

Asn Ile Ser Ser Glu His Gln Thr Gln Leu Tyr Glu Val Tyr Lys Leu
325 330 335

Asp Phe Leu Met Phe Asn Tyr Ser Val Pro Ser Tyr Leu Lys Leu Glu
340 345 350

<210> 469
<211> 312
<212> PRT
<213> Homo sapiens

<400> 469

Met Ala Asp Phe Gly Ile Ser Ala Gly Gln Phe Val Ala Val Val Trp
1 5 10 15

Asp Lys Ser Ser Pro Val Glu Ala Leu Lys Gly Leu Val Asp Lys Leu
20 25 30

Gln Ala Leu Thr Gly Asn Glu Gly Arg Val Ser Val Glu Asn Ile Lys
35 40 45

Gln Leu Leu Gln Ser Ala His Lys Glu Ser Ser Phe Asp Ile Ile Leu
50 55 60

Ser Gly Leu Val Pro Gly Ser Thr Thr Leu His Ser Ala Glu Ile Leu
65 70 75 80

Ala Glu Ile Ala Arg Ile Leu Arg Pro Gly Gly Cys Leu Phe Leu Lys
85 90 95

Glu Pro Val Glu Thr Ala Val Asp Asn Asn Ser Lys Val Lys Thr Ala
100 105 110

Ser Lys Leu Cys Ser Ala Leu Thr Leu Ser Gly Leu Val Glu Val Lys
Page 580

115

120

125

Glu Leu Gln Arg Glu Pro Leu Thr Pro Glu Glu Val Gln Ser Val Arg
 130 135 140

Glu His Leu Gly His Glu Ser Asp Asn Leu Leu Phe Val Gln Ile Thr
 145 150 155 160

Gly Lys Lys Pro Asn Phe Glu Val Gly Ser Ser Arg Gln Leu Lys Leu
 165 170 175

Ser Ile Thr Lys Lys Ser Ser Pro Ser Val Lys Pro Ala Val Asp Pro
 180 185 190

Ala Ala Ala Lys Leu Trp Thr Leu Ser Ala Asn Asp Met Glu Asp Asp
 195 200 205

Ser Met Asp Leu Ile Asp Ser Asp Glu Leu Leu Asp Pro Glu Asp Leu
 210 215 220

Lys Lys Pro Asp Pro Ala Ser Leu Arg Ala Ala Ser Cys Gly Glu Gly
 225 230 235 240

Lys Lys Arg Lys Ala Cys Lys Asn Cys Thr Cys Gly Leu Ala Glu Glu
 245 250 255

Leu Glu Lys Glu Lys Ser Arg Glu Gln Met Ser Ser Gln Pro Lys Ser
 260 265 270

Ala Cys Gly Asn Cys Tyr Leu Gly Asp Ala Phe Arg Cys Ala Ser Cys
 275 280 285

Pro Tyr Leu Gly Met Pro Ala Phe Lys Pro Gly Glu Lys Val Leu Leu
 290 295 300

Ser Asp Ser Asn Leu His Asp Ala
 305 310

<210> 470
 <211> 237
 <212> PRT
 <213> Homo sapiens

<400> 470

Met Thr Ser Glu Ile Thr Tyr Ala Glu Val Arg Phe Lys Asn Glu Phe
 1 5 10 15

Lys Ser Ser Gly Ile Asn Thr Ala Ser Ser Ala Ala Ser Lys Glu Arg
 20 25 30

Thr Ala Pro His Lys Ser Asn Thr Gly Phe Pro Lys Leu Leu Cys Ala
 35 40 45

Ser Leu Leu Ile Phe Phe Leu Leu Leu Ala Ile Ser Phe Phe Ile Ala
50 55 60

Phe Val Ile Phe Phe Gln Lys Tyr Ser Gln Leu Leu Glu Lys Lys Thr
65 70 75 80

Thr Lys Glu Leu Val His Thr Thr Leu Glu Cys Val Lys Lys Asn Met
85 90 95

Pro Val Glu Glu Thr Ala Trp Ser Cys Cys Pro Lys Asn Trp Lys Ser
100 105 110

Phe Ser Ser Asn Cys Tyr Phe Ile Ser Thr Glu Ser Ala Ser Trp Gln
115 120 125

Asp Ser Glu Lys Asp Cys Ala Arg Met Glu Ala His Leu Leu Val Ile
130 135 140

Asn Thr Gln Glu Glu Gln Asp Phe Ile Phe Gln Asn Leu Gln Glu Glu
145 150 155 160

Ser Ala Tyr Phe Val Gly Leu Ser Asp Pro Glu Gly Gln Arg His Trp
165 170 175

Gln Trp Val Asp Gln Thr Pro Tyr Asn Glu Ser Ser Thr Phe Trp His
180 185 190

Pro Arg Glu Pro Ser Asp Pro Asn Glu Arg Cys Val Val Leu Asn Phe
195 200 205

Arg Lys Ser Pro Lys Arg Trp Gly Trp Asn Asp Val Asn Cys Leu Gly
210 215 220

Pro Gln Arg Ser Val Cys Glu Met Met Lys Ile His Leu
225 230 235

<210> 471
<211> 481
<212> PRT
<213> Homo sapiens

<400> 471

Met Arg His Ser Lys Arg Thr His Cys Pro Asp Trp Asp Ser Arg Glu
1 5 10 15

Ser Trp Gly His Glu Ser Tyr Arg Gly Ser His Lys Arg Lys Arg Arg
20 25 30

Ser His Ser Ser Thr Gln Glu Asn Arg His Cys Lys Pro His His Gln
35 40 45

Phe Lys Glu Ser Asp Cys His Tyr Leu Glu Ala Arg Ser Leu Asn Glu
 50 55 60
 Arg Asp Tyr Arg Asp Arg Arg Tyr Val Asp Glu Tyr Arg Asn Asp Tyr
 65 70 75 80
 Cys Glu Gly Tyr Val Pro Arg His Tyr His Arg Asp Ile Glu Ser Gly
 85 90 95
 Tyr Arg Ile His Cys Ser Lys Ser Ser Val Arg Ser Arg Arg Ser Ser
 100 105 110
 Pro Lys Arg Lys Arg Asn Arg His Cys Ser Ser His Gln Ser Arg Ser
 115 120 125
 Lys Ser His Arg Arg Lys Arg Ser Arg Ser Ile Glu Asp Asp Glu Glu
 130 135 140
 Gly His Leu Ile Cys Gln Ser Gly Asp Val Leu Arg Ala Arg Tyr Glu
 145 150 155 160
 Ile Val Asp Thr Leu Gly Glu Gly Ala Phe Gly Lys Val Val Glu Cys
 165 170 175
 Ile Asp His Gly Met Asp Gly Met His Val Ala Val Lys Ile Val Lys
 180 185 190
 Asn Val Gly Arg Tyr Arg Glu Ala Ala Arg Ser Glu Ile Gln Val Leu
 195 200 205
 Glu His Leu Asn Ser Thr Asp Pro Asn Ser Val Phe Arg Cys Val Gln
 210 215 220
 Met Leu Glu Trp Phe Asp His His Gly His Val Cys Ile Val Phe Glu
 225 230 235 240
 Leu Leu Gly Leu Ser Thr Tyr Asp Phe Ile Lys Glu Asn Ser Phe Leu
 245 250 255
 Pro Phe Gln Ile Asp His Ile Arg Gln Met Ala Tyr Gln Ile Cys Gln
 260 265 270
 Ser Ile Asn Phe Leu His His Asn Lys Leu Thr His Thr Asp Leu Lys
 275 280 285
 Pro Glu Asn Ile Leu Phe Val Lys Ser Asp Tyr Val Val Lys Tyr Asn
 290 295 300
 Ser Lys Met Lys Arg Asp Glu Arg Thr Leu Lys Asn Thr Asp Ile Lys
 305 310 315 320

Val Val Asp Phe Gly Ser Ala Thr Tyr Asp Asp Glu His His Ser Thr
 325 330 335

Leu Val Ser Thr Arg His Tyr Arg Ala Pro Glu Val Ile Leu Ala Leu
 340 345 350

Gly Trp Ser Gln Pro Cys Asp Val Trp Ser Ile Gly Cys Ile Leu Ile
 355 360 365

Glu Tyr Tyr Leu Gly Phe Thr Val Phe Gln Thr His Asp Ser Lys Glu
 370 375 380

His Leu Ala Met Met Glu Arg Ile Leu Gly Pro Ile Pro Gln His Met
 385 390 395 400

Ile Gln Lys Thr Arg Lys Arg Lys Tyr Phe His His Asn Gln Leu Asp
 405 410 415

Trp Asp Glu His Ser Ser Ala Gly Arg Tyr Val Arg Arg Arg Cys Lys
 420 425 430

Pro Leu Lys Glu Phe Met Leu Cys His Asp Glu Glu His Glu Lys Leu
 435 440 445

Phe Asp Leu Val Arg Arg Met Leu Glu Tyr Asp Pro Thr Gln Arg Ile
 450 455 460

Thr Leu Asp Glu Ala Leu Gln His Pro Phe Phe Asp Leu Leu Lys Lys
 465 470 475 480

Lys

<210> 472
 <211> 278
 <212> PRT
 <213> Homo sapiens

<400> 472

Met Asp Ser Met Pro Glu Pro Ala Ser Arg Cys Leu Leu Leu Leu Pro
 1 5 10 15

Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Ala Pro Glu Leu Gly Pro
 20 25 30

Ser Gln Ala Gly Ala Glu Glu Asn Asp Trp Val Arg Leu Pro Ser Lys
 35 40 45

Cys Glu Val Cys Lys Tyr Val Ala Val Glu Leu Lys Ser Ala Phe Glu
 50 55 60

Glu Thr Gly Lys Thr Lys Glu Val Ile Gly Thr Gly Tyr Gly Ile Leu
65 70 75 80

Asp Gln Lys Ala Ser Gly Val Lys Tyr Thr Lys Ser Asp Leu Arg Leu
85 90 95

Ile Glu Val Thr Glu Thr Ile Cys Lys Arg Leu Leu Asp Tyr Ser Leu
100 105 110

His Lys Glu Arg Thr Gly Ser Asn Arg Phe Ala Lys Gly Met Ser Glu
115 120 125

Thr Phe Glu Thr Leu His Asn Leu Val His Lys Gly Val Lys Val Val
130 135 140

Met Asp Ile Pro Tyr Glu Leu Trp Asn Glu Thr Ser Ala Glu Val Ala
145 150 155 160

Asp Leu Lys Lys Gln Cys Asp Val Leu Val Glu Glu Phe Glu Glu Val
165 170 175

Ile Glu Asp Trp Tyr Arg Asn His Gln Glu Glu Asp Leu Thr Glu Phe
180 185 190

Leu Cys Ala Asn His Val Leu Lys Gly Lys Asp Thr Ser Cys Leu Ala
195 200 205

Glu Gln Trp Ser Gly Lys Lys Gly Asp Thr Ala Ala Leu Gly Gly Lys
210 215 220

Lys Ser Lys Lys Lys Ser Ser Arg Ala Lys Ala Ala Gly Gly Arg Ser
225 230 235 240

Ser Ser Ser Lys Gln Arg Lys Glu Leu Gly Gly Leu Glu Gly Asp Pro
245 250 255

Ser Pro Glu Glu Asp Glu Gly Ile Gln Lys Ala Ser Pro Leu Thr His
260 265 270

Ser Pro Pro Asp Glu Leu
275

<210> 473
<211> 327
<212> PRT
<213> Homo sapiens

<400> 473

Met Thr Met Glu Ser Gly Ala Glu Asn Gln Gln Ser Gly Asp Ala Ala
1 5 10 15

Val Thr Glu Ala Glu Asn Gln Gln Met Thr Val Gln Ala Gln Pro Gln
Page 585

20

25

30

Ile Ala Thr Leu Ala Gln Val Ser Met Pro Ala Ala His Ala Thr Ser
35 40 45

Ser Ala Pro Thr Val Thr Leu Val Gln Leu Pro Asn Gly Gln Thr Val
50 55 60

Gln Val His Gly Val Ile Gln Ala Ala Gln Pro Ser Val Ile Gln Ser
65 70 75 80

Pro Gln Val Gln Thr Val Gln Ile Ser Thr Ile Ala Glu Ser Glu Asp
85 90 95

Ser Gln Glu Ser Val Asp Ser Val Thr Asp Ser Gln Lys Arg Arg Glu
100 105 110

Ile Leu Ser Arg Arg Pro Ser Tyr Arg Lys Ile Leu Asn Asp Leu Ser
115 120 125

Ser Asp Ala Pro Gly Val Pro Arg Ile Glu Glu Glu Lys Ser Glu Glu
130 135 140

Glu Thr Ser Ala Pro Ala Ile Thr Thr Val Thr Val Pro Thr Pro Ile
145 150 155 160

Tyr Gln Thr Ser Ser Gly Gln Tyr Ile Ala Ile Thr Gln Gly Gly Ala
165 170 175

Ile Gln Leu Ala Asn Asn Gly Thr Asp Gly Val Gln Gly Leu Gln Thr
180 185 190

Leu Thr Met Thr Asn Ala Ala Ala Thr Gln Pro Gly Thr Thr Ile Leu
195 200 205

Gln Tyr Ala Gln Thr Thr Asp Gly Gln Gln Ile Leu Val Pro Ser Asn
210 215 220

Gln Val Val Val Gln Ala Ala Ser Gly Asp Val Gln Thr Tyr Gln Ile
225 230 235 240

Arg Thr Ala Pro Thr Ser Thr Ile Ala Pro Gly Val Val Met Ala Ser
245 250 255

Ser Pro Ala Leu Pro Thr Gln Pro Ala Glu Glu Ala Ala Arg Lys Arg
260 265 270

Glu Val Arg Leu Met Lys Asn Arg Glu Ala Ala Arg Glu Cys Arg Arg
275 280 285

Lys Lys Lys Glu Tyr Val Lys Cys Leu Glu Asn Arg Val Ala Val Leu

290

295

300

Glu Asn Gln Asn Lys Thr Leu Ile Glu Glu Leu Lys Ala Leu Lys Asp
 305 310 315 320

Leu Tyr Cys His Lys Ser Asp
 325

<210> 474
 <211> 2442
 <212> PRT
 <213> Homo sapiens

<400> 474

Met Ala Glu Asn Leu Leu Asp Gly Pro Pro Asn Pro Lys Arg Ala Lys
 1 5 10 15

Leu Ser Ser Pro Gly Phe Ser Ala Asn Asp Ser Thr Asp Phe Gly Ser
 20 25 30

Leu Phe Asp Leu Glu Asn Asp Leu Pro Asp Glu Leu Ile Pro Asn Gly
 35 40 45

Gly Glu Leu Gly Leu Leu Asn Ser Gly Asn Leu Val Pro Asp Ala Ala
 50 55 60

Ser Lys His Lys Gln Leu Ser Glu Leu Leu Arg Gly Gly Ser Gly Ser
 65 70 75 80

Ser Ile Asn Pro Gly Ile Gly Asn Val Ser Ala Ser Ser Pro Val Gln
 85 90 95

Gln Gly Leu Gly Gly Gln Ala Gln Gly Gln Pro Asn Ser Ala Asn Met
 100 105 110

Ala Ser Leu Ser Ala Met Gly Lys Ser Pro Leu Ser Gln Gly Asp Ser
 115 120 125

Ser Ala Pro Ser Leu Pro Lys Gln Ala Ala Ser Thr Ser Gly Pro Thr
 130 135 140

Pro Ala Ala Ser Gln Ala Leu Asn Pro Gln Ala Gln Lys Gln Val Gly
 145 150 155 160

Leu Ala Thr Ser Ser Pro Ala Thr Ser Gln Thr Gly Pro Gly Ile Cys
 165 170 175

Met Asn Ala Asn Phe Asn Gln Thr His Pro Gly Leu Leu Asn Ser Asn
 180 185 190

Ser Gly His Ser Leu Ile Asn Gln Ala Ser Gln Gly Gln Ala Gln Val
 195 200 205

Met Asn Gly Ser Leu Gly Ala Ala Gly Arg Gly Arg Gly Ala Gly Met
 210 215 220
 Pro Tyr Pro Thr Pro Ala Met Gln Gly Ala Ser Ser Ser Val Leu Ala
 225 230 235 240
 Glu Thr Leu Thr Gln Val Ser Pro Gln Met Thr Gly His Ala Gly Leu
 245 250 255
 Asn Thr Ala Gln Ala Gly Gly Met Ala Lys Met Gly Ile Thr Gly Asn
 260 265 270
 Thr Ser Pro Phe Gly Gln Pro Phe Ser Gln Ala Gly Gly Gln Pro Met
 275 280 285
 Gly Ala Thr Gly Val Asn Pro Gln Leu Ala Ser Lys Gln Ser Met Val
 290 295 300
 Asn Ser Leu Pro Thr Phe Pro Thr Asp Ile Lys Asn Thr Ser Val Thr
 305 310 315 320
 Asn Val Pro Asn Met Ser Gln Met Gln Thr Ser Val Gly Ile Val Pro
 325 330 335
 Thr Gln Ala Ile Ala Thr Gly Pro Thr Ala Asp Pro Glu Lys Arg Lys
 340 345 350
 Leu Ile Gln Gln Gln Leu Val Leu Leu Leu His Ala His Lys Cys Gln
 355 360 365
 Arg Arg Glu Gln Ala Asn Gly Glu Val Arg Ala Cys Ser Leu Pro His
 370 375 380
 Cys Arg Thr Met Lys Asn Val Leu Asn His Met Thr His Cys Gln Ala
 385 390 395 400
 Gly Lys Ala Cys Gln Val Ala His Cys Ala Ser Ser Arg Gln Ile Ile
 405 410 415
 Ser His Trp Lys Asn Cys Thr Arg His Asp Cys Pro Val Cys Leu Pro
 420 425 430
 Leu Lys Asn Ala Ser Asp Lys Arg Asn Gln Gln Thr Ile Leu Gly Ser
 435 440 445
 Pro Ala Ser Gly Ile Gln Asn Thr Ile Gly Ser Val Gly Thr Gly Gln
 450 455 460
 Gln Asn Ala Thr Ser Leu Ser Asn Pro Asn Pro Ile Asp Pro Ser Ser
 465 470 475 480

Met Gln Arg Ala Tyr Ala Ala Leu Gly Leu Pro Tyr Met Asn Gln Pro
 485 490 495
 Gln Thr Gln Leu Gln Pro Gln Val Pro Gly Gln Gln Pro Ala Gln Pro
 500 505 510
 Gln Thr His Gln Gln Met Arg Thr Leu Asn Pro Leu Gly Asn Asn Pro
 515 520 525
 Met Asn Ile Pro Ala Gly Gly Ile Thr Thr Asp Gln Gln Pro Pro Asn
 530 535 540
 Leu Ile Ser Glu Ser Ala Leu Pro Thr Ser Leu Gly Ala Thr Asn Pro
 545 550 555 560
 Leu Met Asn Asp Gly Ser Asn Ser Gly Asn Ile Gly Thr Leu Ser Thr
 565 570 575
 Ile Pro Thr Ala Ala Pro Pro Ser Ser Thr Gly Val Arg Lys Gly Trp
 580 585 590
 His Glu His Val Thr Gln Asp Leu Arg Ser His Leu Val His Lys Leu
 595 600 605
 Val Gln Ala Ile Phe Pro Thr Pro Asp Pro Ala Ala Leu Lys Asp Arg
 610 615 620
 Arg Met Glu Asn Leu Val Ala Tyr Ala Lys Lys Val Glu Gly Asp Met
 625 630 635 640
 Tyr Glu Ser Ala Asn Ser Arg Asp Glu Tyr Tyr His Leu Leu Ala Glu
 645 650 655
 Lys Ile Tyr Lys Ile Gln Lys Glu Leu Glu Glu Lys Arg Arg Ser Arg
 660 665 670
 Leu His Lys Gln Gly Ile Leu Gly Asn Gln Pro Ala Leu Pro Ala Pro
 675 680 685
 Gly Ala Gln Pro Pro Val Ile Pro Gln Ala Gln Pro Val Arg Pro Pro
 690 695 700
 Asn Gly Pro Leu Ser Leu Pro Val Asn Arg Met Gln Val Ser Gln Gly
 705 710 715 720
 Met Asn Ser Phe Asn Pro Met Ser Leu Gly Asn Val Gln Leu Pro Gln
 725 730 735
 Ala Pro Met Gly Pro Arg Ala Ala Ser Pro Met Asn His Ser Val Gln
 740 745 750

Met Asn Ser Met Gly Ser Val Pro Gly Met Ala Ile Ser Pro Ser Arg
 755 760 765
 Met Pro Gln Pro Pro Asn Met Met Gly Ala His Thr Asn Asn Met Met
 770 775 780
 Ala Gln Ala Pro Ala Gln Ser Gln Phe Leu Pro Gln Asn Gln Phe Pro
 785 790 795 800
 Ser Ser Ser Gly Ala Met Ser Val Gly Met Gly Gln Pro Pro Ala Gln
 805 810 815
 Thr Gly Val Ser Gln Gly Gln Val Pro Gly Ala Ala Leu Pro Asn Pro
 820 825 830
 Leu Asn Met Leu Gly Pro Gln Ala Ser Gln Leu Pro Cys Pro Pro Val
 835 840 845
 Thr Gln Ser Pro Leu His Pro Thr Pro Pro Pro Ala Ser Thr Ala Ala
 850 855 860
 Gly Met Pro Ser Leu Gln His Thr Thr Pro Pro Gly Met Thr Pro Pro
 865 870 875 880
 Gln Pro Ala Ala Pro Thr Gln Pro Ser Thr Pro Val Ser Ser Ser Gly
 885 890 895
 Gln Thr Pro Thr Pro Thr Pro Gly Ser Val Pro Ser Ala Thr Gln Thr
 900 905 910
 Gln Ser Thr Pro Thr Val Gln Ala Ala Ala Gln Ala Gln Val Thr Pro
 915 920 925
 Gln Pro Gln Thr Pro Val Gln Pro Pro Ser Val Ala Thr Pro Gln Ser
 930 935 940
 Ser Gln Gln Gln Pro Thr Pro Val His Ala Gln Pro Pro Gly Thr Pro
 945 950 955 960
 Leu Ser Gln Ala Ala Ala Ser Ile Asp Asn Arg Val Pro Thr Pro Ser
 965 970 975
 Ser Val Ala Ser Ala Glu Thr Asn Ser Gln Gln Pro Gly Pro Asp Val
 980 985 990
 Pro Val Leu Glu Met Lys Thr Glu Thr Gln Ala Glu Asp Thr Glu Pro
 995 1000 1005
 Asp Pro Gly Glu Ser Lys Gly Glu Pro Arg Ser Glu Met Met Glu
 1010 1015 1020

Glu	Asp	Leu	Gln	Gly	Ala	Ser	Gln	Val	Lys	Glu	Glu	Thr	Asp	Ile
1025						1030					1035			
Ala	Glu	Gln	Lys	Ser	Glu	Pro	Met	Glu	Val	Asp	Glu	Lys	Lys	Pro
1040						1045					1050			
Glu	Val	Lys	Val	Glu	Val	Lys	Glu	Glu	Glu	Glu	Ser	Ser	Ser	Asn
1055						1060					1065			
Gly	Thr	Ala	Ser	Gln	Ser	Thr	Ser	Pro	Ser	Gln	Pro	Arg	Lys	Lys
1070						1075					1080			
Ile	Phe	Lys	Pro	Glu	Glu	Leu	Arg	Gln	Ala	Leu	Met	Pro	Thr	Leu
1085						1090					1095			
Glu	Ala	Leu	Tyr	Arg	Gln	Asp	Pro	Glu	Ser	Leu	Pro	Phe	Arg	Gln
1100						1105					1110			
Pro	Val	Asp	Pro	Gln	Leu	Leu	Gly	Ile	Pro	Asp	Tyr	Phe	Asp	Ile
1115						1120					1125			
Val	Lys	Asn	Pro	Met	Asp	Leu	Ser	Thr	Ile	Lys	Arg	Lys	Leu	Asp
1130						1135					1140			
Thr	Gly	Gln	Tyr	Gln	Glu	Pro	Trp	Gln	Tyr	Val	Asp	Asp	Val	Trp
1145						1150					1155			
Leu	Met	Phe	Asn	Asn	Ala	Trp	Leu	Tyr	Asn	Arg	Lys	Thr	Ser	Arg
1160						1165					1170			
Val	Tyr	Lys	Phe	Cys	Ser	Lys	Leu	Ala	Glu	Val	Phe	Glu	Gln	Glu
1175						1180					1185			
Ile	Asp	Pro	Val	Met	Gln	Ser	Leu	Gly	Tyr	Cys	Cys	Gly	Arg	Lys
1190						1195					1200			
Tyr	Glu	Phe	Ser	Pro	Gln	Thr	Leu	Cys	Cys	Tyr	Gly	Lys	Gln	Leu
1205						1210					1215			
Cys	Thr	Ile	Pro	Arg	Asp	Ala	Ala	Tyr	Tyr	Ser	Tyr	Gln	Asn	Arg
1220						1225					1230			
Tyr	His	Phe	Cys	Glu	Lys	Cys	Phe	Thr	Glu	Ile	Gln	Gly	Glu	Asn
1235						1240					1245			
Val	Thr	Leu	Gly	Asp	Asp	Pro	Ser	Gln	Pro	Gln	Thr	Thr	Ile	Ser
1250						1255					1260			
Lys	Asp	Gln	Phe	Glu	Lys	Lys	Lys	Asn	Asp	Thr	Leu	Asp	Pro	Glu
1265						1270					1275			

Pro	Phe 1280	Val	Asp	Cys	Lys	Glu 1285	Cys	Gly	Arg	Lys	Met 1290	His	Gln	Ile
Cys	Val 1295	Leu	His	Tyr	Asp	Ile 1300	Ile	Trp	Pro	Ser	Gly 1305	Phe	Val	Cys
Asp	Asn 1310	Cys	Leu	Lys	Lys	Thr 1315	Gly	Arg	Pro	Arg	Lys 1320	Glu	Asn	Lys
Phe	Ser 1325	Ala	Lys	Arg	Leu	Gln 1330	Thr	Thr	Arg	Leu	Gly 1335	Asn	His	Leu
Glu	Asp 1340	Arg	Val	Asn	Lys	Phe 1345	Leu	Arg	Arg	Gln	Asn 1350	His	Pro	Glu
Ala	Gly 1355	Glu	Val	Phe	Val	Arg 1360	Val	Val	Ala	Ser	Ser 1365	Asp	Lys	Thr
Val	Glu 1370	Val	Lys	Pro	Gly	Met 1375	Lys	Ser	Arg	Phe	Val 1380	Asp	Ser	Gly
Glu	Met 1385	Ser	Glu	Ser	Phe	Pro 1390	Tyr	Arg	Thr	Lys	Ala 1395	Leu	Phe	Ala
Phe	Glu 1400	Glu	Ile	Asp	Gly	Val 1405	Asp	Val	Cys	Phe	Phe 1410	Gly	Met	His
Val	Gln 1415	Glu	Tyr	Gly	Ser	Asp 1420	Cys	Pro	Pro	Pro	Asn 1425	Thr	Arg	Arg
Val	Tyr 1430	Ile	Ser	Tyr	Leu	Asp 1435	Ser	Ile	His	Phe	Phe 1440	Arg	Pro	Arg
Cys	Leu 1445	Arg	Thr	Ala	Val	Tyr 1450	His	Glu	Ile	Leu	Ile 1455	Gly	Tyr	Leu
Glu	Tyr 1460	Val	Lys	Lys	Leu	Gly 1465	Tyr	Val	Thr	Gly	His 1470	Ile	Trp	Ala
Cys	Pro 1475	Pro	Ser	Glu	Gly	Asp 1480	Asp	Tyr	Ile	Phe	His 1485	Cys	His	Pro
Pro	Asp 1490	Gln	Lys	Ile	Pro	Lys 1495	Pro	Lys	Arg	Leu	Gln 1500	Glu	Trp	Tyr
Lys	Lys 1505	Met	Leu	Asp	Lys	Ala 1510	Phe	Ala	Glu	Arg	Ile 1515	Ile	His	Asp
Tyr	Lys 1520	Asp	Ile	Phe	Lys	Gln 1525	Ala	Thr	Glu	Asp	Arg 1530	Leu	Thr	Ser

Ala	Lys 1535	Glu	Leu	Pro	Tyr	Phe 1540	Glu	Gly	Asp	Phe	Trp 1545	Pro	Asn	Val
Leu	Glu 1550	Glu	Ser	Ile	Lys	Glu 1555	Leu	Glu	Gln	Glu	Glu 1560	Glu	Glu	Arg
Lys	Lys 1565	Glu	Glu	Ser	Thr	Ala 1570	Ala	Ser	Glu	Thr	Thr 1575	Glu	Gly	Ser
Gln	Gly 1580	Asp	Ser	Lys	Asn	Ala 1585	Lys	Lys	Lys	Asn	Asn 1590	Lys	Lys	Thr
Asn	Lys 1595	Asn	Lys	Ser	Ser	Ile 1600	Ser	Arg	Ala	Asn	Lys 1605	Lys	Lys	Pro
Ser	Met 1610	Pro	Asn	Val	Ser	Asn 1615	Asp	Leu	Ser	Gln	Lys 1620	Leu	Tyr	Ala
Thr	Met 1625	Glu	Lys	His	Lys	Glu 1630	Val	Phe	Phe	Val	Ile 1635	His	Leu	His
Ala	Gly 1640	Pro	Val	Ile	Asn	Thr 1645	Leu	Pro	Pro	Ile	Val 1650	Asp	Pro	Asp
Pro	Leu 1655	Leu	Ser	Cys	Asp	Leu 1660	Met	Asp	Gly	Arg	Asp 1665	Ala	Phe	Leu
Thr	Leu 1670	Ala	Arg	Asp	Lys	His 1675	Trp	Glu	Phe	Ser	Ser 1680	Leu	Arg	Arg
Ser	Lys 1685	Trp	Ser	Thr	Leu	Cys 1690	Met	Leu	Val	Glu	Leu 1695	His	Thr	Gln
Gly	Gln 1700	Asp	Arg	Phe	Val	Tyr 1705	Thr	Cys	Asn	Glu	Cys 1710	Lys	His	His
Val	Glu 1715	Thr	Arg	Trp	His	Cys 1720	Thr	Val	Cys	Glu	Asp 1725	Tyr	Asp	Leu
Cys	Ile 1730	Asn	Cys	Tyr	Asn	Thr 1735	Lys	Ser	His	Ala	His 1740	Lys	Met	Val
Lys	Trp 1745	Gly	Leu	Gly	Leu	Asp 1750	Asp	Glu	Gly	Ser	Ser 1755	Gln	Gly	Glu
Pro	Gln 1760	Ser	Lys	Ser	Pro	Gln 1765	Glu	Ser	Arg	Arg	Leu 1770	Ser	Ile	Gln
Arg	Cys 1775	Ile	Gln	Ser	Leu	Val 1780	His	Ala	Cys	Gln	Cys 1785	Arg	Asn	Ala

Asn	Cys	Ser	Leu	Pro	Ser	Cys	Gln	Lys	Met	Lys	Arg	Val	Val	Gln
	1790					1795					1800			
His	Thr	Lys	Gly	Cys	Lys	Arg	Lys	Thr	Asn	Gly	Gly	Cys	Pro	Val
	1805					1810					1815			
Cys	Lys	Gln	Leu	Ile	Ala	Leu	Cys	Cys	Tyr	His	Ala	Lys	His	Cys
	1820					1825					1830			
Gln	Glu	Asn	Lys	Cys	Pro	Val	Pro	Phe	Cys	Leu	Asn	Ile	Lys	His
	1835					1840					1845			
Lys	Leu	Arg	Gln	Gln	Gln	Ile	Gln	His	Arg	Leu	Gln	Gln	Ala	Gln
	1850					1855					1860			
Leu	Met	Arg	Arg	Arg	Met	Ala	Thr	Met	Asn	Thr	Arg	Asn	Val	Pro
	1865					1870					1875			
Gln	Gln	Ser	Leu	Pro	Ser	Pro	Thr	Ser	Ala	Pro	Pro	Gly	Thr	Pro
	1880					1885					1890			
Thr	Gln	Gln	Pro	Ser	Thr	Pro	Gln	Thr	Pro	Gln	Pro	Pro	Ala	Gln
	1895					1900					1905			
Pro	Gln	Pro	Ser	Pro	Val	Ser	Met	Ser	Pro	Ala	Gly	Phe	Pro	Ser
	1910					1915					1920			
Val	Ala	Arg	Thr	Gln	Pro	Pro	Thr	Thr	Val	Ser	Thr	Gly	Lys	Pro
	1925					1930					1935			
Thr	Ser	Gln	Val	Pro	Ala	Pro	Pro	Pro	Pro	Ala	Gln	Pro	Pro	Pro
	1940					1945					1950			
Ala	Ala	Val	Glu	Ala	Ala	Arg	Gln	Ile	Glu	Arg	Glu	Ala	Gln	Gln
	1955					1960					1965			
Gln	Gln	His	Leu	Tyr	Arg	Val	Asn	Ile	Asn	Asn	Ser	Met	Pro	Pro
	1970					1975					1980			
Gly	Arg	Thr	Gly	Met	Gly	Thr	Pro	Gly	Ser	Gln	Met	Ala	Pro	Val
	1985					1990					1995			
Ser	Leu	Asn	Val	Pro	Arg	Pro	Asn	Gln	Val	Ser	Gly	Pro	Val	Met
	2000					2005					2010			
Pro	Ser	Met	Pro	Pro	Gly	Gln	Trp	Gln	Gln	Ala	Pro	Leu	Pro	Gln
	2015					2020					2025			
Gln	Gln	Pro	Met	Pro	Gly	Leu	Pro	Arg	Pro	Val	Ile	Ser	Met	Gln
	2030					2035					2040			

Ala	Gln	Ala	Ala	Val	Ala	Gly	Pro	Arg	Met	Pro	Ser	Val	Gln	Pro
	2045					2050					2055			
Pro	Arg	Ser	Ile	Ser	Pro	Ser	Ala	Leu	Gln	Asp	Leu	Leu	Arg	Thr
	2060					2065					2070			
Leu	Lys	Ser	Pro	Ser	Ser	Pro	Gln	Gln	Gln	Gln	Gln	Val	Leu	Asn
	2075					2080					2085			
Ile	Leu	Lys	Ser	Asn	Pro	Gln	Leu	Met	Ala	Ala	Phe	Ile	Lys	Gln
	2090					2095					2100			
Arg	Thr	Ala	Lys	Tyr	Val	Ala	Asn	Gln	Pro	Gly	Met	Gln	Pro	Gln
	2105					2110					2115			
Pro	Gly	Leu	Gln	Ser	Gln	Pro	Gly	Met	Gln	Pro	Gln	Pro	Gly	Met
	2120					2125					2130			
His	Gln	Gln	Pro	Ser	Leu	Gln	Asn	Leu	Asn	Ala	Met	Gln	Ala	Gly
	2135					2140					2145			
Val	Pro	Arg	Pro	Gly	Val	Pro	Pro	Gln	Gln	Gln	Ala	Met	Gly	Gly
	2150					2155					2160			
Leu	Asn	Pro	Gln	Gly	Gln	Ala	Leu	Asn	Ile	Met	Asn	Pro	Gly	His
	2165					2170					2175			
Asn	Pro	Asn	Met	Ala	Ser	Met	Asn	Pro	Gln	Tyr	Arg	Glu	Met	Leu
	2180					2185					2190			
Arg	Arg	Gln	Leu	Leu	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln
	2195					2200					2205			
Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gly	Ser	Ala	Gly	Met	Ala	Gly
	2210					2215					2220			
Gly	Met	Ala	Gly	His	Gly	Gln	Phe	Gln	Gln	Pro	Gln	Gly	Pro	Gly
	2225					2230					2235			
Gly	Tyr	Pro	Pro	Ala	Met	Gln	Gln	Gln	Gln	Arg	Met	Gln	Gln	His
	2240					2245					2250			
Leu	Pro	Leu	Gln	Gly	Ser	Ser	Met	Gly	Gln	Met	Ala	Ala	Gln	Met
	2255					2260					2265			
Gly	Gln	Leu	Gly	Gln	Met	Gly	Gln	Pro	Gly	Leu	Gly	Ala	Asp	Ser
	2270					2275					2280			
Thr	Pro	Asn	Ile	Gln	Gln	Ala	Leu	Gln	Gln	Arg	Ile	Leu	Gln	Gln
	2285					2290					2295			

Gln Gln Met Lys Gln Gln Ile Gly Ser Pro Gly Gln Pro Asn Pro
2300 2305 2310

Met Ser Pro Gln Gln His Met Leu Ser Gly Gln Pro Gln Ala Ser
2315 2320 2325

His Leu Pro Gly Gln Gln Ile Ala Thr Ser Leu Ser Asn Gln Val
2330 2335 2340

Arg Ser Pro Ala Pro Val Gln Ser Pro Arg Pro Gln Ser Gln Pro
2345 2350 2355

Pro His Ser Ser Pro Ser Pro Arg Ile Gln Pro Gln Pro Ser Pro
2360 2365 2370

His His Val Ser Pro Gln Thr Gly Ser Pro His Pro Gly Leu Ala
2375 2380 2385

Val Thr Met Ala Ser Ser Ile Asp Gln Gly His Leu Gly Asn Pro
2390 2395 2400

Glu Gln Ser Ala Met Leu Pro Gln Leu Asn Thr Pro Ser Arg Ser
2405 2410 2415

Ala Leu Ser Ser Glu Leu Ser Leu Val Gly Asp Thr Thr Gly Asp
2420 2425 2430

Thr Leu Glu Lys Phe Val Glu Gly Leu
2435 2440

<210> 475
<211> 442
<212> PRT
<213> Homo sapiens

<400> 475

Met Arg Gly Ala Met Glu Leu Glu Pro Glu Leu Leu Leu Gln Glu Ala
1 5 10 15

Arg Glu Asn Val Glu Ala Ala Gln Ser Tyr Arg Arg Glu Leu Gly His
20 25 30

Arg Leu Glu Gly Leu Arg Glu Ala Arg Arg Gln Ile Lys Glu Ser Ala
35 40 45

Ser Gln Thr Arg Asp Val Leu Lys Gln His Phe Asn Asp Leu Lys Gly
50 55 60

Thr Leu Gly Lys Leu Leu Asp Glu Arg Leu Val Thr Leu Leu Gln Glu
65 70 75 80

Val Asp Thr Ile Glu₈₅ Gln Glu Thr Ile Lys₉₀ Pro Leu Asp Asp Cys₉₅ Gln
 Lys Leu Ile Glu₁₀₀ His Gly Val Asn Thr₁₀₅ Ala Glu Asp Leu Val₁₁₀ Arg Glu
 Gly Glu Ile₁₁₅ Ala Met Leu Gly Gly₁₂₀ Val Gly Glu Glu Asn₁₂₅ Glu Lys Leu
 Trp Ser Phe Thr Lys Lys Ala₁₃₅ Ser His Ile Gln Leu₁₄₀ Asp Ser Leu Pro
 Glu Val Pro Leu Leu Val₁₅₀ Asp Val Pro Cys₁₅₅ Leu Ser Ala Gln Leu Asp₁₆₀
 Asp Ser Ile Leu Asn₁₆₅ Ile Val Lys Asp His₁₇₀ Ile Phe Lys His Gly₁₇₅ Thr
 Val Ala Ser Arg₁₈₀ Pro Pro Val Gln Ile₁₈₅ Glu Glu Leu Ile Glu₁₉₀ Lys Pro
 Gly Gly Ile₁₉₅ Ile Val Arg Trp Cys₂₀₀ Lys Val Asp Asp Asp₂₀₅ Phe Thr Ala
 Gln Asp₂₁₀ Tyr Arg Leu Gln Phe₂₁₅ Arg Lys Cys Thr Ser₂₂₀ Asn His Phe Glu
 Asp₂₂₅ Val Tyr Val Gly Ser₂₃₀ Glu Thr Glu Phe Ile₂₃₅ Val Leu His Ile Asp₂₄₀
 Pro Asn Val Asp Tyr₂₄₅ Gln Phe Arg Val Cys₂₅₀ Ala Arg Gly Asp Gly₂₅₅ Arg
 Gln Glu Trp Ser₂₆₀ Pro Trp Ser Val Pro₂₆₅ Gln Ile Gly His Ser₂₇₀ Thr Leu
 Val Pro His₂₇₅ Glu Trp Thr Ala Gly₂₈₀ Phe Glu Gly Tyr Ser₂₈₅ Leu Ser Ser
 Arg Arg₂₉₀ Asn Ile Ala Leu Arg₂₉₅ Asn Asp Ser Glu Ser₃₀₀ Ser Gly Val Leu
 Tyr Ser Arg Ala Pro Thr₃₁₀ Tyr Phe Cys Gly Gln₃₁₅ Thr Leu Thr Phe Arg₃₂₀
 Val Glu Thr Val Gly₃₂₅ Gln Pro Asp Arg Arg₃₃₀ Asp Ser Ile Gly Val₃₃₅ Cys
 Ala Glu Lys Gln₃₄₀ Asp Gly Tyr Asp Ser₃₄₅ Leu Gln Arg Asp Gln₃₅₀ Ala Val

Cys Ile Ser Thr Asn Gly Ala Val Phe Val Asn Gly Lys Glu Met Thr
 355 360 365

Asn Gln Leu Pro Ala Val Thr Ser Gly Ser Thr Val Thr Phe Asp Ile
 370 375 380

Glu Ala Val Thr Leu Gly Thr Thr Ser Asn Asn Glu Gly Gly His Phe
 385 390 395 400

Lys Leu Arg Val Thr Ile Ser Ser Asn Asn Arg Glu Val Val Phe Asp
 405 410 415

Trp Leu Leu Asp Gln Ser Cys Gly Ser Leu Tyr Phe Gly Cys Ser Phe
 420 425 430

Phe Tyr Pro Gly Trp Lys Val Leu Val Phe
 435 440

<210> 476
 <211> 619
 <212> PRT
 <213> Homo sapiens

<400> 476

Met Ala Ala Ser Pro Gly Ser Gly Ser Ala Asn Pro Arg Lys Phe Ser
 1 5 10 15

Glu Lys Ile Ala Leu His Thr Gln Arg Gln Ala Glu Glu Thr Arg Ala
 20 25 30

Phe Glu Gln Leu Met Thr Asp Leu Thr Leu Ser Arg Val Gln Phe Gln
 35 40 45

Lys Leu Gln Gln Leu Arg Leu Thr Gln Tyr His Gly Gly Ser Leu Pro
 50 55 60

Asn Val Ser Gln Leu Arg Ser Ser Ala Ser Glu Phe Gln Pro Ser Phe
 65 70 75 80

His Gln Ala Asp Asn Val Arg Gly Thr Arg His His Gly Leu Val Glu
 85 90 95

Arg Pro Ser Arg Asn Arg Phe His Pro Leu His Arg Arg Ser Gly Asp
 100 105 110

Lys Pro Gly Arg Gln Phe Asp Gly Ser Ala Phe Gly Ala Asn Tyr Ser
 115 120 125

Ser Gln Pro Leu Asp Glu Ser Trp Pro Arg Gln Gln Pro Pro Trp Lys
 130 135 140

Asp Glu Lys His Pro Gly Phe Arg Leu Thr Ser Ala Leu Asn Arg Thr
 145 150 155 160
 Asn Ser Asp Ser Ala Leu His Thr Ser Ala Leu Ser Thr Lys Pro Gln
 165 170 175
 Asp Pro Tyr Gly Gly Gly Gly Gln Ser Ala Trp Pro Ala Pro Tyr Met
 180 185 190
 Gly Phe Cys Asp Gly Glu Asn Asn Gly His Gly Glu Val Ala Ser Phe
 195 200 205
 Pro Gly Pro Leu Lys Glu Glu Asn Leu Leu Asn Val Pro Lys Pro Leu
 210 215 220
 Pro Lys Gln Leu Trp Glu Thr Lys Glu Ile Gln Ser Leu Ser Gly Arg
 225 230 235 240
 Pro Arg Ser Cys Asp Val Gly Gly Gly Asn Ala Phe Pro His Asn Gly
 245 250 255
 Gln Asn Leu Gly Leu Ser Pro Phe Leu Gly Thr Leu Asn Thr Gly Gly
 260 265 270
 Ser Leu Pro Asp Leu Thr Asn Leu His Tyr Ser Thr Pro Leu Pro Ala
 275 280 285
 Ser Leu Asp Thr Thr Asp His His Phe Gly Ser Met Ser Val Gly Asn
 290 295 300
 Ser Val Asn Asn Ile Pro Ala Ala Met Thr His Leu Gly Ile Arg Ser
 305 310 315 320
 Ser Ser Gly Leu Gln Ser Ser Arg Ser Asn Pro Ser Ile Gln Ala Thr
 325 330 335
 Leu Asn Lys Thr Val Leu Ser Ser Ser Leu Asn Asn His Pro Gln Thr
 340 345 350
 Ser Val Pro Asn Ala Ser Ala Leu His Pro Ser Leu Arg Leu Phe Ser
 355 360 365
 Leu Ser Asn Pro Ser Leu Ser Thr Thr Asn Leu Ser Gly Pro Ser Arg
 370 375 380
 Arg Arg Gln Pro Pro Val Ser Pro Leu Thr Leu Ser Pro Gly Pro Glu
 385 390 395 400
 Ala His Gln Gly Phe Ser Arg Gln Leu Ser Ser Thr Ser Pro Leu Ala
 405 410 415

Pro Tyr Pro Thr Ser Gln Met Val Ser Ser Asp Arg Ser Gln Leu Ser
 420 425 430

Phe Leu Pro Thr Glu Ala Gln Ala Gln Val Ser Pro Pro Pro Tyr
 435 440 445

Pro Ala Pro Gln Glu Leu Thr Gln Pro Leu Leu Gln Gln Pro Arg Ala
 450 455 460

Pro Glu Ala Pro Ala Gln Gln Pro Gln Ala Ala Ser Ser Leu Pro Gln
 465 470 475 480

Ser Asp Phe Gln Leu Leu Pro Ala Gln Gly Ser Ser Leu Thr Asn Phe
 485 490 495

Phe Pro Asp Val Gly Phe Asp Gln Gln Ser Met Arg Pro Gly Pro Ala
 500 505 510

Phe Pro Gln Gln Val Pro Leu Val Gln Gln Gly Ser Arg Glu Leu Gln
 515 520 525

Asp Ser Phe His Leu Arg Pro Ser Pro Tyr Ser Asn Cys Gly Ser Leu
 530 535 540

Pro Asn Thr Ile Leu Pro Glu Asp Ser Ser Thr Ser Leu Phe Lys Asp
 545 550 555 560

Leu Asn Ser Ala Leu Ala Gly Leu Pro Glu Val Ser Leu Asn Val Asp
 565 570 575

Thr Pro Phe Pro Leu Glu Glu Glu Leu Gln Ile Glu Pro Leu Ser Leu
 580 585 590

Asp Gly Leu Asn Met Leu Ser Asp Ser Ser Met Gly Leu Leu Asp Pro
 595 600 605

Ser Val Glu Glu Thr Phe Arg Ala Asp Arg Leu
 610 615

<210> 477
 <211> 520
 <212> PRT
 <213> Homo sapiens

<400> 477

Met Ser Ile Pro Leu Lys Ser Ser Phe Leu Leu Ser Tyr Leu Cys Thr
 1 5 10 15

Leu Pro Pro Ala Leu Leu Ser Arg Glu Ile Leu Met Ala Asp Ser Glu
 20 25 30

Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala Val Glu Ala Leu Leu
 Page 600

35

40

45

Arg Ala Val Phe Gly Val Val Val Asp Glu Ala Ile Gln Lys Gly Thr
 50 55 60

Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu Pro Glu Glu Leu Lys
 65 70 75 80

Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly Glu Ser Gln Lys Gln
 85 90 95

Ile Leu Glu Arg Cys Arg Ala Val Ile Arg Tyr Ser Val Lys Thr Gly
 100 105 110

His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly Leu Asp Pro His Ala
 115 120 125

Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn Thr Ser Gln Tyr Thr
 130 135 140

Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu Glu Glu Val Leu Arg
 145 150 155 160

Lys Leu Arg Ala Leu Val Gly Trp Ser Ser Gly Asp Gly Ile Phe Cys
 165 170 175

Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Val Asn Leu Ala Arg Tyr
 180 185 190

Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu Arg Thr Leu Pro Pro
 195 200 205

Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr Ser Ile Gln Lys Gly
 210 215 220

Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val Arg Val Val Lys Ala
 225 230 235 240

Asp Glu Arg Gly Lys Met Val Pro Glu Asp Leu Glu Arg Gln Ile Gly
 245 250 255

Met Ala Glu Ala Glu Gly Ala Val Pro Phe Leu Val Ser Ala Thr Ser
 260 265 270

Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu Glu Ala Ile Ala Asp
 275 280 285

Val Cys Gln Arg His Gly Leu Trp Leu His Val Asp Ala Ala Trp Gly
 290 295 300

Gly Ser Val Leu Leu Ser Gln Thr His Arg His Leu Leu Asp Gly Ile
 Page 601

305 310 315 320

Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His Lys Leu Leu Ala Ala
325 330 335

Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp Thr Ser Asn Leu Leu
340 345 350

Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu Phe Gln Gln Asp Lys
355 360 365

Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys Val Val Gln Cys Gly
370 375 380

Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met Trp Lys Ala Gln Gly
385 390 395 400

Asp Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala Phe Val Leu Ala Arg
405 410 415

Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly Phe Glu Leu Val Met
420 425 430

Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe Val Pro Pro Ser Leu
435 440 445

Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu Arg Leu Ser Lys Val
450 455 460

Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu Gly Ser Met Met Ile
465 470 475 480

Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe Phe Arg Val Val Val
485 490 495

Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp Phe Leu Leu Asn Glu
500 505 510

Leu Glu Arg Leu Gly Gln Asp Leu
515 520

<210> 478
<211> 897
<212> PRT
<213> Homo sapiens

<400> 478

Met Val Leu Ala Gln Gly Leu Leu Ser Met Ala Leu Leu Ala Leu Cys
1 5 10 15

Trp Glu Arg Ser Leu Ala Gly Ala Glu Glu Thr Ile Pro Leu Gln Thr
20 25 30

Leu Arg Cys Tyr Asn Asp Tyr Thr Ser His Ile Thr Cys Arg Trp Ala
 35 40 45
 Asp Thr Gln Asp Ala Gln Arg Leu Val Asn Val Thr Leu Ile Arg Arg
 50 55 60
 Val Asn Glu Asp Leu Leu Glu Pro Val Ser Cys Asp Leu Ser Asp Asp
 65 70 75 80
 Met Pro Trp Ser Ala Cys Pro His Pro Arg Cys Val Pro Arg Arg Cys
 85 90 95
 Val Ile Pro Cys Gln Ser Phe Val Val Thr Asp Val Asp Tyr Phe Ser
 100 105 110
 Phe Gln Pro Asp Arg Pro Leu Gly Thr Arg Leu Thr Val Thr Leu Thr
 115 120 125
 Gln His Val Gln Pro Pro Glu Pro Arg Asp Leu Gln Ile Ser Thr Asp
 130 135 140
 Gln Asp His Phe Leu Leu Thr Trp Ser Val Ala Leu Gly Ser Pro Gln
 145 150 155 160
 Ser His Trp Leu Ser Pro Gly Asp Leu Glu Phe Glu Val Val Tyr Lys
 165 170 175
 Arg Leu Gln Asp Ser Trp Glu Asp Ala Ala Ile Leu Leu Ser Asn Thr
 180 185 190
 Ser Gln Ala Thr Leu Gly Pro Glu His Leu Met Pro Ser Ser Thr Tyr
 195 200 205
 Val Ala Arg Val Arg Thr Arg Leu Ala Pro Gly Ser Arg Leu Ser Gly
 210 215 220
 Arg Pro Ser Lys Trp Ser Pro Glu Val Cys Trp Asp Ser Gln Pro Gly
 225 230 235 240
 Asp Glu Ala Gln Pro Gln Asn Leu Glu Cys Phe Phe Asp Gly Ala Ala
 245 250 255
 Val Leu Ser Cys Ser Trp Glu Val Arg Lys Glu Val Ala Ser Ser Val
 260 265 270
 Ser Phe Gly Leu Phe Tyr Lys Pro Ser Pro Asp Ala Gly Glu Glu Glu
 275 280 285
 Cys Ser Pro Val Leu Arg Glu Gly Leu Gly Ser Leu His Thr Arg His
 290 295 300

His Cys Gln Ile Pro Val Pro Asp Pro Ala Thr His Gly Gln Tyr Ile
 305 310 315 320
 Val Ser Val Gln Pro Arg Arg Ala Glu Lys His Ile Lys Ser Ser Val
 325 330 335
 Asn Ile Gln Met Ala Pro Pro Ser Leu Asn Val Thr Lys Asp Gly Asp
 340 345 350
 Ser Tyr Ser Leu Arg Trp Glu Thr Met Lys Met Arg Tyr Glu His Ile
 355 360 365
 Asp His Thr Phe Glu Ile Gln Tyr Arg Lys Asp Thr Ala Thr Trp Lys
 370 375 380
 Asp Ser Lys Thr Glu Thr Leu Gln Asn Ala His Ser Met Ala Leu Pro
 385 390 395 400
 Ala Leu Glu Pro Ser Thr Arg Tyr Trp Ala Arg Val Arg Val Arg Thr
 405 410 415
 Ser Arg Thr Gly Tyr Asn Gly Ile Trp Ser Glu Trp Ser Glu Ala Arg
 420 425 430
 Ser Trp Asp Thr Glu Ser Val Leu Pro Met Trp Val Leu Ala Leu Ile
 435 440 445
 Val Ile Phe Leu Thr Ile Ala Val Leu Leu Ala Leu Arg Phe Cys Gly
 450 455 460
 Ile Tyr Gly Tyr Arg Leu Arg Arg Lys Trp Glu Glu Lys Ile Pro Asn
 465 470 475 480
 Pro Ser Lys Ser His Leu Phe Gln Asn Gly Ser Ala Glu Leu Trp Pro
 485 490 495
 Pro Gly Ser Met Ser Ala Phe Thr Ser Gly Ser Pro Pro His Gln Gly
 500 505 510
 Pro Trp Gly Ser Arg Phe Pro Glu Leu Glu Gly Val Phe Pro Val Gly
 515 520 525
 Phe Gly Asp Ser Glu Val Ser Pro Leu Thr Ile Glu Asp Pro Lys His
 530 535 540
 Val Cys Asp Pro Pro Ser Gly Pro Asp Thr Thr Pro Ala Ala Ser Asp
 545 550 555 560
 Leu Pro Thr Glu Gln Pro Pro Ser Pro Gln Pro Gly Pro Pro Ala Ala
 565 570 575

Ser His Thr Pro Glu Lys Gln Ala Ser Ser Phe Asp Phe Asn Gly Pro
 580 585 590

Tyr Leu Gly Pro Pro His Ser Arg Ser Leu Pro Asp Ile Leu Gly Gln
 595 600 605

Pro Glu Pro Pro Gln Glu Gly Gly Ser Gln Lys Ser Pro Pro Pro Gly
 610 615 620

Ser Leu Glu Tyr Leu Cys Leu Pro Ala Gly Gly Gln Val Gln Leu Val
 625 630 635 640

Pro Leu Ala Gln Ala Met Gly Pro Gly Gln Ala Val Glu Val Glu Arg
 645 650 655

Arg Pro Ser Gln Gly Ala Ala Gly Ser Pro Ser Leu Glu Ser Gly Gly
 660 665 670

Gly Pro Ala Pro Pro Ala Leu Gly Pro Arg Val Gly Gly Gln Asp Gln
 675 680 685

Lys Asp Ser Pro Val Ala Ile Pro Met Ser Ser Gly Asp Thr Glu Asp
 690 695 700

Pro Gly Val Ala Ser Gly Tyr Val Ser Ser Ala Asp Leu Val Phe Thr
 705 710 715 720

Pro Asn Ser Gly Ala Ser Ser Val Ser Leu Val Pro Ser Leu Gly Leu
 725 730 735

Pro Ser Asp Gln Thr Pro Ser Leu Cys Pro Gly Leu Ala Ser Gly Pro
 740 745 750

Pro Gly Ala Pro Gly Pro Val Lys Ser Gly Phe Glu Gly Tyr Val Glu
 755 760 765

Leu Pro Pro Ile Glu Gly Arg Ser Pro Arg Ser Pro Arg Asn Asn Pro
 770 775 780

Val Pro Pro Glu Ala Lys Ser Pro Val Leu Asn Pro Gly Glu Arg Pro
 785 790 795 800

Ala Asp Val Ser Pro Thr Ser Pro Gln Pro Glu Gly Leu Leu Val Leu
 805 810 815

Gln Gln Val Gly Asp Tyr Cys Phe Leu Pro Gly Leu Gly Pro Gly Pro
 820 825 830

Leu Ser Leu Arg Ser Lys Pro Ser Ser Pro Gly Pro Gly Pro Glu Ile
 835 840 845

Lys Asn Leu Asp Gln Ala Phe Gln Val Lys Lys Pro Pro Gly Gln Ala
850 855 860

Val Pro Gln Val Pro Val Ile Gln Leu Phe Lys Ala Leu Lys Gln Gln
865 870 875 880

Asp Tyr Leu Ser Leu Pro Pro Trp Glu Val Asn Lys Pro Gly Glu Val
885 890 895

Cys

<210> 479
<211> 415
<212> PRT
<213> Homo sapiens

<400> 479

Met Glu Leu Arg Val Gly Asn Arg Tyr Arg Leu Gly Arg Lys Ile Gly
1 5 10 15

Ser Gly Ser Phe Gly Asp Ile Tyr Leu Gly Thr Asp Ile Ala Ala Gly
20 25 30

Glu Glu Val Ala Ile Lys Leu Glu Cys Val Lys Thr Lys His Pro Gln
35 40 45

Leu His Ile Glu Ser Lys Ile Tyr Lys Met Met Gln Gly Gly Val Gly
50 55 60

Ile Pro Thr Ile Arg Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
65 70 75 80

Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
85 90 95

Ser Arg Lys Phe Ser Leu Lys Thr Val Leu Leu Leu Ala Asp Gln Met
100 105 110

Ile Ser Arg Ile Glu Tyr Ile His Ser Lys Asn Phe Ile His Arg Asp
115 120 125

Val Lys Pro Asp Asn Phe Leu Met Gly Leu Gly Lys Lys Gly Asn Leu
130 135 140

Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
145 150 155 160

Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
165 170 175

Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
 180 185 190

Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
 195 200 205

Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Ala Thr Lys Arg Gln Lys
 210 215 220

Tyr Glu Arg Ile Ser Glu Lys Lys Met Ser Thr Pro Ile Glu Val Leu
 225 230 235 240

Cys Lys Gly Tyr Pro Ser Glu Phe Ala Thr Tyr Leu Asn Phe Cys Arg
 245 250 255

Ser Leu Arg Phe Asp Asp Lys Pro Asp Tyr Ser Tyr Leu Arg Gln Leu
 260 265 270

Phe Arg Asn Leu Phe His Arg Gln Gly Phe Ser Tyr Asp Tyr Val Phe
 275 280 285

Asp Trp Asn Met Leu Lys Phe Gly Ala Ser Arg Ala Ala Asp Asp Ala
 290 295 300

Glu Arg Glu Arg Arg Asp Arg Glu Glu Arg Leu Arg His Ser Arg Asn
 305 310 315 320

Pro Ala Thr Arg Gly Leu Pro Ser Thr Ala Ser Gly Arg Leu Arg Gly
 325 330 335

Thr Gln Glu Val Ala Pro Pro Thr Pro Leu Thr Pro Thr Ser His Thr
 340 345 350

Ala Asn Thr Ser Pro Arg Pro Val Ser Gly Met Glu Arg Glu Arg Lys
 355 360 365

Val Ser Met Arg Leu His Arg Gly Ala Pro Val Asn Ile Ser Ser Ser
 370 375 380

Asp Leu Thr Gly Arg Gln Asp Thr Ser Arg Met Ser Thr Ser Gln Ile
 385 390 395 400

Pro Gly Arg Val Ala Ser Ser Gly Leu Gln Ser Val Val His Arg
 405 410 415

<210> 480
 <211> 146
 <212> PRT
 <213> Homo sapiens
 <400> 480

Met Ala Gly Pro Leu Arg Ala Pro Leu Leu Leu Leu Ala Ile Leu Ala
1 5 10 15

Val Ala Leu Ala Val Ser Pro Ala Ala Gly Ser Ser Pro Gly Lys Pro
20 25 30

Pro Arg Leu Val Gly Gly Pro Met Asp Ala Ser Val Glu Glu Glu Gly
35 40 45

Val Arg Arg Ala Leu Asp Phe Ala Val Gly Glu Tyr Asn Lys Ala Ser
50 55 60

Asn Asp Met Tyr His Ser Arg Ala Leu Gln Val Val Arg Ala Arg Lys
65 70 75 80

Gln Ile Val Ala Gly Val Asn Tyr Phe Leu Asp Val Glu Leu Gly Arg
85 90 95

Thr Thr Cys Thr Lys Thr Gln Pro Asn Leu Asp Asn Cys Pro Phe His
100 105 110

Asp Gln Pro His Leu Lys Arg Lys Ala Phe Cys Ser Phe Gln Ile Tyr
115 120 125

Ala Val Pro Trp Gln Gly Thr Met Thr Leu Ser Lys Ser Thr Cys Gln
130 135 140

Asp Ala
145

<210> 481
<211> 445
<212> PRT
<213> Homo sapiens

<400> 481

Met Ala Leu Val Asp Lys His Lys Val Lys Arg Gln Arg Leu Asp Arg
1 5 10 15

Ile Cys Glu Gly Ile Arg Pro Gln Ile Met Asn Gly Pro Leu His Pro
20 25 30

Arg Pro Leu Val Ala Leu Leu Asp Gly Arg Asp Cys Thr Val Glu Met
35 40 45

Pro Ile Leu Lys Asp Leu Ala Thr Val Ala Phe Cys Asp Ala Gln Ser
50 55 60

Thr Gln Glu Ile His Glu Lys Val Leu Asn Glu Ala Val Gly Ala Met
65 70 75 80

Met Tyr His Thr Ile Thr Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys
Page 608

Ala Leu Arg Val Ile Val Arg Ile Gly Ser Gly Tyr Asp Asn Val Asp
100 105 110

Ile Lys Ala Ala Gly Glu Leu Gly Ile Ala Val Cys Asn Ile Pro Ser
115 120 125

Ala Ala Val Glu Glu Thr Ala Asp Ser Thr Ile Cys His Ile Leu Asn
130 135 140

Leu Tyr Arg Arg Asn Thr Trp Leu Tyr Gln Ala Leu Arg Glu Gly Thr
145 150 155 160

Arg Val Gln Ser Val Glu Gln Ile Arg Glu Val Ala Ser Gly Ala Ala
165 170 175

Arg Ile Arg Gly Glu Thr Leu Gly Leu Ile Gly Phe Gly Arg Thr Gly
180 185 190

Gln Ala Val Ala Val Arg Ala Lys Ala Phe Gly Phe Ser Val Ile Phe
195 200 205

Tyr Asp Pro Tyr Leu Gln Asp Gly Ile Glu Arg Ser Leu Gly Val Gln
210 215 220

Arg Val Tyr Thr Leu Gln Asp Leu Leu Tyr Gln Ser Asp Cys Val Ser
225 230 235 240

Leu His Cys Asn Leu Asn Glu His Asn His His Leu Ile Asn Asp Phe
245 250 255

Thr Ile Lys Gln Met Arg Gln Gly Ala Phe Leu Val Asn Ala Ala Arg
260 265 270

Gly Gly Leu Val Asp Glu Lys Ala Leu Ala Gln Ala Leu Lys Glu Gly
275 280 285

Arg Ile Arg Gly Ala Ala Leu Asp Val His Glu Ser Glu Pro Phe Ser
290 295 300

Phe Ala Gln Gly Pro Leu Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro
305 310 315 320

His Thr Ala Trp Tyr Ser Glu Gln Ala Ser Leu Glu Met Arg Glu Ala
325 330 335

Ala Ala Thr Glu Ile Arg Arg Ala Ile Thr Gly Arg Ile Pro Glu Ser
340 345 350

Leu Arg Asn Cys Val Asn Lys Glu Phe Phe Val Thr Ser Ala Pro Trp
Page 609

355

360

365

Ser Val Ile Asp Gln Gln Ala Ile His Pro Glu Leu Asn Gly Ala Thr
 370 375 380

Tyr Arg Tyr Pro Pro Gly Ile Val Gly Val Ala Pro Gly Gly Leu Pro
 385 390 395 400

Ala Ala Met Glu Gly Ile Ile Pro Gly Gly Ile Pro Val Thr His Asn
 405 410 415

Leu Pro Thr Val Ala His Pro Ser Gln Ala Pro Ser Pro Asn Gln Pro
 420 425 430

Thr Lys His Gly Asp Asn Arg Glu His Pro Asn Glu Gln
 435 440 445

<210> 482
 <211> 271
 <212> PRT
 <213> Homo sapiens

<400> 482

Met Glu His Gly Ser Ile Ile Thr Gln Ala Arg Arg Glu Asp Ala Leu
 1 5 10 15

Val Leu Thr Lys Gln Gly Leu Val Ser Lys Ser Ser Pro Lys Lys Pro
 20 25 30

Arg Gly Arg Asn Ile Phe Lys Ala Leu Phe Cys Cys Phe Arg Ala Gln
 35 40 45

His Val Gly Gln Ser Ser Ser Ser Thr Glu Leu Ala Ala Tyr Lys Glu
 50 55 60

Glu Ala Asn Thr Ile Ala Lys Ser Asp Leu Leu Gln Cys Leu Gln Tyr
 65 70 75 80

Gln Phe Tyr Gln Ile Pro Gly Thr Cys Leu Leu Pro Glu Val Thr Glu
 85 90 95

Glu Asp Gln Gly Arg Ile Cys Val Val Ile Asp Leu Asp Glu Thr Leu
 100 105 110

Val His Ser Ser Phe Lys Pro Ile Asn Asn Ala Asp Phe Ile Val Pro
 115 120 125

Ile Glu Ile Glu Gly Thr Thr His Gln Val Tyr Val Leu Lys Arg Pro
 130 135 140

Tyr Val Asp Glu Phe Leu Arg Arg Met Gly Glu Leu Phe Glu Cys Val
 145 150 155 160

Leu Phe Thr Ala Ser Leu Ala Lys Tyr Ala Asp Pro Val Thr Asp Leu
 165 170 175

Leu Asp Arg Cys Gly Val Phe Arg Ala Arg Leu Phe Arg Glu Ser Cys
 180 185 190

Val Phe His Gln Gly Cys Tyr Val Lys Asp Leu Ser Arg Leu Gly Arg
 195 200 205

Asp Leu Arg Lys Thr Leu Ile Leu Asp Asn Ser Pro Ala Ser Tyr Ile
 210 215 220

Phe His Pro Glu Asn Ala Val Pro Val Gln Ser Trp Phe Asp Asp Met
 225 230 235 240

Ala Asp Thr Glu Leu Leu Asn Leu Ile Pro Ile Phe Glu Glu Leu Ser
 245 250 255

Gly Ala Glu Asp Val Tyr Thr Ser Leu Gly Gln Leu Arg Ala Pro
 260 265 270

<210> 483
 <211> 776
 <212> PRT
 <213> Homo sapiens

<400> 483

Met Ser Ser Thr Arg Ser Gln Asn Pro His Gly Leu Lys Gln Ile Gly
 1 5 10 15

Leu Asp Gln Ile Trp Asp Asp Leu Arg Ala Gly Ile Gln Gln Val Tyr
 20 25 30

Thr Arg Gln Ser Met Ala Lys Ser Arg Tyr Met Glu Leu Tyr Thr His
 35 40 45

Val Tyr Asn Tyr Cys Thr Ser Val His Gln Ser Asn Gln Ala Arg Gly
 50 55 60

Ala Gly Val Pro Pro Ser Lys Ser Lys Lys Gly Gln Thr Pro Gly Gly
 65 70 75 80

Ala Gln Phe Val Gly Leu Glu Leu Tyr Lys Arg Leu Lys Glu Phe Leu
 85 90 95

Lys Asn Tyr Leu Thr Asn Leu Leu Lys Asp Gly Glu Asp Leu Met Asp
 100 105 110

Glu Ser Val Leu Lys Phe Tyr Thr Gln Gln Trp Glu Asp Tyr Arg Phe
 115 120 125

Ser Ser Lys Val Leu Asn Gly Ile Cys Ala Tyr Leu Asn Arg His Trp
 130 135 140
 Val Arg Arg Glu Cys Asp Glu Gly Arg Lys Gly Ile Tyr Glu Ile Tyr
 145 150 155 160
 Ser Leu Ala Leu Val Thr Trp Arg Asp Cys Leu Phe Arg Pro Leu Asn
 165 170 175
 Lys Gln Val Thr Asn Ala Val Leu Lys Leu Ile Glu Lys Glu Arg Asn
 180 185 190
 Gly Glu Thr Ile Asn Thr Arg Leu Ile Ser Gly Val Val Gln Ser Tyr
 195 200 205
 Val Glu Leu Gly Leu Asn Glu Asp Asp Ala Phe Ala Lys Gly Pro Thr
 210 215 220
 Leu Thr Val Tyr Lys Glu Ser Phe Glu Ser Gln Phe Leu Ala Asp Thr
 225 230 235 240
 Glu Arg Phe Tyr Thr Arg Glu Ser Thr Glu Phe Leu Gln Gln Asn Pro
 245 250 255
 Val Thr Glu Tyr Met Lys Lys Ala Glu Ala Arg Leu Leu Glu Glu Gln
 260 265 270
 Arg Arg Val Gln Val Tyr Leu His Glu Ser Thr Gln Asp Glu Leu Ala
 275 280 285
 Arg Lys Cys Glu Gln Val Leu Ile Glu Lys His Leu Glu Ile Phe His
 290 295 300
 Thr Glu Phe Gln Asn Leu Leu Asp Ala Asp Lys Asn Glu Asp Leu Gly
 305 310 315 320
 Arg Met Tyr Asn Leu Val Ser Arg Ile Gln Asp Gly Leu Gly Glu Leu
 325 330 335
 Lys Lys Leu Leu Glu Thr His Ile His Asn Gln Gly Leu Ala Ala Ile
 340 345 350
 Glu Lys Cys Gly Glu Ala Ala Leu Asn Asp Pro Lys Met Tyr Val Gln
 355 360 365
 Thr Val Leu Asp Val His Lys Lys Tyr Asn Ala Leu Val Met Ser Ala
 370 375 380
 Phe Asn Asn Asp Ala Gly Phe Val Ala Ala Leu Asp Lys Ala Cys Gly
 385 390 395 400

Arg Phe Ile Asn Asn Ala Val Thr Lys Met Ala Gln Ser Ser Ser
 405 410 415
 Lys Ser Pro Glu Leu Leu Ala Arg Tyr Cys Asp Ser Leu Leu Lys Lys
 420 425 430
 Ser Ser Lys Asn Pro Glu Glu Ala Glu Leu Glu Asp Thr Leu Asn Gln
 435 440 445
 Val Met Val Val Phe Lys Tyr Ile Glu Asp Lys Asp Val Phe Gln Lys
 450 455 460
 Phe Tyr Ala Lys Met Leu Ala Lys Arg Leu Val His Gln Asn Ser Ala
 465 470 475 480
 Ser Asp Asp Ala Glu Ala Ser Met Ile Ser Lys Leu Lys Gln Ala Cys
 485 490 495
 Gly Phe Glu Tyr Thr Ser Lys Leu Gln Arg Met Phe Gln Asp Ile Gly
 500 505 510
 Val Ser Lys Asp Leu Asn Glu Gln Phe Lys Lys His Leu Thr Asn Ser
 515 520 525
 Glu Pro Leu Asp Leu Asp Phe Ser Ile Gln Val Leu Ser Ser Gly Ser
 530 535 540
 Trp Pro Phe Gln Gln Ser Cys Thr Phe Ala Leu Pro Ser Glu Leu Glu
 545 550 555 560
 Arg Ser Tyr Gln Arg Phe Thr Ala Phe Tyr Ala Ser Arg His Ser Gly
 565 570 575
 Arg Lys Leu Thr Trp Leu Tyr Gln Leu Ser Lys Gly Glu Leu Val Thr
 580 585 590
 Asn Cys Phe Lys Asn Arg Tyr Thr Leu Gln Ala Ser Thr Phe Gln Met
 595 600 605
 Ala Ile Leu Leu Gln Tyr Asn Thr Glu Asp Ala Tyr Thr Val Gln Gln
 610 615 620
 Leu Thr Asp Ser Thr Gln Ile Lys Met Asp Ile Leu Ala Gln Val Leu
 625 630 635 640
 Gln Ile Leu Leu Lys Ser Lys Leu Leu Val Leu Glu Asp Glu Asn Ala
 645 650 655
 Asn Val Asp Glu Val Glu Leu Lys Pro Asp Thr Leu Ile Lys Leu Tyr
 660 665 670

Leu Gly Tyr Lys Asn Lys Lys Leu Arg Val Asn Ile Asn Val Pro Met
 675 680 685

Lys Thr Glu Gln Lys Gln Glu Gln Glu Thr Thr His Lys Asn Ile Glu
 690 695 700

Glu Asp Arg Lys Leu Leu Ile Gln Ala Ala Ile Val Arg Ile Met Lys
 705 710 715 720

Met Arg Lys Val Leu Lys His Gln Gln Leu Leu Gly Glu Val Leu Thr
 725 730 735

Gln Leu Ser Ser Arg Phe Lys Pro Arg Val Pro Val Ile Lys Lys Cys
 740 745 750

Ile Asp Ile Leu Ile Glu Lys Glu Tyr Leu Glu Arg Val Asp Gly Glu
 755 760 765

Lys Asp Thr Tyr Ser Tyr Leu Ala
 770 775

<210> 484
 <211> 956
 <212> PRT
 <213> Homo sapiens

<400> 484

Met Ser Ser Gly Leu Trp Ser Gln Glu Lys Val Thr Ser Pro Tyr Trp
 1 5 10 15

Glu Glu Arg Ile Phe Tyr Leu Leu Leu Gln Glu Cys Ser Val Thr Asp
 20 25 30

Lys Gln Thr Gln Lys Leu Leu Lys Val Pro Lys Gly Ser Ile Gly Gln
 35 40 45

Tyr Ile Gln Asp Arg Ser Val Gly His Ser Arg Ile Pro Ser Ala Lys
 50 55 60

Gly Lys Lys Asn Gln Ile Gly Leu Lys Ile Leu Glu Gln Pro His Ala
 65 70 75 80

Val Leu Phe Val Asp Glu Lys Asp Val Val Glu Ile Asn Glu Lys Phe
 85 90 95

Thr Glu Leu Leu Leu Ala Ile Thr Asn Cys Glu Glu Arg Phe Ser Leu
 100 105 110

Phe Lys Asn Arg Asn Arg Leu Ser Lys Gly Leu Gln Ile Asp Val Gly
 115 120 125

Cys Pro Val Lys Val Gln Leu Arg Ser Gly Glu Glu Lys Phe Pro Gly
 130 135 140
 Val Val Arg Phe Arg Gly Pro Leu Leu Ala Glu Arg Thr Val Ser Gly
 145 150 155 160
 Ile Phe Phe Gly Val Glu Leu Leu Glu Glu Gly Arg Gly Gln Gly Phe
 165 170 175
 Thr Asp Gly Val Tyr Gln Gly Lys Gln Leu Phe Gln Cys Asp Glu Asp
 180 185 190
 Cys Gly Val Phe Val Ala Leu Asp Lys Leu Glu Leu Ile Glu Asp Asp
 195 200 205
 Asp Thr Ala Leu Glu Ser Asp Tyr Ala Gly Pro Gly Asp Thr Met Gln
 210 215 220
 Val Glu Leu Pro Pro Leu Glu Ile Asn Ser Arg Val Ser Leu Lys Val
 225 230 235 240
 Gly Glu Thr Ile Glu Ser Gly Thr Val Ile Phe Cys Asp Val Leu Pro
 245 250 255
 Gly Lys Glu Ser Leu Gly Tyr Phe Val Gly Val Asp Met Asp Asn Pro
 260 265 270
 Ile Gly Asn Trp Asp Gly Arg Phe Asp Gly Val Gln Leu Cys Ser Phe
 275 280 285
 Ala Cys Val Glu Ser Thr Ile Leu Leu His Ile Asn Asp Ile Ile Pro
 290 295 300
 Ala Leu Ser Glu Ser Val Thr Gln Glu Arg Arg Pro Pro Lys Leu Ala
 305 310 315 320
 Phe Met Ser Arg Gly Val Gly Asp Lys Gly Ser Ser Ser His Asn Lys
 325 330 335
 Pro Lys Ala Thr Gly Ser Thr Ser Asp Pro Gly Asn Arg Asn Arg Ser
 340 345 350
 Glu Leu Phe Tyr Thr Leu Asn Gly Ser Ser Val Asp Ser Gln Pro Gln
 355 360 365
 Ser Lys Ser Lys Asn Thr Trp Tyr Ile Asp Glu Val Ala Glu Asp Pro
 370 375 380
 Ala Lys Ser Leu Thr Glu Ile Ser Thr Asp Phe Asp Arg Ser Ser Pro
 385 390 395 400

Pro Leu Gln Pro Pro Pro Val Asn Ser Leu Thr Thr Glu Asn Arg Phe
 405 410 415
 His Ser Leu Pro Phe Ser Leu Thr Lys Met Pro Asn Thr Asn Gly Ser
 420 425 430
 Ile Gly His Ser Pro Leu Ser Leu Ser Ala Gln Ser Val Met Glu Glu
 435 440 445
 Leu Asn Thr Ala Pro Val Gln Glu Ser Pro Pro Leu Ala Met Pro Pro
 450 455 460
 Gly Asn Ser His Gly Leu Glu Val Gly Ser Leu Ala Glu Val Lys Glu
 465 470 475 480
 Asn Pro Pro Phe Tyr Gly Val Ile Arg Trp Ile Gly Gln Pro Pro Gly
 485 490 495
 Leu Asn Glu Val Leu Ala Gly Leu Glu Leu Glu Asp Glu Cys Ala Gly
 500 505 510
 Cys Thr Asp Gly Thr Phe Arg Gly Thr Arg Tyr Phe Thr Cys Ala Leu
 515 520 525
 Lys Lys Ala Leu Phe Val Lys Leu Lys Ser Cys Arg Pro Asp Ser Arg
 530 535 540
 Phe Ala Ser Leu Gln Pro Val Ser Asn Gln Ile Glu Arg Cys Asn Ser
 545 550 555 560
 Leu Ala Phe Gly Gly Tyr Leu Ser Glu Val Val Glu Glu Asn Thr Pro
 565 570 575
 Pro Lys Met Glu Lys Glu Gly Leu Glu Ile Met Ile Gly Lys Lys Lys
 580 585 590
 Gly Ile Gln Gly His Tyr Asn Ser Cys Tyr Leu Asp Ser Thr Leu Phe
 595 600 605
 Cys Leu Phe Ala Phe Ser Ser Val Leu Asp Thr Val Leu Leu Arg Pro
 610 615 620
 Lys Glu Lys Asn Asp Val Glu Tyr Tyr Ser Glu Thr Gln Glu Leu Leu
 625 630 635 640
 Arg Thr Glu Ile Val Asn Pro Leu Arg Ile Tyr Gly Tyr Val Cys Ala
 645 650 655
 Thr Lys Ile Met Lys Leu Arg Lys Ile Leu Glu Lys Val Glu Ala Ala
 660 665 670

Ser Gly Phe Thr Ser Glu Glu Lys Asp Pro Glu Glu Phe Leu Asn Ile
 675 680 685

Leu Phe His His Ile Leu Arg Val Glu Pro Leu Leu Lys Ile Arg Ser
 690 695 700

Ala Gly Gln Lys Val Gln Asp Cys Tyr Phe Tyr Gln Ile Phe Met Glu
 705 710 715 720

Lys Asn Glu Lys Val Gly Val Pro Thr Ile Gln Gln Leu Leu Glu Trp
 725 730 735

Ser Phe Ile Asn Ser Asn Leu Lys Phe Ala Glu Ala Pro Ser Cys Leu
 740 745 750

Ile Ile Gln Met Pro Arg Phe Gly Lys Asp Phe Lys Leu Phe Lys Lys
 755 760 765

Ile Phe Pro Ser Leu Glu Leu Asn Ile Thr Asp Leu Leu Glu Asp Thr
 770 775 780

Pro Arg Gln Cys Arg Ile Cys Gly Gly Leu Ala Met Tyr Glu Cys Arg
 785 790 795 800

Glu Cys Tyr Asp Asp Pro Asp Ile Ser Ala Gly Lys Ile Lys Gln Phe
 805 810 815

Cys Lys Thr Cys Asn Thr Gln Val His Leu His Pro Lys Arg Leu Asn
 820 825 830

His Lys Tyr Asn Pro Val Ser Leu Pro Lys Asp Leu Pro Asp Trp Asp
 835 840 845

Trp Arg His Gly Cys Ile Pro Cys Gln Asn Met Glu Leu Phe Ala Val
 850 855 860

Leu Cys Ile Glu Thr Ser His Tyr Val Ala Phe Val Lys Tyr Gly Lys
 865 870 875 880

Asp Asp Ser Ala Trp Leu Phe Phe Asp Ser Met Ala Asp Arg Asp Gly
 885 890 895

Gly Gln Asn Gly Phe Asn Ile Pro Gln Val Thr Pro Cys Pro Glu Val
 900 905 910

Gly Glu Tyr Leu Lys Met Ser Leu Glu Asp Leu His Ser Leu Asp Ser
 915 920 925

Arg Arg Ile Gln Gly Cys Ala Arg Arg Leu Leu Cys Asp Ala Tyr Met
 930 935 940

Cys Met Tyr Gln Ser Pro Thr Met Ser Leu Tyr Lys
 945 950 955

<210> 485
 <211> 394
 <212> PRT
 <213> Homo sapiens

<400> 485

Met Asp Leu Cys His Pro Glu Pro Ala Glu Leu Ser Ser Gly Glu Thr
 1 5 10 15

Glu Glu Leu Gln Arg Ile Lys Trp His Arg Lys Gln Leu Leu Glu Asp
 20 25 30

Ile Gln Lys Leu Lys Asp Glu Ile Ala Asp Val Phe Ala Gln Ile Asp
 35 40 45

Cys Phe Glu Ser Ala Glu Glu Ser Arg Met Ala Gln Lys Glu Lys Glu
 50 55 60

Leu Cys Ile Gly Arg Lys Lys Phe Asn Met Asp Pro Ala Lys Gly Ile
 65 70 75 80

Gln Tyr Phe Ile Glu His Lys Leu Leu Thr Pro Asp Val Gln Asp Ile
 85 90 95

Ala Arg Phe Leu Tyr Lys Gly Glu Gly Leu Asn Lys Thr Ala Ile Gly
 100 105 110

Thr Tyr Leu Gly Glu Arg Asp Pro Ile Asn Leu Gln Val Leu Gln Ala
 115 120 125

Phe Val Asp Cys His Glu Phe Ala Asn Leu Asn Leu Val Gln Ala Leu
 130 135 140

Arg Gln Phe Leu Trp Ser Phe Arg Leu Pro Gly Glu Ala Gln Lys Ile
 145 150 155 160

Asp Arg Met Met Glu Ala Phe Ala Thr Arg Tyr Cys Leu Cys Asn Pro
 165 170 175

Gly Val Phe Gln Ser Thr Asp Thr Cys Tyr Val Leu Ser Phe Ser Ile
 180 185 190

Ile Met Leu Asn Thr Ser Leu His Asn Pro Asn Val Arg Asp Arg Pro
 195 200 205

Pro Phe Glu Arg Phe Val Ser Met Asn Arg Gly Ile Asn Asn Gly Ser
 210 215 220

Asp Leu Pro Glu Asp Gln Leu Arg Asn Leu Phe Asp Ser Ile Lys Ser
 Page 618

225 230 235 240

Glu Pro Phe Ser Ile Pro Glu Asp Asp Gly Asn Asp Leu Thr His Thr
245 250 255

Phe Phe Asn Pro Asp Arg Glu Gly Trp Leu Leu Lys Leu Gly Gly Arg
260 265 270

Val Lys Thr Trp Lys Arg Arg Trp Phe Ile Leu Thr Asp Asn Cys Leu
275 280 285

Tyr Tyr Phe Glu Phe Thr Thr Asp Lys Glu Pro Arg Gly Ile Ile Pro
290 295 300

Leu Glu Asn Leu Ser Val Gln Lys Val Asp Asp Pro Lys Lys Pro Phe
305 310 315 320

Cys Leu Glu Leu Tyr Asn Pro Ser Cys Arg Gly Gln Lys Ile Lys Ala
325 330 335

Cys Lys Thr Asp Gly Asp Gly Arg Val Val Glu Gly Lys His Glu Ser
340 345 350

Tyr Arg Ile Ser Ala Thr Ser Ala Glu Glu Arg Asp Gln Trp Ile Glu
355 360 365

Ser Ile Arg Ala Ser Ile Thr Arg Val Pro Phe Tyr Asp Leu Val Ser
370 375 380

Thr Arg Lys Lys Lys Ile Ala Ser Lys Gln
385 390

<210> 486
<211> 420
<212> PRT
<213> Homo sapiens

<400> 486

Met Glu Thr Lys Arg Val Glu Ile Pro Gly Ser Val Leu Asp Asp Leu
1 5 10 15

Cys Ser Arg Phe Ile Leu His Ile Pro Ser Glu Glu Arg Asp Asn Ala
20 25 30

Ile Arg Val Cys Phe Gln Ile Glu Leu Ala His Trp Phe Tyr Leu Asp
35 40 45

Phe Tyr Met Gln Asn Thr Pro Gly Leu Pro Gln Cys Gly Ile Arg Asp
50 55 60

Phe Ala Lys Ala Val Phe Ser His Cys Pro Phe Leu Leu Pro Gln Gly
65 70 75 80

Glu Asp Val Glu Lys Val Leu Asp Glu Trp Lys Glu Tyr Lys Met Gly
 85 90 95
 Val Pro Thr Tyr Gly Ala Ile Ile Leu Asp Glu Thr Leu Glu Asn Val
 100 105 110
 Leu Leu Val Gln Gly Tyr Leu Ala Lys Ser Gly Trp Gly Phe Pro Lys
 115 120 125
 Gly Lys Val Asn Lys Glu Glu Ala Pro His Asp Cys Ala Ala Arg Glu
 130 135 140
 Val Phe Glu Glu Thr Gly Phe Asp Ile Lys Asp Tyr Ile Cys Lys Asp
 145 150 155 160
 Asp Tyr Ile Glu Leu Arg Ile Asn Asp Gln Leu Ala Arg Leu Tyr Ile
 165 170 175
 Ile Pro Gly Ile Pro Lys Asp Thr Lys Phe Asn Pro Lys Thr Arg Arg
 180 185 190
 Glu Ile Arg Asn Ile Glu Trp Phe Ser Ile Glu Lys Leu Pro Cys His
 195 200 205
 Arg Asn Asp Met Thr Pro Lys Ser Lys Leu Gly Leu Ala Pro Asn Lys
 210 215 220
 Phe Phe Met Ala Ile Pro Phe Ile Arg Pro Leu Arg Asp Trp Leu Ser
 225 230 235 240
 Arg Arg Phe Gly Asp Ser Ser Asp Ser Asp Asn Gly Phe Ser Ser Thr
 245 250 255
 Gly Ser Thr Pro Ala Lys Pro Thr Val Glu Lys Leu Ser Arg Thr Lys
 260 265 270
 Phe Arg His Ser Gln Gln Leu Phe Pro Asp Gly Ser Pro Gly Asp Gln
 275 280 285
 Trp Val Lys His Arg Gln Pro Leu Gln Gln Lys Pro Tyr Asn Asn His
 290 295 300
 Ser Glu Met Ser Asp Leu Leu Lys Gly Lys Asn Gln Ser Met Arg Gly
 305 310 315 320
 Asn Gly Arg Lys Gln Tyr Gln Asp Ser Pro Asn Gln Lys Lys Arg Thr
 325 330 335
 Asn Gly Leu Gln Pro Ala Lys Gln Gln Asn Ser Leu Met Lys Cys Glu
 340 345 350

Lys Lys Leu His Pro Arg Lys Leu Gln Asp Asn Phe Glu Thr Asp Ala
 355 360 365

Val Tyr Asp Leu Pro Ser Ser Ser Glu Asp Gln Leu Leu Glu His Ala
 370 375 380

Glu Gly Gln Pro Val Ala Cys Asn Gly His Cys Lys Phe Pro Phe Ser
 385 390 395 400

Ser Arg Ala Phe Leu Ser Phe Lys Phe Asp His Asn Ala Ile Met Lys
 405 410 415

Ile Leu Asp Leu
 420

<210> 487
 <211> 1712
 <212> PRT
 <213> Homo sapiens

<400> 487

Met Glu Arg Asn Val Leu Thr Thr Phe Ser Gln Glu Met Ser Gln Leu
 1 5 10 15

Ile Leu Asn Glu Met Pro Lys Ala Glu Tyr Ser Ser Leu Phe Asn Asp
 20 25 30

Phe Val Glu Ser Glu Phe Phe Leu Ile Asp Gly Asp Ser Leu Leu Ile
 35 40 45

Thr Cys Ile Cys Glu Ile Ser Phe Lys Pro Gly Gln Asn Leu His Phe
 50 55 60

Phe Tyr Leu Val Glu Arg Tyr Leu Val Asp Leu Ile Ser Lys Gly Gly
 65 70 75 80

Gln Phe Thr Ile Val Phe Phe Lys Asp Ala Glu Tyr Ala Tyr Phe Asn
 85 90 95

Phe Pro Glu Leu Leu Ser Leu Arg Thr Ala Leu Ile Leu His Leu Gln
 100 105 110

Lys Asn Thr Thr Ile Asp Val Arg Thr Thr Phe Ser Arg Cys Leu Ser
 115 120 125

Lys Glu Trp Gly Ser Phe Leu Glu Glu Ser Tyr Pro Tyr Phe Leu Ile
 130 135 140

Val Ala Asp Glu Gly Leu Asn Asp Leu Gln Thr Gln Leu Phe Asn Phe
 145 150 155 160

Leu Ile Ile His Ser Trp Ala Arg Lys Val Asn Val Val Leu Ser Ser
 165 170 175
 Gly Gln Glu Ser Asp Val Leu Cys Leu Tyr Ala Tyr Leu Leu Pro Ser
 180 185 190
 Met Tyr Arg His Gln Ile Phe Ser Trp Lys Asn Lys Gln Asn Ile Lys
 195 200 205
 Asp Ala Tyr Thr Thr Leu Leu Asn Gln Leu Glu Arg Phe Lys Leu Ser
 210 215 220
 Ala Leu Ala Pro Leu Phe Gly Ser Leu Lys Trp Asn Asn Ile Thr Glu
 225 230 235 240
 Glu Ala His Lys Thr Val Ser Leu Leu Thr Gln Val Trp Pro Glu Gly
 245 250 255
 Ser Asp Ile Arg Arg Val Phe Cys Val Thr Ser Cys Ser Leu Ser Leu
 260 265 270
 Arg Met Tyr His Arg Phe Leu Gly Asn Arg Glu Pro Ser Ser Gly Gln
 275 280 285
 Glu Thr Glu Ile Gln Gln Val Asn Ser Asn Cys Leu Thr Leu Gln Glu
 290 295 300
 Met Glu Asp Leu Cys Lys Leu His Cys Leu Thr Val Val Phe Leu Leu
 305 310 315 320
 His Leu Pro Leu Ser Gln Arg Ala Cys Ala Arg Val Ile Thr Ser His
 325 330 335
 Trp Ala Glu Asp Met Lys Pro Leu Leu Gln Met Lys Lys Trp Cys Glu
 340 345 350
 Tyr Phe Ile Leu Arg Asn Ile His Thr Phe Glu Phe Trp Asn Leu Asn
 355 360 365
 Leu Ile His Leu Ser Asp Leu Asn Asp Glu Leu Leu Leu Lys Asn Ile
 370 375 380
 Ala Phe Tyr Tyr Glu Asn Glu Asn Val Lys Gly Leu His Leu Asn Leu
 385 390 395 400
 Gly Asp Thr Ile Met Lys Asp Tyr Glu Tyr Leu Trp Asn Thr Val Ser
 405 410 415
 Lys Leu Val Arg Asp Phe Glu Val Gly Gln Pro Phe Pro Leu Arg Thr
 420 425 430

Thr Lys Val Cys Phe Leu Glu Lys Lys Pro Ser Pro Ile Lys Asp Ser
 435 440 445

Ser Asn Glu Met Val Pro Asn Leu Gly Phe Ile Pro Thr Ser Ser Phe
 450 455 460

Val Val Asp Lys Phe Ala Gly Asp Ile Leu Lys Asp Leu Pro Phe Leu
 465 470 475 480

Lys Ser Asp Asp Pro Ile Val Thr Ser Leu Val Lys Gln Lys Glu Phe
 485 490 495

Asp Glu Leu Val His Trp His Ser His Lys Pro Leu Ser Asp Asp Tyr
 500 505 510

Asp Arg Ser Arg Cys Gln Phe Asp Glu Lys Ser Arg Asp Pro Arg Val
 515 520 525

Leu Arg Ser Val Gln Lys Tyr His Val Phe Gln Arg Phe Tyr Gly Asn
 530 535 540

Ser Leu Glu Thr Val Ser Ser Lys Ile Ile Val Thr Gln Thr Ile Lys
 545 550 555 560

Ser Lys Lys Asp Phe Ser Gly Pro Lys Ser Lys Lys Ala His Glu Thr
 565 570 575

Lys Ala Glu Ile Ile Ala Arg Glu Asn Lys Lys Arg Leu Phe Ala Arg
 580 585 590

Glu Glu Gln Lys Glu Glu Gln Lys Trp Asn Ala Leu Ser Phe Ser Ile
 595 600 605

Glu Glu Gln Leu Lys Glu Asn Leu His Ser Gly Ile Lys Ser Leu Glu
 610 615 620

Asp Phe Leu Lys Ser Cys Lys Ser Ser Cys Val Lys Leu Gln Val Glu
 625 630 635 640

Met Val Gly Leu Thr Ala Cys Leu Lys Ala Trp Lys Glu His Cys Arg
 645 650 655

Ser Glu Glu Gly Lys Thr Thr Lys Asp Leu Ser Ile Ala Val Gln Val
 660 665 670

Met Lys Arg Ile His Ser Leu Met Glu Lys Tyr Ser Glu Leu Leu Gln
 675 680 685

Glu Asp Asp Arg Gln Leu Ile Ala Arg Cys Leu Lys Tyr Leu Gly Phe
 690 695 700

Asp Glu Leu Ala Ser Ser Leu His Pro Ala Gln Asp Ala Glu Asn Asp
 705 710 715 720
 Val Lys Val Lys Lys Arg Asn Lys Tyr Ser Val Gly Ile Gly Pro Ala
 725 730 735
 Arg Phe Gln Leu Gln Tyr Met Gly His Tyr Leu Ile Arg Asp Glu Arg
 740 745 750
 Lys Asp Pro Asp Pro Arg Val Gln Asp Phe Ile Pro Asp Thr Trp Gln
 755 760 765
 Arg Glu Leu Leu Asp Val Val Asp Lys Asn Glu Ser Ala Val Ile Val
 770 775 780
 Ala Pro Thr Ser Ser Gly Lys Thr Tyr Ala Ser Tyr Tyr Cys Met Glu
 785 790 795 800
 Lys Val Leu Lys Glu Ser Asp Asp Gly Val Val Val Tyr Val Ala Pro
 805 810 815
 Thr Lys Ala Leu Val Asn Gln Val Ala Ala Thr Val Gln Asn Arg Phe
 820 825 830
 Thr Lys Asn Leu Pro Ser Gly Glu Val Leu Cys Gly Val Phe Thr Arg
 835 840 845
 Glu Tyr Arg His Asp Ala Leu Asn Cys Gln Val Leu Ile Thr Val Pro
 850 855 860
 Ala Cys Phe Glu Ile Leu Leu Leu Ala Pro His Arg Gln Asn Trp Val
 865 870 875 880
 Lys Lys Ile Arg Tyr Val Ile Phe Asp Glu Val His Cys Leu Gly Gly
 885 890 895
 Glu Ile Gly Ala Glu Ile Trp Glu His Leu Leu Val Met Ile Arg Cys
 900 905 910
 Pro Phe Leu Ala Leu Ser Ala Thr Ile Ser Asn Pro Glu His Leu Thr
 915 920 925
 Glu Trp Leu Gln Ser Val Lys Trp Tyr Trp Lys Gln Glu Asp Lys Ile
 930 935 940
 Ile Glu Asn Asn Thr Ala Ser Lys Arg His Val Gly Arg Gln Ala Gly
 945 950 955 960
 Phe Pro Lys Asp Tyr Leu Gln Val Lys Gln Ser Tyr Lys Val Arg Leu
 965 970 975

Val Leu Tyr Gly Glu Arg Tyr Asn Asp Leu Glu Lys His Val Cys Ser
 980 985 990

Ile Lys His Gly Asp Ile His Phe Asp His Phe His Pro Cys Ala Ala
 995 1000 1005

Leu Thr Thr Asp His Ile Glu Arg Tyr Gly Phe Pro Pro Asp Leu
 1010 1015 1020

Thr Leu Ser Pro Arg Glu Ser Ile Gln Leu Tyr Asp Ala Met Phe
 1025 1030 1035

Gln Ile Trp Lys Ser Trp Pro Arg Ala Gln Glu Leu Cys Pro Glu
 1040 1045 1050

Asn Phe Ile His Phe Asn Asn Lys Leu Val Ile Lys Lys Met Asp
 1055 1060 1065

Ala Arg Lys Tyr Glu Glu Ser Leu Lys Ala Glu Leu Thr Ser Trp
 1070 1075 1080

Ile Lys Asn Gly Asn Val Glu Gln Ala Arg Met Val Leu Gln Asn
 1085 1090 1095

Leu Ser Pro Glu Ala Asp Leu Ser Pro Glu Asn Met Ile Thr Met
 1100 1105 1110

Phe Pro Leu Leu Val Glu Lys Leu Arg Lys Met Glu Lys Leu Pro
 1115 1120 1125

Ala Leu Phe Phe Leu Phe Lys Leu Gly Ala Val Glu Asn Ala Ala
 1130 1135 1140

Glu Ser Val Ser Thr Phe Leu Lys Lys Lys Gln Glu Thr Lys Arg
 1145 1150 1155

Pro Pro Lys Ala Asp Lys Glu Ala His Val Met Ala Asn Lys Leu
 1160 1165 1170

Arg Lys Val Lys Lys Ser Ile Glu Lys Gln Lys Ile Ile Asp Glu
 1175 1180 1185

Lys Ser Gln Lys Lys Thr Arg Asn Val Asp Gln Ser Leu Ile His
 1190 1195 1200

Glu Ala Glu His Asp Asn Leu Val Lys Cys Leu Glu Lys Asn Leu
 1205 1210 1215

Glu Ile Pro Gln Asp Cys Thr Tyr Ala Asp Gln Lys Ala Val Asp
 1220 1225 1230

Thr	Glu	Thr	Leu	Gln	Lys	Val	Phe	Gly	Arg	Val	Lys	Phe	Glu	Arg
	1235					1240					1245			
Lys	Gly	Glu	Glu	Leu	Lys	Ala	Leu	Ala	Glu	Arg	Gly	Ile	Gly	Tyr
	1250					1255					1260			
His	His	Ser	Ala	Met	Ser	Phe	Lys	Glu	Lys	Gln	Leu	Val	Glu	Ile
	1265					1270					1275			
Leu	Phe	Arg	Lys	Gly	Tyr	Leu	Arg	Val	Val	Thr	Ala	Thr	Gly	Thr
	1280					1285					1290			
Leu	Ala	Leu	Gly	Val	Asn	Met	Pro	Cys	Lys	Ser	Val	Val	Phe	Ala
	1295					1300					1305			
Gln	Asn	Ser	Val	Tyr	Leu	Asp	Ala	Leu	Asn	Tyr	Arg	Gln	Met	Ser
	1310					1315					1320			
Gly	Arg	Ala	Gly	Arg	Arg	Gly	Gln	Asp	Leu	Met	Gly	Asp	Val	Tyr
	1325					1330					1335			
Phe	Phe	Asp	Ile	Pro	Phe	Pro	Lys	Ile	Gly	Lys	Leu	Ile	Lys	Ser
	1340					1345					1350			
Asn	Val	Pro	Glu	Leu	Arg	Gly	His	Phe	Pro	Leu	Ser	Ile	Thr	Leu
	1355					1360					1365			
Val	Leu	Arg	Leu	Met	Leu	Leu	Ala	Ser	Lys	Gly	Asp	Asp	Pro	Glu
	1370					1375					1380			
Asp	Ala	Lys	Ala	Lys	Val	Leu	Ser	Val	Leu	Lys	His	Ser	Leu	Leu
	1385					1390					1395			
Ser	Phe	Lys	Gln	Pro	Arg	Val	Met	Asp	Met	Leu	Lys	Leu	Tyr	Phe
	1400					1405					1410			
Leu	Phe	Ser	Leu	Gln	Phe	Leu	Val	Lys	Glu	Gly	Tyr	Leu	Asp	Gln
	1415					1420					1425			
Glu	Gly	Asn	Pro	Met	Gly	Phe	Ala	Gly	Leu	Val	Ser	His	Leu	His
	1430					1435					1440			
Tyr	His	Glu	Pro	Ser	Asn	Leu	Val	Phe	Val	Ser	Phe	Leu	Val	Asn
	1445					1450					1455			
Gly	Leu	Phe	His	Asp	Leu	Cys	Gln	Pro	Thr	Arg	Lys	Gly	Ser	Lys
	1460					1465					1470			
His	Phe	Ser	Gln	Asp	Val	Met	Glu	Lys	Leu	Val	Leu	Val	Leu	Ala
	1475					1480					1485			

His Leu Phe Gly Arg Arg Tyr Phe Pro Pro Lys Phe Gln Asp Ala
 1490 1495 1500

His Phe Glu Phe Tyr Gln Ser Lys Val Phe Leu Asp Asp Leu Pro
 1505 1510 1515

Glu Asp Phe Ser Asp Ala Leu Asp Glu Tyr Asn Met Lys Ile Met
 1520 1525 1530

Glu Asp Phe Thr Thr Phe Leu Arg Ile Val Ser Lys Leu Ala Asp
 1535 1540 1545

Met Asn Gln Glu Tyr Gln Leu Pro Leu Ser Lys Ile Lys Phe Thr
 1550 1555 1560

Gly Lys Glu Cys Glu Asp Ser Gln Leu Val Ser His Leu Met Ser
 1565 1570 1575

Cys Lys Glu Gly Arg Val Ala Ile Ser Pro Phe Val Cys Leu Ser
 1580 1585 1590

Gly Asn Phe Asp Asp Asp Leu Leu Arg Leu Glu Thr Pro Asn His
 1595 1600 1605

Val Thr Leu Gly Thr Ile Gly Val Asn Arg Ser Gln Ala Pro Val
 1610 1615 1620

Leu Leu Ser Gln Lys Phe Asp Asn Arg Gly Arg Lys Met Ser Leu
 1625 1630 1635

Asn Ala Tyr Ala Leu Asp Phe Tyr Lys His Gly Ser Leu Ile Gly
 1640 1645 1650

Leu Val Gln Asp Asn Arg Met Asn Glu Gly Asp Ala Tyr Tyr Leu
 1655 1660 1665

Leu Lys Asp Phe Ala Leu Thr Ile Lys Ser Ile Ser Val Ser Leu
 1670 1675 1680

Arg Glu Leu Cys Glu Asn Glu Asp Asp Asn Val Val Leu Ala Phe
 1685 1690 1695

Glu Gln Leu Ser Thr Thr Phe Trp Glu Lys Leu Asn Lys Val
 1700 1705 1710

<210> 488
 <211> 550
 <212> PRT
 <213> Homo sapiens

<400> 488

Met Val Pro Lys Ala Asp Ser Gly Ala Phe Leu Leu Leu Phe Leu Leu
 1 5 10 15
 Val Leu Thr Val Thr Glu Pro Leu Arg Pro Glu Leu Arg Cys Asn Pro
 20 25 30
 Gly Gln Phe Ala Cys Arg Ser Gly Thr Ile Gln Cys Ile Pro Leu Pro
 35 40 45
 Trp Gln Cys Asp Gly Trp Ala Thr Cys Glu Asp Glu Ser Asp Glu Ala
 50 55 60
 Asn Cys Pro Glu Val Thr Gly Glu Val Arg Pro His His Gly Lys Glu
 65 70 75 80
 Ala Val Asp Pro Arg Gln Gly Arg Ala Arg Gly Gly Asp Pro Ser His
 85 90 95
 Phe His Ala Val Asn Val Ala Gln Pro Val Arg Phe Ser Ser Phe Leu
 100 105 110
 Gly Lys Cys Pro Thr Gly Trp His His Tyr Glu Gly Thr Ala Ser Cys
 115 120 125
 Tyr Arg Val Tyr Leu Ser Gly Glu Asn Tyr Trp Asp Ala Ala Gln Thr
 130 135 140
 Cys Gln Arg Leu Asn Gly Ser Leu Ala Thr Phe Ser Thr Asp Gln Glu
 145 150 155 160
 Leu Arg Phe Val Leu Ala Gln Glu Trp Asp Gln Pro Glu Arg Ser Phe
 165 170 175
 Gly Trp Lys Asp Gln Arg Lys Leu Trp Val Gly Tyr Gln Tyr Val Ile
 180 185 190
 Thr Gly Arg Asn Arg Ser Leu Glu Gly Arg Trp Glu Val Ala Phe Lys
 195 200 205
 Gly Ser Ser Glu Val Phe Leu Pro Pro Asp Pro Ile Phe Ala Ser Ala
 210 215 220
 Met Ser Glu Asn Asp Asn Val Phe Cys Ala Gln Leu Gln Cys Phe His
 225 230 235 240
 Phe Pro Thr Leu Arg His His Asp Leu His Ser Trp His Ala Glu Ser
 245 250 255
 Cys Tyr Glu Lys Ser Ser Phe Leu Cys Lys Arg Ser Gln Thr Cys Val
 260 265 270

Asp Ile Lys Asp Asn Val Val Asp Glu Gly Phe Tyr Phe Thr Pro Lys
 275 280 285

Gly Asp Asp Pro Cys Leu Ser Cys Thr Cys His Gly Gly Glu Pro Glu
 290 295 300

Met Cys Val Ala Ala Leu Cys Glu Arg Pro Gln Gly Cys Gln Gln Tyr
 305 310 315 320

Arg Lys Asp Pro Lys Glu Cys Cys Lys Phe Met Cys Leu Asp Pro Asp
 325 330 335

Gly Asn Ser Leu Phe Asp Ser Met Ala Ser Gly Met Arg Leu Val Val
 340 345 350

Ser Cys Ile Ser Ser Phe Leu Ile Leu Ser Leu Leu Leu Phe Met Val
 355 360 365

His Arg Leu Arg Gln Arg Arg Glu Arg Ile Glu Ser Leu Ile Gly
 370 375 380

Ala Asn Leu His His Phe Asn Leu Gly Arg Arg Ile Pro Gly Phe Asp
 385 390 395 400

Tyr Gly Pro Asp Gly Phe Gly Thr Gly Leu Thr Pro Leu His Leu Ser
 405 410 415

Asp Asp Gly Glu Gly Gly Thr Phe His Phe His Asp Pro Pro Pro Pro
 420 425 430

Tyr Thr Ala Tyr Lys Tyr Pro Asp Ile Gly Gln Pro Asp Asp Pro Pro
 435 440 445

Pro Pro Tyr Glu Ala Ser Ile His Pro Asp Ser Val Phe Tyr Asp Pro
 450 455 460

Ala Asp Asp Asp Ala Phe Glu Pro Val Glu Val Ser Leu Pro Ala Pro
 465 470 475 480

Gly Asp Gly Gly Ser Glu Gly Ala Leu Leu Arg Arg Leu Glu Gln Pro
 485 490 495

Leu Pro Thr Ala Gly Ala Ser Leu Ala Asp Leu Glu Asp Ser Ala Asp
 500 505 510

Ser Ser Ser Ala Leu Leu Val Pro Pro Asp Pro Ala Gln Ser Gly Ser
 515 520 525

Thr Pro Ala Ala Glu Ala Leu Pro Gly Gly Gly Arg His Ser Arg Ser
 530 535 540

Ser Leu Asn Thr Val Val
545 550

<210> 489
<211> 735
<212> PRT
<213> Homo sapiens

<400> 489

Met Ala Lys Glu Arg Gly Leu Ile Ser Pro Ser Asp Phe Ala Gln Leu
1 5 10 15

Gln Lys Tyr Met Glu Tyr Ser Thr Lys Lys Val Ser Asp Val Leu Lys
20 25 30

Leu Phe Glu Asp Gly Glu Met Ala Lys Tyr Val Gln Gly Asp Ala Ile
35 40 45

Gly Tyr Glu Gly Phe Gln Gln Phe Leu Lys Ile Tyr Leu Glu Val Asp
50 55 60

Asn Val Pro Arg His Leu Ser Leu Ala Leu Phe Gln Ser Phe Glu Thr
65 70 75 80

Gly His Cys Leu Asn Glu Thr Asn Val Thr Lys Asp Val Val Cys Leu
85 90 95

Asn Asp Val Ser Cys Tyr Phe Ser Leu Leu Glu Gly Gly Arg Pro Glu
100 105 110

Asp Lys Leu Glu Phe Thr Phe Lys Leu Tyr Asp Thr Asp Arg Asn Gly
115 120 125

Ile Leu Asp Ser Ser Glu Val Asp Lys Ile Ile Leu Gln Met Met Arg
130 135 140

Val Ala Glu Tyr Leu Asp Trp Asp Val Ser Glu Leu Arg Pro Ile Leu
145 150 155 160

Gln Glu Met Met Lys Glu Ile Asp Tyr Asp Gly Ser Gly Ser Val Ser
165 170 175

Gln Ala Glu Trp Val Arg Ala Gly Ala Thr Thr Val Pro Leu Leu Val
180 185 190

Leu Leu Gly Leu Glu Met Thr Leu Lys Asp Asp Gly Gln His Met Trp
195 200 205

Arg Pro Lys Arg Phe Pro Arg Pro Val Tyr Cys Asn Leu Cys Glu Ser
210 215 220

Ser Ile Gly Leu Gly Lys Gln Gly Leu Ser Cys Asn Leu Cys Lys Tyr
Page 630

225 230 235 240
 Thr Val His Asp Gln Cys Ala Met Lys Ala Leu Pro Cys Glu Val Ser
 245 250 255
 Thr Tyr Ala Lys Ser Arg Lys Asp Ile Gly Val Gln Ser His Val Trp
 260 265 270
 Val Arg Gly Gly Cys Glu Ser Gly Arg Cys Asp Arg Cys Gln Lys Lys
 275 280 285
 Ile Arg Ile Tyr His Ser Leu Thr Gly Leu His Cys Val Trp Cys His
 290 295 300
 Leu Glu Ile His Asp Asp Cys Leu Gln Ala Val Gly His Glu Cys Asp
 305 310 315 320
 Cys Gly Leu Leu Arg Asp His Ile Leu Pro Pro Ser Ser Ile Tyr Pro
 325 330 335
 Ser Val Leu Ala Ser Gly Pro Asp Arg Lys Asn Ser Lys Thr Ser Gln
 340 345 350
 Lys Thr Met Asp Asp Leu Asn Leu Ser Thr Ser Glu Ala Leu Arg Ile
 355 360 365
 Asp Pro Val Pro Asn Thr His Pro Leu Leu Val Phe Val Asn Pro Lys
 370 375 380
 Ser Gly Gly Lys Gln Gly Gln Arg Val Leu Trp Lys Phe Gln Tyr Ile
 385 390 395 400
 Leu Asn Pro Arg Gln Val Phe Asn Leu Leu Lys Asp Gly Pro Glu Ile
 405 410 415
 Gly Leu Arg Leu Phe Lys Asp Val Pro Asp Ser Arg Ile Leu Val Cys
 420 425 430
 Gly Gly Asp Gly Thr Val Gly Trp Ile Leu Glu Thr Ile Asp Lys Ala
 435 440 445
 Asn Leu Pro Val Leu Pro Pro Val Ala Val Leu Pro Leu Gly Thr Gly
 450 455 460
 Asn Asp Leu Ala Arg Cys Leu Arg Trp Gly Gly Gly Tyr Glu Gly Gln
 465 470 475 480
 Asn Leu Ala Lys Ile Leu Lys Asp Leu Glu Met Ser Lys Val Val His
 485 490 495
 Met Asp Arg Trp Ser Val Glu Val Ile Pro Gln Gln Thr Glu Glu Lys
 Page 631

500

505

510

Ser Asp Pro Val Pro Phe Gln Ile Ile Asn Asn Tyr Phe Ser Ile Gly
 515 520 525

Val Asp Ala Ser Ile Ala His Arg Phe His Ile Met Arg Glu Lys Tyr
 530 535 540

Pro Glu Lys Phe Asn Ser Arg Met Lys Asn Lys Leu Trp Tyr Phe Glu
 545 550 555 560

Phe Ala Thr Ser Glu Ser Ile Phe Ser Thr Cys Lys Lys Leu Glu Glu
 565 570 575

Ser Leu Thr Val Glu Ile Cys Gly Lys Pro Leu Asp Leu Ser Asn Leu
 580 585 590

Ser Leu Glu Gly Ile Ala Val Leu Asn Ile Pro Ser Met His Gly Gly
 595 600 605

Ser Asn Leu Trp Gly Asp Thr Arg Arg Pro His Gly Asp Ile Tyr Gly
 610 615 620

Ile Asn Gln Ala Leu Gly Ala Thr Ala Lys Val Ile Thr Asp Pro Asp
 625 630 635 640

Ile Leu Lys Thr Cys Val Pro Asp Leu Ser Asp Lys Arg Leu Glu Val
 645 650 655

Val Gly Leu Glu Gly Ala Ile Glu Met Gly Gln Ile Tyr Thr Lys Leu
 660 665 670

Lys Asn Ala Gly Arg Arg Leu Ala Lys Cys Ser Glu Ile Thr Phe His
 675 680 685

Thr Thr Lys Thr Leu Pro Met Gln Ile Asp Gly Glu Pro Trp Met Gln
 690 695 700

Thr Pro Cys Thr Ile Lys Ile Thr His Lys Asn Gln Met Pro Met Leu
 705 710 715 720

Met Gly Pro Pro Pro Arg Ser Thr Asn Phe Phe Gly Phe Leu Ser
 725 730 735

<210> 490
 <211> 678
 <212> PRT
 <213> Homo sapiens

<400> 490

Met Glu Leu Arg Ser Tyr Gln Trp Glu Val Ile Met Pro Ala Leu Glu
 1 5 10 15

Gly Lys Asn Ile Ile Ile Trp Leu Pro Thr Gly Ala Gly Lys Thr Arg
 20 25 30
 Ala Ala Ala Tyr Val Ala Lys Arg His Leu Glu Thr Val Asp Gly Ala
 35 40 45
 Lys Val Val Val Leu Val Asn Arg Val His Leu Val Thr Gln His Gly
 50 55 60
 Glu Glu Phe Arg Arg Met Leu Asp Gly Arg Trp Thr Val Thr Thr Leu
 65 70 75 80
 Ser Gly Asp Met Gly Pro Arg Ala Gly Phe Gly His Leu Ala Arg Cys
 85 90 95
 His Asp Leu Leu Ile Cys Thr Ala Glu Leu Leu Gln Met Ala Leu Thr
 100 105 110
 Ser Pro Glu Glu Glu Glu His Val Glu Leu Thr Val Phe Ser Leu Ile
 115 120 125
 Val Val Asp Glu Cys His His Thr His Lys Asp Thr Val Tyr Asn Val
 130 135 140
 Ile Met Ser Gln Tyr Leu Glu Leu Lys Leu Gln Arg Ala Gln Pro Leu
 145 150 155 160
 Pro Gln Val Leu Gly Leu Thr Ala Ser Pro Gly Thr Gly Gly Ala Ser
 165 170 175
 Lys Leu Asp Gly Ala Ile Asn His Val Leu Gln Leu Cys Ala Asn Leu
 180 185 190
 Asp Thr Trp Cys Ile Met Ser Pro Gln Asn Cys Cys Pro Gln Leu Gln
 195 200 205
 Glu His Ser Gln Gln Pro Cys Lys Gln Tyr Asn Leu Cys His Arg Arg
 210 215 220
 Ser Gln Asp Pro Phe Gly Asp Leu Leu Lys Lys Leu Met Asp Gln Ile
 225 230 235 240
 His Asp His Leu Glu Met Pro Glu Leu Ser Arg Lys Phe Gly Thr Gln
 245 250 255
 Met Tyr Glu Gln Gln Val Val Lys Leu Ser Glu Ala Ala Ala Leu Ala
 260 265 270
 Gly Leu Gln Glu Gln Arg Val Tyr Ala Leu His Leu Arg Arg Tyr Asn
 275 280 285

Asp Ala Leu Leu Ile His Asp Thr Val Arg Ala Val Asp Ala Leu Ala
 290 295 300
 Ala Leu Gln Asp Phe Tyr His Arg Glu His Val Thr Lys Thr Gln Ile
 305 310 315 320
 Leu Cys Ala Glu Arg Arg Leu Leu Ala Leu Phe Asp Asp Arg Lys Asn
 325 330 335
 Glu Leu Ala His Leu Ala Thr His Gly Pro Glu Asn Pro Lys Leu Glu
 340 345 350
 Met Leu Glu Lys Ile Leu Gln Arg Gln Phe Ser Ser Ser Asn Ser Pro
 355 360 365
 Arg Gly Ile Ile Phe Thr Arg Thr Arg Gln Ser Ala His Ser Leu Leu
 370 375 380
 Leu Trp Leu Gln Gln Gln Gln Gly Leu Gln Thr Val Asp Ile Arg Ala
 385 390 395 400
 Gln Leu Leu Ile Gly Ala Gly Asn Ser Ser Gln Ser Thr His Met Thr
 405 410 415
 Gln Arg Asp Gln Gln Glu Val Ile Gln Lys Phe Gln Asp Gly Thr Leu
 420 425 430
 Asn Leu Leu Val Ala Thr Ser Val Ala Glu Glu Gly Leu Asp Ile Pro
 435 440 445
 His Cys Asn Val Val Val Arg Tyr Gly Leu Leu Thr Asn Glu Ile Ser
 450 455 460
 Met Val Gln Ala Arg Gly Arg Ala Arg Ala Asp Gln Ser Val Tyr Ala
 465 470 475 480
 Phe Val Ala Thr Glu Gly Ser Arg Glu Leu Lys Arg Glu Leu Ile Asn
 485 490 495
 Glu Ala Leu Glu Thr Leu Met Glu Gln Ala Val Ala Ala Val Gln Lys
 500 505 510
 Met Asp Gln Ala Glu Tyr Gln Ala Lys Ile Arg Asp Leu Gln Gln Ala
 515 520 525
 Ala Leu Thr Lys Arg Ala Ala Gln Ala Ala Gln Arg Glu Asn Gln Arg
 530 535 540
 Gln Gln Phe Pro Val Glu His Val Gln Leu Leu Cys Ile Asn Cys Met
 545 550 555 560

Val Ala Val Gly His Gly Ser Asp Leu Arg Lys Val Glu Gly Thr His
565 570 575

His Val Asn Val Asn Pro Asn Phe Ser Asn Tyr Tyr Asn Val Ser Arg
580 585 590

Asp Pro Val Val Ile Asn Lys Val Phe Lys Asp Trp Lys Pro Gly Gly
595 600 605

Val Ile Ser Cys Arg Asn Cys Gly Glu Val Trp Gly Leu Gln Met Ile
610 615 620

Tyr Lys Ser Val Lys Leu Pro Val Leu Lys Val Arg Ser Met Leu Leu
625 630 635 640

Glu Thr Pro Gln Gly Arg Ile Gln Ala Lys Lys Trp Ser Arg Val Pro
645 650 655

Phe Ser Val Pro Asp Phe Asp Phe Leu Gln His Cys Ala Glu Asn Leu
660 665 670

Ser Asp Leu Ser Leu Asp
675

<210> 491
<211> 562
<212> PRT
<213> Homo sapiens

<400> 491

Met Asp Asp Lys Gly Asp Pro Ser Asn Glu Glu Ala Pro Lys Ala Ile
1 5 10 15

Lys Pro Thr Ser Lys Glu Phe Arg Lys Thr Trp Gly Phe Arg Arg Thr
20 25 30

Thr Ile Ala Lys Arg Glu Gly Ala Gly Asp Ala Glu Ala Asp Pro Leu
35 40 45

Glu Pro Pro Pro Gln Gln Gln Leu Gly Leu Ser Leu Arg Arg Ser
50 55 60

Gly Arg Gln Pro Lys Arg Thr Glu Arg Val Glu Gln Phe Leu Thr Ile
65 70 75 80

Ala Arg Arg Arg Gly Arg Arg Ser Met Pro Val Ser Leu Glu Asp Ser
85 90 95

Gly Glu Pro Thr Ser Cys Pro Ala Thr Asp Ala Glu Thr Ala Ser Glu
100 105 110

Gly Ser Val Glu Ser Ala Ser Glu Thr Arg Ser Gly Pro Gln Ser Ala
 115 120 125
 Ser Thr Ala Val Lys Glu Arg Pro Ala Ser Ser Glu Lys Val Lys Gly
 130 135 140
 Gly Asp Asp His Asp Asp Thr Ser Asp Ser Asp Ser Asp Gly Leu Thr
 145 150 155 160
 Leu Lys Glu Leu Gln Asn Arg Leu Arg Arg Lys Arg Glu Gln Glu Pro
 165 170 175
 Thr Glu Arg Pro Leu Lys Gly Ile Gln Ser Arg Leu Arg Lys Lys Arg
 180 185 190
 Arg Glu Glu Gly Pro Ala Glu Thr Val Gly Ser Glu Ala Ser Asp Thr
 195 200 205
 Val Glu Gly Val Leu Pro Ser Lys Gln Glu Pro Glu Asn Asp Gln Gly
 210 215 220
 Val Val Ser Gln Ala Gly Lys Asp Asp Arg Glu Ser Lys Leu Glu Gly
 225 230 235 240
 Lys Ala Ala Gln Asp Ile Lys Asp Glu Glu Pro Gly Asp Leu Gly Arg
 245 250 255
 Pro Lys Pro Glu Cys Glu Gly Tyr Asp Pro Asn Ala Leu Tyr Cys Ile
 260 265 270
 Cys Arg Gln Pro His Asn Asn Arg Phe Met Ile Cys Cys Asp Arg Cys
 275 280 285
 Glu Glu Trp Phe His Gly Asp Cys Val Gly Ile Ser Glu Ala Arg Gly
 290 295 300
 Arg Leu Leu Glu Arg Asn Gly Glu Asp Tyr Ile Cys Pro Asn Cys Thr
 305 310 315 320
 Ile Leu Gln Val Gln Asp Glu Thr His Ser Glu Thr Ala Asp Gln Gln
 325 330 335
 Glu Ala Lys Trp Arg Pro Gly Asp Ala Asp Gly Thr Asp Cys Thr Ser
 340 345 350
 Ile Gly Thr Ile Glu Gln Lys Ser Ser Glu Asp Gln Gly Ile Lys Gly
 355 360 365
 Arg Ile Glu Lys Ala Ala Asn Pro Ser Gly Lys Lys Lys Leu Lys Ile
 370 375 380

Phe Gln Pro Val Ile Glu Ala Pro Gly Ala Ser Lys Cys Ile Gly Pro
385 390 395 400

Gly Cys Cys His Val Ala Gln Pro Asp Ser Val Tyr Cys Ser Asn Asp
405 410 415

Cys Ile Leu Lys His Ala Ala Ala Thr Met Lys Phe Leu Ser Ser Gly
420 425 430

Lys Glu Gln Lys Pro Lys Pro Lys Glu Lys Met Lys Met Lys Pro Glu
435 440 445

Lys Pro Ser Leu Pro Lys Cys Gly Ala Gln Ala Gly Ile Lys Ile Ser
450 455 460

Ser Val His Lys Arg Pro Ala Pro Glu Lys Lys Glu Thr Thr Val Lys
465 470 475 480

Lys Ala Val Val Val Pro Ala Arg Ser Glu Ala Leu Gly Lys Glu Ala
485 490 495

Ala Cys Glu Ser Ser Thr Pro Ser Trp Ala Ser Asp His Asn Tyr Asn
500 505 510

Ala Val Lys Pro Glu Lys Thr Ala Ala Pro Ser Pro Ser Leu Leu Tyr
515 520 525

Lys Cys Met Tyr His Leu Gly Val Gly Leu Leu Asp Pro Ser Arg Ser
530 535 540

Phe Trp Ile Ala Ile Pro Trp Ala Cys Pro Gly Leu Gly Val Ala Ala
545 550 555 560

Leu Cys

<210> 492
<211> 2068
<212> PRT
<213> Homo sapiens

<400> 492

Met Gln Ala Asp Lys Cys Arg Thr Ser Ser Arg Ser Val Lys Lys Glu
1 5 10 15

Leu Val Ile Glu Ser Pro Leu Gln Tyr Lys Asp Ala Ala Gln Gly Glu
20 25 30

Val Glu Ala Glu Ser Pro Gly Pro Val Pro Ala Lys Pro Lys Leu Ile
35 40 45

Glu Pro Leu Asp Tyr Glu Asn Val Ile Val Gln Lys Lys Thr Gln Ile
 50 55 60
 Leu Asn Asp Cys Leu Arg Glu Met Leu Leu Phe Pro Tyr Asp Asp Phe
 65 70 75 80
 Gln Thr Ala Ile Leu Arg Arg Gln Gly Arg Tyr Ile Cys Ser Thr Val
 85 90 95
 Pro Ala Lys Ala Glu Glu Glu Ala Gln Ser Leu Phe Val Thr Glu Cys
 100 105 110
 Ile Lys Thr Tyr Asn Ser Asp Trp His Leu Val Asn Tyr Lys Tyr Glu
 115 120 125
 Asp Tyr Ser Gly Glu Phe Arg Gln Leu Pro Asn Lys Val Val Lys Leu
 130 135 140
 Asp Lys Leu Pro Val His Val Tyr Glu Val Asp Glu Glu Val Asp Lys
 145 150 155 160
 Asp Glu Asp Ala Ala Ser Leu Gly Ser Gln Lys Gly Gly Ile Thr Lys
 165 170 175
 His Gly Trp Leu Tyr Lys Gly Asn Met Asn Ser Ala Ile Ser Val Thr
 180 185 190
 Met Arg Ser Phe Lys Arg Arg Phe Phe His Leu Ile Gln Leu Gly Asp
 195 200 205
 Gly Ser Tyr Asn Leu Asn Phe Tyr Lys Asp Glu Lys Ile Ser Lys Glu
 210 215 220
 Pro Lys Gly Ser Ile Phe Leu Asp Ser Cys Met Gly Val Val Gln Asn
 225 230 235 240
 Asn Lys Val Arg Arg Phe Ala Phe Glu Leu Lys Met Gln Asp Lys Ser
 245 250 255
 Ser Tyr Leu Leu Ala Ala Asp Ser Glu Val Glu Met Glu Glu Trp Ile
 260 265 270
 Thr Ile Leu Asn Lys Ile Leu Gln Leu Asn Phe Glu Ala Ala Met Gln
 275 280 285
 Glu Lys Arg Asn Gly Asp Ser His Glu Asp Asp Glu Gln Ser Lys Leu
 290 295 300
 Glu Gly Ser Gly Ser Gly Leu Asp Ser Tyr Leu Pro Glu Leu Ala Lys
 305 310 315 320

Ser Ala Arg Glu Ala Glu Ile Lys Leu Lys Ser Glu Ser Arg Val Lys
 325 330 335

Leu Phe Tyr Leu Asp Pro Asp Ala Gln Lys Leu Asp Phe Ser Ser Ala
 340 345 350

Glu Pro Glu Val Lys Ser Phe Glu Glu Lys Phe Gly Lys Arg Ile Leu
 355 360 365

Val Lys Cys Asn Asp Leu Ser Phe Asn Leu Gln Cys Cys Val Ala Glu
 370 375 380

Asn Glu Glu Gly Pro Thr Thr Asn Val Glu Pro Phe Phe Val Thr Leu
 385 390 395 400

Ser Leu Phe Asp Ile Lys Tyr Asn Arg Lys Ile Ser Ala Asp Phe His
 405 410 415

Val Asp Leu Asn His Phe Ser Val Arg Gln Met Leu Ala Thr Thr Ser
 420 425 430

Pro Ala Leu Met Asn Gly Ser Gly Gln Ser Pro Ser Val Leu Lys Gly
 435 440 445

Ile Leu His Glu Ala Ala Met Gln Tyr Pro Lys Gln Gly Ile Phe Ser
 450 455 460

Val Thr Cys Pro His Pro Asp Ile Phe Leu Val Ala Arg Ile Glu Lys
 465 470 475 480

Val Leu Gln Gly Ser Ile Thr His Cys Ala Glu Pro Tyr Met Lys Ser
 485 490 495

Ser Asp Ser Ser Lys Val Ala Gln Lys Val Leu Lys Asn Ala Lys Gln
 500 505 510

Ala Cys Gln Arg Leu Gly Gln Tyr Arg Met Pro Phe Ala Trp Ala Ala
 515 520 525

Arg Thr Leu Phe Lys Asp Ala Ser Gly Asn Leu Asp Lys Asn Ala Arg
 530 535 540

Phe Ser Ala Ile Tyr Arg Gln Asp Ser Asn Lys Leu Ser Asn Asp Asp
 545 550 555 560

Met Leu Lys Leu Leu Ala Asp Phe Arg Lys Pro Glu Lys Met Ala Lys
 565 570 575

Leu Pro Val Ile Leu Gly Asn Leu Asp Ile Thr Ile Asp Asn Val Ser
 580 585 590

Ser Asp Phe Pro Asn Tyr Val Asn Ser Ser Tyr Ile Pro Thr Lys Gln
 595 600 605
 Phe Glu Thr Cys Ser Lys Thr Pro Ile Thr Phe Glu Val Glu Glu Phe
 610 615 620
 Val Pro Cys Ile Pro Lys His Thr Gln Pro Tyr Thr Ile Tyr Thr Asn
 625 630 635 640
 His Leu Tyr Val Tyr Pro Lys Tyr Leu Lys Tyr Asp Ser Gln Lys Ser
 645 650 655
 Phe Ala Lys Ala Arg Asn Ile Ala Ile Cys Ile Glu Phe Lys Asp Ser
 660 665 670
 Asp Glu Glu Asp Ser Gln Pro Leu Lys Cys Ile Tyr Gly Arg Pro Gly
 675 680 685
 Gly Pro Val Phe Thr Arg Ser Ala Phe Ala Ala Val Leu His His His
 690 695 700
 Gln Asn Pro Glu Phe Tyr Asp Glu Ile Lys Ile Glu Leu Pro Thr Gln
 705 710 715 720
 Leu His Glu Lys His His Leu Leu Leu Thr Phe Phe His Val Ser Cys
 725 730 735
 Asp Asn Ser Ser Lys Gly Ser Thr Lys Lys Arg Asp Val Val Glu Thr
 740 745 750
 Gln Val Gly Tyr Ser Trp Leu Pro Leu Leu Lys Asp Gly Arg Val Val
 755 760 765
 Thr Ser Glu Gln His Ile Pro Val Ser Ala Asn Leu Pro Ser Gly Tyr
 770 775 780
 Leu Gly Tyr Gln Glu Leu Gly Met Gly Arg His Tyr Gly Pro Glu Ile
 785 790 795 800
 Lys Trp Val Asp Gly Gly Lys Pro Leu Leu Lys Ile Ser Thr His Leu
 805 810 815
 Val Ser Thr Val Tyr Thr Gln Asp Gln His Leu His Asn Phe Phe Gln
 820 825 830
 Tyr Cys Gln Lys Thr Glu Ser Gly Ala Gln Ala Leu Gly Asn Glu Leu
 835 840 845
 Val Lys Tyr Leu Lys Ser Leu His Ala Met Glu Gly His Val Met Ile
 850 855 860

Ala Phe Leu Pro Thr Ile Leu Asn Gln Leu Phe Arg Val Leu Thr Arg
 865 870 875 880

Ala Thr Gln Glu Glu Val Ala Val Asn Val Thr Arg Val Ile Ile His
 885 890 895

Val Val Ala Gln Cys His Glu Glu Gly Leu Glu Ser His Leu Arg Ser
 900 905 910

Tyr Val Lys Tyr Ala Tyr Lys Ala Glu Pro Tyr Val Ala Ser Glu Tyr
 915 920 925

Lys Thr Val His Glu Glu Leu Thr Lys Ser Met Thr Thr Ile Leu Lys
 930 935 940

Pro Ser Ala Asp Phe Leu Thr Ser Asn Lys Leu Leu Lys Tyr Ser Trp
 945 950 955 960

Phe Phe Phe Asp Val Leu Ile Lys Ser Met Ala Gln His Leu Ile Glu
 965 970 975

Asn Ser Lys Val Lys Leu Leu Arg Asn Gln Arg Phe Pro Ala Ser Tyr
 980 985 990

His His Ala Val Glu Thr Val Val Asn Met Leu Met Pro His Ile Thr
 995 1000 1005

Gln Lys Phe Arg Asp Asn Pro Glu Ala Ser Lys Asn Ala Asn His
 1010 1015 1020

Ser Leu Ala Val Phe Ile Lys Arg Cys Phe Thr Phe Met Asp Arg
 1025 1030 1035

Gly Phe Val Phe Lys Gln Ile Asn Asn Tyr Ile Ser Cys Phe Ala
 1040 1045 1050

Pro Gly Asp Pro Lys Thr Leu Phe Glu Tyr Lys Phe Glu Phe Leu
 1055 1060 1065

Arg Val Val Cys Asn His Glu His Tyr Ile Pro Leu Asn Leu Pro
 1070 1075 1080

Met Pro Phe Gly Lys Gly Arg Ile Gln Arg Tyr Gln Asp Leu Gln
 1085 1090 1095

Leu Asp Tyr Ser Leu Thr Asp Glu Phe Cys Arg Asn His Phe Leu
 1100 1105 1110

Val Gly Leu Leu Leu Arg Glu Val Gly Thr Ala Leu Gln Glu Phe
 1115 1120 1125

Arg	Glu	Val	Arg	Leu	Ile	Ala	Ile	Ser	Val	Leu	Lys	Asn	Leu	Leu
	1130					1135					1140			
Ile	Lys	His	Ser	Phe	Asp	Asp	Arg	Tyr	Ala	Ser	Arg	Ser	His	Gln
	1145					1150					1155			
Ala	Arg	Ile	Ala	Thr	Leu	Tyr	Leu	Pro	Leu	Phe	Gly	Leu	Leu	Ile
	1160					1165					1170			
Glu	Asn	Val	Gln	Arg	Ile	Asn	Val	Arg	Asp	Val	Ser	Pro	Phe	Pro
	1175					1180					1185			
Val	Asn	Ala	Gly	Met	Thr	Val	Lys	Asp	Glu	Ser	Leu	Ala	Leu	Pro
	1190					1195					1200			
Ala	Val	Asn	Pro	Leu	Val	Thr	Pro	Gln	Lys	Gly	Ser	Thr	Leu	Asp
	1205					1210					1215			
Asn	Ser	Leu	His	Lys	Asp	Leu	Leu	Gly	Ala	Ile	Ser	Gly	Ile	Ala
	1220					1225					1230			
Ser	Pro	Tyr	Thr	Thr	Ser	Thr	Pro	Asn	Ile	Asn	Ser	Val	Arg	Asn
	1235					1240					1245			
Ala	Asp	Ser	Arg	Gly	Ser	Leu	Ile	Ser	Thr	Asp	Ser	Gly	Asn	Ser
	1250					1255					1260			
Leu	Pro	Glu	Arg	Asn	Ser	Glu	Lys	Ser	Asn	Ser	Leu	Asp	Lys	His
	1265					1270					1275			
Gln	Gln	Ser	Ser	Thr	Leu	Gly	Asn	Ser	Val	Val	Arg	Cys	Asp	Lys
	1280					1285					1290			
Leu	Asp	Gln	Ser	Glu	Ile	Lys	Ser	Leu	Leu	Met	Cys	Phe	Leu	Tyr
	1295					1300					1305			
Ile	Leu	Lys	Ser	Met	Ser	Asp	Asp	Ala	Leu	Phe	Thr	Tyr	Trp	Asn
	1310					1315					1320			
Lys	Ala	Ser	Thr	Ser	Glu	Leu	Met	Asp	Phe	Phe	Thr	Ile	Ser	Glu
	1325					1330					1335			
Val	Cys	Leu	His	Gln	Phe	Gln	Tyr	Met	Gly	Lys	Arg	Tyr	Ile	Ala
	1340					1345					1350			
Arg	Thr	Gly	Met	Met	His	Ala	Arg	Leu	Gln	Gln	Leu	Gly	Ser	Leu
	1355					1360					1365			
Asp	Asn	Ser	Leu	Thr	Phe	Asn	His	Ser	Tyr	Gly	His	Ser	Asp	Ala
	1370					1375					1380			

Asp	Val	Leu	His	Gln	Ser	Leu	Leu	Glu	Ala	Asn	Ile	Ala	Thr	Glu
1385						1390					1395			
Val	Cys	Leu	Thr	Ala	Leu	Asp	Thr	Leu	Ser	Leu	Phe	Thr	Leu	Ala
1400						1405					1410			
Phe	Lys	Asn	Gln	Leu	Leu	Ala	Asp	His	Gly	His	Asn	Pro	Leu	Met
1415						1420					1425			
Lys	Lys	Val	Phe	Asp	Val	Tyr	Leu	Cys	Phe	Leu	Gln	Lys	His	Gln
1430						1435					1440			
Ser	Glu	Thr	Ala	Leu	Lys	Asn	Val	Phe	Thr	Ala	Leu	Arg	Ser	Leu
1445						1450					1455			
Ile	Tyr	Lys	Phe	Pro	Ser	Thr	Phe	Tyr	Glu	Gly	Arg	Ala	Asp	Met
1460						1465					1470			
Cys	Ala	Ala	Leu	Cys	Tyr	Glu	Ile	Leu	Lys	Cys	Cys	Asn	Ser	Lys
1475						1480					1485			
Leu	Ser	Ser	Ile	Arg	Thr	Glu	Ala	Ser	Gln	Leu	Leu	Tyr	Phe	Leu
1490						1495					1500			
Met	Arg	Asn	Asn	Phe	Asp	Tyr	Thr	Gly	Lys	Lys	Ser	Phe	Val	Arg
1505						1510					1515			
Thr	His	Leu	Gln	Val	Ile	Ile	Ser	Val	Ser	Gln	Leu	Ile	Ala	Asp
1520						1525					1530			
Val	Val	Gly	Ile	Gly	Gly	Thr	Arg	Phe	Gln	Gln	Ser	Leu	Ser	Ile
1535						1540					1545			
Ile	Asn	Asn	Cys	Ala	Asn	Ser	Asp	Arg	Leu	Ile	Lys	His	Thr	Ser
1550						1555					1560			
Phe	Ser	Ser	Asp	Val	Lys	Asp	Leu	Thr	Lys	Arg	Ile	Arg	Thr	Val
1565						1570					1575			
Leu	Met	Ala	Thr	Ala	Gln	Met	Lys	Glu	His	Glu	Asn	Asp	Pro	Glu
1580						1585					1590			
Met	Leu	Val	Asp	Leu	Gln	Tyr	Ser	Leu	Ala	Lys	Ser	Tyr	Ala	Ser
1595						1600					1605			
Thr	Pro	Glu	Leu	Arg	Lys	Thr	Trp	Leu	Asp	Ser	Met	Ala	Arg	Ile
1610						1615					1620			
His	Val	Lys	Asn	Gly	Asp	Leu	Ser	Glu	Ala	Ala	Met	Cys	Tyr	Val
1625						1630					1635			

His	Val	Thr	Ala	Leu	Val	Ala	Glu	Tyr	Leu	Thr	Arg	Lys	Glu	Ala
1640						1645					1650			
Val	Gln	Trp	Glu	Pro	Pro	Leu	Leu	Pro	His	Ser	His	Ser	Ala	Cys
1655						1660					1665			
Leu	Arg	Arg	Ser	Arg	Gly	Gly	Val	Phe	Arg	Gln	Gly	Cys	Thr	Ala
1670						1675					1680			
Phe	Arg	Val	Ile	Thr	Pro	Asn	Ile	Asp	Glu	Glu	Ala	Ser	Met	Met
1685						1690					1695			
Glu	Asp	Val	Gly	Met	Gln	Asp	Val	His	Phe	Asn	Glu	Asp	Val	Leu
1700						1705					1710			
Met	Glu	Leu	Leu	Glu	Gln	Cys	Ala	Asp	Gly	Leu	Trp	Lys	Ala	Glu
1715						1720					1725			
Arg	Tyr	Glu	Leu	Ile	Ala	Asp	Ile	Tyr	Lys	Leu	Ile	Ile	Pro	Ile
1730						1735					1740			
Tyr	Glu	Lys	Arg	Arg	Asp	Phe	Glu	Arg	Leu	Ala	His	Leu	Tyr	Asp
1745						1750					1755			
Thr	Leu	His	Arg	Ala	Tyr	Ser	Lys	Val	Thr	Glu	Val	Met	His	Ser
1760						1765					1770			
Gly	Arg	Arg	Leu	Leu	Gly	Thr	Tyr	Phe	Arg	Val	Ala	Phe	Phe	Gly
1775						1780					1785			
Gln	Ala	Ala	Gln	Tyr	Gln	Phe	Thr	Asp	Ser	Glu	Thr	Asp	Val	Glu
1790						1795					1800			
Gly	Phe	Phe	Glu	Asp	Glu	Asp	Gly	Lys	Glu	Tyr	Ile	Tyr	Lys	Glu
1805						1810					1815			
Pro	Lys	Leu	Thr	Pro	Leu	Ser	Glu	Ile	Ser	Gln	Arg	Leu	Leu	Lys
1820						1825					1830			
Leu	Tyr	Ser	Asp	Lys	Phe	Gly	Ser	Glu	Asn	Val	Lys	Met	Ile	Gln
1835						1840					1845			
Asp	Ser	Gly	Lys	Val	Asn	Pro	Lys	Asp	Leu	Asp	Ser	Lys	Tyr	Ala
1850						1855					1860			
Tyr	Ile	Gln	Val	Thr	His	Val	Ile	Pro	Phe	Phe	Asp	Glu	Lys	Glu
1865						1870					1875			
Leu	Gln	Glu	Arg	Lys	Thr	Glu	Phe	Glu	Arg	Ser	His	Asn	Ile	Arg
1880						1885					1890			

Arg Phe Met Phe Glu Met Pro Phe Thr Gln Thr Gly Lys Arg Gln
 1895 1900 1905

Gly Gly Val Glu Glu Gln Cys Lys Arg Arg Thr Ile Leu Thr Ala
 1910 1915 1920

Ile His Cys Phe Pro Tyr Val Lys Lys Arg Ile Pro Val Met Tyr
 1925 1930 1935

Gln His His Thr Asp Leu Asn Pro Ile Glu Val Ala Ile Asp Glu
 1940 1945 1950

Met Ser Lys Lys Val Ala Glu Leu Arg Gln Leu Cys Ser Ser Ala
 1955 1960 1965

Glu Val Asp Met Ile Lys Leu Gln Leu Lys Leu Gln Gly Ser Val
 1970 1975 1980

Ser Val Gln Val Asn Ala Gly Pro Leu Ala Tyr Ala Arg Ala Phe
 1985 1990 1995

Leu Asp Asp Thr Asn Thr Lys Arg Tyr Pro Asp Asn Lys Val Lys
 2000 2005 2010

Leu Leu Lys Glu Val Phe Arg Gln Phe Val Glu Ala Cys Gly Gln
 2015 2020 2025

Ala Leu Ala Val Asn Glu Arg Leu Ile Lys Glu Asp Gln Leu Glu
 2030 2035 2040

Tyr Gln Glu Glu Met Lys Ala Asn Tyr Arg Glu Met Ala Lys Glu
 2045 2050 2055

Leu Ser Glu Ile Met His Glu Gln Leu Gly
 2060 2065

<210> 493
 <211> 496
 <212> PRT
 <213> Homo sapiens

<400> 493

Met Thr Arg Gly Ala Arg Leu Arg Ser Asp Ala Arg Ala Gln Leu Asn
 1 5 10 15

Gln Leu Ser Leu Asp Gly Gly Thr Gly Ser Gly Gln Lys Gly Lys Cys
 20 25 30

Glu Glu Phe Pro Ser Ser Leu Ser Ser Val Ser Pro Gly Leu Glu Ala
 35 40 45

Ala Ala Leu Leu Leu Ala Val Thr Met Asp Pro Leu Glu Thr Pro Ile
 Page 645

50

55

60

Lys Asp Gly Ile Leu Tyr Gln Gln His Val Lys Phe Gly Lys Lys Cys
65 70 75 80

Trp Arg Lys Val Trp Ala Leu Leu Tyr Ala Gly Gly Pro Ser Gly Val
85 90 95

Ala Arg Leu Glu Ser Trp Glu Val Arg Asp Gly Gly Leu Gly Ala Ala
100 105 110

Gly Asp Arg Ser Ala Gly Pro Gly Arg Arg Gly Glu Arg Arg Val Ile
115 120 125

Arg Leu Ala Asp Cys Val Ser Val Leu Pro Ala Asp Gly Glu Ser Cys
130 135 140

Pro Arg Asp Thr Gly Ala Phe Leu Leu Thr Thr Thr Glu Arg Ser His
145 150 155 160

Leu Leu Ala Ala Gln His Arg Gln Ala Trp Met Gly Pro Ile Cys Gln
165 170 175

Leu Ala Phe Pro Gly Thr Gly Glu Ala Ser Ser Gly Ser Thr Asp Ala
180 185 190

Gln Ser Pro Lys Arg Gly Leu Val Pro Met Glu Glu Asn Ser Ile Tyr
195 200 205

Ser Ser Trp Gln Glu Val Gly Glu Phe Pro Val Val Val Gln Arg Thr
210 215 220

Glu Ala Ala Thr Arg Cys Gln Leu Lys Gly Pro Ala Leu Leu Val Leu
225 230 235 240

Gly Pro Asp Ala Ile Gln Leu Arg Glu Ala Lys Gly Thr Gln Ala Leu
245 250 255

Tyr Ser Trp Pro Tyr His Phe Leu Arg Lys Phe Gly Ser Asp Lys Gly
260 265 270

Val Phe Ser Phe Glu Ala Gly Arg Arg Cys His Ser Gly Glu Gly Leu
275 280 285

Phe Ala Phe Ser Thr Pro Cys Ala Pro Asp Leu Cys Arg Ala Val Ala
290 295 300

Gly Ala Ile Ala Arg Gln Arg Glu Arg Leu Pro Glu Leu Thr Arg Pro
305 310 315 320

Gln Pro Cys Pro Leu Pro Arg Ala Thr Ser Leu Pro Ser Leu Asp Thr
Page 646

Pro Gly Glu Leu Arg Glu Met Pro Pro Gly Pro Glu Pro Pro Thr Ser
340 345 350

Arg Lys Met His Leu Ala Glu Pro Gly Pro Gln Ser Leu Pro Leu Leu
355 360 365

Leu Gly Pro Glu Pro Asn Asp Leu Ala Ser Gly Leu Tyr Ala Ser Val
370 375 380

Cys Lys Arg Ala Ser Gly Pro Pro Gly Asn Glu His Leu Tyr Glu Asn
385 390 395 400

Leu Cys Val Leu Glu Ala Ser Pro Thr Leu His Gly Gly Glu Pro Glu
405 410 415

Pro His Glu Gly Pro Gly Ser Arg Ser Pro Thr Thr Ser Pro Ile Tyr
420 425 430

His Asn Gly Gln Asp Leu Ser Trp Pro Gly Pro Ala Asn Asp Ser Thr
435 440 445

Leu Glu Ala Gln Tyr Arg Arg Leu Leu Glu Leu Asp Gln Val Glu Gly
450 455 460

Thr Gly Arg Pro Asp Pro Gln Ala Gly Phe Lys Ala Lys Leu Val Thr
465 470 475 480

Leu Leu Ser Arg Glu Arg Arg Lys Gly Pro Ala Pro Cys Asp Arg Pro
485 490 495

<210> 494
<211> 486
<212> PRT
<213> Homo sapiens

<400> 494

Met Gln Pro Ser Gly Leu Glu Gly Pro Gly Thr Phe Gly Arg Trp Pro
1 5 10 15

Leu Leu Ser Leu Leu Leu Leu Leu Leu Leu Gln Pro Val Thr Cys
20 25 30

Ala Tyr Thr Thr Pro Gly Pro Pro Arg Ala Leu Thr Thr Leu Gly Ala
35 40 45

Pro Arg Ala His Thr Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu
50 55 60

Ser Ser Pro Ser Thr Gln Gly Leu Gln Glu Gln Ala Arg Ala Leu Met
65 70 75 80

Arg Asp Phe Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu
 85 90 95
 Arg Gln Val Tyr Gln Lys Gly Leu Gln Asp Val Asn Leu Arg Asn Phe
 100 105 110
 Ser Tyr Gly Gln Thr Ser Leu Asp Arg Leu Arg Asp Gly Leu Val Gly
 115 120 125
 Ala Gln Phe Trp Ser Ala Tyr Val Pro Cys Gln Thr Gln Asp Arg Asp
 130 135 140
 Ala Leu Arg Leu Thr Leu Glu Gln Ile Asp Leu Ile Arg Arg Met Cys
 145 150 155 160
 Ala Ser Tyr Ser Glu Leu Glu Leu Val Thr Ser Ala Lys Ala Leu Asn
 165 170 175
 Asp Thr Gln Lys Leu Ala Cys Leu Ile Gly Val Glu Gly Gly His Ser
 180 185 190
 Leu Asp Asn Ser Leu Ser Ile Leu Arg Thr Phe Tyr Met Leu Gly Val
 195 200 205
 Arg Tyr Leu Thr Leu Thr His Thr Cys Asn Thr Pro Trp Ala Glu Ser
 210 215 220
 Ser Ala Lys Gly Val His Ser Phe Tyr Asn Asn Ile Ser Gly Leu Thr
 225 230 235 240
 Asp Phe Gly Glu Lys Val Val Ala Glu Met Asn Arg Leu Gly Met Met
 245 250 255
 Val Asp Leu Ser His Val Ser Asp Ala Val Ala Arg Arg Ala Leu Glu
 260 265 270
 Val Ser Gln Ala Pro Val Ile Phe Ser His Ser Ala Ala Arg Gly Val
 275 280 285
 Cys Asn Ser Ala Arg Asn Val Pro Asp Asp Ile Leu Gln Leu Leu Lys
 290 295 300
 Lys Asn Gly Gly Val Val Met Val Ser Leu Ser Met Gly Val Ile Gln
 305 310 315 320
 Cys Asn Pro Ser Ala Asn Val Ser Thr Val Ala Asp His Phe Asp His
 325 330 335
 Ile Lys Ala Val Ile Gly Ser Lys Phe Ile Gly Ile Gly Gly Asp Tyr
 340 345 350

Asp Gly Ala Gly Lys Phe Pro Gln Gly Leu Glu Asp Val Ser Thr Tyr
355 360 365

Pro Val Leu Ile Glu Glu Leu Leu Ser Arg Gly Trp Ser Glu Glu Glu
370 375 380

Leu Gln Gly Val Leu Arg Gly Asn Leu Leu Arg Val Phe Arg Gln Val
385 390 395 400

Glu Lys Val Gln Glu Glu Asn Lys Trp Gln Ser Pro Leu Glu Asp Lys
405 410 415

Phe Pro Asp Glu Gln Leu Ser Ser Ser Cys His Ser Asp Leu Ser Arg
420 425 430

Leu Arg Gln Arg Gln Ser Leu Thr Ser Gly Gln Glu Leu Thr Glu Ile
435 440 445

Pro Ile His Trp Thr Ala Lys Leu Pro Ala Lys Trp Ser Val Ser Glu
450 455 460

Ser Ser Pro His Met Ala Pro Val Leu Ala Val Val Ala Thr Phe Pro
465 470 475 480

Val Leu Ile Leu Trp Leu
485

<210> 495
<211> 391
<212> PRT
<213> Homo sapiens

<400> 495

Met Ala Ala Val Val Glu Asn Val Val Lys Leu Leu Gly Glu Gln Tyr
1 5 10 15

Tyr Lys Asp Ala Met Glu Gln Cys His Asn Tyr Asn Ala Arg Leu Cys
20 25 30

Ala Glu Arg Ser Val Arg Leu Pro Phe Leu Asp Ser Gln Thr Gly Val
35 40 45

Ala Gln Ser Asn Cys Tyr Ile Trp Met Glu Lys Arg His Arg Gly Pro
50 55 60

Gly Leu Ala Ser Gly Gln Leu Tyr Ser Tyr Pro Ala Arg Arg Trp Arg
65 70 75 80

Lys Lys Arg Arg Ala His Pro Pro Glu Asp Pro Arg Leu Ser Phe Pro
85 90 95

Ser Ile Lys Pro Asp Thr Asp Gln Thr Leu Lys Lys Glu Gly Leu Ile
 100 105 110
 Ser Gln Asp Gly Ser Ser Leu Glu Ala Leu Leu Arg Thr Asp Pro Leu
 115 120 125
 Glu Lys Arg Gly Ala Pro Asp Pro Arg Val Asp Asp Asp Ser Leu Gly
 130 135 140
 Glu Phe Pro Val Thr Asn Ser Arg Ala Arg Lys Arg Ile Leu Glu Pro
 145 150 155 160
 Asp Asp Phe Leu Asp Asp Leu Asp Asp Glu Asp Tyr Glu Glu Asp Thr
 165 170 175
 Pro Lys Arg Arg Gly Lys Gly Lys Ser Lys Gly Lys Gly Val Gly Ser
 180 185 190
 Ala Arg Lys Lys Leu Asp Ala Ser Ile Leu Glu Asp Arg Asp Lys Pro
 195 200 205
 Tyr Ala Cys Asp Ile Cys Gly Lys Arg Tyr Lys Asn Arg Pro Gly Leu
 210 215 220
 Ser Tyr His Tyr Ala His Ser His Leu Ala Glu Glu Glu Gly Glu Asp
 225 230 235 240
 Lys Glu Asp Ser Gln Pro Pro Thr Pro Val Ser Gln Arg Ser Glu Glu
 245 250 255
 Gln Lys Ser Lys Lys Gly Pro Asp Gly Leu Ala Leu Pro Asn Asn Tyr
 260 265 270
 Cys Asp Phe Cys Leu Gly Asp Ser Lys Ile Asn Lys Lys Thr Gly Gln
 275 280 285
 Pro Glu Glu Leu Val Ser Cys Ser Asp Cys Gly Arg Ser Gly His Pro
 290 295 300
 Ser Cys Leu Gln Phe Thr Pro Val Met Met Ala Ala Val Lys Thr Tyr
 305 310 315 320
 Arg Trp Gln Cys Ile Glu Cys Lys Cys Cys Asn Ile Cys Gly Thr Ser
 325 330 335
 Glu Asn Asp Asp Gln Leu Leu Phe Cys Asp Asp Cys Asp Arg Gly Tyr
 340 345 350
 His Met Tyr Cys Leu Thr Pro Ser Met Ser Glu Pro Pro Glu Gly Ser
 355 360 365

Trp Ser Cys His Leu Cys Leu Asp Leu Leu Lys Glu Lys Ala Ser Ile
 370 375 380

Tyr Gln Asn Gln Asn Ser Ser
 385 390

<210> 496
 <211> 551
 <212> PRT
 <213> Homo sapiens

<400> 496

Met Ala Gly Asp Leu Ser Ala Gly Phe Phe Met Glu Glu Leu Asn Thr
 1 5 10 15

Tyr Arg Gln Lys Gln Gly Val Val Leu Lys Tyr Gln Glu Leu Pro Asn
 20 25 30

Ser Gly Pro Pro His Asp Arg Arg Phe Thr Phe Gln Val Ile Ile Asp
 35 40 45

Gly Arg Glu Phe Pro Glu Gly Glu Gly Arg Ser Lys Lys Glu Ala Lys
 50 55 60

Asn Ala Ala Ala Lys Leu Ala Val Glu Ile Leu Asn Lys Glu Lys Lys
 65 70 75 80

Ala Val Ser Pro Leu Leu Leu Thr Thr Thr Asn Ser Ser Glu Gly Leu
 85 90 95

Ser Met Gly Asn Tyr Ile Gly Leu Ile Asn Arg Ile Ala Gln Lys Lys
 100 105 110

Arg Leu Thr Val Asn Tyr Glu Gln Cys Ala Ser Gly Val His Gly Pro
 115 120 125

Glu Gly Phe His Tyr Lys Cys Lys Met Gly Gln Lys Glu Tyr Ser Ile
 130 135 140

Gly Thr Gly Ser Thr Lys Gln Glu Ala Lys Gln Leu Ala Ala Lys Leu
 145 150 155 160

Ala Tyr Leu Gln Ile Leu Ser Glu Glu Thr Ser Val Lys Ser Asp Tyr
 165 170 175

Leu Ser Ser Gly Ser Phe Ala Thr Thr Cys Glu Ser Gln Ser Asn Ser
 180 185 190

Leu Val Thr Ser Thr Leu Ala Ser Glu Ser Ser Ser Glu Gly Asp Phe
 195 200 205

Ser Ala Asp Thr Ser Glu Ile Asn Ser Asn Ser Asp Ser Leu Asn Ser
 210 215 220
 Ser Ser Leu Leu Met Asn Gly Leu Arg Asn Asn Gln Arg Lys Ala Lys
 225 230 235
 Arg Ser Leu Ala Pro Arg Phe Asp Leu Pro Asp Met Lys Glu Thr Lys
 245 250 255
 Tyr Thr Val Asp Lys Arg Phe Gly Met Asp Phe Lys Glu Ile Glu Leu
 260 265 270
 Ile Gly Ser Gly Gly Phe Gly Gln Val Phe Lys Ala Lys His Arg Ile
 275 280 285
 Asp Gly Lys Thr Tyr Val Ile Lys Arg Val Lys Tyr Asn Asn Glu Lys
 290 295 300
 Ala Glu Arg Glu Val Lys Ala Leu Ala Lys Leu Asp His Val Asn Ile
 305 310 315 320
 Val His Tyr Asn Gly Cys Trp Asp Gly Phe Asp Tyr Asp Pro Glu Thr
 325 330 335
 Ser Asp Asp Ser Leu Glu Ser Ser Asp Tyr Asp Pro Glu Asn Ser Lys
 340 345 350
 Asn Ser Ser Arg Ser Lys Thr Lys Cys Leu Phe Ile Gln Met Glu Phe
 355 360 365
 Cys Asp Lys Gly Thr Leu Glu Gln Trp Ile Glu Lys Arg Arg Gly Glu
 370 375 380
 Lys Leu Asp Lys Val Leu Ala Leu Glu Leu Phe Glu Gln Ile Thr Lys
 385 390 395 400
 Gly Val Asp Tyr Ile His Ser Lys Lys Leu Ile His Arg Asp Leu Lys
 405 410 415
 Pro Ser Asn Ile Phe Leu Val Asp Thr Lys Gln Val Lys Ile Gly Asp
 420 425 430
 Phe Gly Leu Val Thr Ser Leu Lys Asn Asp Gly Lys Arg Thr Arg Ser
 435 440 445
 Lys Gly Thr Leu Arg Tyr Met Ser Pro Glu Gln Ile Ser Ser Gln Asp
 450 455 460
 Tyr Gly Lys Glu Val Asp Leu Tyr Ala Leu Gly Leu Ile Leu Ala Glu
 465 470 475 480

Leu Leu His Val Cys Asp Thr Ala Phe Glu Thr Ser Lys Phe Phe Thr
 485 490 495

Asp Leu Arg Asp Gly Ile Ile Ser Asp Ile Phe Asp Lys Lys Glu Lys
 500 505 510

Thr Leu Leu Gln Lys Leu Leu Ser Lys Lys Pro Glu Asp Arg Pro Asn
 515 520 525

Thr Ser Glu Ile Leu Arg Thr Leu Thr Val Trp Lys Lys Ser Pro Glu
 530 535 540

Lys Asn Glu Arg His Thr Cys
 545 550

<210> 497
 <211> 352
 <212> PRT
 <213> Homo sapiens

<400> 497

Met Ala Ser Arg Lys Glu Gly Thr Gly Ser Thr Ala Thr Ser Ser Ser
 1 5 10 15

Ser Thr Ala Gly Ala Ala Gly Lys Gly Lys Gly Lys Gly Gly Ser Gly
 20 25 30

Asp Ser Ala Val Lys Gln Val Gln Ile Asp Gly Leu Val Val Leu Lys
 35 40 45

Ile Ile Lys His Tyr Gln Glu Glu Gly Gln Gly Thr Glu Val Val Gln
 50 55 60

Gly Val Leu Leu Gly Leu Val Val Glu Asp Arg Leu Glu Ile Thr Asn
 65 70 75 80

Cys Phe Pro Phe Pro Gln His Thr Glu Asp Asp Ala Asp Phe Asp Glu
 85 90 95

Val Gln Tyr Gln Met Glu Met Met Arg Ser Leu Arg His Val Asn Ile
 100 105 110

Asp His Leu His Val Gly Trp Tyr Gln Ser Thr Tyr Tyr Gly Ser Phe
 115 120 125

Val Thr Arg Ala Leu Leu Asp Ser Gln Phe Ser Tyr Gln His Ala Ile
 130 135 140

Glu Glu Ser Val Val Leu Ile Tyr Asp Pro Ile Lys Thr Ala Gln Gly
 145 150 155 160

Ser Leu Ser Leu Lys Ala Tyr Arg Leu Thr Pro Lys Leu Met Glu Val
 Page 653

Cys Lys Glu Lys Asp Phe Ser Pro Glu Ala Leu Lys Lys Ala Asn Ile
180 185 190

Thr Phe Glu Tyr Met Phe Glu Glu Val Pro Ile Val Ile Lys Asn Ser
195 200 205

His Leu Ile Asn Val Leu Met Trp Glu Leu Glu Lys Lys Ser Ala Val
210 215 220

Ala Asp Lys His Glu Leu Leu Ser Leu Ala Ser Ser Asn His Leu Gly
225 230 235 240

Lys Asn Leu Gln Leu Leu Met Asp Arg Val Asp Glu Met Ser Gln Asp
245 250 255

Ile Val Lys Tyr Asn Thr Tyr Met Arg Asn Thr Ser Lys Gln Gln Gln
260 265 270

Gln Lys His Gln Tyr Gln Gln Arg Arg Gln Gln Glu Asn Met Gln Arg
275 280 285

Gln Ser Arg Gly Glu Pro Pro Leu Pro Glu Glu Asp Leu Ser Lys Leu
290 295 300

Phe Lys Pro Pro Gln Pro Pro Ala Arg Met Asp Ser Leu Leu Ile Ala
305 310 315 320

Gly Gln Ile Asn Thr Tyr Cys Gln Asn Ile Lys Glu Phe Thr Ala Gln
325 330 335

Asn Leu Gly Lys Leu Phe Met Ala Gln Ala Leu Gln Glu Tyr Asn Asn
340 345 350

<210> 498
<211> 823
<212> PRT
<213> Homo sapiens

<400> 498

Met Gly Gly Arg Val Phe Leu Val Phe Leu Ala Phe Cys Val Trp Leu
1 5 10 15

Thr Leu Pro Gly Ala Glu Thr Gln Asp Ser Arg Gly Cys Ala Arg Trp
20 25 30

Cys Pro Gln Asp Ser Ser Cys Val Asn Ala Thr Ala Cys Arg Cys Asn
35 40 45

Pro Gly Phe Ser Ser Phe Ser Glu Ile Ile Thr Thr Pro Met Glu Thr
50 55 60

Cys Asp Asp Ile Asn Glu Cys Ala Thr Leu Ser Lys Val Ser Cys Gly
 65 70 75 80
 Lys Phe Ser Asp Cys Trp Asn Thr Glu Gly Ser Tyr Asp Cys Val Cys
 85 90 95
 Ser Pro Gly Tyr Glu Pro Val Ser Gly Ala Lys Thr Phe Lys Asn Glu
 100 105 110
 Ser Glu Asn Thr Cys Gln Asp Val Asp Glu Cys Gln Gln Asn Pro Arg
 115 120 125
 Leu Cys Lys Ser Tyr Gly Thr Cys Val Asn Thr Leu Gly Ser Tyr Thr
 130 135 140
 Cys Gln Cys Leu Pro Gly Phe Lys Leu Lys Pro Glu Asp Pro Lys Leu
 145 150 155 160
 Cys Thr Asp Val Asn Glu Cys Thr Ser Gly Gln Asn Pro Cys His Ser
 165 170 175
 Ser Thr His Cys Leu Asn Asn Val Gly Ser Tyr Gln Cys Arg Cys Arg
 180 185 190
 Pro Gly Trp Gln Pro Ile Pro Gly Ser Pro Asn Gly Pro Asn Asn Thr
 195 200 205
 Val Cys Glu Asp Val Asp Glu Cys Ser Ser Gly Gln His Gln Cys Asp
 210 215 220
 Ser Ser Thr Val Cys Phe Asn Thr Val Gly Ser Tyr Ser Cys Arg Cys
 225 230 235 240
 Arg Pro Gly Trp Lys Pro Arg His Gly Ile Pro Asn Asn Gln Lys Asp
 245 250 255
 Thr Val Cys Glu Asp Met Thr Phe Ser Thr Trp Thr Pro Pro Pro Gly
 260 265 270
 Val His Ser Gln Thr Leu Ser Arg Phe Phe Asp Lys Val Gln Asp Leu
 275 280 285
 Gly Arg Asp Tyr Lys Pro Gly Leu Ala Asn Asn Thr Ile Gln Ser Ile
 290 295 300
 Leu Gln Ala Leu Asp Glu Leu Leu Glu Ala Pro Gly Asp Leu Glu Thr
 305 310 315 320
 Leu Pro Arg Leu Gln Gln His Cys Val Ala Ser His Leu Leu Asp Gly
 325 330 335

Leu Glu Asp Val Leu Arg Gly Leu Ser Lys Asn Leu Ser Asn Gly Leu
 340 345 350
 Leu Asn Phe Ser Tyr Pro Ala Gly Thr Glu Leu Ser Leu Glu Val Gln
 355 360 365
 Lys Gln Val Asp Arg Ser Val Thr Leu Arg Gln Asn Gln Ala Val Met
 370 375 380
 Gln Leu Asp Trp Asn Gln Ala Gln Lys Ser Gly Asp Pro Gly Pro Ser
 385 390 395 400
 Val Val Gly Leu Val Ser Ile Pro Gly Met Gly Lys Leu Leu Ala Glu
 405 410 415
 Ala Pro Leu Val Leu Glu Pro Glu Lys Gln Met Leu Leu His Glu Thr
 420 425 430
 His Gln Gly Leu Leu Gln Asp Gly Ser Pro Ile Leu Leu Ser Asp Val
 435 440 445
 Ile Ser Ala Phe Leu Ser Asn Asn Asp Thr Gln Asn Leu Ser Ser Pro
 450 455 460
 Val Thr Phe Thr Phe Ser His Arg Ser Val Ile Pro Arg Gln Lys Val
 465 470 475 480
 Leu Cys Val Phe Trp Glu His Gly Gln Asn Gly Cys Gly His Trp Ala
 485 490 495
 Thr Thr Gly Cys Ser Thr Ile Gly Thr Arg Asp Thr Ser Thr Ile Cys
 500 505 510
 Arg Cys Thr His Leu Ser Ser Phe Ala Val Leu Met Ala His Tyr Asp
 515 520 525
 Val Gln Glu Glu Asp Pro Val Leu Thr Val Ile Thr Tyr Met Gly Leu
 530 535 540
 Ser Val Ser Leu Leu Cys Leu Leu Leu Ala Ala Leu Thr Phe Leu Leu
 545 550 555 560
 Cys Lys Ala Ile Gln Asn Thr Ser Thr Ser Leu His Leu Gln Leu Ser
 565 570 575
 Leu Cys Leu Phe Leu Ala His Leu Leu Phe Leu Val Ala Ile Asp Gln
 580 585 590
 Thr Gly His Lys Val Leu Cys Ser Ile Ile Ala Gly Thr Leu His Tyr
 595 600 605

Leu Tyr Leu Ala Thr Leu Thr Trp Met Leu Leu Glu Ala Leu Tyr Leu
610 615 620

Phe Leu Thr Ala Arg Asn Leu Thr Val Val Asn Tyr Ser Ser Ile Asn
625 630 635 640

Arg Phe Met Lys Lys Leu Met Phe Pro Val Gly Tyr Gly Val Pro Ala
645 650 655

Val Thr Val Ala Ile Ser Ala Ala Ser Arg Pro His Leu Tyr Gly Thr
660 665 670

Pro Ser Arg Cys Trp Leu Gln Pro Glu Lys Gly Phe Ile Trp Gly Phe
675 680 685

Leu Gly Pro Val Cys Ala Ile Phe Ser Val Asn Leu Val Leu Phe Leu
690 695 700

Val Thr Leu Trp Ile Leu Lys Asn Arg Leu Ser Ser Leu Asn Ser Glu
705 710 715 720

Val Ser Thr Leu Arg Asn Thr Arg Met Leu Ala Phe Lys Ala Thr Ala
725 730 735

Gln Leu Phe Ile Leu Gly Cys Thr Trp Cys Leu Gly Ile Leu Gln Val
740 745 750

Gly Pro Ala Ala Arg Val Met Ala Tyr Leu Phe Thr Ile Ile Asn Ser
755 760 765

Leu Gln Gly Val Phe Ile Phe Leu Val Tyr Cys Leu Leu Ser Gln Gln
770 775 780

Val Arg Glu Gln Tyr Gly Lys Trp Ser Lys Gly Ile Arg Lys Leu Lys
785 790 795 800

Thr Glu Ser Glu Met His Thr Leu Ser Ser Ser Ala Lys Ala Asp Thr
805 810 815

Ser Lys Pro Ser Thr Val Asn
820

<210> 499
<211> 1371
<212> PRT
<213> Homo sapiens

<400> 499

Met Thr Thr Lys Arg Ser Leu Phe Val Arg Leu Val Pro Cys Arg Cys
1 5 10 15

Leu Arg Gly Glu Glu Glu Thr Val Thr Thr Leu Asp Tyr Ser His Cys
 20 25 30
 Ser Leu Glu Gln Val Pro Lys Glu Ile Phe Thr Phe Glu Lys Thr Leu
 35 40 45
 Glu Glu Leu Tyr Leu Asp Ala Asn Gln Ile Glu Glu Leu Pro Lys Gln
 50 55 60
 Leu Phe Asn Cys Gln Ser Leu His Lys Leu Ser Leu Pro Asp Asn Asp
 65 70 75 80
 Leu Thr Thr Leu Pro Ala Ser Ile Ala Asn Leu Ile Asn Leu Arg Glu
 85 90 95
 Leu Asp Val Ser Lys Asn Gly Ile Gln Glu Phe Pro Glu Asn Ile Lys
 100 105 110
 Asn Cys Lys Val Leu Thr Ile Val Glu Ala Ser Val Asn Pro Ile Ser
 115 120 125
 Lys Leu Pro Asp Gly Phe Ser Gln Leu Leu Asn Leu Thr Gln Leu Tyr
 130 135 140
 Leu Asn Asp Ala Phe Leu Glu Phe Leu Pro Ala Asn Phe Gly Arg Leu
 145 150 155 160
 Thr Lys Leu Gln Ile Leu Glu Leu Arg Glu Asn Gln Leu Lys Met Leu
 165 170 175
 Pro Lys Thr Met Asn Arg Leu Thr Gln Leu Glu Arg Leu Asp Leu Gly
 180 185 190
 Ser Asn Glu Phe Thr Glu Val Pro Glu Val Leu Glu Gln Leu Ser Gly
 195 200 205
 Leu Lys Glu Phe Trp Met Asp Ala Asn Arg Leu Thr Phe Ile Pro Gly
 210 215 220
 Phe Ile Gly Ser Leu Lys Gln Leu Thr Tyr Leu Asp Val Ser Lys Asn
 225 230 235 240
 Asn Ile Glu Met Val Glu Glu Gly Ile Ser Thr Cys Glu Asn Leu Gln
 245 250 255
 Asp Leu Leu Leu Ser Ser Asn Ser Leu Gln Gln Leu Pro Glu Thr Ile
 260 265 270
 Gly Ser Leu Lys Asn Ile Thr Thr Leu Lys Ile Asp Glu Asn Gln Leu
 275 280 285

Met Tyr Leu Pro Asp Ser Ile Gly Gly Leu Ile Ser Val Glu Glu Leu
 290 295 300
 Asp Cys Ser Phe Asn Glu Val Glu Ala Leu Pro Ser Ser Ile Gly Gln
 305 310 315 320
 Leu Thr Asn Leu Arg Thr Phe Ala Ala Asp His Asn Tyr Leu Gln Gln
 325 330 335
 Leu Pro Pro Glu Ile Gly Ser Trp Lys Asn Ile Thr Val Leu Phe Leu
 340 345 350
 His Ser Asn Lys Leu Glu Thr Leu Pro Glu Glu Met Gly Asp Met Gln
 355 360 365
 Lys Leu Lys Val Ile Asn Leu Ser Asp Asn Arg Leu Lys Asn Leu Pro
 370 375 380
 Phe Ser Phe Thr Lys Leu Gln Gln Leu Thr Ala Met Trp Leu Ser Asp
 385 390 395 400
 Asn Gln Ser Lys Pro Leu Ile Pro Leu Gln Lys Glu Thr Asp Ser Glu
 405 410 415
 Thr Gln Lys Met Val Leu Thr Asn Tyr Met Phe Pro Gln Gln Pro Arg
 420 425 430
 Thr Glu Asp Val Met Phe Ile Ser Asp Asn Glu Ser Phe Asn Pro Ser
 435 440 445
 Leu Trp Glu Glu Gln Arg Lys Gln Arg Ala Gln Val Ala Phe Glu Cys
 450 455 460
 Asp Glu Asp Lys Asp Glu Arg Glu Ala Pro Pro Arg Glu Gly Asn Leu
 465 470 475 480
 Lys Arg Tyr Pro Thr Pro Tyr Pro Asp Glu Leu Lys Asn Met Val Lys
 485 490 495
 Thr Val Gln Thr Ile Val His Arg Leu Lys Asp Glu Glu Thr Asn Glu
 500 505 510
 Asp Ser Gly Arg Asp Leu Lys Pro His Glu Asp Gln Gln Asp Ile Asn
 515 520 525
 Lys Asp Val Gly Val Lys Thr Ser Glu Ser Thr Thr Thr Val Lys Ser
 530 535 540
 Lys Val Asp Glu Arg Glu Lys Tyr Met Ile Gly Asn Ser Val Gln Lys
 545 550 555 560

Ile Ser Glu Pro Glu Ala Glu Ile Ser Pro Gly Ser Leu Pro Val Thr
 565 570 575
 Ala Asn Met Lys Ala Ser Glu Asn Leu Lys His Ile Val Asn His Asp
 580 585 590
 Asp Val Phe Glu Glu Ser Glu Glu Leu Ser Ser Asp Glu Glu Met Lys
 595 600 605
 Met Ala Glu Met Arg Pro Pro Leu Ile Glu Thr Ser Ile Asn Gln Pro
 610 615 620
 Lys Val Val Ala Leu Ser Asn Asn Lys Lys Asp Asp Thr Lys Glu Thr
 625 630 635 640
 Asp Ser Leu Ser Asp Glu Val Thr His Asn Ser Asn Gln Asn Asn Ser
 645 650 655
 Asn Cys Ser Ser Pro Ser Arg Met Ser Asp Ser Val Ser Leu Asn Thr
 660 665 670
 Asp Ser Ser Gln Asp Thr Ser Leu Cys Ser Pro Val Lys Gln Thr His
 675 680 685
 Ile Asp Ile Asn Ser Lys Ile Arg Gln Glu Asp Glu Asn Phe Asn Ser
 690 695 700
 Leu Leu Gln Asn Gly Asp Ile Leu Asn Ser Ser Thr Glu Glu Lys Phe
 705 710 715 720
 Lys Ala His Asp Lys Lys Asp Phe Asn Leu Pro Glu Tyr Asp Leu Asn
 725 730 735
 Val Glu Glu Arg Leu Val Leu Ile Glu Lys Ser Val Asp Ser Thr Ala
 740 745 750
 Thr Ala Asp Asp Thr His Lys Leu Asp His Ile Asn Met Asn Leu Asn
 755 760 765
 Lys Leu Ile Thr Asn Asp Thr Phe Gln Pro Glu Ile Met Glu Arg Ser
 770 775 780
 Lys Thr Gln Asp Ile Val Leu Gly Thr Ser Phe Leu Ser Ile Asn Ser
 785 790 795 800
 Lys Glu Glu Thr Glu His Leu Glu Asn Gly Asn Lys Tyr Pro Asn Leu
 805 810 815
 Glu Ser Val Asn Lys Val Asn Gly His Ser Glu Glu Thr Ser Gln Ser
 820 825 830

Pro Asn Arg Thr Glu Pro His Asp Ser Asp Cys Ser Val Asp Leu Gly
 835 840 845

Ile Ser Lys Ser Thr Glu Asp Leu Ser Pro Gln Lys Ser Gly Pro Val
 850 855 860

Gly Ser Val Val Lys Ser His Ser Ile Thr Asn Met Glu Ile Gly Gly
 865 870 875 880

Leu Lys Ile Tyr Asp Ile Leu Ser Asp Asn Gly Pro Gln Gln Pro Ser
 885 890 895

Thr Thr Val Lys Ile Thr Ser Ala Val Asp Gly Lys Asn Ile Val Arg
 900 905 910

Ser Lys Ser Ala Thr Leu Leu Tyr Asp Gln Pro Leu Gln Val Phe Thr
 915 920 925

Gly Ser Ser Ser Ser Ser Asp Leu Ile Ser Gly Thr Lys Ala Ile Phe
 930 935 940

Lys Phe Asp Ser Asn His Asn Pro Glu Glu Pro Asn Ile Ile Arg Gly
 945 950 955 960

Pro Thr Ser Gly Pro Gln Ser Ala Pro Gln Ile Tyr Gly Pro Pro Gln
 965 970 975

Tyr Asn Ile Gln Tyr Ser Ser Ser Ala Ala Val Lys Asp Thr Leu Trp
 980 985 990

His Ser Lys Gln Asn Pro Gln Ile Asp His Ala Ser Phe Pro Pro Gln
 995 1000 1005

Leu Leu Pro Arg Ser Glu Ser Thr Glu Asn Gln Ser Tyr Ala Lys
 1010 1015 1020

His Ser Ala Asn Met Asn Phe Ser Asn His Asn Asn Val Arg Ala
 1025 1030 1035

Asn Thr Ala Tyr His Leu His Gln Arg Leu Gly Pro Ala Arg His
 1040 1045 1050

Gly Glu Met Trp Ala Ile Ser Pro Asn Asp Arg Leu Ile Pro Ala
 1055 1060 1065

Val Thr Arg Ser Thr Ile Gln Arg Gln Ser Ser Val Ser Ser Thr
 1070 1075 1080

Ala Ser Val Asn Leu Gly Asp Pro Gly Ser Thr Arg Arg Ala Gln
 1085 1090 1095

Ile	Pro	Glu	Gly	Asp	Tyr	Leu	Ser	Tyr	Arg	Glu	Phe	His	Ser	Ala
	1100					1105					1110			
Gly	Arg	Thr	Pro	Pro	Met	Met	Pro	Gly	Ser	Gln	Arg	Pro	Leu	Ser
	1115					1120					1125			
Ala	Arg	Thr	Tyr	Ser	Ile	Asp	Gly	Pro	Asn	Ala	Ser	Arg	Pro	Gln
	1130					1135					1140			
Ser	Ala	Arg	Pro	Ser	Ile	Asn	Glu	Ile	Pro	Glu	Arg	Thr	Met	Ser
	1145					1150					1155			
Val	Ser	Asp	Phe	Asn	Tyr	Ser	Arg	Thr	Ser	Pro	Ser	Lys	Arg	Pro
	1160					1165					1170			
Asn	Ala	Arg	Val	Gly	Ser	Glu	His	Ser	Leu	Leu	Asp	Pro	Pro	Gly
	1175					1180					1185			
Lys	Ser	Lys	Val	Pro	Arg	Asp	Trp	Arg	Glu	Gln	Val	Leu	Arg	His
	1190					1195					1200			
Ile	Glu	Ala	Lys	Lys	Leu	Glu	Lys	Met	Pro	Leu	Ser	Asn	Gly	Gln
	1205					1210					1215			
Met	Gly	Gln	Pro	Leu	Arg	Pro	Gln	Ala	Asn	Tyr	Ser	Gln	Ile	His
	1220					1225					1230			
His	Pro	Pro	Gln	Ala	Ser	Val	Ala	Arg	His	Pro	Ser	Arg	Glu	Gln
	1235					1240					1245			
Leu	Ile	Asp	Tyr	Leu	Met	Leu	Lys	Val	Ala	His	Gln	Pro	Pro	Tyr
	1250					1255					1260			
Thr	Gln	Pro	His	Cys	Ser	Pro	Arg	Gln	Gly	His	Glu	Leu	Ala	Lys
	1265					1270					1275			
Gln	Glu	Ile	Arg	Val	Arg	Val	Glu	Lys	Asp	Pro	Glu	Leu	Gly	Phe
	1280					1285					1290			
Ser	Ile	Ser	Gly	Gly	Val	Gly	Gly	Arg	Gly	Asn	Pro	Phe	Arg	Pro
	1295					1300					1305			
Asp	Asp	Asp	Gly	Ile	Phe	Val	Thr	Arg	Val	Gln	Pro	Glu	Gly	Pro
	1310					1315					1320			
Ala	Ser	Lys	Leu	Leu	Gln	Pro	Gly	Asp	Lys	Ile	Ile	Gln	Ala	Asn
	1325					1330					1335			
Gly	Tyr	Ser	Phe	Ile	Asn	Ile	Glu	His	Gly	Gln	Ala	Val	Ser	Leu
	1340					1345					1350			

Leu Lys Thr Phe Gln Asn Thr Val Glu Leu Ile Ile Val Arg Glu
 1355 1360 1365

Val Ser Ser
 1370

<210> 500
 <211> 469
 <212> PRT
 <213> Homo sapiens
 <400> 500

Met Asn Asp Phe Gly Ile Lys Asn Met Asp Gln Val Ala Pro Val Ala
 1 5 10 15

Asn Ser Tyr Arg Gly Thr Leu Lys Arg Gln Pro Ala Phe Asp Thr Phe
 20 25 30

Asp Gly Ser Leu Phe Ala Val Phe Pro Ser Leu Asn Glu Glu Gln Thr
 35 40 45

Leu Gln Glu Val Pro Thr Gly Leu Asp Ser Ile Ser His Asp Ser Ala
 50 55 60

Asn Cys Glu Leu Pro Leu Leu Thr Pro Cys Ser Lys Ala Val Met Ser
 65 70 75 80

Gln Ala Leu Lys Ala Thr Phe Ser Gly Phe Lys Lys Glu Gln Arg Arg
 85 90 95

Leu Gly Ile Pro Lys Asn Pro Trp Leu Trp Ser Glu Gln Gln Val Cys
 100 105 110

Gln Trp Leu Leu Trp Ala Thr Asn Glu Phe Ser Leu Val Asn Val Asn
 115 120 125

Leu Gln Arg Phe Gly Met Asn Gly Gln Met Leu Cys Asn Leu Gly Lys
 130 135 140

Glu Arg Phe Leu Glu Leu Ala Pro Asp Phe Val Gly Asp Ile Leu Trp
 145 150 155 160

Glu His Leu Glu Gln Met Ile Lys Glu Asn Gln Glu Lys Thr Glu Asp
 165 170 175

Gln Tyr Glu Glu Asn Ser His Leu Thr Ser Val Pro His Trp Ile Asn
 180 185 190

Ser Asn Thr Leu Gly Phe Gly Thr Glu Gln Ala Pro Tyr Gly Met Gln
 195 200 205

Thr Gln Asn Tyr Pro Lys Gly Gly Leu Leu Asp Ser Met Cys Pro Ala
 210 215 220
 Ser Thr Pro Ser Val Leu Ser Ser Glu Gln Glu Phe Gln Met Phe Pro
 225 230 235 240
 Lys Ser Arg Leu Ser Ser Val Ser Val Thr Tyr Cys Ser Val Ser Gln
 245 250 255
 Asp Phe Pro Gly Ser Asn Leu Asn Leu Leu Thr Asn Asn Ser Gly Thr
 260 265 270
 Pro Lys Asp His Asp Ser Pro Glu Asn Gly Ala Asp Ser Phe Glu Ser
 275 280 285
 Ser Asp Ser Leu Leu Gln Ser Trp Asn Ser Gln Ser Ser Leu Leu Asp
 290 295 300
 Val Gln Arg Val Pro Ser Phe Glu Ser Phe Glu Asp Asp Cys Ser Gln
 305 310 315 320
 Ser Leu Cys Leu Asn Lys Pro Thr Met Ser Phe Lys Asp Tyr Ile Gln
 325 330 335
 Glu Arg Ser Asp Pro Val Glu Gln Gly Lys Pro Val Ile Pro Ala Ala
 340 345 350
 Val Leu Ala Gly Phe Thr Gly Ser Gly Pro Ile Gln Leu Trp Gln Phe
 355 360 365
 Leu Leu Glu Leu Leu Ser Asp Lys Ser Cys Gln Ser Phe Ile Ser Trp
 370 375 380
 Thr Gly Asp Gly Trp Glu Phe Lys Leu Ala Asp Pro Asp Glu Val Ala
 385 390 395 400
 Arg Arg Trp Gly Lys Arg Lys Asn Lys Pro Lys Met Asn Tyr Glu Lys
 405 410 415
 Leu Ser Arg Gly Leu Arg Tyr Tyr Tyr Asp Lys Asn Ile Ile His Lys
 420 425 430
 Thr Ser Gly Lys Arg Tyr Val Tyr Arg Phe Val Cys Asp Leu Gln Asn
 435 440 445
 Leu Leu Gly Phe Thr Pro Glu Glu Leu His Ala Ile Leu Gly Val Gln
 450 455 460
 Pro Asp Thr Glu Asp
 465

<210> 501
 <211> 390
 <212> PRT
 <213> Homo sapiens

<400> 501

Met Asp Phe Trp Leu Trp Pro Leu Tyr Phe Leu Pro Val Ser Gly Ala
 1 5 10 15

Leu Arg Ile Leu Pro Glu Val Lys Val Glu Gly Glu Leu Gly Gly Ser
 20 25 30

Val Thr Ile Lys Cys Pro Leu Pro Glu Met His Val Arg Ile Tyr Leu
 35 40 45

Cys Arg Glu Met Ala Gly Ser Gly Thr Cys Gly Thr Val Val Ser Thr
 50 55 60

Thr Asn Phe Ile Lys Ala Glu Tyr Lys Gly Arg Val Thr Leu Lys Gln
 65 70 75 80

Tyr Pro Arg Lys Asn Leu Phe Leu Val Glu Val Thr Gln Leu Thr Glu
 85 90 95

Ser Asp Ser Gly Val Tyr Ala Cys Gly Ala Gly Met Asn Thr Asp Arg
 100 105 110

Gly Lys Thr Gln Lys Val Thr Leu Asn Val His Ser Glu Tyr Glu Pro
 115 120 125

Ser Trp Glu Glu Gln Pro Met Pro Glu Thr Pro Lys Trp Phe His Leu
 130 135 140

Pro Tyr Leu Phe Gln Met Pro Ala Tyr Ala Ser Ser Ser Lys Phe Val
 145 150 155 160

Thr Arg Val Thr Thr Pro Ala Gln Arg Gly Lys Val Pro Pro Val His
 165 170 175

His Ser Ser Pro Thr Thr Gln Ile Thr His Arg Pro Arg Val Ser Arg
 180 185 190

Ala Ser Ser Val Ala Gly Asp Lys Pro Arg Thr Phe Leu Pro Ser Thr
 195 200 205

Thr Ala Ser Lys Ile Ser Ala Leu Glu Gly Leu Leu Lys Pro Gln Thr
 210 215 220

Pro Ser Tyr Asn His His Thr Arg Leu His Arg Gln Arg Ala Leu Asp
 225 230 235 240

Tyr Gly Ser Gln Ser Gly Arg Glu Gly Gln Gly Phe His Ile Leu Ile
 Page 665

Pro Thr Ile Leu Gly Leu Phe Leu Leu Ala Leu Leu Gly Leu Val Val
260 265 270

Lys Arg Ala Val Glu Arg Arg Lys Ala Leu Ser Arg Arg Ala Arg Arg
275 280 285

Leu Ala Val Arg Met Arg Ala Leu Glu Ser Ser Gln Arg Pro Arg Gly
290 295 300

Ser Pro Arg Pro Arg Ser Gln Asn Asn Ile Tyr Ser Ala Cys Pro Arg
305 310 315 320

Arg Ala Arg Gly Ala Asp Ala Ala Gly Thr Gly Glu Ala Pro Val Pro
325 330 335

Gly Pro Gly Ala Pro Leu Pro Pro Ala Pro Leu Gln Val Ser Glu Ser
340 345 350

Pro Trp Leu His Ala Pro Ser Leu Lys Thr Ser Cys Glu Tyr Val Ser
355 360 365

Leu Tyr His Gln Pro Ala Ala Met Met Glu Asp Ser Asp Ser Asp Asp
370 375 380

Tyr Ile Asn Val Pro Ala
385 390

<210> 502
<211> 543
<212> PRT
<213> Homo sapiens

<400> 502

Met Ala Ser Gly Gly Gly Gly Gly Asn Thr Gly Ala Gly Gly Gly Pro
1 5 10 15

Gly Met Gly Leu Ser Leu Gly Leu Gly Leu Gly Leu Ser Leu Gly Met
20 25 30

Ser Glu Ala Thr Ser Glu Ala Glu Glu Glu Ala Ala Thr Ala Glu Ala
35 40 45

Val Gly Arg Leu Ala Thr Thr Leu Trp Leu Arg Leu Arg Gly Trp Glu
50 55 60

Ala Val Leu Ala Ala Ala Gln Arg Leu Leu Val Trp Glu Lys Pro Leu
65 70 75 80

His Ser Leu Val Thr Ala Ala Ala Leu Asn Gly Leu Phe Trp Leu Leu
85 90 95

Ser Ser Ser Ser Leu Arg Pro Phe Phe Leu Leu Ser Val Ser Leu Leu
 100 105 110
 Ala Tyr Phe Leu Leu Asp Leu Trp Gln Pro Arg Phe Leu Pro Asp Val
 115 120 125
 Ser Ala Ser Ser Pro Glu Glu Pro His Ser Asp Ser Glu Gly Ala Gly
 130 135 140
 Ser Gly Ala Arg Pro His Leu Leu Ser Val Pro Glu Leu Cys Arg Tyr
 145 150 155 160
 Leu Ala Glu Ser Trp Leu Thr Phe Gln Ile His Leu Gln Glu Leu Leu
 165 170 175
 Gln Tyr Lys Arg Gln Asn Pro Ala Gln Phe Cys Val Arg Val Cys Ser
 180 185 190
 Gly Cys Ala Val Leu Ala Val Leu Gly His Tyr Val Pro Gly Ile Met
 195 200 205
 Ile Ser Tyr Ile Val Leu Leu Ser Ile Leu Leu Trp Pro Leu Val Val
 210 215 220
 Tyr His Glu Leu Ile Gln Arg Met Tyr Thr Arg Leu Glu Pro Leu Leu
 225 230 235 240
 Met Gln Leu Asp Tyr Ser Met Lys Ala Glu Ala Asn Ala Leu His His
 245 250 255
 Lys His Asp Lys Arg Lys Arg Gln Gly Lys Asn Ala Pro Pro Gly Gly
 260 265 270
 Asp Glu Pro Leu Ala Glu Thr Glu Ser Glu Ser Glu Ala Glu Leu Ala
 275 280 285
 Gly Phe Ser Pro Val Val Asp Val Lys Lys Thr Ala Leu Ala Leu Ala
 290 295 300
 Ile Thr Asp Ser Glu Leu Ser Asp Glu Glu Ala Ser Ile Leu Glu Ser
 305 310 315 320
 Gly Gly Phe Ser Val Ser Arg Ala Thr Thr Pro Gln Leu Thr Asp Val
 325 330 335
 Ser Glu Asp Leu Asp Gln Gln Ser Leu Pro Ser Glu Pro Glu Glu Thr
 340 345 350
 Leu Ser Arg Asp Leu Gly Glu Gly Glu Glu Gly Glu Leu Ala Pro Pro
 355 360 365

Glu Asp Leu Leu Gly Arg Pro Gln Ala Leu Ser Arg Gln Ala Leu Asp
 370 375 380

Ser Glu Glu Glu Glu Glu Asp Val Ala Ala Lys Glu Thr Leu Leu Arg
 385 390 395 400

Leu Ser Ser Pro Leu His Phe Val Asn Thr His Phe Asn Gly Ala Gly
 405 410 415

Ser Pro Pro Asp Gly Val Lys Cys Ser Pro Gly Gly Pro Val Glu Thr
 420 425 430

Leu Ser Pro Glu Thr Val Ser Gly Gly Leu Thr Ala Leu Pro Gly Thr
 435 440 445

Leu Ser Pro Pro Leu Cys Leu Val Gly Ser Asp Pro Ala Pro Ser Pro
 450 455 460

Ser Ile Leu Pro Pro Val Pro Gln Asp Ser Pro Gln Pro Leu Pro Ala
 465 470 475 480

Pro Glu Glu Glu Glu Ala Leu Thr Thr Glu Asp Phe Glu Leu Leu Asp
 485 490 495

Gln Gly Glu Leu Glu Gln Leu Asn Ala Glu Leu Gly Leu Glu Pro Glu
 500 505 510

Thr Pro Pro Lys Pro Pro Asp Ala Pro Pro Leu Gly Pro Asp Ile His
 515 520 525

Ser Leu Val Gln Ser Asp Gln Glu Ala Gln Ala Val Ala Glu Pro
 530 535 540

<210> 503
 <211> 1068
 <212> PRT
 <213> Homo sapiens

<400> 503

Met Leu Val Gly Ser Gln Ser Phe Ser Pro Gly Gly Pro Asn Gly Ile
 1 5 10 15

Ile Arg Ser Gln Ser Phe Ala Gly Phe Ser Gly Leu Gln Glu Arg Arg
 20 25 30

Ser Arg Cys Asn Ser Phe Ile Glu Asn Ser Ser Ala Leu Lys Lys Pro
 35 40 45

Gln Ala Lys Leu Lys Lys Met His Asn Leu Gly His Lys Asn Asn Asn
 50 55 60

Pro 65 Pro Lys Glu Pro 70 Gln Pro Lys Arg Val 75 Glu Glu Val Tyr Arg Ala 80
 Leu Lys Asn Gly 85 Leu Asp Glu Tyr Leu 90 Glu Val His Gln Thr 95 Glu Leu
 Asp Lys Leu 100 Thr Ala Gln Leu Lys Asp 105 Met Lys Arg Asn 110 Ser Arg Leu
 Gly Val 115 Leu Tyr Asp Leu Asp 120 Lys Gln Ile Lys Thr 125 Ile Glu Arg Tyr
 Met 130 Arg Arg Leu Glu Phe 135 His Ile Ser Lys Val 140 Asp Glu Leu Tyr Glu
 Ala 145 Tyr Cys Ile Gln Arg 150 Arg Leu Gln Asp Gly 155 Ala Ser Lys Met 160 Lys
 Gln Ala Phe Ala 165 Thr Ser Pro Ala Ser 170 Lys Ala Ala Arg Glu Ser 175 Leu
 Thr Glu Ile 180 Asn Arg Ser Phe Lys 185 Glu Tyr Thr Glu Asn 190 Met Cys Thr
 Ile Glu 195 Val Glu Leu Glu Asn 200 Leu Leu Gly Glu Phe Ser 205 Ile Lys Met
 Lys Gly 210 Leu Ala Gly Phe 215 Ala Arg Leu Cys Pro Gly 220 Asp Gln Tyr Glu
 Ile 225 Phe Met Lys Tyr 230 Gly Arg Gln Arg Trp Lys 235 Leu Lys Gly Lys Ile 240
 Glu Val Asn Gly 245 Lys Gln Ser Trp Asp Gly 250 Glu Glu Thr Val Phe 255 Leu
 Pro Leu Ile 260 Val Gly Phe Ile Ser 265 Ile Lys Val Thr Glu Leu 270 Lys Gly
 Leu Ala Thr 275 His Ile Leu Val 280 Gly Ser Val Thr Cys 285 Glu Thr Lys Glu
 Leu Phe 290 Ala Ala Arg Pro 295 Gln Val Val Ala Val 300 Asp Ile Asn Asp Leu
 Gly Thr 305 Ile Lys Leu 310 Asn Leu Glu Ile Thr 315 Trp Tyr Pro Phe Asp Val 320
 Glu Asp Met Thr 325 Ala Ser Ser Gly Ala 330 Gly Asn Lys Ala Ala 335 Ala Leu

Gln Arg Arg Met Ser Met Tyr Ser Gln Gly Thr Pro Glu Thr Pro Thr
 340 345 350
 Phe Lys Asp His Ser Phe Phe Arg Trp Leu His Pro Ser Pro Asp Lys
 355 360 365
 Pro Arg Arg Leu Ser Val Leu Ser Ala Leu Gln Asp Thr Phe Phe Ala
 370 375 380
 Lys Leu His Arg Ser Arg Ser Phe Ser Asp Leu Pro Ser Leu Arg Pro
 385 390 395 400
 Ser Pro Lys Ala Val Leu Glu Leu Tyr Ser Asn Leu Pro Asp Asp Ile
 405 410 415
 Phe Glu Asn Gly Lys Ala Ala Glu Glu Lys Met Pro Leu Ser Leu Ser
 420 425 430
 Phe Ser Asp Leu Pro Asn Gly Asp Cys Ala Leu Thr Ser His Ser Thr
 435 440 445
 Gly Ser Pro Ser Asn Ser Thr Asn Pro Glu Ile Thr Ile Thr Pro Ala
 450 455 460
 Glu Phe Asn Leu Ser Ser Leu Ala Ser Gln Asn Glu Gly Met Asp Asp
 465 470 475 480
 Thr Ser Ser Ala Ser Ser Arg Asn Ser Leu Gly Glu Gly Gln Glu Pro
 485 490 495
 Lys Ser His Leu Lys Glu Glu Asp Pro Glu Glu Pro Arg Lys Pro Ala
 500 505 510
 Ser Ala Pro Ser Glu Ala Cys Arg Arg Gln Ser Ser Gly Ala Gly Ala
 515 520 525
 Glu His Leu Phe Leu Glu Asn Asp Val Ala Glu Ala Leu Leu Gln Glu
 530 535 540
 Ser Glu Glu Ala Ser Glu Leu Lys Pro Val Glu Leu Asp Thr Ser Glu
 545 550 555 560
 Gly Asn Ile Thr Lys Gln Leu Val Lys Arg Leu Thr Ser Ala Glu Val
 565 570 575
 Pro Met Ala Thr Asp Arg Leu Leu Ser Glu Gly Ser Val Gly Gly Glu
 580 585 590
 Ser Glu Gly Cys Arg Ser Phe Leu Asp Gly Ser Leu Glu Asp Ala Phe
 595 600 605

Asn Gly Leu Leu Leu Ala Leu Glu Pro His Lys Glu Gln Tyr Lys Glu
 610 615 620
 Phe Gln Asp Leu Asn Gln Glu Val Met Asn Leu Asp Asp Ile Leu Lys
 625 630 635 640
 Cys Lys Pro Ala Val Ser Arg Ser Arg Ser Ser Ser Leu Ser Leu Thr
 645 650 655
 Val Glu Ser Ala Leu Glu Ser Phe Asp Phe Leu Asn Thr Ser Asp Phe
 660 665 670
 Asp Glu Glu Glu Asp Gly Asp Glu Val Cys Asn Val Gly Gly Gly Ala
 675 680 685
 Asp Ser Val Phe Ser Asp Thr Glu Thr Glu Lys His Ser Tyr Arg Ser
 690 695 700
 Val His Pro Glu Ala Arg Gly His Leu Ser Glu Ala Leu Thr Glu Asp
 705 710 715 720
 Thr Gly Val Gly Thr Ser Val Ala Gly Ser Pro Leu Pro Leu Thr Thr
 725 730 735
 Gly Asn Glu Ser Leu Asp Ile Thr Ile Val Arg His Leu Gln Tyr Cys
 740 745 750
 Thr Gln Leu Val Gln Gln Ile Val Phe Ser Ser Lys Thr Pro Phe Val
 755 760 765
 Ala Arg Ser Leu Leu Glu Lys Leu Ser Arg Gln Ile Gln Val Met Glu
 770 775 780
 Lys Leu Ala Ala Val Ser Asp Glu Asn Ile Gly Asn Ile Ser Ser Val
 785 790 795 800
 Val Glu Ala Ile Pro Glu Phe His Lys Lys Leu Ser Leu Leu Ser Phe
 805 810 815
 Trp Thr Lys Cys Cys Ser Pro Val Gly Val Tyr His Ser Pro Ala Asp
 820 825 830
 Arg Val Met Lys Gln Leu Glu Ala Ser Phe Ala Arg Thr Val Asn Lys
 835 840 845
 Glu Tyr Pro Gly Leu Ala Asp Pro Val Phe Arg Thr Leu Val Ser Gln
 850 855 860
 Ile Leu Asp Arg Ala Glu Pro Leu Leu Ser Ser Ser Leu Ser Ser Glu
 865 870 875 880

Val Val Thr Val Phe Gln Tyr Tyr Ser Tyr Phe Thr Ser His Gly Val
885 890 895

Ser Asp Leu Glu Ser Tyr Leu Ser Gln Leu Ala Arg Gln Val Ser Met
900 905 910

Val Gln Thr Leu Gln Ser Leu Arg Asp Glu Lys Leu Leu Gln Thr Met
915 920 925

Ser Asp Leu Ala Pro Ser Asn Leu Leu Ala Gln Gln Glu Val Leu Arg
930 935 940

Thr Leu Ala Leu Leu Leu Thr Arg Glu Asp Asn Glu Val Ser Glu Ala
945 950 955 960

Val Thr Leu Tyr Leu Ala Ala Ala Ser Lys Asn Gln His Phe Arg Glu
965 970 975

Lys Ala Leu Leu Tyr Tyr Cys Glu Ala Leu Thr Lys Thr Asn Leu Gln
980 985 990

Leu Gln Lys Ala Ala Cys Leu Ala Leu Lys Ile Leu Glu Ala Thr Glu
995 1000 1005

Ser Ile Lys Met Leu Val Thr Leu Cys Gln Ser Asp Thr Glu Glu
1010 1015 1020

Ile Arg Asn Val Ala Ser Glu Thr Leu Leu Ser Leu Gly Glu Asp
1025 1030 1035

Gly Arg Leu Ala Tyr Glu Gln Leu Asp Lys Phe Pro Arg Asp Cys
1040 1045 1050

Val Lys Val Gly Gly Arg His Gly Thr Glu Val Ala Thr Ala Phe
1055 1060 1065

<210> 504
<211> 843
<212> PRT
<213> Homo sapiens

<400> 504

Met Val Ala Glu Glu Ser Gly Pro Gly Ala Gln Asn Ser Pro Tyr Gln
1 5 10 15

Leu Arg Arg Lys Thr Leu Leu Pro Lys Arg Thr Ala Cys Pro Thr Lys
20 25 30

Asn Ser Met Glu Gly Ala Ser Thr Ser Thr Thr Glu Asn Phe Gly His
35 40 45

Arg Ala Lys Arg Ala Arg Val Ser Gly Lys Ser Gln Asp Leu Ser Ala
 50 55 60
 Ala Pro Ala Glu Gln Tyr Leu Gln Glu Lys Leu Pro Asp Glu Val Val
 65 70 75 80
 Leu Lys Ile Phe Ser Tyr Leu Leu Glu Gln Asp Leu Cys Arg Ala Ala
 85 90 95
 Cys Val Cys Lys Arg Phe Ser Glu Leu Ala Asn Asp Pro Ile Leu Trp
 100 105 110
 Lys Arg Leu Tyr Met Glu Val Phe Glu Tyr Thr Arg Pro Met Met His
 115 120 125
 Pro Glu Pro Gly Lys Phe Tyr Gln Ile Asn Pro Glu Glu Tyr Glu His
 130 135 140
 Pro Asn Pro Trp Lys Glu Ser Phe Gln Gln Leu Tyr Lys Gly Ala His
 145 150 155 160
 Val Lys Pro Gly Phe Ala Glu His Phe Tyr Ser Asn Pro Ala Arg Tyr
 165 170 175
 Lys Gly Arg Glu Asn Met Leu Tyr Tyr Asp Thr Ile Glu Asp Ala Leu
 180 185 190
 Gly Gly Val Gln Glu Ala His Phe Asp Gly Leu Ile Phe Val His Ser
 195 200 205
 Gly Ile Tyr Thr Asp Glu Trp Ile Tyr Ile Glu Ser Pro Ile Thr Met
 210 215 220
 Ile Gly Ala Ala Pro Gly Lys Val Ala Asp Lys Val Ile Ile Glu Asn
 225 230 235 240
 Thr Arg Asp Ser Thr Phe Val Phe Met Glu Gly Ser Glu Asp Ala Tyr
 245 250 255
 Val Gly Tyr Met Thr Ile Arg Phe Asn Pro Asp Asp Lys Ser Ala Gln
 260 265 270
 His His Asn Ala His His Cys Leu Glu Ile Thr Val Asn Cys Ser Pro
 275 280 285
 Ile Ile Asp His Cys Ile Ile Arg Ser Thr Cys Thr Val Gly Ser Ala
 290 295 300
 Val Cys Val Ser Gly Gln Gly Ala Cys Pro Thr Ile Lys His Cys Asn
 305 310 315 320

Ile Ser Asp Cys Glu Asn Val Gly Leu Tyr Ile Thr Asp His Ala Gln
 325 330 335
 Gly Ile Tyr Glu Asp Asn Glu Ile Ser Asn Asn Ala Leu Ala Gly Ile
 340 345 350
 Trp Val Lys Asn His Gly Asn Pro Ile Ile Arg Arg Asn His Ile His
 355 360 365
 His Gly Arg Asp Val Gly Val Phe Thr Phe Asp His Gly Met Gly Tyr
 370 375 380
 Phe Glu Ser Cys Asn Ile His Arg Asn Arg Ile Ala Gly Phe Glu Val
 385 390 395 400
 Lys Ala Tyr Ala Asn Pro Thr Val Val Arg Cys Glu Ile His His Gly
 405 410 415
 Gln Thr Gly Gly Ile Tyr Val His Glu Lys Gly Arg Gly Gln Phe Ile
 420 425 430
 Glu Asn Lys Ile Tyr Ala Asn Asn Phe Ala Gly Val Trp Ile Thr Ser
 435 440 445
 Asn Ser Asp Pro Thr Ile Arg Gly Asn Ser Ile Phe Asn Gly Asn Gln
 450 455 460
 Gly Gly Val Tyr Ile Phe Gly Asp Gly Arg Gly Leu Ile Glu Gly Asn
 465 470 475 480
 Asp Ile Tyr Gly Asn Ala Leu Ala Gly Ile Gln Ile Arg Thr Asn Ser
 485 490 495
 Cys Pro Ile Val Arg His Asn Lys Ile His Asp Gly Gln His Gly Gly
 500 505 510
 Ile Tyr Val His Glu Lys Gly Gln Gly Val Ile Glu Glu Asn Glu Val
 515 520 525
 Tyr Ser Asn Thr Leu Ala Gly Val Trp Val Thr Thr Gly Ser Thr Pro
 530 535 540
 Val Leu Arg Arg Asn Arg Ile His Ser Gly Lys Gln Val Gly Val Tyr
 545 550 555 560
 Phe Tyr Asp Asn Gly His Gly Val Leu Glu Asp Asn Asp Ile Tyr Asn
 565 570 575
 His Met Tyr Ser Gly Val Gln Ile Arg Thr Gly Ser Asn Pro Lys Ile
 580 585 590

Arg Arg Asn Lys Ile Trp Gly Gly Gln Asn Gly Gly Ile Leu Val Tyr
 595 600 605

Asn Ser Gly Leu Gly Cys Ile Glu Asp Asn Glu Ile Phe Asp Asn Ala
 610 615 620

Met Ala Gly Val Trp Ile Lys Thr Asp Ser Asn Pro Thr Leu Arg Arg
 625 630 635 640

Asn Lys Ile His Asp Gly Arg Asp Gly Gly Ile Cys Ile Phe Asn Gly
 645 650 655

Gly Arg Gly Leu Leu Glu Glu Asn Asp Ile Phe Arg Asn Ala Gln Ala
 660 665 670

Gly Val Leu Ile Ser Thr Asn Ser His Pro Ile Leu Arg Lys Asn Arg
 675 680 685

Ile Phe Asp Gly Phe Ala Ala Gly Ile Glu Ile Thr Asn His Ala Thr
 690 695 700

Ala Thr Leu Glu Gly Asn Gln Ile Phe Asn Asn Arg Phe Gly Gly Leu
 705 710 715 720

Phe Leu Ala Ser Gly Val Asn Val Thr Met Lys Asp Asn Lys Ile Met
 725 730 735

Asn Asn Gln Asp Ala Ile Glu Lys Ala Val Ser Arg Gly Gln Cys Leu
 740 745 750

Tyr Lys Ile Ser Ser Tyr Thr Ser Tyr Pro Met His Asp Phe Tyr Arg
 755 760 765

Cys His Thr Cys Asn Thr Thr Asp Arg Asn Ala Ile Cys Val Asn Cys
 770 775 780

Ile Lys Lys Cys His Gln Gly His Asp Val Glu Phe Ile Arg His Asp
 785 790 795 800

Arg Phe Phe Cys Asp Cys Gly Ala Gly Thr Leu Ser Asn Pro Cys Thr
 805 810 815

Leu Ala Gly Glu Pro Thr His Asp Thr Asp Thr Leu Tyr Asp Ser Ala
 820 825 830

Pro Pro Ile Glu Ser Asn Thr Leu Gln His Asn
 835 840

<210> 505
 <211> 447
 <212> PRT
 <213> Homo sapiens

<400> 505

Met Pro Asp Ile Ile Trp Val Phe Pro Pro Gln Ala Glu Ala Glu Glu
1 5 10 15

Asp Cys His Ser Asp Thr Val Arg Ala Asp Asp Asp Glu Glu Asn Glu
20 25 30

Ser Pro Ala Glu Thr Asp Leu Gln Ala Gln Leu Gln Met Phe Arg Ala
35 40 45

Gln Trp Met Phe Glu Leu Ala Pro Gly Val Ser Ser Ser Asn Leu Glu
50 55 60

Asn Arg Pro Cys Arg Ala Ala Arg Gly Ser Leu Gln Lys Thr Ser Ala
65 70 75 80

Asp Thr Lys Gly Lys Gln Glu Gln Ala Lys Glu Glu Lys Ala Arg Glu
85 90 95

Leu Phe Leu Lys Ala Val Glu Glu Glu Gln Asn Gly Ala Leu Tyr Glu
100 105 110

Ala Ile Lys Phe Tyr Arg Arg Ala Met Gln Leu Val Pro Asp Ile Glu
115 120 125

Phe Lys Ile Thr Tyr Thr Arg Ser Pro Asp Gly Asp Gly Val Gly Asn
130 135 140

Ser Tyr Ile Glu Asp Asn Asp Asp Asp Ser Lys Met Ala Asp Leu Leu
145 150 155 160

Ser Tyr Phe Gln Gln Gln Leu Thr Phe Gln Glu Ser Val Leu Lys Leu
165 170 175

Cys Gln Pro Glu Leu Glu Ser Ser Gln Ile His Ile Ser Val Leu Pro
180 185 190

Met Glu Val Leu Met Tyr Ile Phe Arg Trp Val Val Ser Ser Asp Leu
195 200 205

Asp Leu Arg Ser Leu Glu Gln Leu Ser Leu Val Cys Arg Gly Phe Tyr
210 215 220

Ile Cys Ala Arg Asp Pro Glu Ile Trp Arg Leu Ala Cys Leu Lys Val
225 230 235 240

Trp Gly Arg Ser Cys Ile Lys Leu Val Pro Tyr Thr Ser Trp Arg Glu
245 250 255

Met Phe Leu Glu Arg Pro Arg Val Arg Phe Asp Gly Val Tyr Ile Ser
Page 676

260

265

270

Lys Thr Thr Tyr Ile Arg Gln Gly Glu Gln Ser Leu Asp Gly Phe Tyr
 275 280 285

Arg Ala Trp His Gln Val Glu Tyr Tyr Arg Tyr Ile Arg Phe Phe Pro
 290 295 300

Asp Gly His Val Met Met Leu Thr Thr Pro Glu Glu Pro Gln Ser Ile
 305 310 315 320

Val Pro Arg Leu Arg Thr Arg Asn Thr Arg Thr Asp Ala Ile Leu Leu
 325 330 335

Gly His Tyr Arg Leu Ser Gln Asp Thr Asp Asn Gln Thr Lys Val Phe
 340 345 350

Ala Val Ile Thr Lys Lys Lys Glu Glu Lys Pro Leu Asp Tyr Lys Tyr
 355 360 365

Arg Tyr Phe Arg Arg Val Pro Val Gln Glu Ala Asp Gln Ser Phe His
 370 375 380

Val Gly Leu Gln Leu Cys Ser Ser Gly His Gln Arg Phe Asn Lys Leu
 385 390 395 400

Ile Trp Ile His His Ser Cys His Ile Thr Tyr Lys Ser Thr Gly Glu
 405 410 415

Thr Ala Val Ser Ala Phe Glu Ile Asp Lys Met Tyr Thr Pro Leu Phe
 420 425 430

Phe Ala Arg Val Arg Ser Tyr Thr Ala Phe Ser Glu Arg Pro Leu
 435 440 445

<210> 506

<211> 365

<212> PRT

<213> Homo sapiens

<400> 506

Met Gly Val Pro Arg Pro Gln Pro Trp Ala Leu Gly Leu Leu Leu Phe
 1 5 10 15

Leu Leu Pro Gly Ser Leu Gly Ala Glu Ser His Leu Ser Leu Leu Tyr
 20 25 30

His Leu Thr Ala Val Ser Ser Pro Ala Pro Gly Thr Pro Ala Phe Trp
 35 40 45

Val Ser Gly Trp Leu Gly Pro Gln Gln Tyr Leu Ser Tyr Asn Ser Leu
 50 55 60

Arg Gly Glu Ala Glu Pro Cys Gly Ala Trp Val Trp Glu Asn Gln Val
 65 70 75 80
 Ser Trp Tyr Trp Glu Lys Glu Thr Thr Asp Leu Arg Ile Lys Glu Lys
 85 90 95
 Leu Phe Leu Glu Ala Phe Lys Ala Leu Gly Gly Lys Gly Pro Tyr Thr
 100 105 110
 Leu Gln Gly Leu Leu Gly Cys Glu Leu Gly Pro Asp Asn Thr Ser Val
 115 120 125
 Pro Thr Ala Lys Phe Ala Leu Asn Gly Glu Glu Phe Met Asn Phe Asp
 130 135 140
 Leu Lys Gln Gly Thr Trp Gly Gly Asp Trp Pro Glu Ala Leu Ala Ile
 145 150 155 160
 Ser Gln Arg Trp Gln Gln Gln Asp Lys Ala Ala Asn Lys Glu Leu Thr
 165 170 175
 Phe Leu Leu Phe Ser Cys Pro His Arg Leu Arg Glu His Leu Glu Arg
 180 185 190
 Gly Arg Gly Asn Leu Glu Trp Lys Glu Pro Pro Ser Met Arg Leu Lys
 195 200 205
 Ala Arg Pro Ser Ser Pro Gly Phe Ser Val Leu Thr Cys Ser Ala Phe
 210 215 220
 Ser Phe Tyr Pro Pro Glu Leu Gln Leu Arg Phe Leu Arg Asn Gly Leu
 225 230 235 240
 Ala Ala Gly Thr Gly Gln Gly Asp Phe Gly Pro Asn Ser Asp Gly Ser
 245 250 255
 Phe His Ala Ser Ser Ser Leu Thr Val Lys Ser Gly Asp Glu His His
 260 265 270
 Tyr Cys Cys Ile Val Gln His Ala Gly Leu Ala Gln Pro Leu Arg Val
 275 280 285
 Glu Leu Glu Ser Pro Ala Lys Ser Ser Val Leu Val Val Gly Ile Val
 290 295 300
 Ile Gly Val Leu Leu Leu Thr Ala Ala Ala Val Gly Gly Ala Leu Leu
 305 310 315 320
 Trp Arg Arg Met Arg Ser Gly Leu Pro Ala Pro Trp Ile Ser Leu Arg
 325 330 335

Gly Asp Asp Thr Gly Val Leu Leu Pro Thr Pro Gly Glu Ala Gln Asp
 340 345 350

Ala Asp Leu Lys Asp Val Asn Val Ile Pro Ala Thr Ala
 355 360 365

<210> 507
 <211> 822
 <212> PRT
 <213> Homo sapiens
 <400> 507

Met Gly Phe Ser Ser Glu Leu Cys Ser Pro Gln Gly His Gly Val Leu
 1 5 10 15

Gln Gln Met Gln Glu Ala Glu Leu Arg Leu Leu Glu Gly Met Arg Lys
 20 25 30

Trp Met Ala Gln Arg Val Lys Ser Asp Arg Glu Tyr Ala Gly Leu Leu
 35 40 45

His His Met Ser Leu Gln Asp Ser Gly Gly Gln Ser Arg Ala Ile Ser
 50 55 60

Pro Asp Ser Pro Ile Ser Gln Ser Trp Ala Glu Ile Thr Ser Gln Thr
 65 70 75 80

Glu Gly Leu Ser Arg Leu Leu Arg Gln His Ala Glu Asp Leu Asn Ser
 85 90

Gly Pro Leu Ser Lys Leu Ser Leu Leu Ile Arg Glu Arg Gln Gln Leu
 100 105 110

Arg Lys Thr Tyr Ser Glu Gln Trp Gln Gln Leu Gln Gln Glu Leu Thr
 115 120 125

Lys Thr His Ser Gln Asp Ile Glu Lys Leu Lys Ser Gln Tyr Arg Ala
 130 135 140

Leu Ala Arg Asp Ser Ala Gln Ala Lys Arg Lys Tyr Gln Glu Ala Ser
 145 150 155 160

Lys Asp Lys Asp Arg Asp Lys Ala Lys Asp Lys Tyr Val Arg Ser Leu
 165 170 175

Trp Lys Leu Phe Ala His His Asn Arg Tyr Val Leu Gly Val Arg Ala
 180 185 190

Ala Gln Leu His His Gln His His Gln Leu Leu Leu Pro Gly Leu
 195 200 205

Leu Arg Ser Leu Gln Asp Leu His Glu Glu Met Ala Cys Ile Leu Lys
 210 215 220
 Glu Ile Leu Gln Glu Tyr Leu Glu Ile Ser Ser Leu Val Gln Asp Glu
 225 230 235 240
 Val Val Ala Ile His Arg Glu Met Ala Ala Ala Ala Arg Ile Gln
 245 250 255
 Pro Glu Ala Glu Tyr Gln Gly Phe Leu Arg Gln Tyr Gly Ser Ala Pro
 260 265 270
 Asp Val Pro Pro Cys Val Thr Phe Asp Glu Ser Leu Leu Glu Glu Gly
 275 280 285
 Glu Pro Leu Glu Pro Gly Glu Leu Gln Leu Asn Glu Leu Thr Val Glu
 290 295 300
 Ser Val Gln His Thr Leu Thr Ser Val Thr Asp Glu Leu Ala Val Ala
 305 310 315 320
 Thr Glu Met Val Phe Arg Arg Gln Glu Met Val Thr Gln Leu Gln Gln
 325 330 335
 Glu Leu Arg Asn Glu Glu Glu Asn Thr His Pro Arg Glu Arg Val Gln
 340 345 350
 Leu Leu Gly Lys Arg Gln Val Leu Gln Glu Ala Leu Gln Gly Leu Gln
 355 360 365
 Val Ala Leu Cys Ser Gln Ala Lys Leu Gln Ala Gln Gln Glu Leu Leu
 370 375 380
 Gln Thr Lys Leu Glu His Leu Gly Pro Gly Glu Pro Pro Pro Val Leu
 385 390 395 400
 Leu Leu Gln Asp Asp Arg His Ser Thr Ser Ser Ser Glu Gln Glu Arg
 405 410 415
 Glu Gly Gly Arg Thr Pro Thr Leu Glu Ile Leu Lys Ser His Ile Ser
 420 425 430
 Gly Ile Phe Arg Pro Lys Phe Ser Leu Pro Pro Pro Leu Gln Leu Ile
 435 440 445
 Pro Glu Val Gln Lys Pro Leu His Glu Gln Leu Trp Tyr His Gly Ala
 450 455 460
 Ile Pro Arg Ala Glu Val Ala Glu Leu Leu Val His Ser Gly Asp Phe
 465 470 475 480

Leu Val Arg Glu Ser Gln Gly Lys Gln Glu Tyr Val Leu Ser Val Leu
 485 490 495

Trp Asp Gly Leu Pro Arg His Phe Ile Ile Gln Ser Leu Asp Asn Leu
 500 505 510

Tyr Arg Leu Glu Gly Glu Gly Phe Pro Ser Ile Pro Leu Leu Ile Asp
 515 520 525

His Leu Leu Ser Thr Gln Gln Pro Leu Thr Lys Lys Ser Gly Val Val
 530 535 540

Leu His Arg Ala Val Pro Lys Asp Lys Trp Val Leu Asn His Glu Asp
 545 550 555 560

Leu Val Leu Gly Glu Gln Ile Gly Arg Gly Asn Phe Gly Glu Val Phe
 565 570 575

Ser Gly Arg Leu Arg Ala Asp Asn Thr Leu Val Ala Val Lys Ser Cys
 580 585 590

Arg Glu Thr Leu Pro Pro Asp Leu Lys Ala Lys Phe Leu Gln Glu Ala
 595 600 605

Arg Ile Leu Lys Gln Tyr Ser His Pro Asn Ile Val Arg Leu Ile Gly
 610 615 620

Val Cys Thr Gln Lys Gln Pro Ile Tyr Ile Val Met Glu Leu Val Gln
 625 630 635 640

Gly Gly Asp Phe Leu Thr Phe Leu Arg Thr Glu Gly Ala Arg Leu Arg
 645 650 655

Val Lys Thr Leu Leu Gln Met Val Gly Asp Ala Ala Ala Gly Met Glu
 660 665 670

Tyr Leu Glu Ser Lys Cys Cys Ile His Arg Asp Leu Ala Ala Arg Asn
 675 680 685

Cys Leu Val Thr Glu Lys Asn Val Leu Lys Ile Ser Asp Phe Gly Met
 690 695 700

Ser Arg Glu Glu Ala Asp Gly Val Tyr Ala Ala Ser Gly Gly Leu Arg
 705 710 715 720

Gln Val Pro Val Lys Trp Thr Ala Pro Glu Ala Leu Asn Tyr Gly Arg
 725 730 735

Tyr Ser Ser Glu Ser Asp Val Trp Ser Phe Gly Ile Leu Leu Trp Glu
 740 745 750

Thr Phe Ser Leu Gly Ala Ser Pro Tyr Pro Asn Leu Ser Asn Gln Gln
 755 760 765

Thr Arg Glu Phe Val Glu Lys Gly Gly Arg Leu Pro Cys Pro Glu Leu
 770 775 780

Cys Pro Asp Ala Val Phe Arg Leu Met Glu Gln Cys Trp Ala Tyr Glu
 785 790 795 800

Pro Gly Gln Arg Pro Ser Phe Ser Thr Ile Tyr Gln Glu Leu Gln Ser
 805 810 815

Ile Arg Lys Arg His Arg
 820

<210> 508
 <211> 529
 <212> PRT
 <213> Homo sapiens
 <400> 508

Met Gly Cys Val Phe Cys Lys Lys Leu Glu Pro Val Ala Thr Ala Lys
 1 5 10 15

Glu Asp Ala Gly Leu Glu Gly Asp Phe Arg Ser Tyr Gly Ala Ala Asp
 20 25 30

His Tyr Gly Pro Asp Pro Thr Lys Ala Arg Pro Ala Ser Ser Phe Ala
 35 40 45

His Ile Pro Asn Tyr Ser Asn Phe Ser Ser Gln Ala Ile Asn Pro Gly
 50 55 60

Phe Leu Asp Ser Gly Thr Ile Arg Gly Val Ser Gly Ile Gly Val Thr
 65 70 75 80

Leu Phe Ile Ala Leu Tyr Asp Tyr Glu Ala Arg Thr Glu Asp Asp Leu
 85 90 95

Thr Phe Thr Lys Gly Glu Lys Phe His Ile Leu Asn Asn Thr Glu Gly
 100 105 110

Asp Trp Trp Glu Ala Arg Ser Leu Ser Ser Gly Lys Thr Gly Cys Ile
 115 120 125

Pro Ser Asn Tyr Val Ala Pro Val Asp Ser Ile Gln Ala Glu Glu Trp
 130 135 140

Tyr Phe Gly Lys Ile Gly Arg Lys Asp Ala Glu Arg Gln Leu Leu Ser
 145 150 155 160

Pro Gly Asn Pro Gln Gly Ala Phe Leu Ile Arg Glu Ser Glu Thr Thr
 165 170 175
 Lys Gly Ala Tyr Ser Leu Ser Ile Arg Asp Trp Asp Gln Thr Arg Gly
 180 185 190
 Asp His Val Lys His Tyr Lys Ile Arg Lys Leu Asp Met Gly Gly Tyr
 195 200 205
 Tyr Ile Thr Thr Arg Val Gln Phe Asn Ser Val Gln Glu Leu Val Gln
 210 215 220
 His Tyr Met Glu Val Asn Asp Gly Leu Cys Asn Leu Leu Ile Ala Pro
 225 230 235 240
 Cys Thr Ile Met Lys Pro Gln Thr Leu Gly Leu Ala Lys Asp Ala Trp
 245 250 255
 Glu Ile Ser Arg Ser Ser Ile Thr Leu Glu Arg Arg Leu Gly Thr Gly
 260 265 270
 Cys Phe Gly Asp Val Trp Leu Gly Thr Trp Asn Gly Ser Thr Lys Val
 275 280 285
 Ala Val Lys Thr Leu Lys Pro Gly Thr Met Ser Pro Lys Ala Phe Leu
 290 295 300
 Glu Glu Ala Gln Val Met Lys Leu Leu Arg His Asp Lys Leu Val Gln
 305 310 315 320
 Leu Tyr Ala Val Val Ser Glu Glu Pro Ile Tyr Ile Val Thr Glu Phe
 325 330 335
 Met Cys His Gly Ser Leu Leu Asp Phe Leu Lys Asn Pro Glu Gly Gln
 340 345 350
 Asp Leu Arg Leu Pro Gln Leu Val Asp Met Ala Ala Gln Val Ala Glu
 355 360 365
 Gly Met Ala Tyr Met Glu Arg Met Asn Tyr Ile His Arg Asp Leu Arg
 370 375 380
 Ala Ala Asn Ile Leu Val Gly Glu Arg Leu Ala Cys Lys Ile Ala Asp
 385 390 395 400
 Phe Gly Leu Ala Arg Leu Ile Lys Asp Asp Glu Tyr Asn Pro Cys Gln
 405 410 415
 Gly Ser Lys Phe Pro Ile Lys Trp Thr Ala Pro Glu Ala Ala Leu Phe
 420 425 430

130

135

140

Met Gly Ile Glu Ile Leu Ser Phe Thr Ile Lys Asp Val Tyr Asp Lys
 145 150 155 160

Val Asp Tyr Leu Ser Ser Leu Gly Lys Thr Gln Thr Ala Val Val Gln
 165 170 175

Arg Asp Ala Asp Ile Gly Val Ala Glu Ala Glu Arg Asp Ala Gly Ile
 180 185 190

Arg Glu Ala Glu Cys Lys Lys Glu Met Leu Asp Val Lys Phe Met Ala
 195 200 205

Asp Thr Lys Ile Ala Asp Ser Lys Arg Ala Phe Glu Leu Gln Lys Ser
 210 215 220

Ala Phe Ser Glu Glu Val Asn Ile Lys Thr Ala Glu Ala Gln Leu Ala
 225 230 235 240

Tyr Glu Leu Gln Gly Ala Arg Glu Gln Gln Lys Ile Arg Gln Glu Glu
 245 250 255

Ile Glu Ile Glu Val Val Gln Arg Lys Lys Gln Ile Ala Val Glu Ala
 260 265 270

Gln Glu Ile Leu Arg Thr Asp Lys Glu Leu Ile Ala Thr Val Arg Arg
 275 280 285

Pro Ala Glu Ala Glu Ala His Arg Ile Gln Gln Ile Ala Glu Gly Glu
 290 295 300

Lys Val Lys Gln Val Leu Leu Ala Gln Ala Glu Ala Glu Lys Ile Arg
 305 310 315 320

Lys Ile Gly Glu Ala Glu Ala Ala Val Ile Glu Ala Met Gly Lys Ala
 325 330 335

Glu Ala Glu Arg Met Lys Leu Lys Ala Glu Ala Tyr Gln Lys Tyr Gly
 340 345 350

Asp Ala Ala Lys Met Ala Leu Val Leu Glu Ala Leu Pro Gln Ile Ala
 355 360 365

Ala Lys Ile Ala Ala Pro Leu Thr Lys Val Asp Glu Ile Val Val Leu
 370 375 380

Ser Gly Asp Asn Ser Lys Val Thr Ser Glu Val Asn Arg Leu Leu Ala
 385 390 395 400

Glu Leu Pro Ala Ser Val His Ala Leu Thr Gly Val Asp Leu Ser Lys
 Page 685

Ile Pro Leu Ile Lys Lys Ala Thr Gly Val Gln Val
420 425

<210> 510
<211> 617
<212> PRT
<213> Homo sapiens

<400> 510

Met Ser Trp Gly Thr Glu Leu Trp Asp Gln Phe Asp Asn Leu Glu Lys
1 5 10 15

His Thr Gln Trp Gly Ile Asp Ile Leu Glu Lys Tyr Ile Lys Phe Val
20 25 30

Lys Glu Arg Thr Glu Ile Glu Leu Ser Tyr Ala Lys Gln Leu Arg Asn
35 40 45

Leu Ser Lys Lys Tyr Gln Pro Lys Lys Asn Ser Lys Glu Glu Glu Glu
50 55 60

Tyr Lys Tyr Thr Ser Cys Lys Ala Phe Ile Ser Asn Leu Asn Glu Met
65 70 75 80

Asn Asp Tyr Ala Gly Gln His Glu Val Ile Ser Glu Asn Met Ala Ser
85 90 95

Gln Ile Ile Val Asp Leu Ala Arg Tyr Val Gln Glu Leu Lys Gln Glu
100 105 110

Arg Lys Ser Asn Phe His Asp Gly Arg Lys Ala Gln Gln His Ile Glu
115 120 125

Thr Cys Trp Lys Gln Leu Glu Ser Ser Lys Arg Arg Phe Glu Arg Asp
130 135 140

Cys Lys Glu Ala Asp Arg Ala Gln Gln Tyr Phe Glu Lys Met Asp Ala
145 150 155 160

Asp Ile Asn Val Thr Lys Ala Asp Val Glu Lys Ala Arg Gln Gln Ala
165 170 175

Gln Ile Arg His Gln Met Ala Glu Asp Ser Lys Ala Asp Tyr Ser Ser
180 185 190

Ile Leu Gln Lys Phe Asn His Glu Gln His Glu Tyr Tyr His Thr His
195 200 205

Ile Pro Asn Ile Phe Gln Lys Ile Gln Glu Met Glu Glu Arg Arg Ile
210 215 220

Val Arg Met Gly Glu Ser Met Lys Thr Tyr Ala Glu Val Asp Arg Gln
 225 230 235 240
 Val Ile Pro Ile Ile Gly Lys Cys Leu Asp Gly Ile Val Lys Ala Ala
 245 250 255
 Glu Ser Ile Asp Gln Lys Asn Asp Ser Gln Leu Val Ile Glu Ala Tyr
 260 265 270
 Lys Ser Gly Phe Glu Pro Pro Gly Asp Ile Glu Phe Glu Asp Tyr Thr
 275 280 285
 Gln Pro Met Lys Arg Thr Val Ser Asp Asn Ser Leu Ser Asn Ser Arg
 290 295 300
 Gly Glu Gly Lys Pro Asp Leu Lys Phe Gly Gly Lys Ser Lys Gly Lys
 305 310 315 320
 Leu Trp Pro Phe Ile Lys Lys Asn Lys Leu Met Ser Leu Leu Thr Ser
 325 330 335
 Pro His Gln Pro Pro Pro Pro Pro Ala Ser Ala Ser Pro Ser Ala
 340 345 350
 Val Pro Asn Gly Pro Gln Ser Pro Lys Gln Gln Lys Glu Pro Leu Ser
 355 360 365
 His Arg Phe Asn Glu Phe Met Thr Ser Lys Pro Lys Ile His Cys Phe
 370 375 380
 Arg Ser Leu Lys Arg Gly Leu Ser Leu Lys Leu Gly Ala Thr Pro Glu
 385 390 395 400
 Asp Phe Ser Asn Leu Pro Pro Glu Gln Arg Arg Lys Lys Leu Gln Gln
 405 410 415
 Lys Val Asp Glu Leu Asn Lys Glu Ile Gln Lys Glu Met Asp Gln Arg
 420 425 430
 Asp Ala Ile Thr Lys Met Lys Asp Val Tyr Leu Lys Asn Pro Gln Met
 435 440 445
 Gly Asp Pro Ala Ser Leu Asp His Lys Leu Ala Glu Val Ser Gln Asn
 450 455 460
 Ile Glu Lys Leu Arg Val Glu Thr Gln Lys Phe Glu Ala Trp Leu Ala
 465 470 475 480
 Glu Val Glu Gly Arg Leu Pro Ala Arg Ser Glu Gln Ala Arg Arg Gln
 485 490 495

Ser Gly Leu Tyr Asp Ser Gln Asn Pro Pro Thr Val Asn Asn Cys Ala
 500 505 510

Gln Asp Arg Glu Ser Pro Asp Gly Ser Tyr Thr Glu Glu Gln Ser Gln
 515 520 525

Glu Ser Glu Met Lys Val Leu Ala Thr Asp Phe Asp Asp Glu Phe Asp
 530 535 540

Asp Glu Glu Pro Leu Pro Ala Ile Gly Thr Cys Lys Ala Leu Tyr Thr
 545 550 555 560

Phe Glu Gly Gln Asn Glu Gly Thr Ile Ser Val Val Glu Gly Glu Thr
 565 570 575

Leu Tyr Val Ile Glu Glu Asp Lys Gly Asp Gly Trp Thr Arg Ile Arg
 580 585 590

Arg Asn Glu Asp Glu Glu Gly Tyr Val Pro Thr Ser Tyr Val Glu Val
 595 600 605

Cys Leu Asp Lys Asn Ala Lys Asp Ser
 610 615

<210> 511
 <211> 574
 <212> PRT
 <213> Homo sapiens

<400> 511

Met Ala Ser Asp Leu Glu Ser Ser Leu Thr Ser Ile Asp Trp Leu Pro
 1 5 10 15

Gln Leu Thr Leu Arg Ala Thr Ile Glu Lys Leu Gly Ser Ala Ser Gln
 20 25 30

Ala Gly Pro Pro Gly Ser Ser Arg Lys Cys Ser Pro Gly Ser Pro Thr
 35 40 45

Asp Pro Asn Ala Thr Leu Ser Lys Asp Glu Ala Ala Val His Gln Asp
 50 55 60

Gly Lys Pro Arg Tyr Ser Tyr Ala Thr Leu Ile Thr Tyr Ala Ile Asn
 65 70 75 80

Ser Ser Pro Ala Lys Lys Met Thr Leu Ser Glu Ile Tyr Arg Trp Ile
 85 90 95

Cys Asp Asn Phe Pro Tyr Tyr Lys Asn Ala Gly Ile Gly Trp Lys Asn
 100 105 110

Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe Arg Lys Val Pro
 115 120 125
 Arg Pro Arg Asp Asp Pro Gly Lys Gly Ser Tyr Trp Thr Ile Asp Thr
 130 135 140
 Cys Pro Asp Ile Ser Arg Lys Arg Arg His Pro Pro Asp Asp Asp Leu
 145 150 155 160
 Ser Gln Asp Ser Pro Glu Gln Glu Ala Ser Lys Ser Pro Arg Gly Gly
 165 170 175
 Val Ala Gly Ser Gly Glu Ala Ser Leu Pro Pro Glu Gly Asn Pro Gln
 180 185 190
 Met Ser Leu Gln Ser Pro Thr Ser Ile Ala Ser Tyr Ser Gln Gly Thr
 195 200 205
 Gly Ser Val Asp Gly Gly Ala Val Ala Ala Gly Ala Ser Gly Arg Glu
 210 215 220
 Ser Ala Glu Gly Pro Pro Pro Leu Tyr Asn Thr Asn His Asp Phe Lys
 225 230 235 240
 Phe Ser Tyr Ser Glu Ile Asn Phe Gln Asp Leu Ser Trp Ser Phe Arg
 245 250 255
 Asn Leu Tyr Lys Ser Met Leu Glu Lys Ser Ser Ser Ser Ser Gln His
 260 265 270
 Gly Phe Ser Ser Leu Leu Gly Asp Ile Pro Pro Ser Asn Asn Tyr Tyr
 275 280 285
 Met Tyr Gln Gln Gln Gln Pro Pro Pro Pro Gln Gln Gln Gln Gln
 290 295 300
 Gln Gln Pro Pro Gln Pro Pro Pro Gln Gln Ser Gln Pro Gln Gln Gln
 305 310 315 320
 Gln Ala Pro Ala Gln Gly Pro Ser Ala Val Gly Gly Ala Pro Pro Leu
 325 330 335
 His Thr Pro Ser Thr Asp Gly Cys Thr Pro Pro Gly Gly Lys Gln Ala
 340 345 350
 Gly Ala Glu Gly Tyr Gly Pro Pro Pro Val Met Ala Met His Pro Pro
 355 360 365
 Pro Leu Gln His Gly Gly Tyr His Pro His Gln His His Pro His Ser
 370 375 380

His Pro Ala Gln Gln Pro Pro Pro Pro Gln Pro Gln Ala Gln Gly Gln
385 390 395 400

Ala Pro Ile Asn Asn Thr Gly Phe Ala Phe Pro Ser Asp Trp Cys Ser
405 410 415

Asn Ile Asp Ser Leu Lys Glu Ser Phe Lys Met Val Asn Arg Leu Asn
420 425 430

Trp Ser Ser Ile Glu Gln Ser Gln Phe Ser Glu Leu Met Glu Ser Leu
435 440 445

Arg Gln Ala Glu Gln Lys Asn Trp Thr Leu Asp Gln His His Ile Ala
450 455 460

Asn Leu Cys Asp Ser Leu Asn His Phe Leu Thr Gln Thr Gly His Val
465 470 475 480

Pro Pro Gln Gly Gly Thr His Arg Pro Pro Ala Pro Ala Arg Ile Ala
485 490 495

Asp Ser Cys Ala Leu Thr Ser Gly Lys Gln Glu Ser Ala Met Ser Gln
500 505 510

Val Asn Ser Tyr Gly His Pro Gln Ala Pro His Leu Tyr Pro Gly Pro
515 520 525

Ser Pro Met Tyr Pro Ile Pro Thr Gln Asp Ser Ala Gly Tyr Asn Arg
530 535 540

Pro Ala His His Met Val Pro Arg Pro Ser Val Pro Pro Pro Gly Ala
545 550 555 560

Asn Glu Glu Ile Pro Asp Asp Phe Asp Trp Asp Leu Ile Thr
565 570

<210> 512
<211> 655
<212> PRT
<213> Homo sapiens

<400> 512

Met Ala Glu Ala Pro Gln Val Val Glu Ile Asp Pro Asp Phe Glu Pro
1 5 10 15

Leu Pro Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro Glu Phe
20 25 30

Ser Gln Ser Asn Ser Ala Thr Ser Ser Pro Ala Pro Ser Gly Ser Ala
35 40 45

Ala Ala Asn Pro Asp Ala Ala Ala Gly Leu Pro Ser Ala Ser Ala Ala
 50 55 60

Ala Val Ser Ala Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
 65 70 75 80

Glu Asp Phe Pro Gln Ala Pro Gly Ser Val Ala Ala Ala Val Ala Ala
 85 90 95

Ala Ala Ala Ala Ala Ala Thr Gly Gly Leu Cys Gly Asp Phe Gln Gly
 100 105 110

Pro Glu Ala Gly Cys Leu His Pro Ala Pro Pro Gln Pro Pro Pro Pro
 115 120 125

Gly Pro Leu Ser Gln His Pro Pro Val Pro Pro Ala Ala Ala Gly Pro
 130 135 140

Leu Ala Gly Gln Pro Arg Lys Ser Ser Ser Ser Arg Arg Asn Ala Trp
 145 150 155 160

Gly Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser
 165 170 175

Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys
 180 185 190

Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
 195 200 205

Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile
 210 215 220

Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn
 225 230 235 240

Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser
 245 250 255

Met Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Ser Arg Ala Ala Lys
 260 265 270

Lys Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Ala Gly Asp Ser Pro
 275 280 285

Gly Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn
 290 295 300

Asp Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn
 305 310 315 320

Ala Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp
 325 330 335

Asp Leu Gly Glu Gly Asp Val His Ser Met Val Tyr Pro Pro Ser Ala
 340 345 350

Ala Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro
 355 360 365

Glu Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro
 370 375 380

Thr Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Thr Met Met Gln
 385 390 395 400

Gln Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser
 405 410 415

Pro Ser Pro Asn Tyr Gln Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser
 420 425 430

Pro Leu Pro Gln Met Pro Ile Gln Thr Leu Gln Asp Asn Lys Ser Ser
 435 440 445

Tyr Gly Gly Met Ser Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu
 450 455 460

Leu Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Thr Pro Val
 465 470 475 480

Asp Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val
 485 490 495

Met Met Gly Pro Asn Ser Val Met Ser Thr Tyr Gly Ser Gln Ala Ser
 500 505 510

His Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala
 515 520 525

Gln Gln Thr Ser Ala Val Asn Gly Arg Pro Leu Pro His Thr Val Ser
 530 535 540

Thr Met Pro His Thr Ser Gly Met Asn Arg Leu Thr Gln Val Lys Thr
 545 550 555 560

Pro Val Gln Val Pro Leu Pro His Pro Met Gln Met Ser Ala Leu Gly
 565 570 575

Gly Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Leu
 580 585 590

Leu His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu
595 600 605

Arg Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Leu Met Asp
610 615 620

Gly Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser
625 630 635 640

Phe Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
645 650 655

<210> 513
<211> 673
<212> PRT
<213> Homo sapiens
<400> 513

Met Ala Glu Ala Pro Ala Ser Pro Ala Pro Leu Ser Pro Leu Glu Val
1 5 10 15

Glu Leu Asp Pro Glu Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr
20 25 30

Trp Pro Leu Gln Arg Pro Glu Leu Gln Ala Ser Pro Ala Lys Pro Ser
35 40 45

Gly Glu Thr Ala Ala Asp Ser Met Ile Pro Glu Glu Glu Asp Asp Glu
50 55 60

Asp Asp Glu Asp Gly Gly Gly Arg Ala Gly Ser Ala Met Ala Ile Gly
65 70 75 80

Gly Gly Gly Gly Ser Gly Thr Leu Gly Ser Gly Leu Leu Leu Glu Asp
85 90 95

Ser Ala Arg Val Leu Ala Pro Gly Gly Gln Asp Pro Gly Ser Gly Pro
100 105 110

Ala Thr Ala Ala Gly Gly Leu Ser Gly Gly Thr Gln Ala Leu Leu Gln
115 120 125

Pro Gln Gln Pro Leu Pro Pro Pro Gln Pro Gly Ala Ala Gly Gly Ser
130 135 140

Gly Gln Pro Arg Lys Cys Ser Ser Arg Arg Asn Ala Trp Gly Asn Leu
145 150 155 160

Ser Tyr Ala Asp Leu Ile Thr Arg Ala Ile Glu Ser Ser Pro Asp Lys
165 170 175

Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Arg Cys Val Pro
Page 693

180

185

190

Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn
 195 200 205

Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg Val Gln
 210 215 220

Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Ile Ile Asn Pro Asp Gly
 225 230 235 240

Gly Lys Ser Gly Lys Ala Pro Arg Arg Arg Ala Val Ser Met Asp Asn
 245 250 255

Ser Asn Lys Tyr Thr Lys Ser Arg Gly Arg Ala Ala Lys Lys Lys Ala
 260 265 270

Ala Leu Gln Thr Ala Pro Glu Ser Ala Asp Asp Ser Pro Ser Gln Leu
 275 280 285

Ser Lys Trp Pro Gly Ser Pro Thr Ser Arg Ser Ser Asp Glu Leu Asp
 290 295 300

Ala Trp Thr Asp Phe Arg Ser Arg Thr Asn Ser Asn Ala Ser Thr Val
 305 310 315 320

Ser Gly Arg Leu Ser Pro Ile Met Ala Ser Thr Glu Leu Asp Glu Val
 325 330 335

Gln Asp Asp Asp Ala Pro Leu Ser Pro Met Leu Tyr Ser Ser Ser Ala
 340 345 350

Ser Leu Ser Pro Ser Val Ser Lys Pro Cys Thr Val Glu Leu Pro Arg
 355 360 365

Leu Thr Asp Met Ala Gly Thr Met Asn Leu Asn Asp Gly Leu Thr Glu
 370 375 380

Asn Leu Met Asp Asp Leu Leu Asp Asn Ile Thr Leu Pro Pro Ser Gln
 385 390 395 400

Pro Ser Pro Thr Gly Gly Leu Met Gln Arg Ser Ser Ser Phe Pro Tyr
 405 410 415

Thr Thr Lys Gly Ser Gly Leu Gly Ser Pro Thr Ser Ser Phe Asn Ser
 420 425 430

Thr Val Phe Gly Pro Ser Ser Leu Asn Ser Leu Arg Gln Ser Pro Met
 435 440 445

Gln Thr Ile Gln Glu Asn Lys Pro Ala Thr Phe Ser Ser Met Ser His
 Page 694

450

455

460

Tyr Gly Asn Gln Thr Leu Gln Asp Leu Leu Thr Ser Asp Ser Leu Ser
 465 470 475 480

His Ser Asp Val Met Met Thr Gln Ser Asp Pro Leu Met Ser Gln Ala
 485 490 495

Ser Thr Ala Val Ser Ala Gln Asn Ser Arg Arg Asn Val Met Leu Arg
 500 505 510

Asn Asp Pro Met Met Ser Phe Ala Ala Gln Pro Asn Gln Gly Ser Leu
 515 520 525

Val Asn Gln Asn Leu Leu His His Gln His Gln Thr Gln Gly Ala Leu
 530 535 540

Gly Gly Ser Arg Ala Leu Ser Asn Ser Val Ser Asn Met Gly Leu Ser
 545 550 555 560

Glu Ser Ser Ser Leu Gly Ser Ala Lys His Gln Gln Gln Ser Pro Val
 565 570 575

Ser Gln Ser Met Gln Thr Leu Ser Asp Ser Leu Ser Gly Ser Ser Leu
 580 585 590

Tyr Ser Thr Ser Ala Asn Leu Pro Val Met Gly His Glu Lys Phe Pro
 595 600 605

Ser Asp Leu Asp Leu Asp Met Phe Asn Gly Ser Leu Glu Cys Asp Met
 610 615 620

Glu Ser Ile Ile Arg Ser Glu Leu Met Asp Ala Asp Gly Leu Asp Phe
 625 630 635 640

Asn Phe Asp Ser Leu Ile Ser Thr Gln Asn Val Val Gly Leu Asn Val
 645 650 655

Gly Asn Phe Thr Gly Ala Lys Gln Ala Ser Ser Gln Ser Trp Val Pro
 660 665 670

Gly

<210> 514
 <211> 3013
 <212> PRT
 <213> Homo sapiens

<400> 514

Met Ala Ser Gln Gln Asp Ser Gly Phe Phe Glu Ile Ser Ile Lys Tyr
 1 5 10 15

Leu Leu Lys Ser Trp Ser Asn Thr Ser Pro Val Gly Asn Gly Tyr Ile
 20 25 30
 Lys Pro Pro Val Pro Pro Ala Ser Gly Thr His Arg Glu Lys Gly Pro
 35 40 45
 Pro Thr Met Leu Pro Ile Asn Val Asp Pro Asp Ser Lys Pro Gly Glu
 50 55 60
 Tyr Val Leu Lys Ser Leu Phe Val Asn Phe Thr Thr Gln Ala Glu Arg
 65 70 75 80
 Lys Ile Arg Ile Ile Met Ala Glu Pro Leu Glu Lys Pro Leu Thr Lys
 85 90 95
 Ser Leu Gln Arg Gly Glu Asp Pro Gln Phe Asp Gln Val Ile Ser Ser
 100 105 110
 Met Ser Ser Leu Ser Glu Tyr Cys Leu Pro Ser Ile Leu Arg Thr Leu
 115 120 125
 Phe Asp Trp Tyr Lys Arg Gln Asn Gly Ile Glu Asp Glu Ser His Glu
 130 135 140
 Tyr Arg Pro Arg Thr Ser Asn Lys Ser Lys Ser Asp Glu Gln Gln Arg
 145 150 155 160
 Asp Tyr Leu Met Glu Arg Arg Asp Leu Ala Ile Asp Phe Ile Phe Ser
 165 170 175
 Leu Val Leu Ile Glu Val Leu Lys Gln Ile Pro Leu His Pro Val Ile
 180 185 190
 Asp Ser Leu Ile His Asp Val Ile Asn Leu Ala Phe Lys His Phe Lys
 195 200 205
 Tyr Lys Glu Gly Tyr Leu Gly Pro Asn Thr Gly Asn Met His Ile Val
 210 215 220
 Ala Asp Leu Tyr Ala Glu Val Ile Gly Val Leu Ala Gln Ala Lys Phe
 225 230 235 240
 Pro Ala Val Lys Lys Lys Phe Met Ala Glu Leu Lys Glu Leu Arg His
 245 250 255
 Lys Glu Gln Asn Pro Tyr Val Val Gln Ser Ile Ile Ser Leu Ile Met
 260 265 270
 Gly Met Lys Phe Phe Arg Ile Lys Met Tyr Pro Val Glu Asp Phe Glu
 275 280 285

Ala Ser Leu Gln Phe Met Gln Glu Cys Ala His Tyr Phe Leu Glu Val
 290 295 300
 Lys Asp Lys Asp Ile Lys His Ala Leu Ala Gly Leu Phe Val Glu Ile
 305 310 315 320
 Leu Val Pro Val Ala Ala Ala Val Lys Asn Glu Val Asn Val Pro Cys
 325 330 335
 Leu Arg Asn Phe Val Glu Ser Leu Tyr Asp Thr Thr Leu Glu Leu Ser
 340 345 350
 Ser Arg Lys Lys His Ser Leu Ala Leu Tyr Pro Leu Val Thr Cys Leu
 355 360 365
 Leu Cys Val Ser Gln Lys Gln Leu Phe Leu Asn Arg Trp His Ile Phe
 370 375 380
 Leu Asn Asn Cys Leu Ser Asn Leu Lys Asn Lys Asp Pro Lys Met Ala
 385 390 395 400
 Arg Val Ala Leu Glu Ser Leu Tyr Arg Leu Leu Trp Val Tyr Met Ile
 405 410 415
 Arg Ile Lys Cys Glu Ser Asn Thr Ala Thr Gln Ser Arg Leu Ile Thr
 420 425 430
 Ile Ile Thr Thr Leu Phe Pro Lys Gly Ser Arg Gly Val Val Pro Arg
 435 440 445
 Asp Met Pro Leu Asn Ile Phe Val Lys Ile Ile Gln Phe Ile Ala Gln
 450 455 460
 Glu Arg Leu Asp Phe Ala Met Lys Glu Ile Ile Phe Asp Phe Leu Cys
 465 470 475 480
 Val Gly Lys Pro Ala Lys Ala Phe Ser Leu Asn Pro Glu Arg Met Asn
 485 490 495
 Ile Gly Leu Arg Ala Phe Leu Val Ile Ala Asp Ser Leu Gln Gln Lys
 500 505 510
 Asp Gly Glu Pro Pro Met Pro Val Thr Gly Ala Val Leu Pro Ser Gly
 515 520 525
 Asn Thr Leu Arg Val Lys Lys Thr Tyr Leu Ser Lys Thr Leu Thr Glu
 530 535 540
 Glu Glu Ala Lys Met Ile Gly Met Ser Leu Tyr Tyr Ser Gln Val Arg
 545 550 555 560

Lys Ala Val Asp Asn Ile Leu Arg His Leu Asp Lys Glu Val Gly Arg
 565 570 575
 Cys Met Met Leu Thr Asn Val Gln Met Leu Asn Lys Glu Pro Glu Asp
 580 585 590
 Met Ile Thr Gly Glu Arg Lys Pro Lys Ile Asp Leu Phe Arg Thr Cys
 595 600 605
 Val Ala Ala Ile Pro Arg Leu Leu Pro Asp Gly Met Ser Lys Leu Glu
 610 615 620
 Leu Ile Asp Leu Leu Ala Arg Leu Ser Ile His Met Asp Asp Glu Leu
 625 630 635 640
 Arg His Ile Ala Gln Asn Ser Leu Gln Gly Leu Leu Val Asp Phe Ser
 645 650 655
 Asp Trp Arg Glu Asp Val Leu Phe Gly Phe Thr Asn Phe Leu Leu Arg
 660 665 670
 Glu Val Asn Asp Met His His Thr Leu Leu Asp Ser Ser Leu Lys Leu
 675 680 685
 Leu Leu Gln Leu Leu Thr Gln Trp Lys Leu Val Ile Gln Thr Gln Gly
 690 695 700
 Lys Val Tyr Glu Gln Ala Asn Lys Ile Arg Asn Ser Glu Leu Ile Ala
 705 710 715 720
 Asn Gly Ser Ser His Arg Ile Gln Ser Glu Arg Gly Pro His Cys Ser
 725 730 735
 Val Leu His Ala Val Glu Gly Phe Ala Leu Val Leu Leu Cys Ser Phe
 740 745 750
 Gln Val Ala Thr Arg Lys Leu Ser Val Leu Ile Leu Lys Glu Ile Arg
 755 760 765
 Ala Leu Phe Ile Ala Leu Gly Gln Pro Glu Asp Asp Asp Arg Pro Met
 770 775 780
 Ile Asp Val Met Asp Gln Leu Ser Ser Ser Ile Leu Glu Ser Phe Ile
 785 790 795 800
 His Val Ala Val Ser Asp Ser Ala Thr Leu Pro Leu Thr His Asn Val
 805 810 815
 Asp Leu Gln Trp Leu Val Glu Trp Asn Ala Val Leu Val Asn Ser His
 820 825 830

Tyr Asp Val Lys Ser Pro Ser His Val Trp Ile Phe Ala Gln Ser Val
 835 840 845
 Lys Asp Pro Trp Val Leu Cys Leu Phe Ser Phe Leu Arg Gln Glu Asn
 850 855 860
 Leu Pro Lys His Cys Pro Thr Ala Leu Ser Tyr Ala Trp Pro Tyr Ala
 865 870 875 880
 Phe Thr Arg Leu Gln Ser Val Met Pro Leu Val Asp Pro Asn Ser Pro
 885 890 895
 Ile Asn Ala Lys Lys Thr Ser Thr Ala Gly Ser Gly Asp Asn Tyr Val
 900 905 910
 Thr Leu Trp Arg Asn Tyr Leu Ile Leu Cys Phe Gly Val Ala Lys Pro
 915 920 925
 Ser Ile Met Ser Pro Gly His Leu Arg Ala Ser Thr Pro Glu Ile Met
 930 935 940
 Ala Thr Thr Pro Asp Gly Thr Val Ser Tyr Asp Asn Lys Ala Ile Gly
 945 950 955 960
 Thr Pro Ser Val Gly Val Leu Leu Lys Gln Leu Val Pro Leu Met Arg
 965 970 975
 Leu Glu Ser Ile Glu Ile Thr Glu Ser Leu Val Leu Gly Phe Gly Arg
 980 985 990
 Thr Asn Ser Leu Val Phe Arg Glu Leu Val Glu Glu Leu His Pro Leu
 995 1000 1005
 Met Lys Glu Ala Leu Glu Arg Arg Pro Glu Asn Lys Lys Arg Arg
 1010 1015 1020
 Glu Arg Arg Asp Leu Leu Arg Leu Gln Leu Leu Arg Ile Phe Glu
 1025 1030 1035
 Leu Leu Ala Asp Ala Gly Val Ile Ser Asp Ser Thr Asn Gly Ala
 1040 1045 1050
 Leu Glu Arg Asp Thr Leu Ala Leu Gly Ala Leu Phe Leu Glu Tyr
 1055 1060 1065
 Val Asp Leu Thr Arg Met Leu Leu Glu Ala Glu Asn Asp Lys Glu
 1070 1075 1080
 Val Glu Ile Leu Lys Asp Ile Arg Ala His Phe Ser Ala Met Val
 1085 1090 1095

Ala	Asn 1100	Leu	Ile	Gln	Cys	Val 1105	Pro	Val	His	His	Arg 1110	Arg	Phe	Leu
Phe	Pro 1115	Gln	Gln	Ser	Leu	Arg 1120	His	His	Leu	Phe	Ile 1125	Leu	Phe	Ser
Gln	Trp 1130	Ala	Gly	Pro	Phe	Ser 1135	Ile	Met	Phe	Thr	Pro 1140	Leu	Asp	Arg
Tyr	Ser 1145	Asp	Arg	Asn	His	Gln 1150	Ile	Thr	Arg	Tyr	Gln 1155	Tyr	Cys	Ala
Leu	Lys 1160	Ala	Met	Ser	Ala	Val 1165	Leu	Cys	Cys	Gly	Pro 1170	Val	Phe	Asp
Asn	Val 1175	Gly	Leu	Ser	Pro	Asp 1180	Gly	Tyr	Leu	Tyr	Lys 1185	Trp	Leu	Asp
Asn	Ile 1190	Leu	Ala	Cys	Gln	Asp 1195	Leu	Arg	Val	His	Gln 1200	Leu	Gly	Cys
Glu	Val 1205	Val	Val	Leu	Leu	Leu 1210	Glu	Leu	Asn	Pro	Asp 1215	Gln	Ile	Asn
Leu	Phe 1220	Asn	Trp	Ala	Ile	Asp 1225	Arg	Cys	Tyr	Thr	Gly 1230	Ser	Tyr	Gln
Leu	Ala 1235	Ser	Gly	Cys	Phe	Lys 1240	Ala	Ile	Ala	Thr	Val 1245	Cys	Gly	Ser
Arg	Asn 1250	Tyr	Pro	Phe	Asp	Ile 1255	Val	Thr	Leu	Leu	Asn 1260	Leu	Val	Leu
Phe	Lys 1265	Ala	Ser	Asp	Thr	Asn 1270	Arg	Glu	Ile	Tyr	Glu 1275	Ile	Ser	Met
Gln	Leu 1280	Met	Gln	Ile	Leu	Glu 1285	Ala	Lys	Leu	Phe	Val 1290	Tyr	Ser	Lys
Lys	Val 1295	Ala	Glu	Gln	Arg	Pro 1300	Gly	Ser	Ile	Leu	Tyr 1305	Gly	Thr	His
Gly	Pro 1310	Leu	Pro	Pro	Leu	Tyr 1315	Ser	Val	Ser	Leu	Ala 1320	Leu	Leu	Ser
Cys	Glu 1325	Leu	Ala	Arg	Met	Tyr 1330	Pro	Glu	Leu	Thr	Leu 1335	Pro	Leu	Phe
Ser	Glu 1340	Val	Ser	Gln	Arg	Phe 1345	Pro	Thr	Thr	His	Pro 1350	Asn	Gly	Arg

Gln	Ile	Met	Leu	Thr	Tyr	Leu	Leu	Pro	Trp	Leu	His	Asn	Ile	Glu
	1355					1360					1365			
Leu	Val	Asp	Ser	Arg	Leu	Leu	Leu	Pro	Gly	Ser	Ser	Pro	Ser	Ser
	1370					1375					1380			
Pro	Glu	Asp	Glu	Val	Lys	Asp	Arg	Glu	Gly	Asp	Val	Thr	Ala	Ser
	1385					1390					1395			
His	Gly	Leu	Arg	Gly	Asn	Gly	Trp	Gly	Ser	Pro	Glu	Ala	Thr	Ser
	1400					1405					1410			
Leu	Val	Leu	Asn	Asn	Leu	Met	Tyr	Met	Thr	Ala	Lys	Tyr	Gly	Asp
	1415					1420					1425			
Glu	Val	Pro	Gly	Pro	Glu	Met	Glu	Asn	Ala	Trp	Asn	Ala	Leu	Ala
	1430					1435					1440			
Asn	Asn	Glu	Lys	Trp	Ser	Asn	Asn	Leu	Arg	Ile	Thr	Leu	Gln	Phe
	1445					1450					1455			
Leu	Ile	Ser	Leu	Cys	Gly	Val	Ser	Ser	Asp	Thr	Val	Leu	Leu	Pro
	1460					1465					1470			
Tyr	Ile	Lys	Lys	Val	Ala	Ile	Tyr	Leu	Cys	Arg	Asn	Asn	Thr	Ile
	1475					1480					1485			
Gln	Thr	Met	Glu	Glu	Leu	Leu	Phe	Glu	Leu	Gln	Gln	Thr	Glu	Pro
	1490					1495					1500			
Val	Asn	Pro	Ile	Val	Gln	His	Cys	Asp	Asn	Pro	Pro	Phe	Tyr	Arg
	1505					1510					1515			
Phe	Thr	Ala	Ser	Ser	Lys	Ala	Ser	Ala	Ala	Ala	Ser	Gly	Thr	Thr
	1520					1525					1530			
Ser	Ser	Ser	Asn	Thr	Val	Val	Ala	Gly	Gln	Glu	Asn	Phe	Pro	Asp
	1535					1540					1545			
Ala	Glu	Glu	Asn	Lys	Ile	Leu	Lys	Glu	Ser	Asp	Glu	Arg	Phe	Ser
	1550					1555					1560			
Asn	Val	Ile	Arg	Ala	His	Thr	Arg	Leu	Glu	Ser	Arg	Tyr	Ser	Asn
	1565					1570					1575			
Ser	Ser	Gly	Gly	Ser	Tyr	Asp	Glu	Asp	Lys	Asn	Asp	Pro	Ile	Ser
	1580					1585					1590			
Pro	Tyr	Thr	Gly	Trp	Leu	Leu	Thr	Ile	Thr	Glu	Thr	Lys	Gln	Pro
	1595					1600					1605			

Gln	Pro	Leu	Pro	Met	Pro	Cys	Thr	Gly	Gly	Cys	Trp	Ala	Pro	Leu
1610						1615					1620			
Val	Asp	Tyr	Leu	Pro	Glu	Thr	Ile	Thr	Pro	Arg	Gly	Pro	Leu	His
1625						1630					1635			
Arg	Cys	Asn	Ile	Ala	Val	Ile	Phe	Met	Thr	Glu	Met	Val	Val	Asp
1640						1645					1650			
His	Ser	Val	Arg	Glu	Asp	Trp	Ala	Leu	His	Leu	Pro	Leu	Leu	Leu
1655						1660					1665			
His	Ala	Val	Phe	Leu	Gly	Leu	Asp	His	Tyr	Arg	Pro	Glu	Val	Phe
1670						1675					1680			
Glu	His	Ser	Lys	Lys	Leu	Leu	Leu	His	Leu	Leu	Ile	Ala	Leu	Ser
1685						1690					1695			
Cys	Asn	Ser	Asn	Phe	His	Ser	Ile	Ala	Ser	Val	Leu	Leu	Gln	Thr
1700						1705					1710			
Arg	Glu	Met	Gly	Glu	Ala	Lys	Thr	Leu	Thr	Val	Gln	Pro	Ala	Tyr
1715						1720					1725			
Gln	Pro	Glu	Tyr	Leu	Tyr	Thr	Gly	Gly	Phe	Asp	Phe	Leu	Arg	Glu
1730						1735					1740			
Asp	Gln	Ser	Ser	Pro	Val	Pro	Asp	Ser	Gly	Leu	Ser	Ser	Ser	Ser
1745						1750					1755			
Thr	Ser	Ser	Ser	Ile	Ser	Leu	Gly	Gly	Ser	Ser	Gly	Asn	Leu	Pro
1760						1765					1770			
Gln	Met	Thr	Gln	Glu	Val	Glu	Asp	Val	Asp	Thr	Ala	Ala	Glu	Thr
1775						1780					1785			
Asp	Glu	Lys	Ala	Asn	Lys	Leu	Ile	Glu	Phe	Leu	Thr	Thr	Arg	Ala
1790						1795					1800			
Phe	Gly	Pro	Leu	Trp	Cys	His	Glu	Asp	Ile	Thr	Pro	Lys	Asn	Gln
1805						1810					1815			
Asn	Ser	Lys	Ser	Ala	Glu	Gln	Leu	Thr	Asn	Phe	Leu	Arg	His	Val
1820						1825					1830			
Val	Ser	Val	Phe	Lys	Asp	Ser	Lys	Ser	Gly	Phe	His	Leu	Glu	His
1835						1840					1845			
Gln	Leu	Ser	Glu	Val	Ala	Leu	Gln	Thr	Ala	Leu	Ala	Ser	Ser	Ser
1850						1855					1860			

Arg	His	Tyr	Ala	Gly	Arg	Ser	Phe	Gln	Ile	Phe	Arg	Ala	Leu	Lys
	1865					1870					1875			
Gln	Pro	Leu	Ser	Ala	His	Ala	Leu	Ser	Asp	Leu	Leu	Ser	Arg	Leu
	1880					1885					1890			
Val	Glu	Val	Ile	Gly	Glu	His	Gly	Asp	Glu	Ile	Gln	Gly	Tyr	Val
	1895					1900					1905			
Met	Glu	Ala	Leu	Leu	Thr	Leu	Glu	Ala	Ala	Val	Asp	Asn	Leu	Ser
	1910					1915					1920			
Asp	Cys	Leu	Lys	Asn	Ser	Asp	Leu	Leu	Thr	Val	Leu	Ser	Arg	Ser
	1925					1930					1935			
Ser	Ser	Pro	Asp	Leu	Ser	Ser	Ser	Ser	Lys	Leu	Thr	Ala	Ser	Arg
	1940					1945					1950			
Lys	Ser	Thr	Gly	Gln	Leu	Asn	Met	Asn	Pro	Gly	Thr	Thr	Ser	Gly
	1955					1960					1965			
Asn	Thr	Ala	Thr	Ala	Glu	Arg	Ser	Arg	His	Gln	Arg	Ser	Phe	Ser
	1970					1975					1980			
Val	Pro	Lys	Lys	Phe	Gly	Val	Ile	Asp	Arg	Ser	Ser	Asp	Pro	Pro
	1985					1990					1995			
Arg	Ser	Ala	Thr	Leu	Asp	Arg	Ile	Gln	Ala	Cys	Thr	Gln	Gln	Gly
	2000					2005					2010			
Leu	Ser	Ser	Lys	Thr	Arg	Ser	Ser	Ser	Ser	Leu	Lys	Asp	Ser	Leu
	2015					2020					2025			
Thr	Asp	Pro	Ser	His	Ile	Asn	His	Pro	Thr	Asn	Leu	Leu	Ala	Thr
	2030					2035					2040			
Ile	Phe	Trp	Val	Thr	Val	Ala	Leu	Met	Glu	Ser	Asp	Phe	Glu	Phe
	2045					2050					2055			
Glu	Tyr	Leu	Met	Ala	Leu	Arg	Leu	Leu	Ser	Arg	Leu	Leu	Ala	His
	2060					2065					2070			
Met	Pro	Leu	Asp	Lys	Ala	Glu	Asn	Arg	Glu	Lys	Leu	Glu	Lys	Leu
	2075					2080					2085			
Gln	Ala	Gln	Leu	Lys	Trp	Ala	Asp	Phe	Ser	Gly	Leu	Gln	Gln	Leu
	2090					2095					2100			
Leu	Leu	Lys	Gly	Phe	Thr	Ser	Leu	Thr	Thr	Thr	Asp	Leu	Thr	Leu
	2105					2110					2115			

Gln	Leu	Phe	Ser	Leu	Leu	Thr	Pro	Val	Ser	Lys	Ile	Ser	Met	Val
	2120					2125					2130			
Asp	Ala	Ser	His	Ala	Ile	Gly	Phe	Pro	Leu	Asn	Val	Leu	Cys	Leu
	2135					2140					2145			
Leu	Pro	Gln	Leu	Ile	Gln	His	Phe	Glu	Asn	Pro	Asn	Gln	Phe	Cys
	2150					2155					2160			
Lys	Asp	Ile	Ala	Glu	Arg	Ile	Ala	Gln	Val	Cys	Leu	Glu	Glu	Lys
	2165					2170					2175			
Asn	Pro	Lys	Leu	Ser	Asn	Leu	Ala	His	Val	Met	Thr	Leu	Tyr	Lys
	2180					2185					2190			
Thr	His	Ser	Tyr	Thr	Arg	Asp	Cys	Ala	Thr	Trp	Val	Asn	Val	Val
	2195					2200					2205			
Cys	Arg	Tyr	Leu	His	Glu	Ala	Tyr	Ala	Asp	Ile	Thr	Leu	Asn	Met
	2210					2215					2220			
Val	Thr	Tyr	Leu	Ala	Glu	Leu	Leu	Glu	Lys	Gly	Leu	Pro	Ser	Val
	2225					2230					2235			
Gln	Gln	Pro	Leu	Leu	Gln	Val	Ile	Tyr	Ser	Leu	Leu	Ser	Tyr	Met
	2240					2245					2250			
Asp	Leu	Ser	Val	Val	Pro	Val	Lys	Gln	Phe	Asn	Val	Glu	Val	Leu
	2255					2260					2265			
Lys	Thr	Ile	Glu	Lys	Tyr	Val	Gln	Ser	Val	His	Trp	Arg	Glu	Ala
	2270					2275					2280			
Leu	Asn	Ile	Leu	Lys	Leu	Val	Val	Ser	Arg	Ser	Ala	Ser	Leu	Val
	2285					2290					2295			
Leu	Pro	Ser	Tyr	Gln	His	Ser	Asp	Leu	Ser	Lys	Ile	Glu	Ile	His
	2300					2305					2310			
Arg	Val	Trp	Thr	Ser	Ala	Ser	Lys	Glu	Leu	Pro	Gly	Lys	Thr	Leu
	2315					2320					2325			
Asp	Phe	His	Phe	Asp	Ile	Ser	Glu	Thr	Pro	Ile	Ile	Gly	Arg	Arg
	2330					2335					2340			
Tyr	Asp	Glu	Leu	Gln	Asn	Ser	Ser	Gly	Arg	Asp	Gly	Lys	Pro	Arg
	2345					2350					2355			
Ala	Met	Ala	Val	Thr	Arg	Ser	Thr	Ser	Ser	Thr	Ser	Ser	Gly	Ser
	2360					2365					2370			

Asn	Ser	Asn	Val	Leu	Val	Pro	Val	Ser	Trp	Lys	Arg	Pro	Gln	Tyr
	2375					2380					2385			
Ser	Gln	Lys	Arg	Thr	Lys	Glu	Lys	Leu	Val	His	Val	Leu	Ser	Leu
	2390					2395					2400			
Cys	Gly	Gln	Glu	Val	Gly	Leu	Ser	Lys	Asn	Pro	Ser	Val	Ile	Phe
	2405					2410					2415			
Ser	Ser	Cys	Gly	Asp	Leu	Asp	Leu	Leu	Glu	His	Gln	Thr	Ser	Leu
	2420					2425					2430			
Val	Ser	Ser	Glu	Asp	Gly	Ala	Arg	Glu	Gln	Glu	Asn	Met	Asp	Asp
	2435					2440					2445			
Thr	Asn	Ser	Glu	Gln	Gln	Phe	Arg	Val	Phe	Arg	Asp	Phe	Asp	Phe
	2450					2455					2460			
Leu	Asp	Val	Glu	Leu	Glu	Asp	Gly	Glu	Gly	Glu	Ser	Met	Asp	Asn
	2465					2470					2475			
Phe	Asn	Trp	Gly	Val	Arg	Arg	Arg	Ser	Leu	Asp	Ser	Leu	Asp	Lys
	2480					2485					2490			
Cys	Asp	Met	Gln	Ile	Leu	Glu	Glu	Arg	Gln	Leu	Ser	Gly	Ser	Thr
	2495					2500					2505			
Pro	Ser	Leu	Asn	Lys	Met	His	His	Glu	Asp	Ser	Asp	Glu	Ser	Ser
	2510					2515					2520			
Glu	Glu	Glu	Asp	Leu	Thr	Ala	Ser	Gln	Ile	Leu	Glu	His	Ser	Asp
	2525					2530					2535			
Leu	Ile	Met	Thr	Leu	Ser	Pro	Ser	Glu	Glu	Thr	Asn	Pro	Met	Glu
	2540					2545					2550			
Leu	Leu	Thr	Thr	Ala	Cys	Asp	Ser	Thr	Pro	Ala	Glu	Pro	His	Ser
	2555					2560					2565			
Phe	Asn	Thr	Arg	Met	Ser	Ser	Phe	Asp	Ala	Ser	Leu	Pro	Asp	Met
	2570					2575					2580			
Asn	Asn	Leu	Gln	Ile	Ser	Glu	Gly	Ser	Lys	Ala	Glu	Ala	Val	Arg
	2585					2590					2595			
Glu	Glu	Glu	Asp	Thr	Thr	Val	His	Glu	Asp	Asp	Leu	Ser	Ser	Ser
	2600					2605					2610			
Ile	Asn	Glu	Leu	Pro	Ala	Ala	Phe	Glu	Cys	Ser	Asp	Ser	Phe	Ser
	2615					2620					2625			

Leu	Asp	Met	Thr	Glu	Gly	Glu	Glu	Lys	Gly	Asn	Arg	Ala	Leu	Asp
	2630					2635					2640			
Gln	Phe	Thr	Leu	Ala	Ser	Phe	Gly	Glu	Gly	Asp	Arg	Gly	Val	Ser
	2645					2650					2655			
Pro	Pro	Pro	Ser	Pro	Phe	Phe	Ser	Ala	Ile	Leu	Ala	Ala	Phe	Gln
	2660					2665					2670			
Pro	Ala	Ala	Cys	Asp	Asp	Ala	Glu	Glu	Ala	Trp	Arg	Ser	His	Ile
	2675					2680					2685			
Asn	Gln	Leu	Met	Cys	Asp	Ser	Asp	Gly	Ser	Cys	Ala	Val	Tyr	Thr
	2690					2695					2700			
Phe	His	Val	Phe	Ser	Ser	Leu	Phe	Lys	Asn	Ile	Gln	Lys	Arg	Phe
	2705					2710					2715			
Cys	Phe	Leu	Thr	Cys	Asp	Ala	Ala	Ser	Tyr	Leu	Gly	Asp	Asn	Leu
	2720					2725					2730			
Arg	Gly	Ile	Gly	Ser	Lys	Phe	Val	Ser	Ser	Ser	Gln	Met	Leu	Thr
	2735					2740					2745			
Ser	Cys	Ser	Glu	Cys	Pro	Thr	Leu	Phe	Val	Asp	Ala	Glu	Thr	Leu
	2750					2755					2760			
Leu	Ser	Cys	Gly	Leu	Leu	Asp	Lys	Leu	Lys	Phe	Ser	Val	Leu	Glu
	2765					2770					2775			
Leu	Gln	Glu	Tyr	Leu	Asp	Thr	Tyr	Asn	Asn	Arg	Lys	Glu	Ala	Thr
	2780					2785					2790			
Leu	Ser	Trp	Leu	Ala	Asn	Cys	Lys	Ala	Thr	Phe	Ala	Gly	Gly	Ser
	2795					2800					2805			
Arg	Asp	Gly	Val	Ile	Thr	Cys	Gln	Pro	Gly	Asp	Ser	Glu	Glu	Lys
	2810					2815					2820			
Gln	Leu	Glu	Leu	Cys	Gln	Arg	Leu	Tyr	Lys	Leu	His	Phe	Gln	Leu
	2825					2830					2835			
Leu	Leu	Leu	Phe	Gln	Ser	Tyr	Cys	Lys	Leu	Ile	Gly	Gln	Val	His
	2840					2845					2850			
Glu	Val	Ser	Ser	Met	Pro	Glu	Leu	Leu	Asn	Met	Ser	Arg	Glu	Leu
	2855					2860					2865			
Ser	Asp	Leu	Lys	Lys	His	Leu	Lys	Glu	Ala	Ser	Ala	Val	Ile	Ala
	2870					2875					2880			

Ala Asp Pro Leu Tyr Ser Asp Gly Ala Trp Ser Glu Pro Thr Phe
2885 2890 2895

Thr Ser Thr Glu Ala Ala Ile Gln Ser Met Leu Glu Cys Leu Lys
2900 2905 2910

Asn Asn Glu Leu Gly Lys Ala Leu Arg Gln Ile Arg Glu Cys Arg
2915 2920 2925

Ser Leu Trp Pro Asn Asp Ile Phe Gly Ser Ser Ser Asp Asp Glu
2930 2935 2940

Val Gln Thr Leu Leu Asn Ile Tyr Phe Arg His Gln Thr Leu Gly
2945 2950 2955

Gln Thr Gly Thr Tyr Ala Leu Val Gly Ser Asn Gln Ser Leu Thr
2960 2965 2970

Glu Ile Cys Thr Lys Leu Met Glu Leu Asn Met Glu Ile Arg Asp
2975 2980 2985

Met Ile Arg Arg Ala Gln Ser Tyr Arg Val Leu Thr Thr Phe Leu
2990 2995 3000

Pro Asp Ser Ser Val Ser Gly Thr Ser Leu
3005 3010

<210> 515
<211> 829
<212> PRT
<213> Homo sapiens

<400> 515

Met Ala Lys Tyr Asn Thr Gly Gly Asn Pro Thr Glu Asp Val Ser Val
1 5 10 15

Asn Ser Arg Pro Phe Arg Val Thr Gly Pro Asn Ser Ser Ser Gly Ile
20 25 30

Gln Ala Arg Lys Asn Leu Phe Asn Asn Gln Gly Asn Ala Ser Pro Pro
35 40 45

Ala Gly Pro Ser Asn Val Pro Lys Phe Gly Ser Pro Lys Pro Pro Val
50 55 60

Ala Val Lys Pro Ser Ser Glu Glu Lys Pro Asp Lys Glu Pro Lys Pro
65 70 75 80

Pro Phe Leu Lys Pro Thr Gly Ala Gly Gln Arg Phe Gly Thr Pro Ala
85 90 95

Ser Leu Thr Thr Arg Asp Pro Glu Ala Lys Val Gly Phe Leu Lys Pro
 100 105 110
 Val Gly Pro Lys Pro Ile Asn Leu Pro Lys Glu Asp Ser Lys Pro Thr
 115 120 125
 Phe Pro Trp Pro Pro Gly Asn Lys Pro Ser Leu His Ser Val Asn Gln
 130 135 140
 Asp His Asp Leu Lys Pro Leu Gly Pro Lys Ser Gly Pro Thr Pro Pro
 145 150 155 160
 Thr Ser Glu Asn Glu Gln Lys Gln Ala Phe Pro Lys Leu Thr Gly Val
 165 170 175
 Lys Gly Lys Phe Met Ser Ala Ser Gln Asp Leu Glu Pro Lys Pro Leu
 180 185 190
 Phe Pro Lys Pro Ala Phe Gly Gln Lys Pro Pro Leu Ser Thr Glu Asn
 195 200 205
 Ser His Glu Asp Glu Ser Pro Met Lys Asn Val Ser Ser Ser Lys Gly
 210 215 220
 Ser Pro Ala Pro Leu Gly Val Arg Ser Lys Ser Gly Pro Leu Lys Pro
 225 230 235 240
 Ala Arg Glu Asp Ser Glu Asn Lys Asp His Ala Gly Glu Ile Ser Ser
 245 250 255
 Leu Pro Phe Pro Gly Val Val Leu Lys Pro Ala Ala Ser Arg Gly Gly
 260 265 270
 Pro Gly Leu Ser Lys Asn Gly Glu Glu Lys Lys Glu Asp Arg Lys Ile
 275 280 285
 Asp Ala Ala Lys Asn Thr Phe Gln Ser Lys Ile Asn Gln Glu Glu Leu
 290 295 300
 Ala Ser Gly Thr Pro Pro Ala Arg Phe Pro Lys Ala Pro Ser Lys Leu
 305 310 315 320
 Thr Val Gly Gly Pro Trp Gly Gln Ser Gln Glu Lys Glu Lys Gly Asp
 325 330 335
 Lys Asn Ser Ala Thr Pro Lys Gln Lys Pro Leu Pro Pro Leu Phe Thr
 340 345 350
 Leu Gly Pro Pro Pro Pro Lys Pro Asn Arg Pro Pro Asn Val Asp Leu
 355 360 365

Thr Lys Phe His Lys Thr Ser Ser Gly Asn Ser Thr Ser Lys Gly Gln
 370 375 380
 Thr Ser Tyr Ser Thr Thr Ser Leu Pro Pro Pro Pro Pro Ser His Pro
 385 390 395 400
 Ala Ser Gln Pro Pro Leu Pro Ala Ser His Pro Ser Gln Pro Pro Val
 405 410 415
 Pro Ser Leu Pro Pro Arg Asn Ile Lys Pro Pro Phe Asp Leu Lys Ser
 420 425 430
 Pro Val Asn Glu Asp Asn Gln Asp Gly Val Thr His Ser Asp Gly Ala
 435 440 445
 Gly Asn Leu Asp Glu Glu Gln Asp Ser Glu Gly Glu Thr Tyr Glu Asp
 450 455 460
 Ile Glu Ala Ser Lys Glu Arg Glu Lys Lys Arg Glu Lys Glu Glu Lys
 465 470 475 480
 Lys Arg Leu Glu Leu Glu Lys Lys Glu Gln Lys Glu Lys Glu Lys Lys
 485 490 495
 Glu Gln Glu Ile Lys Lys Lys Phe Lys Leu Thr Gly Pro Ile Gln Val
 500 505 510
 Ile His Leu Ala Lys Ala Cys Cys Asp Val Lys Gly Gly Lys Asn Glu
 515 520 525
 Leu Ser Phe Lys Gln Gly Glu Gln Ile Glu Ile Ile Arg Ile Thr Asp
 530 535 540
 Asn Pro Glu Gly Lys Trp Leu Gly Arg Thr Ala Arg Gly Ser Tyr Gly
 545 550 555 560
 Tyr Ile Lys Thr Thr Ala Val Glu Ile Asp Tyr Asp Ser Leu Lys Leu
 565 570 575
 Lys Lys Asp Ser Leu Gly Ala Pro Ser Arg Pro Ile Glu Asp Asp Gln
 580 585 590
 Glu Val Tyr Asp Asp Val Ala Glu Gln Asp Asp Ile Ser Ser His Ser
 595 600 605
 Gln Ser Gly Ser Gly Gly Ile Phe Pro Pro Pro Pro Asp Asp Asp Ile
 610 615 620
 Tyr Asp Gly Ile Glu Glu Glu Asp Ala Asp Asp Gly Ser Thr Leu Gln
 625 630 635 640

Val Gln Glu Lys Ser Asn Thr Trp Ser Trp Gly Ile Leu Lys Met Leu
645 650 655

Lys Gly Lys Asp Asp Arg Lys Lys Ser Ile Arg Glu Lys Pro Lys Val
660 665 670

Ser Asp Ser Asp Asn Asn Glu Gly Ser Ser Phe Pro Ala Pro Pro Lys
675 680 685

Gln Leu Asp Met Gly Asp Glu Val Tyr Asp Asp Val Asp Thr Ser Asp
690 695 700

Phe Pro Val Ser Ser Ala Glu Met Ser Gln Gly Thr Asn Val Gly Lys
705 710 715 720

Ala Lys Thr Glu Glu Lys Asp Leu Lys Lys Leu Lys Lys Gln Glu Lys
725 730 735

Glu Glu Lys Asp Phe Arg Lys Lys Phe Lys Tyr Asp Gly Glu Ile Arg
740 745 750

Val Leu Tyr Ser Thr Lys Val Thr Thr Ser Ile Thr Ser Lys Lys Trp
755 760 765

Gly Thr Arg Asp Leu Gln Val Lys Pro Gly Glu Ser Leu Glu Val Ile
770 775 780

Gln Thr Thr Asp Asp Thr Lys Val Leu Cys Arg Asn Glu Glu Gly Lys
785 790 795 800

Tyr Gly Tyr Val Leu Arg Ser Tyr Leu Ala Asp Asn Asp Gly Glu Ile
805 810 815

Tyr Asp Asp Ile Ala Asp Gly Cys Ile Tyr Asp Asn Asp
820 825

<210> 516
<211> 117
<212> PRT
<213> Homo sapiens

<400> 516

Met Lys Phe Val Tyr Lys Glu Glu His Pro Phe Glu Lys Arg Arg Ser
1 5 10 15

Glu Gly Glu Lys Ile Arg Lys Lys Tyr Pro Asp Arg Val Pro Val Ile
20 25 30

Val Glu Lys Ala Pro Lys Ala Arg Ile Gly Asp Leu Asp Lys Lys Lys
35 40 45

Tyr Leu Val Pro Ser Asp Leu Thr Val Gly Gln Phe Tyr Phe Leu Ile
 50 55 60

Arg Lys Arg Ile His Leu Arg Ala Glu Asp Ala Leu Phe Phe Phe Val
 65 70 75 80

Asn Asn Val Ile Pro Pro Thr Ser Ala Thr Met Gly Gln Leu Tyr Gln
 85 90 95

Glu His His Glu Glu Asp Phe Phe Leu Tyr Ile Ala Tyr Ser Asp Glu
 100 105 110

Ser Val Tyr Gly Leu
 115

<210> 517
 <211> 1684
 <212> PRT
 <213> Homo sapiens

<400> 517

Met Glu Asp Leu Val Gln Asp Gly Val Ala Ser Pro Ala Thr Pro Gly
 1 5 10 15

Thr Gly Lys Ser Lys Leu Glu Thr Leu Pro Lys Glu Asp Leu Ile Lys
 20 25 30

Phe Ala Lys Lys Gln Met Met Leu Ile Gln Lys Ala Lys Ser Arg Cys
 35 40 45

Thr Glu Leu Glu Lys Glu Ile Glu Glu Leu Arg Ser Lys Pro Val Thr
 50 55 60

Glu Gly Thr Gly Asp Ile Ile Lys Ala Leu Thr Glu Arg Leu Asp Ala
 65 70 75 80

Leu Leu Leu Glu Lys Ala Glu Thr Glu Gln Gln Cys Leu Ser Leu Lys
 85 90 95

Lys Glu Asn Ile Lys Met Lys Gln Glu Val Glu Asp Ser Val Thr Lys
 100 105 110

Met Gly Asp Ala His Lys Glu Leu Glu Gln Ser His Ile Asn Tyr Val
 115 120 125

Lys Glu Ile Glu Asn Leu Lys Asn Glu Leu Met Ala Val Arg Ser Lys
 130 135 140

Tyr Ser Glu Asp Lys Ala Asn Leu Gln Lys Gln Leu Glu Glu Ala Met
 145 150 155 160

Asn Thr Gln Leu Glu Leu Ser Glu Gln Leu Lys Phe Gln Asn Asn Ser
 Page 711

Glu Asp Asn Val Lys Lys Leu Gln Glu Glu Ile Glu Lys Ile Arg Pro
180 185 190

Gly Phe Glu Glu Gln Ile Leu Tyr Leu Gln Lys Gln Leu Asp Ala Thr
195 200 205

Thr Asp Glu Lys Lys Glu Thr Val Thr Gln Leu Gln Asn Ile Ile Glu
210 215 220

Ala Asn Ser Gln His Tyr Gln Lys Asn Ile Asn Ser Leu Gln Glu Glu
225 230 235 240

Leu Leu Gln Leu Lys Ala Ile His Gln Glu Glu Val Lys Glu Leu Met
245 250 255

Cys Gln Ile Glu Ala Ser Ala Lys Glu His Glu Ala Glu Ile Asn Lys
260 265 270

Leu Asn Glu Leu Lys Glu Asn Leu Val Lys Gln Cys Glu Ala Ser Glu
275 280 285

Lys Asn Ile Gln Lys Lys Tyr Glu Cys Glu Leu Glu Asn Leu Arg Lys
290 295 300

Ala Thr Ser Asn Ala Asn Gln Asp Asn Gln Ile Cys Ser Ile Leu Leu
305 310 315 320

Gln Glu Asn Thr Phe Val Glu Gln Val Val Asn Glu Lys Val Lys His
325 330 335

Leu Glu Asp Thr Leu Lys Glu Leu Glu Ser Gln His Ser Ile Leu Lys
340 345 350

Asp Glu Val Thr Tyr Met Asn Asn Leu Lys Leu Lys Leu Glu Met Asp
355 360 365

Ala Gln His Ile Lys Asp Glu Phe Phe His Glu Arg Glu Asp Leu Glu
370 375 380

Phe Lys Ile Asn Glu Leu Leu Leu Ala Lys Glu Glu Gln Gly Cys Val
385 390 395 400

Ile Glu Lys Leu Lys Ser Glu Leu Ala Gly Leu Asn Lys Gln Phe Cys
405 410 415

Tyr Thr Val Glu Gln His Asn Arg Glu Val Gln Ser Leu Lys Glu Gln
420 425 430

His Gln Lys Glu Ile Ser Glu Leu Asn Glu Thr Phe Leu Ser Asp Ser

435

440

445

Glu Lys Glu Lys Leu Thr Leu Met Phe Glu Ile Gln Gly Leu Lys Glu
 450 455 460

Gln Cys Glu Asn Leu Gln Gln Glu Lys Gln Glu Ala Ile Leu Asn Tyr
 465 470 475 480

Glu Ser Leu Arg Glu Ile Met Glu Ile Leu Gln Thr Glu Leu Gly Glu
 485 490 495

Ser Ala Gly Lys Ile Ser Gln Glu Phe Glu Ser Met Lys Gln Gln Gln
 500 505 510

Ala Ser Asp Val His Glu Leu Gln Gln Lys Leu Arg Thr Ala Phe Thr
 515 520 525

Glu Lys Asp Ala Leu Leu Glu Thr Val Asn Arg Leu Gln Gly Glu Asn
 530 535 540

Glu Lys Leu Leu Ser Gln Gln Glu Leu Val Pro Glu Leu Glu Asn Thr
 545 550 555 560

Ile Lys Asn Leu Gln Glu Lys Asn Gly Val Tyr Leu Leu Ser Leu Ser
 565 570 575

Gln Arg Asp Thr Met Leu Lys Glu Leu Glu Gly Lys Ile Asn Ser Leu
 580 585 590

Thr Glu Glu Lys Asp Asp Phe Ile Asn Lys Leu Lys Asn Ser His Glu
 595 600 605

Glu Met Asp Asn Phe His Lys Lys Cys Glu Arg Glu Glu Arg Leu Ile
 610 615 620

Leu Glu Leu Gly Lys Lys Val Glu Gln Thr Ile Gln Tyr Asn Ser Glu
 625 630 635 640

Leu Glu Gln Lys Val Asn Glu Leu Thr Gly Gly Leu Glu Glu Thr Leu
 645 650 655

Lys Glu Lys Asp Gln Asn Asp Gln Lys Leu Glu Lys Leu Met Val Gln
 660 665 670

Met Lys Val Leu Ser Glu Asp Lys Glu Val Leu Ser Ala Glu Val Lys
 675 680 685

Ser Leu Tyr Glu Glu Asn Asn Lys Leu Ser Ser Glu Lys Lys Gln Leu
 690 695 700

Ser Arg Asp Leu Glu Val Phe Leu Ser Gln Lys Glu Asp Val Ile Leu
 Page 713

705 710 715 720
 Lys Glu His Ile Thr Gln Leu Glu Lys Lys Leu Gln Leu Met Val Glu
 725 730 735
 Glu Gln Asp Asn Leu Asn Lys Leu Leu Glu Asn Glu Gln Val Gln Lys
 740 745 750
 Leu Phe Val Lys Thr Gln Leu Tyr Gly Phe Leu Lys Glu Met Gly Ser
 755 760 765
 Glu Val Ser Glu Asp Ser Glu Glu Lys Asp Val Val Asn Val Leu Gln
 770 775 780
 Ala Val Gly Glu Ser Leu Ala Lys Ile Asn Glu Glu Lys Cys Asn Leu
 785 790 795 800
 Ala Phe Gln Arg Asp Glu Lys Val Leu Glu Leu Glu Lys Glu Ile Lys
 805 810 815
 Cys Leu Gln Glu Glu Ser Val Val Gln Cys Glu Glu Leu Lys Ser Leu
 820 825 830
 Leu Arg Asp Tyr Glu Gln Glu Lys Val Leu Leu Arg Lys Glu Leu Glu
 835 840 845
 Glu Ile Gln Ser Glu Lys Glu Ala Leu Gln Ser Asp Leu Leu Glu Met
 850 855 860
 Lys Asn Ala Asn Glu Lys Thr Arg Leu Glu Asn Gln Asn Leu Leu Ile
 865 870 875 880
 Gln Val Glu Glu Val Ser Gln Thr Cys Ser Lys Ser Glu Ile His Asn
 885 890 895
 Glu Lys Glu Lys Cys Phe Ile Lys Glu His Glu Asn Leu Lys Pro Leu
 900 905 910
 Leu Glu Gln Lys Glu Leu Arg Asp Arg Arg Ala Glu Leu Ile Leu Leu
 915 920 925
 Lys Asp Ser Leu Ala Lys Ser Pro Ser Val Lys Asn Asp Pro Leu Ser
 930 935 940
 Ser Val Lys Glu Leu Glu Glu Lys Ile Glu Asn Leu Glu Lys Glu Cys
 945 950 955 960
 Lys Glu Lys Glu Glu Lys Ile Asn Lys Ile Lys Leu Val Ala Val Lys
 965 970 975
 Ala Lys Lys Glu Leu Asp Ser Ser Arg Lys Glu Thr Gln Thr Val Lys
 Page 714

980

985

990

Glu Glu Leu Glu Ser Leu Arg Ser Glu Lys Asp Gln Leu Ser Ala Ser
995 1000 1005

Met Arg Asp Leu Ile Gln Gly Ala Glu Ser Tyr Lys Asn Leu Leu
1010 1015 1020

Leu Glu Tyr Glu Lys Gln Ser Glu Gln Leu Asp Val Glu Lys Glu
1025 1030 1035

Arg Ala Asn Asn Phe Glu His Arg Ile Glu Asp Leu Thr Arg Gln
1040 1045 1050

Leu Arg Asn Ser Thr Leu Gln Cys Glu Thr Ile Asn Ser Asp Asn
1055 1060 1065

Glu Asp Leu Leu Ala Arg Ile Glu Thr Leu Gln Ser Asn Ala Lys
1070 1075 1080

Leu Leu Glu Val Gln Ile Leu Glu Val Gln Arg Ala Lys Ala Met
1085 1090 1095

Val Asp Lys Glu Leu Glu Ala Glu Lys Leu Gln Lys Glu Gln Lys
1100 1105 1110

Ile Lys Glu His Ala Thr Thr Val Asn Glu Leu Glu Glu Leu Gln
1115 1120 1125

Val Gln Leu Gln Lys Gln Lys Lys Gln Leu Gln Lys Thr Met Gln
1130 1135 1140

Glu Leu Glu Leu Val Lys Lys Asp Ala Gln Gln Thr Thr Leu Met
1145 1150 1155

Asn Met Glu Ile Ala Asp Tyr Glu Arg Leu Met Lys Glu Leu Asn
1160 1165 1170

Gln Lys Leu Thr Asn Lys Asn Asn Lys Ile Glu Asp Leu Glu Gln
1175 1180 1185

Glu Ile Lys Ile Gln Lys Gln Lys Gln Glu Thr Leu Gln Glu Glu
1190 1195 1200

Ile Thr Ser Leu Gln Ser Ser Val Gln Gln Tyr Glu Glu Lys Asn
1205 1210 1215

Thr Lys Ile Lys Gln Leu Leu Val Lys Thr Lys Lys Glu Leu Ala
1220 1225 1230

Asp Ser Lys Gln Ala Glu Thr Asp His Leu Ile Leu Gln Ala Ser
Page 715

1235

1240

1245

Leu	Lys	Gly	Glu	Leu	Glu	Ala	Ser	Gln	Gln	Gln	Val	Glu	Val	Tyr
	1250					1255					1260			
Lys	Ile	Gln	Leu	Ala	Glu	Ile	Thr	Ser	Glu	Lys	His	Lys	Ile	His
	1265					1270					1275			
Glu	His	Leu	Lys	Thr	Ser	Ala	Glu	Gln	His	Gln	Arg	Thr	Leu	Ser
	1280					1285					1290			
Ala	Tyr	Gln	Gln	Arg	Val	Thr	Ala	Leu	Gln	Glu	Glu	Cys	Arg	Ala
	1295					1300					1305			
Ala	Lys	Ala	Glu	Gln	Ala	Thr	Val	Thr	Ser	Glu	Phe	Glu	Ser	Tyr
	1310					1315					1320			
Lys	Val	Arg	Val	His	Asn	Val	Leu	Lys	Gln	Gln	Lys	Asn	Lys	Ser
	1325					1330					1335			
Met	Ser	Gln	Ala	Glu	Thr	Glu	Gly	Ala	Lys	Gln	Glu	Arg	Glu	His
	1340					1345					1350			
Leu	Glu	Met	Leu	Ile	Asp	Gln	Leu	Lys	Ile	Lys	Leu	Gln	Asp	Ser
	1355					1360					1365			
Gln	Asn	Asn	Leu	Gln	Ile	Asn	Val	Ser	Glu	Leu	Gln	Thr	Leu	Gln
	1370					1375					1380			
Ser	Glu	His	Asp	Thr	Leu	Leu	Glu	Arg	His	Asn	Lys	Met	Leu	Gln
	1385					1390					1395			
Glu	Thr	Val	Ser	Lys	Glu	Ala	Glu	Leu	Arg	Glu	Lys	Leu	Cys	Ser
	1400					1405					1410			
Ile	Gln	Ser	Glu	Asn	Met	Met	Met	Lys	Ser	Glu	His	Thr	Gln	Thr
	1415					1420					1425			
Val	Ser	Gln	Leu	Thr	Ser	Gln	Asn	Glu	Val	Leu	Arg	Asn	Ser	Phe
	1430					1435					1440			
Arg	Asp	Gln	Val	Arg	His	Leu	Gln	Glu	Glu	His	Arg	Lys	Thr	Val
	1445					1450					1455			
Glu	Thr	Leu	Gln	Gln	Gln	Leu	Ser	Lys	Met	Glu	Ala	Gln	Leu	Phe
	1460					1465					1470			
Gln	Leu	Lys	Asn	Glu	Pro	Thr	Thr	Arg	Ser	Pro	Val	Ser	Ser	Gln
	1475					1480					1485			
Gln	Ser	Leu	Lys	Asn	Leu	Arg	Glu	Arg	Arg	Asn	Thr	Asp	Leu	Pro

1490

1495

1500

Leu Leu Asp Met His Thr Val Thr Arg Glu Glu Gly Glu Gly Met
 1505 1510 1515

Glu Thr Thr Asp Thr Glu Ser Val Ser Ser Ala Ser Thr Tyr Thr
 1520 1525 1530

Gln Ser Leu Glu Gln Leu Leu Asn Ser Pro Glu Thr Lys Leu Glu
 1535 1540 1545

Pro Pro Leu Trp His Ala Glu Phe Thr Lys Glu Glu Leu Val Gln
 1550 1555 1560

Lys Leu Ser Ser Thr Thr Lys Ser Ala Asp His Leu Asn Gly Leu
 1565 1570 1575

Leu Arg Glu Thr Glu Ala Thr Asn Ala Ile Leu Met Glu Gln Ile
 1580 1585 1590

Lys Leu Leu Lys Ser Glu Ile Arg Arg Leu Glu Arg Asn Gln Glu
 1595 1600 1605

Arg Glu Lys Ser Ala Ala Asn Leu Glu Tyr Leu Lys Asn Val Leu
 1610 1615 1620

Leu Gln Phe Ile Phe Leu Lys Pro Gly Ser Glu Arg Glu Arg Leu
 1625 1630 1635

Leu Pro Val Ile Asn Thr Met Leu Gln Leu Ser Pro Glu Glu Lys
 1640 1645 1650

Gly Lys Leu Ala Ala Val Ala Gln Gly Glu Glu Glu Asn Ala Ser
 1655 1660 1665

Arg Ser Ser Gly Trp Ala Ser Tyr Leu His Ser Trp Ser Gly Leu
 1670 1675 1680

Arg

<210> 518
 <211> 970
 <212> PRT
 <213> Homo sapiens

<400> 518

Met Asp Ala Ala Glu Pro Gly Leu Pro Pro Gly Pro Glu Gly Arg Lys
 1 5 10 15

Arg Tyr Ser Asp Ile Phe Arg Ser Leu Asp Asn Leu Glu Ile Ser Leu
 20 25 30

Gly Asn Val Thr Leu Glu Met Leu Ala Gly Asp Pro Leu Leu Ser Glu
 35 40 45
 Asp Pro Glu Pro Asp Lys Thr Pro Thr Ala Thr Val Thr Asn Glu Ala
 50 55 60
 Ser Cys Trp Ser Gly Pro Ser Pro Glu Gly Pro Val Pro Leu Thr Gly
 65 70 75 80
 Glu Glu Leu Asp Leu Arg Leu Ile Arg Thr Lys Gly Gly Val Asp Ala
 85 90 95
 Ala Leu Glu Tyr Ala Lys Thr Trp Ser Arg Tyr Ala Lys Glu Leu Leu
 100 105 110
 Ala Trp Thr Glu Lys Arg Ala Ser Tyr Glu Leu Glu Phe Ala Lys Ser
 115 120 125
 Thr Met Lys Ile Ala Glu Ala Gly Lys Val Ser Ile Gln Gln Gln Ser
 130 135 140
 His Met Pro Leu Gln Tyr Ile Tyr Thr Leu Phe Leu Glu His Asp Leu
 145 150 155 160
 Ser Leu Gly Thr Leu Ala Met Glu Thr Val Ala Gln Gln Lys Arg Asp
 165 170 175
 Tyr Tyr Gln Pro Leu Ala Ala Lys Arg Thr Glu Ile Glu Lys Trp Arg
 180 185 190
 Lys Glu Phe Lys Glu Gln Trp Met Lys Glu Gln Lys Arg Met Asn Glu
 195 200 205
 Ala Val Gln Ala Leu Arg Arg Ala Gln Leu Gln Tyr Val Gln Arg Ser
 210 215 220
 Glu Asp Leu Arg Ala Arg Ser Gln Gly Ser Pro Glu Asp Ser Ala Pro
 225 230 235 240
 Gln Ala Ser Pro Gly Pro Ser Lys Gln Gln Glu Arg Arg Arg Arg Ser
 245 250 255
 Arg Glu Glu Ala Gln Ala Lys Ala Gln Glu Ala Glu Ala Leu Tyr Gln
 260 265 270
 Ala Cys Val Arg Glu Ala Asn Ala Arg Gln Gln Asp Leu Glu Ile Ala
 275 280 285
 Lys Gln Arg Ile Val Ser His Val Arg Lys Leu Val Phe Gln Gly Asp
 290 295 300

Glu Val Leu Arg Arg Val Thr Leu Ser Leu Phe Gly Leu Arg Gly Ala
 305 310 315 320
 Gln Ala Glu Arg Gly Pro Arg Ala Phe Ala Ala Leu Ala Glu Cys Cys
 325 330 335
 Ala Pro Phe Glu Pro Gly Gln Arg Tyr Gln Glu Phe Val Arg Ala Leu
 340 345 350
 Arg Pro Glu Ala Pro Pro Pro Pro Pro Ala Phe Ser Phe Gln Glu
 355 360 365
 Phe Leu Pro Ser Leu Asn Ser Ser Pro Leu Asp Ile Arg Lys Lys Leu
 370 375 380
 Ser Gly Pro Leu Pro Pro Arg Leu Asp Glu Asn Ser Ala Glu Pro Gly
 385 390 395 400
 Pro Trp Glu Asp Pro Gly Thr Gly Trp Arg Trp Gln Gly Thr Pro Gly
 405 410 415
 Pro Thr Pro Gly Ser Asp Val Asp Ser Val Gly Gly Gly Ser Glu Ser
 420 425 430
 Arg Ser Leu Asp Ser Pro Thr Ser Ser Pro Gly Ala Gly Thr Arg Gln
 435 440 445
 Leu Val Lys Ala Ser Ser Thr Gly Thr Glu Ser Ser Asp Asp Phe Glu
 450 455 460
 Glu Arg Asp Pro Asp Leu Gly Asp Gly Leu Glu Asn Gly Leu Gly Ser
 465 470 475 480
 Pro Phe Gly Lys Trp Thr Leu Ser Ser Ala Ala Gln Thr His Gln Leu
 485 490 495
 Arg Arg Leu Arg Gly Pro Ala Lys Cys Arg Glu Cys Glu Ala Phe Met
 500 505 510
 Val Ser Gly Thr Glu Cys Glu Glu Cys Phe Leu Thr Cys His Lys Arg
 515 520 525
 Cys Leu Glu Thr Leu Leu Ile Leu Cys Gly His Arg Arg Leu Pro Ala
 530 535 540
 Arg Thr Pro Leu Phe Gly Val Asp Phe Leu Gln Leu Pro Arg Asp Phe
 545 550 555 560
 Pro Glu Glu Val Pro Phe Val Val Thr Lys Cys Thr Ala Glu Ile Glu
 565 570 575

His Arg Ala Leu Asp Val Gln Gly Ile Tyr Arg Val Ser Gly Ser Arg
 580 585 590

Val Arg Val Glu Arg Leu Cys Gln Ala Phe Glu Asn Gly Arg Ala Leu
 595 600 605

Val Glu Leu Ser Gly Asn Ser Pro His Asp Val Ser Ser Val Leu Lys
 610 615 620

Arg Phe Leu Gln Glu Leu Thr Glu Pro Val Ile Pro Phe His Leu Tyr
 625 630 635 640

Asp Ala Phe Ile Ser Leu Ala Lys Thr Leu His Ala Asp Pro Gly Asp
 645 650 655

Asp Pro Gly Thr Pro Ser Pro Ser Pro Glu Val Ile Arg Ser Leu Lys
 660 665 670

Thr Leu Leu Val Gln Leu Pro Asp Ser Asn Tyr Asn Thr Leu Arg His
 675 680 685

Leu Val Ala His Leu Phe Arg Val Ala Ala Arg Phe Met Glu Asn Lys
 690 695 700

Met Ser Ala Asn Asn Leu Gly Ile Val Phe Gly Pro Thr Leu Leu Arg
 705 710 715 720

Pro Pro Asp Gly Pro Arg Ala Ala Ser Ala Ile Pro Val Thr Cys Leu
 725 730 735

Leu Asp Ser Gly His Gln Ala Gln Leu Val Glu Phe Leu Ile Val His
 740 745 750

Tyr Glu Gln Ile Phe Gly Met Asp Glu Leu Pro Gln Ala Thr Glu Pro
 755 760 765

Pro Pro Gln Asp Ser Ser Pro Ala Pro Gly Pro Leu Thr Thr Ser Ser
 770 775 780

Gln Pro Pro Pro Pro His Leu Asp Pro Asp Ser Gln Pro Pro Val Leu
 785 790 795 800

Ala Ser Asp Pro Gly Pro Asp Pro Gln His His Ser Thr Leu Glu Gln
 805 810 815

His Pro Thr Ala Thr Pro Thr Glu Ile Pro Thr Pro Gln Ser Asp Gln
 820 825 830

Arg Glu Asp Val Ala Glu Asp Thr Lys Asp Gly Gly Gly Glu Val Ser
 835 840 845

Ser Gln Gly Pro Glu Asp Ser Leu Leu Gly Thr Gln Ser Arg Gly His
850 855 860

Phe Ser Arg Gln Pro Val Lys Tyr Pro Arg Gly Gly Val Arg Pro Val
865 870 875 880

Thr His Gln Leu Ser Ser Leu Ala Leu Val Ala Ser Lys Leu Cys Glu
885 890 895

Glu Thr Pro Ile Thr Ser Val Pro Arg Gly Ser Leu Arg Gly Arg Gly
900 905 910

Pro Ser Pro Ala Ala Ala Ser Pro Glu Gly Ser Pro Leu Arg Arg Thr
915 920 925

Pro Leu Pro Lys His Phe Glu Ile Thr Gln Glu Thr Ala Arg Leu Leu
930 935 940

Ser Lys Leu Asp Ser Glu Ala Val Pro Arg Ala Thr Cys Cys Pro Asp
945 950 955 960

Val Gln Pro Glu Glu Ala Glu Asp His Leu
965 970

<210> 519
<211> 381
<212> PRT
<213> Homo sapiens

<400> 519

Met Ser Gly Val Val Arg Thr Leu Ser Arg Cys Leu Leu Pro Ala Glu
1 5 10 15

Ala Gly Gly Ala Arg Glu Arg Arg Ala Gly Ser Gly Ala Arg Asp Ala
20 25 30

Glu Arg Glu Ala Arg Arg Arg Ser Arg Asp Ile Asp Ala Leu Leu Ala
35 40 45

Arg Glu Arg Arg Ala Val Arg Arg Leu Val Lys Ile Leu Leu Leu Gly
50 55 60

Ala Gly Glu Ser Gly Lys Ser Thr Phe Leu Lys Gln Met Arg Ile Ile
65 70 75 80

His Gly Arg Glu Phe Asp Gln Lys Ala Leu Leu Glu Phe Arg Asp Thr
85 90 95

Ile Phe Asp Asn Ile Leu Lys Gly Ser Arg Val Leu Val Asp Ala Arg
100 105 110

Asp Lys Leu Gly Ile Pro Trp Gln Tyr Ser Glu Asn Glu Lys His Gly
 115 120 125
 Met Phe Leu Met Ala Phe Glu Asn Lys Ala Gly Leu Pro Val Glu Pro
 130 135 140
 Ala Thr Phe Gln Leu Tyr Val Pro Ala Leu Ser Ala Leu Trp Arg Asp
 145 150 155 160
 Ser Gly Ile Arg Glu Ala Phe Ser Arg Arg Ser Glu Phe Gln Leu Gly
 165 170 175
 Glu Ser Val Lys Tyr Phe Leu Asp Asn Leu Asp Arg Ile Gly Gln Leu
 180 185 190
 Asn Tyr Phe Pro Ser Lys Gln Asp Ile Leu Leu Ala Arg Lys Ala Thr
 195 200 205
 Lys Gly Ile Val Glu His Asp Phe Val Ile Lys Lys Ile Pro Phe Lys
 210 215 220
 Met Val Asp Val Gly Gly Gln Arg Ser Gln Arg Gln Lys Trp Phe Gln
 225 230 235 240
 Cys Phe Asp Gly Ile Thr Ser Ile Leu Phe Met Val Ser Ser Ser Glu
 245 250 255
 Tyr Asp Gln Val Leu Met Glu Asp Arg Arg Thr Asn Arg Leu Val Glu
 260 265 270
 Ser Met Asn Ile Phe Glu Thr Ile Val Asn Asn Lys Leu Phe Phe Asn
 275 280 285
 Val Ser Ile Ile Leu Phe Leu Asn Lys Met Asp Leu Leu Val Glu Lys
 290 295 300
 Val Lys Thr Val Ser Ile Lys Lys His Phe Pro Asp Phe Arg Gly Asp
 305 310 315 320
 Pro His Arg Leu Glu Asp Val Gln Arg Tyr Leu Val Gln Cys Phe Asp
 325 330 335
 Arg Lys Arg Arg Asn Arg Ser Lys Pro Leu Phe His His Phe Thr Thr
 340 345 350
 Ala Ile Asp Thr Glu Asn Val Arg Phe Val Phe His Ala Val Lys Asp
 355 360 365
 Thr Ile Leu Gln Glu Asn Leu Lys Asp Ile Met Leu Gln
 370 375 380

<210> 520
 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 520

Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser Glu Glu Ala Lys
 1 5 10 15

Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp
 20 25 30

Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly
 35 40 45

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
 50 55 60

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
 65 70 75 80

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
 85 90 95

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
 100 105 110

Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
 115 120 125

Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys
 130 135 140

Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr
 145 150 155 160

Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln
 165 170 175

Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr
 180 185 190

Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly
 195 200 205

Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr
 210 215 220

Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val
 225 230 235 240

Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg
 245 250 255

Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe
 260 265 270

Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu
 275 280 285

Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala
 290 295 300

Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser
 305 310 315 320

Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn
 325 330 335

Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn
 340 345 350

Leu Lys Glu Tyr Asn Leu Val
 355

<210> 521
 <211> 137
 <212> PRT
 <213> Homo sapiens

<400> 521

Met Arg Pro Gln Gln Ala Pro Val Ser Gly Lys Val Phe Ile Gln Arg
 1 5 10 15

Asp Tyr Ser Ser Gly Thr Arg Cys Gln Phe Gln Thr Lys Phe Pro Ala
 20 25 30

Glu Leu Glu Asn Arg Ile Asp Arg Gln Gln Phe Glu Glu Thr Val Arg
 35 40 45

Thr Leu Asn Asn Leu Tyr Ala Glu Ala Glu Lys Leu Gly Gly Gln Ser
 50 55 60

Tyr Leu Glu Gly Cys Leu Ala Cys Leu Thr Ala Tyr Thr Ile Phe Leu
 65 70 75 80

Cys Met Glu Thr His Tyr Glu Lys Val Leu Lys Lys Val Ser Lys Tyr
 85 90 95

Ile Gln Glu Gln Asn Glu Lys Ile Tyr Ala Pro Gln Gly Leu Leu Leu
 100 105 110

Thr Asp Pro Ile Glu Arg Gly Leu Arg Val Ile Glu Ile Thr Ile Tyr
 Page 724

115

120

125

Glu Asp Arg Gly Met Ser Ser Gly Arg
130 135

<210> 522
<211> 474
<212> PRT
<213> Homo sapiens

<400> 522

Met Ala Gln His Asp Phe Val Pro Ala Trp Leu Asn Phe Ser Thr Pro
1 5 10 15

Gln Ser Ala Lys Ser Pro Thr Ala Thr Phe Glu Lys His Gly Glu His
20 25 30

Leu Pro Arg Gly Glu Gly Arg Phe Gly Val Ser Arg Arg Arg His Asn
35 40 45

Ser Ser Asp Gly Phe Phe Asn Asn Gly Pro Leu Arg Thr Ala Gly Asp
50 55 60

Ser Trp His Gln Pro Ser Leu Phe Arg His Asp Ser Val Asp Ser Gly
65 70 75 80

Val Ser Lys Gly Ala Tyr Ala Gly Ile Thr Gly Asn Pro Ser Gly Trp
85 90 95

His Ser Ser Ser Arg Gly His Asp Gly Met Ser Gln Arg Ser Gly Gly
100 105 110

Gly Thr Gly Asn His Arg His Trp Asn Gly Ser Phe His Ser Arg Lys
115 120 125

Gly Cys Ala Phe Gln Glu Lys Pro Pro Met Glu Ile Arg Glu Glu Lys
130 135 140

Lys Glu Asp Lys Val Glu Lys Leu Gln Phe Glu Glu Glu Asp Phe Pro
145 150 155 160

Ser Leu Asn Pro Glu Ala Gly Lys Gln His Gln Pro Cys Arg Pro Ile
165 170 175

Gly Thr Pro Ser Gly Val Trp Glu Asn Pro Pro Ser Ala Lys Gln Pro
180 185 190

Ser Lys Met Leu Val Ile Lys Lys Val Ser Lys Glu Asp Pro Ala Ala
195 200 205

Ala Phe Ser Ala Ala Phe Thr Ser Pro Gly Ser His His Ala Asn Gly
210 215 220

Asn Lys Leu Ser Ser Val Val Pro Ser Val Tyr Lys Asn Leu Val Pro
 225 230 235 240
 Lys Pro Val Pro Pro Pro Ser Lys Pro Asn Ala Trp Lys Ala Asn Arg
 245 250 255
 Met Glu His Lys Ser Gly Ser Leu Ser Ser Ser Arg Glu Ser Ala Phe
 260 265 270
 Thr Ser Pro Ile Ser Val Thr Lys Pro Val Val Leu Ala Ser Gly Ala
 275 280 285
 Ala Leu Ser Ser Pro Lys Glu Ser Pro Ser Ser Thr Thr Pro Pro Ile
 290 295 300
 Glu Ile Ser Ser Ser Arg Leu Thr Lys Leu Thr Arg Arg Thr Thr Asp
 305 310 315 320
 Arg Lys Ser Glu Phe Leu Lys Thr Leu Lys Asp Asp Arg Asn Gly Asp
 325 330 335
 Phe Ser Glu Asn Arg Asp Cys Asp Lys Leu Glu Asp Leu Glu Asp Asn
 340 345 350
 Ser Thr Pro Glu Pro Lys Glu Asn Gly Glu Glu Gly Cys His Gln Asn
 355 360 365
 Gly Leu Ala Leu Pro Val Val Glu Glu Gly Glu Val Leu Ser His Ser
 370 375 380
 Leu Glu Ala Glu His Arg Leu Leu Lys Ala Met Gly Trp Gln Glu Tyr
 385 390 395 400
 Pro Glu Asn Asp Glu Asn Cys Leu Pro Leu Thr Glu Asp Glu Leu Lys
 405 410 415
 Glu Phe His Met Lys Thr Glu Gln Leu Arg Arg Asn Gly Phe Gly Lys
 420 425 430
 Asn Gly Phe Leu Gln Ser Arg Ser Ser Ser Leu Phe Ser Pro Trp Arg
 435 440 445
 Ser Thr Cys Lys Ala Glu Phe Glu Asp Ser Asp Thr Glu Thr Ser Ser
 450 455 460
 Ser Glu Thr Ser Asp Asp Asp Ala Trp Lys
 465 470

<210> 523

<211> 549

<212> PRT
 <213> Homo sapiens

<400> 523

```

Met Ala Thr Pro Arg Gly Leu Gly Ala Leu Leu Leu Leu Leu Leu
1          5          10          15

Pro Thr Ser Gly Gln Glu Lys Pro Thr Glu Gly Pro Arg Asn Thr Cys
          20          25          30

Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
          35          40          45

Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
          50          55          60

Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65          70          75          80

Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
          85          90          95

Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
          100          105          110

Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
          115          120          125

Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
          130          135          140

Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145          150          155          160

Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
          165          170          175

Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
          180          185          190

Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
          195          200          205

Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
          210          215          220

Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225          230          235          240

Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
          245          250          255

```

Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
 260 265 270
 Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
 275 280 285
 Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
 290 295 300
 Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
 305 310 315 320
 Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
 325 330 335
 Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
 340 345 350
 Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
 355 360 365
 Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
 370 375 380
 Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
 385 390 395 400
 Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
 405 410 415
 Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
 420 425 430
 Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
 435 440 445
 Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
 450 455 460
 Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu
 465 470 475 480
 Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr
 485 490 495
 Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu
 500 505 510
 Gln Gly Val Phe Ile Cys Cys Trp Phe Thr Ile Leu Tyr Leu Pro Ser
 515 520 525

Gln Ser Thr Thr Val Ser Ser Ser Thr Ala Arg Leu Asp Gln Ala His
 530 535 540

Ser Ala Ser Gln Glu
 545

<210> 524
 <211> 327
 <212> PRT
 <213> Homo sapiens

<400> 524

Met Pro Ala Leu Leu Glu Arg Pro Lys Leu Ser Asn Ala Met Ala Arg
 1 5 10 15

Ala Leu His Arg His Ile Met Met Glu Arg Glu Arg Lys Arg Gln Glu
 20 25 30

Glu Glu Glu Val Asp Lys Met Met Glu Gln Lys Met Lys Glu Glu Gln
 35 40 45

Glu Arg Arg Lys Lys Lys Glu Met Glu Glu Arg Met Ser Leu Glu Glu
 50 55 60

Thr Lys Glu Gln Ile Leu Lys Leu Glu Glu Lys Leu Leu Ala Leu Gln
 65 70 75 80

Glu Glu Lys His Gln Leu Phe Leu Gln Leu Lys Lys Val Leu His Glu
 85 90 95

Glu Glu Lys Arg Arg Arg Lys Glu Gln Ser Asp Leu Thr Thr Leu Thr
 100 105 110

Ser Ala Ala Tyr Gln Gln Ser Leu Thr Val His Thr Gly Thr His Leu
 115 120 125

Leu Ser Met Gln Gly Ser Pro Gly Gly His Asn Arg Pro Gly Thr Leu
 130 135 140

Met Ala Ala Asp Arg Ala Lys Gln Met Phe Gly Pro Gln Val Leu Thr
 145 150 155 160

Thr Arg His Tyr Val Gly Ser Ala Ala Ala Phe Ala Gly Thr Pro Glu
 165 170 175

His Gly Gln Phe Gln Gly Ser Pro Gly Gly Ala Tyr Gly Thr Ala Gln
 180 185 190

Pro Pro Pro His Tyr Gly Pro Thr Gln Pro Ala Tyr Ser Pro Ser Gln
 195 200 205

Gln Leu Arg Ala Pro Ser Ala Phe Pro Ala Val Gln Tyr Leu Ser Gln
 210 215 220

Pro Gln Pro Gln Pro Tyr Ala Val His Gly His Phe Gln Pro Thr Gln
 225 230 235 240

Thr Gly Phe Leu Gln Pro Gly Gly Ala Leu Ser Leu Gln Lys Gln Met
 245 250 255

Glu His Ala Asn Gln Gln Thr Gly Phe Ser Asp Ser Ser Ser Leu Arg
 260 265 270

Pro Met His Pro Gln Ala Leu His Pro Ala Pro Gly Leu Leu Ala Ser
 275 280 285

Pro Gln Leu Pro Val Gln Met Gln Pro Ala Gly Lys Ser Gly Phe Ala
 290 295 300

Ala Thr Ser Gln Pro Gly Pro Arg Leu Pro Phe Ile Gln His Ser Gln
 305 310 315 320

Asn Pro Arg Phe Tyr His Lys
 325

<210> 525
 <211> 160
 <212> PRT
 <213> Homo sapiens

<400> 525

Met Glu Ala Glu Arg Pro Gln Glu Glu Glu Asp Gly Glu Gln Gly Pro
 1 5 10 15

Pro Gln Asp Glu Glu Gly Trp Pro Pro Pro Asn Ser Thr Thr Arg Pro
 20 25 30

Trp Arg Ser Ala Pro Pro Ser Pro Pro Pro Gly Thr Arg His Thr
 35 40 45

Ala Leu Gly Pro Arg Ser Ala Ser Leu Leu Ser Leu Gln Thr Glu Leu
 50 55 60

Leu Leu Asp Leu Val Ala Glu Ala Gln Ser Arg Arg Leu Glu Glu Gln
 65 70 75 80

Arg Ala Thr Phe Tyr Thr Pro Gln Asn Pro Ser Ser Leu Ala Pro Ala
 85 90 95

Pro Leu Arg Pro Leu Glu Asp Arg Glu Gln Leu Tyr Ser Thr Ile Leu
 100 105 110

Ser His Gln Cys Gln Arg Met Glu Ala Gln Arg Ser Glu Pro Pro Leu
 Page 730

115

120

125

Pro Pro Gly Gly Gln Glu Leu Leu Glu Leu Leu Leu Arg Val Gln Gly
 130 135 140

Gly Gly Arg Met Glu Glu Gln Arg Ser Arg Pro Pro Thr His Thr Cys
 145 150 155 160

<210> 526
 <211> 217
 <212> PRT
 <213> Homo sapiens

<400> 526

Met Glu Ala Ile Ala Lys Tyr Asp Phe Lys Ala Thr Ala Asp Asp Glu
 1 5 10 15

Leu Ser Phe Lys Arg Gly Asp Ile Leu Lys Val Leu Asn Glu Glu Cys
 20 25 30

Asp Gln Asn Trp Tyr Lys Ala Glu Leu Asn Gly Lys Asp Gly Phe Ile
 35 40 45

Pro Lys Asn Tyr Ile Glu Met Lys Pro His Pro Trp Phe Phe Gly Lys
 50 55 60

Ile Pro Arg Ala Lys Ala Glu Glu Met Leu Ser Lys Gln Arg His Asp
 65 70 75 80

Gly Ala Phe Leu Ile Arg Glu Ser Glu Ser Ala Pro Gly Asp Phe Ser
 85 90 95

Leu Ser Val Lys Phe Gly Asn Asp Val Gln His Phe Lys Val Leu Arg
 100 105 110

Asp Gly Ala Gly Lys Tyr Phe Leu Trp Val Val Lys Phe Asn Ser Leu
 115 120 125

Asn Glu Leu Val Asp Tyr His Arg Ser Thr Ser Val Ser Arg Asn Gln
 130 135 140

Gln Ile Phe Leu Arg Asp Ile Glu Gln Val Pro Gln Gln Pro Thr Tyr
 145 150 155 160

Val Gln Ala Leu Phe Asp Phe Asp Pro Gln Glu Asp Gly Glu Leu Gly
 165 170 175

Phe Arg Arg Gly Asp Phe Ile His Val Met Asp Asn Ser Asp Pro Asn
 180 185 190

Trp Trp Lys Gly Ala Cys His Gly Gln Thr Gly Met Phe Pro Arg Asn
 195 200 205

Tyr Val Thr Pro Val Asn Arg Asn Val
 210 215

<210> 527
 <211> 433
 <212> PRT
 <213> Homo sapiens

<400> 527

Met Ser Gly Arg Pro Arg Thr Thr Ser Phe Ala Glu Ser Cys Lys Pro
 1 5 10 15

Val Gln Gln Pro Ser Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys
 20 25 30

Asp Gly Ser Lys Val Thr Thr Val Val Ala Thr Pro Gly Gln Gly Pro
 35 40 45

Asp Arg Pro Gln Glu Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn
 50 55 60

Gly Ser Phe Gly Val Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu
 65 70 75 80

Leu Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg
 85 90 95

Glu Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu
 100 105 110

Arg Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu
 115 120 125

Asn Leu Val Leu Asp Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg
 130 135 140

His Tyr Ser Arg Ala Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu
 145 150 155 160

Tyr Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly
 165 170 175

Ile Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp
 180 185 190

Thr Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val
 195 200 205

Arg Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala
 210 215 220

Pro Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val
 225 230 235 240

Trp Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile
 245 250 255

Phe Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val
 260 265 270

Leu Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr
 275 280 285

Thr Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Asp
 290 295 300

Ser Ser Gly Thr Gly His Phe Thr Ser Gly Val Arg Val Phe Arg Pro
 305 310 315 320

Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu Leu Glu Tyr
 325 330 335

Thr Pro Thr Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala His Ser Phe
 340 345 350

Phe Asp Glu Leu Arg Asp Pro Asn Val Lys Leu Pro Asn Gly Arg Asp
 355 360 365

Thr Pro Ala Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser Ser Asn Pro
 370 375 380

Pro Leu Ala Thr Ile Leu Ile Pro Pro His Ala Arg Ile Gln Ala Ala
 385 390 395 400

Ala Ser Thr Pro Thr Asn Ala Thr Ala Ala Ser Asp Ala Asn Thr Gly
 405 410 415

Asp Arg Gly Gln Thr Asn Asn Ala Ala Ser Ala Ser Ala Ser Asn Ser
 420 425 430

Thr

<210> 528
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 528

Met Trp Ser Thr Arg Ser Pro Asn Ser Thr Ala Trp Pro Leu Ser Leu
 1 5 10 15

Glu Pro Asp Pro Gly Met Ala Ser Ala Ser Thr Thr Met His Thr Thr
20 25 30

Thr Ile Ala Glu Pro Asp Pro Gly Met Ser Gly Trp Pro Asp Gly Arg
35 40 45

Met Glu Thr Ser Thr Pro Thr Ile Met Asp Ile Val Val Ile Ala Gly
50 55 60

Val Ile Ala Ala Val Ala Ile Val Leu Val Ser Leu Leu Phe Val Met
65 70 75 80

Leu Arg Tyr Met Tyr Arg His Lys Gly Thr Tyr His Thr Asn Glu Ala
85 90 95

Lys Gly Thr Glu Phe Ala Glu Ser Ala Asp Ala Ala Leu Gln Gly Asp
100 105 110

Pro Ala Leu Gln Asp Ala Gly Asp Ser Ser Arg Lys Glu Tyr Phe Ile
115 120 125

<210> 529
<211> 657
<212> PRT
<213> Homo sapiens

<400> 529

Met Pro Arg Tyr Thr Val His Val Arg Gly Glu Trp Leu Ala Val Pro
1 5 10 15

Cys Gln Asp Ala Gln Leu Thr Val Gly Trp Leu Gly Arg Glu Ala Val
20 25 30

Arg Arg Tyr Ile Lys Asn Lys Pro Asp Asn Gly Gly Phe Thr Ser Val
35 40 45

Asp Asp Ala His Phe Leu Val Arg Arg Cys Lys Gly Leu Gly Leu Leu
50 55 60

Asp Asn Glu Asp Arg Leu Glu Val Ala Leu Glu Asn Asn Glu Phe Val
65 70 75 80

Glu Val Val Ile Glu Gly Asp Ala Met Ser Pro Asp Phe Ile Pro Ser
85 90 95

Gln Pro Glu Gly Val Tyr Leu Tyr Ser Lys Tyr Arg Glu Pro Glu Lys
100 105 110

Tyr Ile Glu Leu Asp Gly Asp Arg Leu Thr Thr Glu Asp Leu Val Asn
115 120 125

Leu Gly Lys Gly Arg Tyr Lys Ile Lys Leu Thr Pro Thr Ala Glu Lys
Page 734

130

135

140

Arg Val Gln Lys Ser Arg Glu Val Ile Asp Ser Ile Ile Lys Glu Lys
 145 150 155 160

Thr Val Val Tyr Gly Ile Thr Thr Gly Phe Gly Lys Phe Ala Arg Thr
 165 170 175

Val Ile Pro Ile Asn Lys Leu Gln Glu Leu Gln Val Asn Leu Val Arg
 180 185 190

Ser His Ser Ser Gly Val Gly Lys Pro Leu Ser Pro Glu Arg Cys Arg
 195 200 205

Met Leu Leu Ala Leu Arg Ile Asn Val Leu Ala Lys Gly Tyr Ser Gly
 210 215 220

Ile Ser Leu Glu Thr Leu Lys Gln Val Ile Glu Met Phe Asn Ala Ser
 225 230 235 240

Cys Leu Pro Tyr Val Pro Glu Lys Gly Thr Val Gly Ala Ser Gly Asp
 245 250 255

Leu Ala Pro Leu Ser His Leu Ala Leu Gly Leu Val Gly Glu Gly Lys
 260 265 270

Met Trp Ser Pro Lys Ser Gly Trp Ala Asp Ala Lys Tyr Val Leu Glu
 275 280 285

Ala His Gly Leu Lys Pro Val Ile Leu Lys Pro Lys Glu Gly Leu Ala
 290 295 300

Leu Ile Asn Gly Thr Gln Met Ile Thr Ser Leu Gly Cys Glu Ala Val
 305 310 315 320

Glu Arg Ala Ser Ala Ile Ala Arg Gln Ala Asp Ile Val Ala Ala Leu
 325 330 335

Thr Leu Glu Val Leu Lys Gly Thr Thr Lys Ala Phe Asp Thr Asp Ile
 340 345 350

His Ala Leu Arg Pro His Arg Gly Gln Ile Glu Val Ala Phe Arg Phe
 355 360 365

Arg Ser Leu Leu Asp Ser Asp His His Pro Ser Glu Ile Ala Glu Ser
 370 375 380

His Arg Phe Cys Asp Arg Val Gln Asp Ala Tyr Thr Leu Arg Cys Cys
 385 390 395 400

Pro Gln Val His Gly Val Val Asn Asp Thr Ile Ala Phe Val Lys Asn
 Page 735

Ile Ile Thr Thr Glu Leu Asn Ser Ala Thr Asp Asn Pro Met Val Phe
420 425 430

Ala Asn Arg Gly Glu Thr Val Ser Gly Gly Asn Phe His Gly Glu Tyr
435 440 445

Pro Ala Lys Ala Leu Asp Tyr Leu Ala Ile Gly Ile His Glu Leu Ala
450 455 460

Ala Ile Ser Glu Arg Arg Ile Glu Arg Leu Cys Asn Pro Ser Leu Ser
465 470 475 480

Glu Leu Pro Ala Phe Leu Val Ala Glu Gly Gly Leu Asn Ser Gly Phe
485 490 495

Met Ile Ala His Cys Thr Ala Ala Leu Val Ser Glu Asn Lys Ala
500 505 510

Leu Cys His Pro Ser Ser Val Asp Ser Leu Ser Thr Ser Ala Ala Thr
515 520 525

Glu Asp His Val Ser Met Gly Gly Trp Ala Ala Arg Lys Ala Leu Arg
530 535 540

Val Ile Glu His Val Glu Gln Val Leu Ala Ile Glu Leu Leu Ala Ala
545 550 555 560

Cys Gln Gly Ile Glu Phe Leu Arg Pro Leu Lys Thr Thr Thr Pro Leu
565 570 575

Glu Lys Val Tyr Asp Leu Val Arg Ser Val Val Arg Pro Trp Ile Lys
580 585 590

Asp Arg Phe Met Ala Pro Asp Ile Glu Ala Ala His Arg Leu Leu Leu
595 600 605

Glu Gln Lys Val Trp Glu Val Ala Ala Pro Tyr Ile Glu Lys Tyr Arg
610 615 620

Met Glu His Ile Pro Glu Ser Arg Pro Leu Ser Pro Thr Ala Phe Ser
625 630 635 640

Leu Gln Phe Leu His Lys Lys Ser Thr Lys Ile Pro Glu Ser Glu Asp
645 650 655

Leu

<210> 530

<211> 526
 <212> PRT
 <213> Homo sapiens

<400> 530

Leu Gly Gly Arg Ser Ser Cys Glu Asp Pro Gly Cys Pro Arg Asp Glu
 1 5 10 15

Glu Arg Ala Pro Arg Met Gly Cys Met Lys Ser Lys Phe Leu Gln Val
 20 25 30

Gly Gly Asn Thr Phe Ser Lys Thr Glu Thr Ser Ala Ser Pro His Cys
 35 40 45

Pro Val Tyr Val Pro Asp Pro Thr Ser Thr Ile Lys Pro Gly Pro Asn
 50 55 60

Ser His Asn Ser Asn Thr Pro Gly Ile Arg Glu Ala Gly Ser Glu Asp
 65 70 75 80

Ile Ile Val Val Ala Leu Tyr Asp Tyr Glu Ala Ile His His Glu Asp
 85 90 95

Leu Ser Phe Gln Lys Gly Asp Gln Met Val Val Leu Glu Glu Ser Gly
 100 105 110

Glu Trp Trp Lys Ala Arg Ser Leu Ala Thr Arg Lys Glu Gly Tyr Ile
 115 120 125

Pro Ser Asn Tyr Val Ala Arg Val Asp Ser Leu Glu Thr Glu Glu Trp
 130 135 140

Phe Phe Lys Gly Ile Ser Arg Lys Asp Ala Glu Arg Gln Leu Leu Ala
 145 150 155 160

Pro Gly Asn Met Leu Gly Ser Phe Met Ile Arg Asp Ser Glu Thr Thr
 165 170 175

Lys Gly Ser Tyr Ser Leu Ser Val Arg Asp Tyr Asp Pro Arg Gln Gly
 180 185 190

Asp Thr Val Lys His Tyr Lys Ile Arg Thr Leu Asp Asn Gly Gly Phe
 195 200 205

Tyr Ile Ser Pro Arg Ser Thr Phe Ser Thr Leu Gln Glu Leu Val Asp
 210 215 220

His Tyr Lys Lys Gly Asn Asp Gly Leu Cys Gln Lys Leu Ser Val Pro
 225 230 235 240

Cys Met Ser Ser Lys Pro Gln Lys Pro Trp Glu Lys Asp Ala Trp Glu
 245 250 255

Ile Pro Arg Glu Ser Leu Lys Leu Glu Lys Lys Leu Gly Ala Gly Gln
 260 265 270
 Phe Gly Glu Val Trp Met Ala Thr Tyr Asn Lys His Thr Lys Val Ala
 275 280 285
 Val Lys Thr Met Lys Pro Gly Ser Met Ser Val Glu Ala Phe Leu Ala
 290 295 300
 Glu Ala Asn Val Met Lys Thr Leu Gln His Asp Lys Leu Val Lys Leu
 305 310 315 320
 His Ala Val Val Thr Lys Glu Pro Ile Tyr Ile Ile Thr Glu Phe Met
 325 330 335
 Ala Lys Gly Ser Leu Leu Asp Phe Leu Lys Ser Asp Glu Gly Ser Lys
 340 345 350
 Gln Pro Leu Pro Lys Leu Ile Asp Phe Ser Ala Gln Ile Ala Glu Gly
 355 360 365
 Met Ala Phe Ile Glu Gln Arg Asn Tyr Ile His Arg Asp Leu Arg Ala
 370 375 380
 Ala Asn Ile Leu Val Ser Ala Ser Leu Val Cys Lys Ile Ala Asp Phe
 385 390 395 400
 Gly Leu Ala Arg Val Ile Glu Asp Asn Glu Tyr Thr Ala Arg Glu Gly
 405 410 415
 Ala Lys Phe Pro Ile Lys Trp Thr Ala Pro Glu Ala Ile Asn Phe Gly
 420 425 430
 Ser Phe Thr Ile Lys Ser Asp Val Trp Ser Phe Gly Ile Leu Leu Met
 435 440 445
 Glu Ile Val Thr Tyr Gly Arg Ile Pro Tyr Pro Gly Met Ser Asn Pro
 450 455 460
 Glu Val Ile Arg Ala Leu Glu Arg Gly Tyr Arg Met Pro Arg Pro Glu
 465 470 475 480
 Asn Cys Pro Glu Glu Leu Tyr Asn Ile Met Met Arg Cys Trp Lys Asn
 485 490 495
 Arg Pro Glu Glu Arg Pro Thr Phe Glu Tyr Ile Gln Ser Val Leu Asp
 500 505 510
 Asp Phe Tyr Thr Ala Thr Glu Ser Gln Tyr Gln Gln Gln Pro
 515 520 525

<210> 531
 <211> 1024
 <212> PRT
 <213> Homo sapiens

<400> 531

Met Glu Arg Arg Ser Arg Arg Lys Ser Arg Arg Asn Gly Arg Ser Thr
 1 5 10 15

Ala Gly Lys Ala Ala Ala Thr Gln Pro Ala Lys Ser Pro Gly Ala Gln
 20 25 30

Leu Trp Leu Phe Pro Ser Ala Ala Gly Leu His Arg Ala Leu Leu Arg
 35 40 45

Arg Val Glu Val Thr Arg Gln Leu Cys Cys Ser Pro Gly Arg Leu Ala
 50 55 60

Val Leu Glu Arg Gly Gly Ala Gly Val Gln Val His Gln Leu Leu Ala
 65 70 75 80

Gly Ser Gly Gly Ala Arg Thr Pro Lys Cys Ile Lys Leu Gly Lys Asn
 85 90 95

Met Lys Ile His Ser Val Asp Gln Gly Ala Glu His Met Leu Ile Leu
 100 105 110

Ser Ser Asp Gly Lys Pro Phe Glu Tyr Asp Asn Tyr Ser Met Lys His
 115 120 125

Leu Arg Phe Glu Ser Ile Leu Gln Glu Lys Lys Ile Ile Gln Ile Thr
 130 135 140

Cys Gly Asp Tyr His Ser Leu Ala Leu Ser Lys Gly Gly Glu Leu Phe
 145 150 155 160

Ala Trp Gly Gln Asn Leu His Gly Gln Leu Gly Val Gly Arg Lys Phe
 165 170 175

Pro Ser Thr Thr Thr Pro Gln Ile Val Glu His Leu Ala Gly Val Pro
 180 185 190

Leu Ala Gln Ile Ser Ala Gly Glu Ala His Ser Met Ala Leu Ser Met
 195 200 205

Ser Gly Asn Ile Tyr Ser Trp Gly Lys Asn Glu Cys Gly Gln Leu Gly
 210 215 220

Leu Gly His Thr Glu Ser Lys Asp Asp Pro Ser Leu Ile Glu Gly Leu
 225 230 235 240

Asp Asn Gln Lys Val Glu Phe Val Ala Cys Gly Gly Ser His Ser Ala
 245 250 255
 Leu Leu Thr Gln Asp Gly Leu Leu Phe Thr Phe Gly Ala Gly Lys His
 260 265 270
 Gly Gln Leu Gly His Asn Ser Thr Gln Asn Glu Leu Arg Pro Cys Leu
 275 280 285
 Val Ala Glu Leu Val Gly Tyr Arg Val Thr Gln Ile Ala Cys Gly Arg
 290 295 300
 Trp His Thr Leu Ala Tyr Val Ser Asp Leu Gly Lys Val Phe Ser Phe
 305 310 315 320
 Gly Ser Gly Lys Asp Gly Gln Leu Gly Asn Gly Gly Thr Arg Asp Gln
 325 330 335
 Leu Met Pro Leu Pro Val Lys Val Ser Ser Ser Glu Glu Leu Lys Leu
 340 345 350
 Glu Ser His Thr Ser Glu Lys Glu Leu Ile Met Ile Ala Gly Gly Asn
 355 360 365
 Gln Ser Ile Leu Leu Trp Ile Lys Lys Glu Asn Ser Tyr Val Asn Leu
 370 375 380
 Lys Arg Thr Ile Pro Thr Leu Asn Glu Gly Thr Val Lys Arg Trp Ile
 385 390 395 400
 Ala Asp Val Glu Thr Lys Arg Trp Gln Ser Thr Lys Arg Glu Ile Gln
 405 410 415
 Glu Ile Phe Ser Ser Pro Ala Cys Leu Thr Gly Ser Phe Leu Arg Lys
 420 425 430
 Arg Arg Thr Thr Glu Met Met Pro Val Tyr Leu Asp Leu Asn Lys Ala
 435 440 445
 Arg Asn Ile Phe Lys Glu Leu Thr Gln Lys Asp Trp Ile Thr Asn Met
 450 455 460
 Ile Thr Thr Cys Leu Lys Asp Asn Leu Leu Lys Arg Leu Pro Phe His
 465 470 475 480
 Ser Pro Pro Gln Glu Ala Leu Glu Ile Phe Phe Leu Leu Pro Glu Cys
 485 490 495
 Pro Met Met His Ile Ser Asn Asn Trp Glu Ser Leu Val Val Pro Phe
 500 505 510

Ala Lys Val Val Cys Lys Met Ser Asp Gln Ser Ser Leu Val Leu Glu
 515 520 525
 Glu Tyr Trp Ala Thr Leu Gln Glu Ser Thr Phe Ser Lys Leu Val Gln
 530 535 540
 Met Phe Lys Thr Ala Val Ile Cys Gln Leu Asp Tyr Trp Asp Glu Ser
 545 550 555 560
 Ala Glu Glu Asn Gly Asn Val Gln Ala Leu Leu Glu Met Leu Lys Lys
 565 570 575
 Leu His Arg Val Asn Gln Val Lys Cys Gln Leu Pro Glu Ser Ile Phe
 580 585 590
 Gln Val Asp Glu Leu Leu His Arg Leu Asn Phe Phe Val Glu Val Cys
 595 600 605
 Arg Arg Tyr Leu Trp Lys Met Thr Val Asp Ala Ser Glu Asn Val Gln
 610 615 620
 Cys Cys Val Ile Phe Ser His Phe Pro Phe Ile Phe Asn Asn Leu Ser
 625 630 635 640
 Lys Ile Lys Leu Leu His Thr Asp Thr Leu Leu Lys Ile Glu Ser Lys
 645 650 655
 Lys His Lys Ala Tyr Leu Arg Ser Ala Ala Ile Glu Glu Glu Arg Glu
 660 665 670
 Ser Glu Phe Ala Leu Arg Pro Thr Phe Asp Leu Thr Val Arg Arg Asn
 675 680 685
 His Leu Ile Glu Asp Val Leu Asn Gln Leu Ser Gln Phe Glu Asn Glu
 690 695 700
 Asp Leu Arg Lys Glu Leu Trp Val Ser Phe Ser Gly Glu Ile Gly Tyr
 705 710 715 720
 Asp Leu Gly Gly Val Lys Lys Glu Phe Phe Tyr Cys Leu Phe Ala Glu
 725 730 735
 Met Ile Gln Pro Glu Tyr Gly Met Phe Met Tyr Pro Glu Gly Ala Ser
 740 745 750
 Cys Met Trp Phe Pro Val Lys Pro Lys Phe Glu Lys Lys Arg Tyr Phe
 755 760 765
 Phe Phe Gly Val Leu Cys Gly Leu Ser Leu Phe Asn Cys Asn Val Ala
 770 775 780

Asn Leu Pro Phe Pro Leu Ala Leu Phe Lys Lys Leu Leu Asp Gln Met
 785 790 795 800
 Pro Ser Leu Glu Asp Leu Lys Glu Leu Ser Pro Asp Leu Gly Lys Asn
 805 810 815
 Leu Gln Thr Leu Leu Asp Asp Glu Gly Asp Asn Phe Glu Glu Val Phe
 820 825 830
 Tyr Ile His Phe Asn Val His Trp Asp Arg Asn Asp Thr Asn Leu Ile
 835 840 845
 Pro Asn Gly Ser Ser Ile Thr Val Asn Gln Thr Asn Lys Arg Asp Tyr
 850 855 860
 Val Ser Lys Tyr Ile Asn Tyr Ile Phe Asn Asp Ser Val Lys Ala Val
 865 870 875 880
 Tyr Glu Glu Phe Arg Arg Gly Phe Tyr Lys Met Cys Asp Glu Asp Ile
 885 890 895
 Ile Lys Leu Phe His Pro Glu Glu Leu Lys Asp Val Ile Val Gly Asn
 900 905 910
 Thr Asp Tyr Asp Trp Lys Thr Phe Glu Lys Asn Ala Arg Tyr Glu Pro
 915 920 925
 Gly Tyr Asn Ser Ser His Pro Thr Ile Val Met Phe Trp Lys Ala Phe
 930 935 940
 His Lys Leu Thr Leu Glu Glu Lys Lys Lys Phe Leu Val Phe Leu Thr
 945 950 955 960
 Gly Thr Asp Arg Leu Gln Met Lys Asp Leu Asn Asn Met Lys Ile Thr
 965 970 975
 Phe Cys Cys Pro Glu Ser Trp Asn Glu Arg Asp Pro Ile Arg Ala Leu
 980 985 990
 Thr Cys Phe Ser Val Leu Phe Leu Pro Lys Tyr Ser Thr Met Glu Thr
 995 1000 1005
 Val Glu Glu Ala Leu Gln Glu Ala Ile Asn Asn Asn Arg Gly Phe
 1010 1015 1020
 Gly

<210> 532
 <211> 1022
 <212> PRT

<213> Homo sapiens

<400> 532

Met Tyr Phe Cys Trp Gly Ala Asp Ser Arg Glu Leu Gln Arg Arg Arg
 1 5 10 15

Thr Ala Gly Ser Pro Gly Ala Glu Leu Leu Gln Ala Ala Ser Gly Glu
 20 25 30

Arg His Ser Leu Leu Leu Leu Thr Asn His Arg Val Leu Ser Cys Gly
 35 40 45

Asp Asn Ser Arg Gly Gln Leu Gly Arg Arg Gly Ala Gln Arg Gly Glu
 50 55 60

Leu Pro Glu Pro Ile Gln Ala Leu Glu Thr Leu Ile Val Asp Leu Val
 65 70 75 80

Ser Cys Gly Lys Glu His Ser Leu Ala Val Cys His Lys Gly Arg Val
 85 90 95

Phe Ala Trp Gly Ala Gly Ser Glu Gly Gln Leu Gly Ile Gly Glu Phe
 100 105 110

Lys Glu Ile Ser Phe Thr Pro Lys Lys Ile Met Thr Leu Asn Asp Ile
 115 120 125

Lys Ile Ile Gln Val Ser Cys Gly His Tyr His Ser Leu Ala Leu Ser
 130 135 140

Lys Asp Ser Gln Val Phe Ser Trp Gly Lys Asn Ser His Gly Gln Leu
 145 150 155 160

Gly Leu Gly Lys Glu Phe Pro Ser Gln Ala Ser Pro Gln Arg Val Arg
 165 170 175

Ser Leu Glu Gly Ile Pro Leu Ala Gln Val Ala Ala Gly Gly Ala His
 180 185 190

Ser Phe Ala Leu Ser Leu Cys Gly Thr Ser Phe Gly Trp Gly Ser Asn
 195 200 205

Ser Ala Gly Gln Leu Ala Leu Ser Gly Arg Asn Val Pro Val Gln Ser
 210 215 220

Asn Lys Pro Leu Ser Val Gly Ala Leu Lys Asn Leu Gly Val Val Tyr
 225 230 235 240

Ile Ser Cys Gly Asp Ala His Thr Ala Val Leu Thr Gln Asp Gly Lys
 245 250 255

Val Phe Thr Phe Gly Asp Asn Arg Ser Gly Gln Leu Gly Tyr Ser Pro
 260 265 270

Thr Pro Glu Lys Arg Gly Pro Gln Leu Val Glu Arg Ile Asp Gly Leu
 275 280 285

Val Ser Gln Ile Asp Cys Gly Ser Tyr His Thr Leu Ala Tyr Val His
 290 295 300

Thr Thr Gly Gln Val Val Ser Phe Gly His Gly Pro Ser Asp Thr Ser
 305 310 315 320

Lys Pro Thr His Pro Glu Ala Leu Thr Glu Asn Phe Asp Ile Ser Cys
 325 330 335

Leu Ile Ser Ala Glu Asp Phe Val Asp Val Gln Val Lys His Ile Phe
 340 345 350

Ala Gly Thr Tyr Ala Asn Phe Val Thr Thr His Gln Asp Thr Ser Ser
 355 360 365

Thr Arg Ala Pro Gly Lys Thr Leu Pro Glu Ile Ser Arg Ile Ser Gln
 370 375 380

Ser Met Ala Glu Lys Trp Ile Ala Val Lys Arg Arg Ser Thr Glu His
 385 390 395 400

Glu Met Ala Lys Ser Glu Ile Arg Met Ile Phe Ser Ser Pro Ala Cys
 405 410 415

Leu Thr Ala Ser Phe Leu Lys Lys Arg Gly Thr Gly Glu Thr Thr Ser
 420 425 430

Ile Asp Val Asp Leu Glu Met Ala Arg Asp Thr Phe Lys Lys Leu Thr
 435 440 445

Lys Lys Glu Trp Ile Ser Ser Met Ile Thr Thr Cys Leu Glu Asp Asp
 450 455 460

Leu Leu Arg Ala Leu Pro Cys His Ser Pro His Gln Glu Ala Leu Ser
 465 470 475 480

Val Phe Leu Leu Leu Pro Glu Cys Pro Val Met His Asp Ser Lys Asn
 485 490 495

Trp Lys Asn Leu Val Val Pro Phe Ala Lys Ala Val Cys Glu Met Ser
 500 505 510

Lys Gln Ser Leu Gln Val Leu Lys Lys Cys Trp Ala Phe Leu Gln Glu
 515 520 525

Ser Ser Leu Asn Pro Leu Ile Gln Met Leu Lys Ala Ala Ile Ile Ser
 530 535 540
 Gln Leu Leu His Gln Thr Lys Thr Glu Gln Asp His Cys Asn Val Lys
 545 550 555 560
 Ala Leu Leu Gly Met Met Lys Glu Leu His Lys Val Asn Lys Ala Asn
 565 570 575
 Cys Arg Leu Pro Glu Asn Thr Phe Asn Ile Asn Glu Leu Ser Asn Leu
 580 585 590
 Leu Asn Phe Tyr Ile Asp Arg Gly Arg Gln Leu Phe Arg Asp Asn His
 595 600 605
 Leu Ile Pro Ala Glu Thr Pro Ser Pro Val Ile Phe Ser Asp Phe Pro
 610 615 620
 Phe Ile Phe Asn Ser Leu Ser Lys Ile Lys Leu Leu Gln Ala Asp Ser
 625 630 635 640
 His Ile Lys Met Gln Met Ser Glu Lys Lys Ala Tyr Met Leu Met His
 645 650 655
 Glu Thr Ile Leu Gln Lys Lys Asp Glu Phe Pro Pro Ser Pro Arg Phe
 660 665 670
 Ile Leu Arg Val Arg Arg Ser Arg Leu Val Lys Asp Ala Leu Arg Gln
 675 680 685
 Leu Ser Gln Ala Glu Ala Thr Asp Phe Cys Lys Val Leu Val Val Glu
 690 695 700
 Phe Ile Asn Glu Ile Cys Pro Glu Ser Gly Gly Val Ser Ser Glu Phe
 705 710 715 720
 Phe His Cys Met Phe Glu Glu Met Thr Lys Pro Glu Tyr Gly Met Phe
 725 730 735
 Met Tyr Pro Glu Met Gly Ser Cys Met Trp Phe Pro Ala Lys Pro Lys
 740 745 750
 Pro Glu Lys Lys Arg Tyr Phe Leu Phe Gly Met Leu Cys Gly Leu Ser
 755 760 765
 Leu Phe Asn Leu Asn Val Ala Asn Leu Pro Phe Pro Leu Ala Leu Tyr
 770 775 780
 Lys Lys Leu Leu Asp Gln Lys Pro Ser Leu Glu Asp Leu Lys Glu Leu
 785 790 795 800

Ser Pro Arg Leu Gly Lys Ser Leu Gln Glu Val Leu Asp Asp Ala Ala
 805 810 815
 Asp Asp Ile Gly Asp Ala Leu Cys Ile Arg Phe Ser Ile His Trp Asp
 820 825 830
 Gln Asn Asp Val Asp Leu Ile Pro Asn Gly Ile Ser Ile Pro Val Asp
 835 840 845
 Gln Thr Asn Lys Arg Asp Tyr Val Ser Lys Tyr Ile Asp Tyr Ile Phe
 850 855 860
 Asn Val Ser Val Lys Ala Val Tyr Glu Glu Phe Gln Arg Gly Phe Tyr
 865 870 875 880
 Arg Val Cys Glu Lys Glu Ile Leu Arg His Phe Tyr Pro Glu Glu Leu
 885 890 895
 Met Thr Ala Ile Ile Gly Asn Thr Asp Tyr Asp Trp Lys Gln Phe Glu
 900 905 910
 Gln Asn Ser Lys Tyr Glu Gln Gly Tyr Gln Lys Ser His Pro Thr Ile
 915 920 925
 Gln Leu Phe Trp Lys Ala Phe His Lys Leu Thr Leu Asp Glu Lys Lys
 930 935 940
 Lys Phe Leu Phe Phe Leu Thr Gly Arg Asp Arg Leu His Ala Arg Gly
 945 950 955 960
 Ile Gln Lys Met Glu Ile Val Phe Arg Cys Pro Glu Thr Phe Ser Glu
 965 970 975
 Arg Asp His Pro Thr Ser Ile Thr Cys His Asn Ile Leu Ser Leu Pro
 980 985 990
 Lys Tyr Ser Thr Met Glu Arg Met Glu Glu Ala Leu Gln Val Ala Ile
 995 1000 1005
 Asn Asn Asn Arg Gly Phe Val Ser Pro Met Leu Thr Gln Ser
 1010 1015 1020
 <210> 533
 <211> 635
 <212> PRT
 <213> Homo sapiens
 <400> 533
 Met Ser Gly Ala Gly Arg Ala Leu Ala Ala Leu Leu Leu Ala Ala Ser
 1 5 10 15
 Val Leu Ser Ala Ala Leu Leu Ala Pro Gly Gly Ser Ser Gly Arg Asp

20

25

30

Ala Gln Ala Ala Pro Pro Arg Asp Leu Asp Lys Lys Arg His Ala Glu
35 40 45

Leu Lys Met Asp Gln Ala Leu Leu Leu Ile His Asn Glu Leu Leu Trp
50 55 60

Thr Asn Leu Thr Val Tyr Trp Lys Ser Glu Cys Cys Tyr His Cys Leu
65 70 75 80

Phe Gln Val Leu Val Asn Val Pro Gln Ser Pro Lys Ala Gly Lys Pro
85 90 95

Ser Ala Ala Ala Ala Ser Val Ser Thr Gln His Gly Ser Ile Leu Gln
100 105 110

Leu Asn Asp Thr Leu Glu Glu Lys Glu Val Cys Arg Leu Glu Tyr Arg
115 120 125

Phe Gly Glu Phe Gly Asn Tyr Ser Leu Leu Val Lys Asn Ile His Asn
130 135 140

Gly Val Ser Glu Ile Ala Cys Asp Leu Ala Val Asn Glu Asp Pro Val
145 150 155 160

Asp Ser Asn Leu Pro Val Ser Ile Ala Phe Leu Ile Gly Leu Ala Val
165 170 175

Ile Ile Val Ile Ser Phe Leu Arg Leu Leu Leu Ser Leu Asp Asp Phe
180 185 190

Asn Asn Trp Ile Ser Lys Ala Ile Ser Ser Arg Glu Thr Asp Arg Leu
195 200 205

Ile Asn Ser Glu Leu Gly Ser Pro Ser Arg Thr Asp Pro Leu Asp Gly
210 215 220

Asp Val Gln Pro Ala Thr Trp Arg Leu Ser Ala Leu Pro Pro Arg Leu
225 230 235 240

Arg Ser Val Asp Thr Phe Arg Gly Ile Ala Leu Ile Leu Met Val Phe
245 250 255

Val Asn Tyr Gly Gly Gly Lys Tyr Trp Tyr Phe Lys His Ala Ser Trp
260 265 270

Asn Gly Leu Thr Val Ala Asp Leu Val Phe Pro Trp Phe Val Phe Ile
275 280 285

Met Gly Ser Ser Ile Phe Leu Ser Met Thr Ser Ile Leu Gln Arg Gly

290

295

300

Cys Ser Lys Phe Arg Leu Leu Gly Lys Ile Ala Trp Arg Ser Phe Leu
 305 310 315 320

Leu Ile Cys Ile Gly Ile Ile Ile Val Asn Pro Asn Tyr Cys Leu Gly
 325 330 335

Pro Leu Ser Trp Asp Lys Val Arg Ile Pro Gly Val Leu Gln Arg Leu
 340 345 350

Gly Val Thr Tyr Phe Val Val Ala Val Leu Glu Leu Leu Phe Ala Lys
 355 360 365

Pro Val Pro Glu His Cys Ala Ser Glu Arg Ser Cys Leu Ser Leu Arg
 370 375 380

Asp Ile Thr Ser Ser Trp Pro Gln Trp Leu Leu Ile Leu Val Leu Glu
 385 390 395 400

Gly Leu Trp Leu Gly Leu Thr Phe Leu Leu Pro Val Pro Gly Cys Pro
 405 410 415

Thr Gly Tyr Leu Gly Pro Gly Gly Ile Gly Asp Phe Gly Lys Tyr Pro
 420 425 430

Asn Cys Thr Gly Gly Ala Ala Gly Tyr Ile Asp Arg Leu Leu Leu Gly
 435 440 445

Asp Asp His Leu Tyr Gln His Pro Ser Ser Ala Val Leu Tyr His Thr
 450 455 460

Glu Val Ala Tyr Asp Pro Glu Gly Ile Leu Gly Thr Ile Asn Ser Ile
 465 470 475 480

Val Met Ala Phe Leu Gly Val Gln Ala Gly Lys Ile Leu Leu Tyr Tyr
 485 490 495

Lys Ala Arg Thr Lys Asp Ile Leu Ile Arg Phe Thr Ala Trp Cys Cys
 500 505 510

Ile Leu Gly Leu Ile Ser Val Ala Leu Thr Lys Val Ser Glu Asn Glu
 515 520 525

Gly Phe Ile Pro Val Asn Lys Asn Leu Trp Ser Leu Ser Tyr Val Thr
 530 535 540

Thr Leu Ser Ser Phe Ala Phe Phe Ile Leu Leu Val Leu Tyr Pro Val
 545 550 555 560

Val Asp Val Lys Gly Leu Trp Thr Gly Thr Pro Phe Phe Tyr Pro Gly
 Page 748

Met Asn Ser Ile Leu Val Tyr Val Gly His Glu Val Phe Glu Asn Tyr
580 585 590

Phe Pro Phe Gln Trp Lys Leu Lys Asp Asn Gln Ser His Lys Glu His
595 600 605

Leu Thr Gln Asn Ile Val Ala Thr Ala Leu Trp Val Leu Ile Ala Tyr
610 615 620

Ile Leu Tyr Arg Lys Lys Ile Phe Trp Lys Ile
625 630 635

<210> 534
<211> 270
<212> PRT
<213> Homo sapiens

<400> 534

Met Gln Tyr Pro His Pro Gly Pro Ala Ala Gly Ala Val Gly Val Pro
1 5 10 15

Leu Tyr Ala Pro Thr Pro Leu Leu Gln Pro Ala His Pro Thr Pro Phe
20 25 30

Tyr Ile Glu Asp Ile Leu Gly Arg Gly Pro Ala Ala Pro Thr Pro Ala
35 40 45

Pro Thr Leu Pro Ser Pro Asn Ser Ser Phe Thr Ser Leu Val Ser Pro
50 55 60

Tyr Arg Thr Pro Val Tyr Glu Pro Thr Pro Ile His Pro Ala Phe Ser
65 70 75 80

His His Ser Ala Ala Ala Leu Ala Ala Tyr Gly Pro Gly Gly Phe
85 90 95

Gly Gly Pro Leu Tyr Pro Phe Pro Arg Thr Val Asn Asp Tyr Thr His
100 105 110

Ala Leu Leu Arg His Asp Pro Leu Gly Lys Pro Leu Leu Trp Ser Pro
115 120 125

Phe Leu Gln Arg Pro Leu His Lys Arg Lys Gly Gly Gln Val Arg Phe
130 135 140

Ser Asn Asp Gln Thr Ile Glu Leu Glu Lys Lys Phe Glu Thr Gln Lys
145 150 155 160

Tyr Leu Ser Pro Pro Glu Arg Lys Arg Leu Ala Lys Met Leu Gln Leu
165 170 175

Ser Glu Arg Gln Val Lys Thr Trp Phe Gln Asn Arg Arg Ala Lys Trp
180 185 190

Arg Arg Leu Lys Gln Glu Asn Pro Gln Ser Asn Lys Lys Glu Glu Leu
195 200 205

Glu Ser Leu Asp Ser Ser Cys Asp Gln Arg Gln Asp Leu Pro Ser Glu
210 215 220

Gln Asn Lys Gly Ala Ser Leu Asp Ser Ser Gln Cys Ser Pro Ser Pro
225 230 235 240

Ala Ser Gln Glu Asp Leu Glu Ser Glu Ile Ser Glu Asp Ser Asp Gln
245 250 255

Glu Val Asp Ile Glu Gly Asp Lys Ser Tyr Phe Asn Ala Gly
260 265 270

<210> 535
<211> 1037
<212> PRT
<213> Homo sapiens

<400> 535

Met Asp Arg Met Ala Ser Ser Met Lys Gln Val Pro Asn Pro Leu Pro
1 5 10 15

Lys Val Leu Ser Arg Arg Gly Val Gly Ala Gly Leu Glu Ala Ala Glu
20 25 30

Arg Glu Ser Phe Glu Arg Thr Gln Thr Val Ser Ile Asn Lys Ala Ile
35 40 45

Asn Thr Gln Glu Val Ala Val Lys Glu Lys His Ala Arg Thr Cys Ile
50 55 60

Leu Gly Thr His His Glu Lys Gly Ala Gln Thr Phe Trp Ser Val Val
65 70 75 80

Asn Arg Leu Pro Leu Ser Ser Asn Ala Val Leu Cys Trp Lys Phe Cys
85 90 95

His Val Phe His Lys Leu Leu Arg Asp Gly His Pro Asn Val Leu Lys
100 105 110

Asp Ser Leu Arg Tyr Arg Asn Glu Leu Ser Asp Met Ser Arg Met Trp
115 120 125

Gly His Leu Ser Glu Gly Tyr Gly Gln Leu Cys Ser Ile Tyr Leu Lys
130 135 140

PCTAU2016050927-seql-000001-EN-20161013

Leu Leu Arg Thr Lys Met Glu Tyr His Thr Lys Asn Pro Arg Phe Pro
 145 150 155 160
 Gly Asn Leu Gln Met Ser Asp Arg Gln Leu Asp Glu Ala Gly Glu Ser
 165 170 175
 Asp Val Asn Asn Phe Phe Gln Leu Thr Val Glu Met Phe Asp Tyr Leu
 180 185 190
 Glu Cys Glu Leu Asn Leu Phe Gln Thr Val Phe Asn Ser Leu Asp Met
 195 200 205
 Ser Arg Ser Val Ser Val Thr Ala Ala Gly Gln Cys Arg Leu Ala Pro
 210 215 220
 Leu Ile Gln Val Ile Leu Asp Cys Ser His Leu Tyr Asp Tyr Thr Val
 225 230 235 240
 Lys Leu Leu Phe Lys Leu His Ser Cys Leu Pro Ala Asp Thr Leu Gln
 245 250 255
 Gly His Arg Asp Arg Phe Met Glu Gln Phe Thr Lys Leu Lys Asp Leu
 260 265 270
 Phe Tyr Arg Ser Ser Asn Leu Gln Tyr Phe Lys Arg Leu Ile Gln Ile
 275 280 285
 Pro Gln Leu Pro Glu Asn Pro Pro Asn Phe Leu Arg Ala Ser Ala Leu
 290 295 300
 Ser Glu His Ile Ser Pro Val Val Val Ile Pro Ala Glu Ala Ser Ser
 305 310 315 320
 Pro Asp Ser Glu Pro Val Leu Glu Lys Asp Asp Leu Met Asp Met Asp
 325 330 335
 Ala Ser Gln Gln Asn Leu Phe Asp Asn Lys Phe Asp Asp Ile Phe Gly
 340 345 350
 Ser Ser Phe Ser Ser Asp Pro Phe Asn Phe Asn Ser Gln Asn Gly Val
 355 360 365
 Asn Lys Asp Glu Lys Asp His Leu Ile Glu Arg Leu Tyr Arg Glu Ile
 370 375 380
 Ser Gly Leu Lys Ala Gln Leu Glu Asn Met Lys Thr Glu Ser Gln Arg
 385 390 395 400
 Val Val Leu Gln Leu Lys Gly His Val Ser Glu Leu Glu Ala Asp Leu
 405 410 415

Ala Glu Gln Gln His Leu Arg Gln Gln Ala Ala Asp Asp Cys Glu Phe
 420 425 430
 Leu Arg Ala Glu Leu Asp Glu Leu Arg Arg Gln Arg Glu Asp Thr Glu
 435 440 445
 Lys Ala Gln Arg Ser Leu Ser Glu Ile Glu Arg Lys Ala Gln Ala Asn
 450 455 460
 Glu Gln Arg Tyr Ser Lys Leu Lys Glu Lys Tyr Ser Glu Leu Val Gln
 465 470 475 480
 Asn His Ala Asp Leu Leu Arg Lys Asn Ala Glu Val Thr Lys Gln Val
 485 490 495
 Ser Met Ala Arg Gln Ala Gln Val Asp Leu Glu Arg Glu Lys Lys Glu
 500 505 510
 Leu Glu Asp Ser Leu Glu Arg Ile Ser Asp Gln Gly Gln Arg Lys Thr
 515 520 525
 Gln Glu Gln Leu Glu Val Leu Glu Ser Leu Lys Gln Glu Leu Ala Thr
 530 535 540
 Ser Gln Arg Glu Leu Gln Val Leu Gln Gly Ser Leu Glu Thr Ser Ala
 545 550 555 560
 Gln Ser Glu Ala Asn Trp Ala Ala Glu Phe Ala Glu Leu Glu Lys Glu
 565 570 575
 Arg Asp Ser Leu Val Ser Gly Ala Ala His Arg Glu Glu Glu Leu Ser
 580 585 590
 Ala Leu Arg Lys Glu Leu Gln Asp Thr Gln Leu Lys Leu Ala Ser Thr
 595 600 605
 Glu Glu Ser Met Cys Gln Leu Ala Lys Asp Gln Arg Lys Met Leu Leu
 610 615 620
 Val Gly Ser Arg Lys Ala Ala Glu Gln Val Ile Gln Asp Ala Leu Asn
 625 630 635 640
 Gln Leu Glu Glu Pro Pro Leu Ile Ser Cys Ala Gly Ser Ala Asp His
 645 650 655
 Leu Leu Ser Thr Val Thr Ser Ile Ser Ser Cys Ile Glu Gln Leu Glu
 660 665 670
 Lys Ser Trp Ser Gln Tyr Leu Ala Cys Pro Glu Asp Ile Ser Gly Leu
 675 680 685

Leu His Ser Ile Thr Leu Leu Ala His Leu Thr Ser Asp Ala Ile Ala
 690 695 700
 His Gly Ala Thr Thr Cys Leu Arg Ala Pro Pro Glu Pro Ala Asp Ser
 705 710 715 720
 Leu Thr Glu Ala Cys Lys Gln Tyr Gly Arg Glu Thr Leu Ala Tyr Leu
 725 730 735
 Ala Ser Leu Glu Glu Glu Gly Ser Leu Glu Asn Ala Asp Ser Thr Ala
 740 745 750
 Met Arg Asn Cys Leu Ser Lys Ile Lys Ala Ile Gly Glu Glu Leu Leu
 755 760 765
 Pro Arg Gly Leu Asp Ile Lys Gln Glu Glu Leu Gly Asp Leu Val Asp
 770 775 780
 Lys Glu Met Ala Ala Thr Ser Ala Ala Ile Glu Thr Ala Thr Ala Arg
 785 790 795 800
 Ile Glu Glu Met Leu Ser Lys Ser Arg Ala Gly Asp Thr Gly Val Lys
 805 810 815
 Leu Glu Val Asn Glu Arg Ile Leu Gly Cys Cys Thr Ser Leu Met Gln
 820 825 830
 Ala Ile Gln Val Leu Ile Val Ala Ser Lys Asp Leu Gln Arg Glu Ile
 835 840 845
 Val Glu Ser Gly Arg Gly Thr Ala Ser Pro Lys Glu Phe Tyr Ala Lys
 850 855 860
 Asn Ser Arg Trp Thr Glu Gly Leu Ile Ser Ala Ser Lys Ala Val Gly
 865 870 875 880
 Trp Gly Ala Thr Val Met Val Asp Ala Ala Asp Leu Val Val Gln Gly
 885 890 895
 Arg Gly Lys Phe Glu Glu Leu Met Val Cys Ser His Glu Ile Ala Ala
 900 905 910
 Ser Thr Ala Gln Leu Val Ala Ala Ser Lys Val Lys Ala Asp Lys Asp
 915 920 925
 Ser Pro Asn Leu Ala Gln Leu Gln Gln Ala Ser Arg Gly Val Asn Gln
 930 935 940
 Ala Thr Ala Gly Val Val Ala Ser Thr Ile Ser Gly Lys Ser Gln Ile
 945 950 955 960

Glu Glu Thr Asp Asn Met Asp Phe Ser Ser Met Thr Leu Thr Gln Ile
 965 970 975

Lys Arg Gln Glu Met Asp Ser Gln Val Arg Val Leu Glu Leu Glu Asn
 980 985 990

Glu Leu Gln Lys Glu Arg Gln Lys Leu Gly Glu Leu Arg Lys Lys His
 995 1000 1005

Tyr Glu Leu Ala Gly Val Ala Glu Gly Trp Glu Glu Gly Thr Glu
 1010 1015 1020

Ala Ser Pro Pro Thr Leu Gln Glu Val Val Thr Glu Lys Glu
 1025 1030 1035

<210> 536
 <211> 193
 <212> PRT
 <213> Homo sapiens
 <400> 536

Met Gly Lys Gln Asn Ser Lys Leu Arg Pro Glu Val Leu Gln Asp Leu
 1 5 10 15

Arg Glu Asn Thr Glu Phe Thr Asp His Glu Leu Gln Glu Trp Tyr Lys
 20 25 30

Gly Phe Leu Lys Asp Cys Pro Thr Gly His Leu Thr Val Asp Glu Phe
 35 40 45

Lys Lys Ile Tyr Ala Asn Phe Phe Pro Tyr Gly Asp Ala Ser Lys Phe
 50 55 60

Ala Glu His Val Phe Arg Thr Phe Asp Thr Asn Gly Asp Gly Thr Ile
 65 70 75 80

Asp Phe Arg Glu Phe Ile Ile Ala Leu Ser Val Thr Ser Arg Gly Lys
 85 90 95

Leu Glu Gln Lys Leu Lys Trp Ala Phe Ser Met Tyr Asp Leu Asp Gly
 100 105 110

Asn Gly Tyr Ile Ser Arg Ser Glu Met Leu Glu Ile Val Gln Ala Ile
 115 120 125

Tyr Lys Met Val Ser Ser Val Met Lys Met Pro Glu Asp Glu Ser Thr
 130 135 140

Pro Glu Lys Arg Thr Asp Lys Ile Phe Arg Gln Met Asp Thr Asn Asn
 145 150 155 160

Asp Gly Lys Leu Ser Leu Glu Glu Phe Ile Arg Gly Ala Lys Ser Asp
 165 170 175

Pro Ser Ile Val Arg Leu Leu Gln Cys Asp Pro Ser Ser Ala Ser Gln
 180 185 190

Phe

<210> 537
 <211> 700
 <212> PRT
 <213> Homo sapiens

<400> 537

Met Lys Cys Val Leu Val Ala Thr Glu Gly Ala Glu Val Leu Phe Tyr
 1 5 10 15

Trp Thr Asp Gln Glu Phe Glu Glu Ser Leu Arg Leu Lys Phe Gly Gln
 20 25 30

Ser Glu Asn Glu Glu Glu Glu Leu Pro Ala Leu Glu Asp Gln Leu Ser
 35 40 45

Thr Leu Leu Ala Pro Val Ile Ile Ser Ser Met Thr Met Leu Glu Lys
 50 55 60

Leu Ser Asp Thr Tyr Thr Cys Phe Ser Thr Glu Asn Gly Asn Phe Leu
 65 70 75 80

Tyr Val Leu His Leu Phe Gly Glu Cys Leu Phe Ile Ala Ile Asn Gly
 85 90 95

Asp His Thr Glu Ser Glu Gly Asp Leu Arg Arg Lys Leu Tyr Val Leu
 100 105 110

Lys Tyr Leu Phe Glu Val His Phe Gly Leu Val Thr Val Asp Gly His
 115 120 125

Leu Ile Arg Lys Glu Leu Arg Pro Pro Asp Leu Ala Gln Arg Val Gln
 130 135 140

Leu Trp Glu His Phe Gln Ser Leu Leu Trp Thr Tyr Ser Arg Leu Arg
 145 150 155 160

Glu Gln Glu Gln Cys Phe Ala Val Glu Ala Leu Glu Arg Leu Ile His
 165 170 175

Pro Gln Leu Cys Glu Leu Cys Ile Glu Ala Leu Glu Arg His Val Ile
 180 185 190

Gln Ala Val Asn Thr Ser Pro Glu Arg Gly Gly Glu Glu Ala Leu His
 Page 755

195

200

205

Ala Phe Leu Leu Val His Ser Lys Leu Leu Ala Phe Tyr Ser Ser His
 210 215 220

Ser Ala Ser Ser Leu Arg Pro Ala Asp Leu Leu Ala Leu Ile Leu Leu
 225 230 235 240

Val Gln Asp Leu Tyr Pro Ser Glu Ser Thr Ala Glu Asp Asp Ile Gln
 245 250 255

Pro Ser Pro Arg Arg Ala Arg Ser Ser Gln Asn Ile Pro Val Gln Gln
 260 265 270

Ala Trp Ser Pro His Ser Thr Gly Pro Thr Gly Gly Ser Ser Ala Glu
 275 280 285

Thr Glu Thr Asp Ser Phe Ser Leu Pro Glu Glu Tyr Phe Thr Pro Ala
 290 295 300

Pro Ser Pro Gly Asp Gln Ser Ser Gly Ser Thr Ile Trp Leu Glu Gly
 305 310 315 320

Gly Thr Pro Pro Met Asp Ala Leu Gln Ile Ala Glu Asp Thr Leu Gln
 325 330 335

Thr Leu Val Pro His Cys Pro Val Pro Ser Gly Pro Arg Arg Ile Phe
 340 345 350

Leu Asp Ala Asn Val Lys Glu Ser Tyr Cys Pro Leu Val Pro His Thr
 355 360 365

Met Tyr Cys Leu Pro Leu Trp Gln Gly Ile Asn Leu Val Leu Leu Thr
 370 375 380

Arg Ser Pro Ser Ala Pro Leu Ala Leu Val Leu Ser Gln Leu Met Asp
 385 390 395 400

Gly Phe Ser Met Leu Glu Lys Lys Leu Lys Glu Gly Pro Glu Pro Gly
 405 410 415

Ala Ser Leu Arg Ser Gln Pro Leu Val Gly Asp Leu Arg Gln Arg Met
 420 425 430

Asp Lys Phe Val Lys Asn Arg Gly Ala Gln Glu Ile Gln Ser Thr Trp
 435 440 445

Leu Glu Phe Lys Ala Lys Ala Phe Ser Lys Ser Glu Pro Gly Ser Ser
 450 455 460

Trp Glu Leu Leu Gln Ala Cys Gly Lys Leu Lys Arg Gln Leu Cys Ala
 Page 756

465 470 475 480

Ile Tyr Arg Leu Asn Phe Leu Thr Thr Ala Pro Ser Arg Gly Gly Pro
485 490 495

His Leu Pro Gln His Leu Gln Asp Gln Val Gln Arg Leu Met Arg Glu
500 505 510

Lys Leu Thr Asp Trp Lys Asp Phe Leu Leu Val Lys Ser Arg Arg Asn
515 520 525

Ile Thr Met Val Ser Tyr Leu Glu Asp Phe Pro Gly Leu Val His Phe
530 535 540

Ile Tyr Val Asp Arg Thr Thr Gly Gln Met Val Ala Pro Ser Leu Asn
545 550 555 560

Cys Ser Gln Lys Thr Ser Ser Glu Leu Gly Lys Gly Pro Leu Ala Ala
565 570 575

Phe Val Lys Thr Lys Val Trp Ser Leu Ile Gln Leu Ala Arg Arg Tyr
580 585 590

Leu Gln Lys Gly Tyr Thr Thr Leu Leu Phe Gln Glu Gly Asp Phe Tyr
595 600 605

Cys Ser Tyr Phe Leu Trp Phe Glu Asn Asp Met Gly Tyr Lys Leu Gln
610 615 620

Met Ile Glu Val Pro Val Leu Ser Asp Asp Ser Val Pro Ile Gly Met
625 630 635 640

Leu Gly Gly Asp Tyr Tyr Arg Lys Leu Leu Arg Tyr Tyr Ser Lys Asn
645 650 655

Arg Pro Thr Glu Ala Val Arg Cys Tyr Glu Leu Leu Ala Leu His Leu
660 665 670

Ser Val Ile Pro Thr Asp Leu Leu Val Gln Gln Ala Gly Gln Leu Ala
675 680 685

Arg Arg Leu Trp Glu Ala Ser Arg Ile Pro Leu Leu
690 695 700

<210> 538
<211> 547
<212> PRT
<213> Homo sapiens

<400> 538

Met Ala Thr Met Val Pro Ser Val Leu Trp Pro Arg Ala Cys Trp Thr
1 5 10 15

Leu Leu Val Cys Cys Leu Leu Thr Pro Gly Val Gln Gly Gln Glu Phe
 20 25 30
 Leu Leu Arg Val Glu Pro Gln Asn Pro Val Leu Ser Ala Gly Gly Ser
 35 40 45
 Leu Phe Val Asn Cys Ser Thr Asp Cys Pro Ser Ser Glu Lys Ile Ala
 50 55 60
 Leu Glu Thr Ser Leu Ser Lys Glu Leu Val Ala Ser Gly Met Gly Trp
 65 70 75 80
 Ala Ala Phe Asn Leu Ser Asn Val Thr Gly Asn Ser Arg Ile Leu Cys
 85 90 95
 Ser Val Tyr Cys Asn Gly Ser Gln Ile Thr Gly Ser Ser Asn Ile Thr
 100 105 110
 Val Tyr Arg Leu Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Pro Trp
 115 120 125
 Gln Pro Val Gly Gln Asn Phe Thr Leu Arg Cys Gln Val Glu Asp Gly
 130 135 140
 Ser Pro Arg Thr Ser Leu Thr Val Val Leu Leu Arg Trp Glu Glu Glu
 145 150 155 160
 Leu Ser Arg Gln Pro Ala Val Glu Glu Pro Ala Glu Val Thr Ala Thr
 165 170 175
 Val Leu Ala Ser Arg Asp Asp His Gly Ala Pro Phe Ser Cys Arg Thr
 180 185 190
 Glu Leu Asp Met Gln Pro Gln Gly Leu Gly Leu Phe Val Asn Thr Ser
 195 200 205
 Ala Pro Arg Gln Leu Arg Thr Phe Val Leu Pro Val Thr Pro Pro Arg
 210 215 220
 Leu Val Ala Pro Arg Phe Leu Glu Val Glu Thr Ser Trp Pro Val Asp
 225 230 235 240
 Cys Thr Leu Asp Gly Leu Phe Pro Ala Ser Glu Ala Gln Val Tyr Leu
 245 250 255
 Ala Leu Gly Asp Gln Met Leu Asn Ala Thr Val Met Asn His Gly Asp
 260 265 270
 Thr Leu Thr Ala Thr Ala Thr Ala Thr Ala Arg Ala Asp Gln Glu Gly
 275 280 285

Ala Arg Glu Ile Val Cys Asn Val Thr Leu Gly Gly Glu Arg Arg Glu
 290 295 300
 Ala Arg Glu Asn Leu Thr Val Phe Ser Phe Leu Gly Pro Ile Val Asn
 305 310 315 320
 Leu Ser Glu Pro Thr Ala His Glu Gly Ser Thr Val Thr Val Ser Cys
 325 330 335
 Met Ala Gly Ala Arg Val Gln Val Thr Leu Asp Gly Val Pro Ala Ala
 340 345 350
 Ala Pro Gly Gln Pro Ala Gln Leu Gln Leu Asn Ala Thr Glu Ser Asp
 355 360 365
 Asp Gly Arg Ser Phe Phe Cys Ser Ala Thr Leu Glu Val Asp Gly Glu
 370 375 380
 Phe Leu His Arg Asn Ser Ser Val Gln Leu Arg Val Leu Tyr Gly Pro
 385 390 395 400
 Lys Ile Asp Arg Ala Thr Cys Pro Gln His Leu Lys Trp Lys Asp Lys
 405 410 415
 Thr Arg His Val Leu Gln Cys Gln Ala Arg Gly Asn Pro Tyr Pro Glu
 420 425 430
 Leu Arg Cys Leu Lys Glu Gly Ser Ser Arg Glu Val Pro Val Gly Ile
 435 440 445
 Pro Phe Phe Val Asn Val Thr His Asn Gly Thr Tyr Gln Cys Gln Ala
 450 455 460
 Ser Ser Ser Arg Gly Lys Tyr Thr Leu Val Val Val Met Asp Ile Glu
 465 470 475 480
 Ala Gly Ser Ser His Phe Val Pro Val Phe Val Ala Val Leu Leu Thr
 485 490 495
 Leu Gly Val Val Thr Ile Val Leu Ala Leu Met Tyr Val Phe Arg Glu
 500 505 510
 His Gln Arg Ser Gly Ser Tyr His Val Arg Glu Glu Ser Thr Tyr Leu
 515 520 525
 Pro Leu Thr Ser Met Gln Pro Thr Glu Ala Met Gly Glu Glu Pro Ser
 530 535 540
 Arg Ala Glu
 545

<210> 539
 <211> 444
 <212> PRT
 <213> Homo sapiens

<400> 539

Met Ala Val Thr Thr Arg Leu Thr Trp Leu His Glu Lys Ile Leu Gln
 1 5 10 15

Asn His Phe Gly Gly Lys Arg Leu Ser Leu Leu Tyr Lys Gly Ser Val
 20 25 30

His Gly Phe Arg Asn Gly Val Leu Leu Asp Arg Cys Cys Asn Gln Gly
 35 40 45

Pro Thr Leu Thr Val Ile Tyr Ser Glu Asp His Ile Ile Gly Ala Tyr
 50 55 60

Ala Glu Glu Ser Tyr Gln Glu Gly Lys Tyr Ala Ser Ile Ile Leu Phe
 65 70 75 80

Ala Leu Gln Asp Thr Lys Ile Ser Glu Trp Lys Leu Gly Leu Cys Thr
 85 90 95

Pro Glu Thr Leu Phe Cys Cys Asp Val Thr Lys Tyr Asn Ser Pro Thr
 100 105 110

Asn Phe Gln Ile Asp Gly Arg Asn Arg Lys Val Ile Met Asp Leu Lys
 115 120 125

Thr Met Glu Asn Leu Gly Leu Ala Gln Asn Cys Thr Ile Ser Ile Gln
 130 135 140

Asp Tyr Glu Val Phe Arg Cys Glu Asp Ser Leu Asp Glu Arg Lys Ile
 145 150 155 160

Lys Gly Val Ile Glu Leu Arg Lys Ser Leu Leu Ser Ala Leu Arg Thr
 165 170 175

Tyr Glu Pro Tyr Gly Ser Leu Val Gln Gln Ile Arg Ile Leu Leu Leu
 180 185 190

Gly Pro Ile Gly Ala Gly Lys Ser Ser Phe Phe Asn Ser Val Arg Ser
 195 200 205

Val Phe Gln Gly His Val Thr His Gln Ala Leu Val Gly Thr Asn Thr
 210 215 220

Thr Gly Ile Ser Glu Lys Tyr Arg Thr Tyr Ser Ile Arg Asp Gly Lys
 225 230 235 240

Asp Gly Lys Tyr Leu Pro Phe Ile Leu Cys Asp Ser Leu Gly Leu Ser
 245 250 255

Glu Lys Glu Gly Gly Leu Cys Arg Asp Asp Ile Phe Tyr Ile Leu Asn
 260 265 270

Gly Asn Ile Arg Asp Arg Tyr Gln Phe Asn Pro Met Glu Ser Ile Lys
 275 280 285

Leu Asn His His Asp Tyr Ile Asp Ser Pro Ser Leu Lys Asp Arg Ile
 290 295 300

His Cys Val Ala Phe Val Phe Asp Ala Ser Ser Ile Gln Tyr Phe Ser
 305 310 315 320

Ser Gln Met Ile Val Lys Ile Lys Arg Ile Arg Arg Glu Leu Val Asn
 325 330 335

Ala Gly Val Val His Val Ala Leu Leu Thr His Val Asp Ser Met Asp
 340 345 350

Leu Ile Thr Lys Gly Asp Leu Ile Glu Ile Glu Arg Cys Glu Pro Val
 355 360 365

Arg Ser Lys Leu Glu Glu Val Gln Arg Lys Leu Gly Phe Ala Leu Ser
 370 375 380

Asp Ile Ser Val Val Ser Asn Tyr Ser Ser Glu Trp Glu Leu Asp Pro
 385 390 395 400

Val Lys Asp Val Leu Ile Leu Ser Ala Leu Arg Arg Met Leu Trp Ala
 405 410 415

Ala Asp Asp Phe Leu Glu Asp Leu Pro Phe Glu Gln Ile Gly Asn Leu
 420 425 430

Arg Glu Glu Ile Ile Asn Cys Ala Gln Gly Lys Lys
 435 440

<210> 540
 <211> 130
 <212> PRT
 <213> Homo sapiens

<400> 540

Met Arg Gln Lys Ala Val Ser Leu Phe Leu Cys Tyr Leu Leu Leu Phe
 1 5 10 15

Thr Cys Ser Gly Val Glu Ala Gly Lys Lys Lys Cys Ser Glu Ser Ser
 20 25 30

PCTAU2016050927-seql-000001-EN-20161013

Asp Ser Gly Ser Gly Phe Trp Lys Ala Leu Thr Phe Met Ala Val Gly
35 40 45

Gly Gly Leu Ala Val Ala Gly Leu Pro Ala Leu Gly Phe Thr Gly Ala
50 55 60

Gly Ile Ala Ala Asn Ser Val Ala Ala Ser Leu Met Ser Trp Ser Ala
65 70 75 80

Ile Leu Asn Gly Gly Gly Val Pro Ala Gly Gly Leu Val Ala Thr Leu
85 90 95

Gln Ser Leu Gly Ala Gly Gly Ser Ser Val Val Ile Gly Asn Ile Gly
100 105 110

Ala Leu Met Gly Tyr Ala Thr His Lys Tyr Leu Asp Ser Glu Glu Asp
115 120 125

Glu Glu
130

```
<210> 541
<211> 1025
<212> PRT
<213> Homo sapiens
```

<400> 541

Met Ser Asn Gly Tyr Ser Thr Asp Glu Asn Phe Arg Tyr Leu Ile Ser
1 5 10 15

Cys Phe Arg Ala Arg Val Lys Met Tyr Ile Gln Val Glu Pro Val Leu
20 25 30

Asp Tyr Leu Thr Phe Leu Pro Ala Glu Val Lys Glu Gln Ile Gln Arg
35 40 45

Thr Val Ala Thr Ser Gly Asn Met Gln Ala Val Glu Leu Leu Leu Ser
50 55 60

Thr Leu Glu Lys Gly Val Trp His Leu Gly Trp Thr Arg Glu Phe Val
65 70 75 80

Glu Ala Leu Arg Arg Thr Gly Ser Pro Leu Ala Ala Arg Tyr Met Asn
85 90 95

Pro Glu Leu Thr Asp Leu Pro Ser Pro Ser Phe Glu Asn Ala His Asp
100 105 110

Glu Tyr Leu Gln Leu Leu Asn Leu Leu Gln Pro Thr Leu Val Asp Lys
115 120 125

Leu Leu Val Arg Asp Val Leu Asp Lys Cys Met Glu Glu Glu Leu Leu
Page 762

130

135

140

Thr Ile Glu Asp Arg Asn Arg Ile Ala Ala Ala Glu Asn Asn Gly Asn
145 150 155 160

Glu Ser Gly Val Arg Glu Leu Leu Lys Arg Ile Val Gln Lys Glu Asn
165 170 175

Trp Phe Ser Ala Phe Leu Asn Val Leu Arg Gln Thr Gly Asn Asn Glu
180 185 190

Leu Val Gln Glu Leu Thr Gly Ser Asp Cys Ser Glu Ser Asn Ala Glu
195 200 205

Ile Glu Asn Leu Ser Gln Val Asp Gly Pro Gln Val Glu Glu Gln Leu
210 215 220

Leu Ser Thr Thr Val Gln Pro Asn Leu Glu Lys Glu Val Trp Gly Met
225 230 235 240

Glu Asn Asn Ser Ser Glu Ser Ser Phe Ala Asp Ser Ser Val Val Ser
245 250 255

Glu Ser Asp Thr Ser Leu Ala Glu Gly Ser Val Ser Cys Leu Asp Glu
260 265 270

Ser Leu Gly His Asn Ser Asn Met Gly Ser Asp Ser Gly Thr Met Gly
275 280 285

Ser Asp Ser Asp Glu Glu Asn Val Ala Ala Arg Ala Ser Pro Glu Pro
290 295 300

Glu Leu Gln Leu Arg Pro Tyr Gln Met Glu Val Ala Gln Pro Ala Leu
305 310 315 320

Glu Gly Lys Asn Ile Ile Ile Cys Leu Pro Thr Gly Ser Gly Lys Thr
325 330 335

Arg Val Ala Val Tyr Ile Ala Lys Asp His Leu Asp Lys Lys Lys
340 345 350

Ala Ser Glu Pro Gly Lys Val Ile Val Leu Val Asn Lys Val Leu Leu
355 360 365

Val Glu Gln Leu Phe Arg Lys Glu Phe Gln Pro Phe Leu Lys Lys Trp
370 375 380

Tyr Arg Val Ile Gly Leu Ser Gly Asp Thr Gln Leu Lys Ile Ser Phe
385 390 395 400

Pro Glu Val Val Lys Ser Cys Asp Ile Ile Ile Ser Thr Ala Gln Ile
Page 763

Leu Glu Asn Ser Leu Leu Asn Leu Glu Asn Gly Glu Asp Ala Gly Val
420 425 430

Gln Leu Ser Asp Phe Ser Leu Ile Ile Ile Asp Glu Cys His His Thr
435 440 445

Asn Lys Glu Ala Val Tyr Asn Asn Ile Met Arg His Tyr Leu Met Gln
450 455 460

Lys Leu Lys Asn Asn Arg Leu Lys Lys Glu Asn Lys Pro Val Ile Pro
465 470 475 480

Leu Pro Gln Ile Leu Gly Leu Thr Ala Ser Pro Gly Val Gly Gly Ala
485 490 495

Thr Lys Gln Ala Lys Ala Glu Glu His Ile Leu Lys Leu Cys Ala Asn
500 505 510

Leu Asp Ala Phe Thr Ile Lys Thr Val Lys Glu Asn Leu Asp Gln Leu
515 520 525

Lys Asn Gln Ile Gln Glu Pro Cys Lys Lys Phe Ala Ile Ala Asp Ala
530 535 540

Thr Arg Glu Asp Pro Phe Lys Glu Lys Leu Leu Glu Ile Met Thr Arg
545 550 555 560

Ile Gln Thr Tyr Cys Gln Met Ser Pro Met Ser Asp Phe Gly Thr Gln
565 570 575

Pro Tyr Glu Gln Trp Ala Ile Gln Met Glu Lys Lys Ala Ala Lys Glu
580 585 590

Gly Asn Arg Lys Glu Arg Val Cys Ala Glu His Leu Arg Lys Tyr Asn
595 600 605

Glu Ala Leu Gln Ile Asn Asp Thr Ile Arg Met Ile Asp Ala Tyr Thr
610 615 620

His Leu Glu Thr Phe Tyr Asn Glu Glu Lys Asp Lys Lys Phe Ala Val
625 630 635 640

Ile Glu Asp Asp Ser Asp Glu Gly Gly Asp Asp Glu Tyr Cys Asp Gly
645 650 655

Asp Glu Asp Glu Asp Asp Leu Lys Lys Pro Leu Lys Leu Asp Glu Thr
660 665 670

Asp Arg Phe Leu Met Thr Leu Phe Phe Glu Asn Asn Lys Met Leu Lys
Page 764

675

680

685

Arg Leu Ala Glu Asn Pro Glu Tyr Glu Asn Glu Lys Leu Thr Lys Leu
 690 695 700

Arg Asn Thr Ile Met Glu Gln Tyr Thr Arg Thr Glu Glu Ser Ala Arg
 705 710 715 720

Gly Ile Ile Phe Thr Lys Thr Arg Gln Ser Ala Tyr Ala Leu Ser Gln
 725 730 735

Trp Ile Thr Glu Asn Glu Lys Phe Ala Glu Val Gly Val Lys Ala His
 740 745 750

His Leu Ile Gly Ala Gly His Ser Ser Glu Phe Lys Pro Met Thr Gln
 755 760 765

Asn Glu Gln Lys Glu Val Ile Ser Lys Phe Arg Thr Gly Lys Ile Asn
 770 775 780

Leu Leu Ile Ala Thr Thr Val Ala Glu Glu Gly Leu Asp Ile Lys Glu
 785 790 795 800

Cys Asn Ile Val Ile Arg Tyr Gly Leu Val Thr Asn Glu Ile Ala Met
 805 810 815

Val Gln Ala Arg Gly Arg Ala Arg Ala Asp Glu Ser Thr Tyr Val Leu
 820 825 830

Val Ala His Ser Gly Ser Gly Val Ile Glu His Glu Thr Val Asn Asp
 835 840 845

Phe Arg Glu Lys Met Met Tyr Lys Ala Ile His Cys Val Gln Asn Met
 850 855 860

Lys Pro Glu Glu Tyr Ala His Lys Ile Leu Glu Leu Gln Met Gln Ser
 865 870 875 880

Ile Met Glu Lys Lys Met Lys Thr Lys Arg Asn Ile Ala Lys His Tyr
 885 890 895

Lys Asn Asn Pro Ser Leu Ile Thr Phe Leu Cys Lys Asn Cys Ser Val
 900 905 910

Leu Ala Cys Ser Gly Glu Asp Ile His Val Ile Glu Lys Met His His
 915 920 925

Val Asn Met Thr Pro Glu Phe Lys Glu Leu Tyr Ile Val Arg Glu Asn
 930 935 940

Lys Ala Leu Gln Lys Lys Cys Ala Asp Tyr Gln Ile Asn Gly Glu Ile
 Page 765

945 950 955 960
 Ile Cys Lys Cys Gly Gln Ala Trp Gly Thr Met Met Val His Lys Gly
 965 970 975
 Leu Asp Leu Pro Cys Leu Lys Ile Arg Asn Phe Val Val Val Phe Lys
 980 985 990
 Asn Asn Ser Thr Lys Lys Gln Tyr Lys Lys Trp Val Glu Leu Pro Ile
 995 1000 1005
 Thr Phe Pro Asn Leu Asp Tyr Ser Glu Cys Cys Leu Phe Ser Asp
 1010 1015 1020
 Glu Asp
 1025
 <210> 542
 <211> 241
 <212> PRT
 <213> Homo sapiens
 <400> 542
 Met Gly Thr Ala Ser Arg Ser Asn Ile Ala Arg His Leu Gln Thr Asn
 1 5 10 15
 Leu Ile Leu Phe Cys Val Gly Ala Val Gly Ala Cys Thr Leu Ser Val
 20 25 30
 Thr Gln Pro Trp Tyr Leu Glu Val Asp Tyr Thr His Glu Ala Val Thr
 35 40 45
 Ile Lys Cys Thr Phe Ser Ala Thr Gly Cys Pro Ser Glu Gln Pro Thr
 50 55 60
 Cys Leu Trp Phe Arg Tyr Gly Ala His Gln Pro Glu Asn Leu Cys Leu
 65 70 75 80
 Asp Gly Cys Lys Ser Glu Ala Asp Lys Phe Thr Val Arg Glu Ala Leu
 85 90 95
 Lys Glu Asn Gln Val Ser Leu Thr Val Asn Arg Val Thr Ser Asn Asp
 100 105 110
 Ser Ala Ile Tyr Ile Cys Gly Ile Ala Phe Pro Ser Val Pro Glu Ala
 115 120 125
 Arg Ala Lys Gln Thr Gly Gly Gly Thr Thr Leu Val Val Arg Glu Ile
 130 135 140
 Lys Leu Leu Ser Lys Glu Leu Arg Ser Phe Leu Thr Ala Leu Val Ser
 145 150 155 160

Leu Leu Ser Val Tyr Val Thr Gly Val Cys Val Ala Phe Ile Leu Leu
 165 170 175

Ser Lys Ser Lys Ser Asn Pro Leu Arg Asn Lys Glu Ile Lys Glu Asp
 180 185 190

Ser Gln Lys Lys Lys Ser Ala Arg Arg Ile Phe Gln Glu Ile Ala Gln
 195 200 205

Glu Leu Tyr His Lys Arg His Val Glu Thr Asn Gln Gln Ser Glu Lys
 210 215 220

Asp Asn Asn Thr Tyr Glu Asn Arg Arg Val Leu Ser Asn Tyr Glu Arg
 225 230 235 240

Pro

<210> 543
 <211> 756
 <212> PRT
 <213> Homo sapiens

<400> 543

Met Ser Trp Ser Pro Ser Leu Thr Thr Gln Thr Cys Gly Ala Trp Glu
 1 5 10 15

Met Lys Glu Arg Leu Gly Thr Gly Gly Phe Gly Asn Val Ile Arg Trp
 20 25 30

His Asn Gln Glu Thr Gly Glu Gln Ile Ala Ile Lys Gln Cys Arg Gln
 35 40 45

Glu Leu Ser Pro Arg Asn Arg Glu Arg Trp Cys Leu Glu Ile Gln Ile
 50 55 60

Met Arg Arg Leu Thr His Pro Asn Val Val Ala Ala Arg Asp Val Pro
 65 70 75 80

Glu Gly Met Gln Asn Leu Ala Pro Asn Asp Leu Pro Leu Leu Ala Met
 85 90 95

Glu Tyr Cys Gln Gly Gly Asp Leu Arg Lys Tyr Leu Asn Gln Phe Glu
 100 105 110

Asn Cys Cys Gly Leu Arg Glu Gly Ala Ile Leu Thr Leu Leu Ser Asp
 115 120 125

Ile Ala Ser Ala Leu Arg Tyr Leu His Glu Asn Arg Ile Ile His Arg
 130 135 140

PCTAU2016050927-seql-000001-EN-20161013

Asp Leu Lys Pro Glu Asn Ile Val Leu Gln Gln Gly Glu Gln Arg Leu
 145 150 155 160
 Ile His Lys Ile Ile Asp Leu Gly Tyr Ala Lys Glu Leu Asp Gln Gly
 165 170 175
 Ser Leu Cys Thr Ser Phe Val Gly Thr Leu Gln Tyr Leu Ala Pro Glu
 180 185 190
 Leu Leu Glu Gln Gln Lys Tyr Thr Val Thr Val Asp Tyr Trp Ser Phe
 195 200 205
 Gly Thr Leu Ala Phe Glu Cys Ile Thr Gly Phe Arg Pro Phe Leu Pro
 210 215 220
 Asn Trp Gln Pro Val Gln Trp His Ser Lys Val Arg Gln Lys Ser Glu
 225 230 235 240
 Val Asp Ile Val Val Ser Glu Asp Leu Asn Gly Thr Val Lys Phe Ser
 245 250 255
 Ser Ser Leu Pro Tyr Pro Asn Asn Leu Asn Ser Val Leu Ala Glu Arg
 260 265 270
 Leu Glu Lys Trp Leu Gln Leu Met Leu Met Trp His Pro Arg Gln Arg
 275 280 285
 Gly Thr Asp Pro Thr Tyr Gly Pro Asn Gly Cys Phe Lys Ala Leu Asp
 290 295 300
 Asp Ile Leu Asn Leu Lys Leu Val His Ile Leu Asn Met Val Thr Gly
 305 310 315 320
 Thr Ile His Thr Tyr Pro Val Thr Glu Asp Glu Ser Leu Gln Ser Leu
 325 330 335
 Lys Ala Arg Ile Gln Gln Asp Thr Gly Ile Pro Glu Glu Asp Gln Glu
 340 345 350
 Leu Leu Gln Glu Ala Gly Leu Ala Leu Ile Pro Asp Lys Pro Ala Thr
 355 360 365
 Gln Cys Ile Ser Asp Gly Lys Leu Asn Glu Gly His Thr Leu Asp Met
 370 375 380
 Asp Leu Val Phe Leu Phe Asp Asn Ser Lys Ile Thr Tyr Glu Thr Gln
 385 390 395 400
 Ile Ser Pro Arg Pro Gln Pro Glu Ser Val Ser Cys Ile Leu Gln Glu
 405 410 415

Pro Lys Arg Asn₄₂₀ Leu Ala Phe Phe Gln₄₂₅ Leu Arg Lys Val₄₃₀ Trp Gly Gln
 Val Trp His₄₃₅ Ser Ile Gln Thr Leu₄₄₀ Lys Glu Asp Cys Asn₄₄₅ Arg Leu Gln
 Gln Gly₄₅₀ Gln Arg Ala Ala Met₄₅₅ Met Asn Leu Leu Arg₄₆₀ Asn Asn Ser Cys
 Leu Ser Lys Met Lys Asn₄₇₀ Ser Met Ala Ser Met₄₇₅ Ser Gln Gln Leu Lys₄₈₀
 Ala Lys Leu Asp Phe₄₈₅ Phe Lys Thr Ser Ile₄₉₀ Gln Ile Asp Leu Glu₄₉₅ Lys
 Tyr Ser Glu Gln₅₀₀ Thr Glu Phe Gly Ile₅₀₅ Thr Ser Asp Lys Leu₅₁₀ Leu Leu
 Ala Trp Arg₅₁₅ Glu Met Glu Gln Ala₅₂₀ Val Glu Leu Cys Gly₅₂₅ Arg Glu Asn
 Glu Val₅₃₀ Lys Leu Leu Val Glu₅₃₅ Arg Met Met Ala Leu₅₄₀ Gln Thr Asp Ile
 Val Asp Leu Gln Arg Ser₅₅₀ Pro Met Gly Arg Lys₅₅₅ Gln Gly Gly Thr Leu₅₆₀
 Asp Asp Leu Glu Glu₅₆₅ Gln Ala Arg Glu Leu₅₇₀ Tyr Arg Arg Leu Arg₅₇₅ Glu
 Lys Pro Arg Asp₅₈₀ Gln Arg Thr Glu Gly₅₈₅ Asp Ser Gln Glu Met₅₉₀ Val Arg
 Leu Leu Leu₅₉₅ Gln Ala Ile Gln Ser₆₀₀ Phe Glu Lys Lys Val₆₀₅ Arg Val Ile
 Tyr Thr Gln Leu Ser Lys Thr₆₁₅ Val Val Cys Lys Gln₆₂₀ Lys Ala Leu Glu
 Leu Leu Pro Lys Val Glu₆₃₀ Glu Val Val Ser Leu₆₃₅ Met Asn Glu Asp Glu₆₄₀
 Lys Thr Val Val Arg₆₄₅ Leu Gln Glu Lys Arg₆₅₀ Gln Lys Glu Leu Trp₆₅₅ Asn
 Leu Leu Lys Ile₆₆₀ Ala Cys Ser Lys Val₆₆₅ Arg Gly Pro Val Ser₆₇₀ Gly Ser
 Pro Asp Ser₆₇₅ Met Asn Ala Ser Arg₆₈₀ Leu Ser Gln Pro Gly₆₈₅ Gln Leu Met

Ser Gln Pro Ser Thr Ala Ser Asn Ser Leu Pro Glu Pro Ala Lys Lys
690 695 700

Ser Glu Glu Leu Val Ala Glu Ala His Asn Leu Cys Thr Leu Leu Glu
705 710 715 720

Asn Ala Ile Gln Asp Thr Val Arg Glu Gln Asp Gln Ser Phe Thr Ala
725 730 735

Leu Asp Trp Ser Trp Leu Gln Thr Glu Glu Glu Glu His Ser Cys Leu
740 745 750

Glu Gln Ala Ser
755

<210> 544
<211> 325
<212> PRT
<213> Homo sapiens

<400> 544

Met Ala Trp Ser Leu Gly Ser Trp Leu Gly Gly Cys Leu Leu Val Ser
1 5 10 15

Ala Leu Gly Met Val Pro Pro Pro Glu Asn Val Arg Met Asn Ser Val
20 25 30

Asn Phe Lys Asn Ile Leu Gln Trp Glu Ser Pro Ala Phe Ala Lys Gly
35 40 45

Asn Leu Thr Phe Thr Ala Gln Tyr Leu Ser Tyr Arg Ile Phe Gln Asp
50 55 60

Lys Cys Met Asn Thr Thr Leu Thr Glu Cys Asp Phe Ser Ser Leu Ser
65 70 75 80

Lys Tyr Gly Asp His Thr Leu Arg Val Arg Ala Glu Phe Ala Asp Glu
85 90 95

His Ser Asp Trp Val Asn Ile Thr Phe Cys Pro Val Asp Asp Thr Ile
100 105 110

Ile Gly Pro Pro Gly Met Gln Val Glu Val Leu Ala Asp Ser Leu His
115 120 125

Met Arg Phe Leu Ala Pro Lys Ile Glu Asn Glu Tyr Glu Thr Trp Thr
130 135 140

Met Lys Asn Val Tyr Asn Ser Trp Thr Tyr Asn Val Gln Tyr Trp Lys
145 150 155 160

Asn Gly Thr Asp Glu Lys Phe Gln Ile Thr Pro Gln Tyr Asp Phe Glu
165 170 175

Val Leu Arg Asn Leu Glu Pro Trp Thr Thr Tyr Cys Val Gln Val Arg
180 185 190

Gly Phe Leu Pro Asp Arg Asn Lys Ala Gly Glu Trp Ser Glu Pro Val
195 200 205

Cys Glu Gln Thr Thr His Asp Glu Thr Val Pro Ser Trp Met Val Ala
210 215 220

Val Ile Leu Met Ala Ser Val Phe Met Val Cys Leu Ala Leu Leu Gly
225 230 235 240

Cys Phe Ala Leu Leu Trp Cys Val Tyr Lys Lys Thr Lys Tyr Ala Phe
245 250 255

Ser Pro Arg Asn Ser Leu Pro Gln His Leu Lys Glu Phe Leu Gly His
260 265 270

Pro His His Asn Thr Leu Leu Phe Phe Ser Phe Pro Leu Ser Asp Glu
275 280 285

Asn Asp Val Phe Asp Lys Leu Ser Val Ile Ala Glu Asp Ser Glu Ser
290 295 300

Gly Lys Gln Asn Pro Gly Asp Ser Cys Ser Leu Gly Thr Pro Pro Gly
305 310 315 320

Gln Gly Pro Gln Ser
325

<210> 545
<211> 427
<212> PRT
<213> Homo sapiens

<400> 545

Met Glu Trp Pro Ala Arg Leu Cys Gly Leu Trp Ala Leu Leu Leu Cys
1 5 10 15

Ala Gly Gly Gly Gly Gly Gly Gly Gly Ala Ala Pro Thr Glu Thr Gln
20 25 30

Pro Pro Val Thr Asn Leu Ser Val Ser Val Glu Asn Leu Cys Thr Val
35 40 45

Ile Trp Thr Trp Asn Pro Pro Glu Gly Ala Ser Ser Asn Cys Ser Leu
50 55 60

Trp Tyr Phe Ser His Phe Gly Asp Lys Gln Asp Lys Lys Ile Ala Pro
Page 771

65 70 75 80
 Glu Thr Arg Arg Ser Ile Glu Val Pro Leu Asn Glu Arg Ile Cys Leu
 85 90 95
 Gln Val Gly Ser Gln Cys Ser Thr Asn Glu Ser Glu Lys Pro Ser Ile
 100 105 110
 Leu Val Glu Lys Cys Ile Ser Pro Pro Glu Gly Asp Pro Glu Ser Ala
 115 120 125
 Val Thr Glu Leu Gln Cys Ile Trp His Asn Leu Ser Tyr Met Lys Cys
 130 135 140
 Ser Trp Leu Pro Gly Arg Asn Thr Ser Pro Asp Thr Asn Tyr Thr Leu
 145 150 155 160
 Tyr Tyr Trp His Arg Ser Leu Glu Lys Ile His Gln Cys Glu Asn Ile
 165 170 175
 Phe Arg Glu Gly Gln Tyr Phe Gly Cys Ser Phe Asp Leu Thr Lys Val
 180 185 190
 Lys Asp Ser Ser Phe Glu Gln His Ser Val Gln Ile Met Val Lys Asp
 195 200 205
 Asn Ala Gly Lys Ile Lys Pro Ser Phe Asn Ile Val Pro Leu Thr Ser
 210 215 220
 Arg Val Lys Pro Asp Pro Pro His Ile Lys Asn Leu Ser Phe His Asn
 225 230 235 240
 Asp Asp Leu Tyr Val Gln Trp Glu Asn Pro Gln Asn Phe Ile Ser Arg
 245 250 255
 Cys Leu Phe Tyr Glu Val Glu Val Asn Asn Ser Gln Thr Glu Thr His
 260 265 270
 Asn Val Phe Tyr Val Gln Glu Ala Lys Cys Glu Asn Pro Glu Phe Glu
 275 280 285
 Arg Asn Val Glu Asn Thr Ser Cys Phe Met Val Pro Gly Val Leu Pro
 290 295 300
 Asp Thr Leu Asn Thr Val Arg Ile Arg Val Lys Thr Asn Lys Leu Cys
 305 310 315 320
 Tyr Glu Asp Asp Lys Leu Trp Ser Asn Trp Ser Gln Glu Met Ser Ile
 325 330 335
 Gly Lys Lys Arg Asn Ser Thr Leu Tyr Ile Thr Met Leu Leu Ile Val
 Page 772

340

345

350

Pro Val Ile Val Ala Gly Ala Ile Ile Val Leu Leu Leu Tyr Leu Lys
 355 360 365

Arg Leu Lys Ile Ile Ile Phe Pro Pro Ile Pro Asp Pro Gly Lys Ile
 370 375 380

Phe Lys Glu Met Phe Gly Asp Gln Asn Asp Asp Thr Leu His Trp Lys
 385 390 395 400

Lys Tyr Asp Ile Tyr Glu Lys Gln Thr Lys Glu Glu Thr Asp Ser Val
 405 410 415

Val Leu Ile Glu Asn Leu Lys Lys Ala Ser Gln
 420 425

<210> 546
 <211> 631
 <212> PRT
 <213> Homo sapiens

<400> 546

Met Asp Tyr Ser Phe Asp Thr Thr Ala Glu Asp Pro Trp Val Arg Ile
 1 5 10 15

Ser Asp Cys Ile Lys Asn Leu Phe Ser Pro Ile Met Ser Glu Asn His
 20 25 30

Gly His Met Pro Leu Gln Pro Asn Ala Ser Leu Asn Glu Glu Glu Gly
 35 40 45

Thr Gln Gly His Pro Asp Gly Thr Pro Pro Lys Leu Asp Thr Ala Asn
 50 55 60

Gly Thr Pro Lys Val Tyr Lys Ser Ala Asp Ser Ser Thr Val Lys Lys
 65 70 75 80

Gly Pro Pro Val Ala Pro Lys Pro Ala Trp Phe Arg Gln Ser Leu Lys
 85 90 95

Gly Leu Arg Asn Arg Ala Ser Asp Pro Arg Gly Leu Pro Asp Pro Ala
 100 105 110

Leu Ser Thr Gln Pro Ala Pro Ala Ser Arg Glu His Leu Gly Ser His
 115 120 125

Ile Arg Ala Ser Ser Ser Ser Ser Ser Ile Arg Gln Arg Ile Ser Ser
 130 135 140

Phe Glu Thr Phe Gly Ser Ser Gln Leu Pro Asp Lys Gly Ala Gln Arg
 145 150 155 160

Leu Ser Leu Gln Pro Ser Ser Gly Glu Ala Ala Lys Pro Leu Gly Lys
 165 170 175
 His Glu Glu Gly Arg Phe Ser Gly Leu Leu Gly Arg Gly Ala Ala Pro
 180 185 190
 Thr Leu Val Pro Gln Gln Pro Glu Gln Val Leu Ser Ser Gly Ser Pro
 195 200 205
 Ala Ala Ser Glu Ala Arg Asp Pro Gly Val Ser Glu Ser Pro Pro Pro
 210 215 220
 Gly Arg Gln Pro Asn Gln Lys Thr Leu Pro Pro Gly Pro Asp Pro Leu
 225 230 235 240
 Leu Arg Leu Leu Ser Thr Gln Ala Glu Glu Ser Gln Gly Pro Val Leu
 245 250 255
 Lys Met Pro Ser Gln Arg Ala Arg Ser Phe Pro Leu Thr Arg Ser Gln
 260 265 270
 Ser Cys Glu Thr Lys Leu Leu Asp Glu Lys Thr Ser Lys Leu Tyr Ser
 275 280 285
 Ile Ser Ser Gln Val Ser Ser Ala Val Met Lys Ser Leu Leu Cys Leu
 290 295 300
 Pro Ser Ser Ile Ser Cys Ala Gln Thr Pro Cys Ile Pro Lys Glu Gly
 305 310 315 320
 Ala Ser Pro Thr Ser Ser Ser Asn Glu Asp Ser Ala Ala Asn Gly Ser
 325 330 335
 Ala Glu Thr Ser Ala Leu Asp Thr Gly Phe Ser Leu Asn Leu Ser Glu
 340 345 350
 Leu Arg Glu Tyr Thr Glu Gly Leu Thr Glu Ala Lys Glu Asp Asp Asp
 355 360 365
 Gly Asp His Ser Ser Leu Gln Ser Gly Gln Ser Val Ile Ser Leu Leu
 370 375 380
 Ser Ser Glu Glu Leu Lys Lys Leu Ile Glu Glu Val Lys Val Leu Asp
 385 390 395 400
 Glu Ala Thr Leu Lys Gln Leu Asp Gly Ile His Val Thr Ile Leu His
 405 410 415
 Lys Glu Glu Gly Ala Gly Leu Gly Phe Ser Leu Ala Gly Gly Ala Asp
 420 425 430

Leu Glu Asn Lys Val Ile Thr Val His Arg Val Phe Pro Asn Gly Leu
 435 440 445

Ala Ser Gln Glu Gly Thr Ile Gln Lys Gly Asn Glu Val Leu Ser Ile
 450 455 460

Asn Gly Lys Ser Leu Lys Gly Thr Thr His His Asp Ala Leu Ala Ile
 465 470 475 480

Leu Arg Gln Ala Arg Glu Pro Arg Gln Ala Val Ile Val Thr Arg Lys
 485 490 495

Leu Thr Pro Glu Ala Met Pro Asp Leu Asn Ser Ser Thr Asp Ser Ala
 500 505 510

Ala Ser Ala Ser Ala Ala Ser Asp Val Ser Val Glu Ser Thr Ala Glu
 515 520 525

Ala Thr Val Cys Thr Val Thr Leu Glu Lys Met Ser Ala Gly Leu Gly
 530 535 540

Phe Ser Leu Glu Gly Gly Lys Gly Ser Leu His Gly Asp Lys Pro Leu
 545 550 555 560

Thr Ile Asn Arg Ile Phe Lys Gly Ala Ala Ser Glu Gln Ser Glu Thr
 565 570 575

Val Gln Pro Gly Asp Glu Ile Leu Gln Leu Gly Gly Thr Ala Met Gln
 580 585 590

Gly Leu Thr Arg Phe Glu Ala Trp Asn Ile Ile Lys Ala Leu Pro Asp
 595 600 605

Gly Pro Val Thr Ile Val Ile Arg Arg Lys Ser Leu Gln Ser Lys Glu
 610 615 620

Thr Thr Ala Ala Gly Asp Ser
 625 630

<210> 547
 <211> 570
 <212> PRT
 <213> Homo sapiens

<400> 547

Met Thr Leu Leu Trp Cys Val Val Ser Leu Tyr Phe Tyr Gly Ile Leu
 1 5 10 15

Gln Ser Asp Ala Ser Glu Arg Cys Asp Asp Trp Gly Leu Asp Thr Met
 20 25 30

Arg Gln Ile Gln Val Phe Glu Asp Glu Pro Ala Arg Ile Lys Cys Pro
 35 40 45
 Leu Phe Glu His Phe Leu Lys Phe Asn Tyr Ser Thr Ala His Ser Ala
 50 55 60
 Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu
 65 70 75 80
 Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys
 85 90 95
 Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr
 100 105 110
 Thr Cys Met Leu Arg Asn Thr Thr Tyr Cys Ser Lys Val Ala Phe Pro
 115 120 125
 Leu Glu Val Val Gln Lys Asp Ser Cys Phe Asn Ser Pro Met Lys Leu
 130 135 140
 Pro Val His Lys Leu Tyr Ile Glu Tyr Gly Ile Gln Arg Ile Thr Cys
 145 150 155 160
 Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Thr Ile Thr
 165 170 175
 Trp Tyr Met Gly Cys Tyr Lys Ile Gln Asn Phe Asn Asn Val Ile Pro
 180 185 190
 Glu Gly Met Asn Leu Ser Phe Leu Ile Ala Leu Ile Ser Asn Asn Gly
 195 200 205
 Asn Tyr Thr Cys Val Val Thr Tyr Pro Glu Asn Gly Arg Thr Phe His
 210 215 220
 Leu Thr Arg Thr Leu Thr Val Lys Val Val Gly Ser Pro Lys Asn Ala
 225 230 235 240
 Val Pro Pro Val Ile His Ser Pro Asn Asp His Val Val Tyr Glu Lys
 245 250 255
 Glu Pro Gly Glu Glu Leu Leu Ile Pro Cys Thr Val Tyr Phe Ser Phe
 260 265 270
 Leu Met Asp Ser Arg Asn Glu Val Trp Trp Thr Ile Asp Gly Lys Lys
 275 280 285
 Pro Asp Asp Ile Thr Ile Asp Val Thr Ile Asn Glu Ser Ile Ser His
 290 295 300

Ser Arg Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys
 305 310 315 320
 Val Thr Ser Glu Asp Leu Lys Arg Ser Tyr Val Cys His Ala Arg Ser
 325 330 335
 Ala Lys Gly Glu Val Ala Lys Ala Ala Lys Val Lys Gln Lys Val Pro
 340 345 350
 Ala Pro Arg Tyr Thr Val Glu Leu Ala Cys Gly Phe Gly Ala Thr Val
 355 360 365
 Leu Leu Val Val Ile Leu Ile Val Val Tyr His Val Tyr Trp Leu Glu
 370 375 380
 Met Val Leu Phe Tyr Arg Ala His Phe Gly Thr Asp Glu Thr Ile Leu
 385 390 395 400
 Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Ala Glu
 405 410 415
 Glu Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu
 420 425 430
 Phe Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly
 435 440 445
 Ile Val Thr Asp Glu Thr Leu Ser Phe Ile Gln Lys Ser Arg Arg Leu
 450 455 460
 Leu Val Val Leu Ser Pro Asn Tyr Val Leu Gln Gly Thr Gln Ala Leu
 465 470 475 480
 Leu Glu Leu Lys Ala Gly Leu Glu Asn Met Ala Ser Arg Gly Asn Ile
 485 490 495
 Asn Val Ile Leu Val Gln Tyr Lys Ala Val Lys Glu Thr Lys Val Lys
 500 505 510
 Glu Leu Lys Arg Ala Lys Thr Val Leu Thr Val Ile Lys Trp Lys Gly
 515 520 525
 Glu Lys Ser Lys Tyr Pro Gln Gly Arg Phe Trp Lys Gln Leu Gln Val
 530 535 540
 Ala Met Pro Val Lys Lys Ser Pro Arg Arg Ser Ser Ser Asp Glu Gln
 545 550 555 560
 Gly Leu Ser Tyr Ser Ser Leu Lys Asn Val
 565 570

<210> 548
 <211> 636
 <212> PRT
 <213> Homo sapiens

<400> 548

Met Arg Gly Gly Arg Gly Ala Pro Phe Trp Leu Trp Pro Leu Pro Lys
 1 5 10 15

Leu Ala Leu Leu Pro Leu Leu Trp Val Leu Phe Gln Arg Thr Arg Pro
 20 25 30

Gln Gly Ser Ala Gly Pro Leu Gln Cys Tyr Gly Val Gly Pro Leu Gly
 35 40 45

Asp Leu Asn Cys Ser Trp Glu Pro Leu Gly Asp Leu Gly Ala Pro Ser
 50 55 60

Glu Leu His Leu Gln Ser Gln Lys Tyr Arg Ser Asn Lys Thr Gln Thr
 65 70 75 80

Val Ala Val Ala Ala Gly Arg Ser Trp Val Ala Ile Pro Arg Glu Gln
 85 90 95

Leu Thr Met Ser Asp Lys Leu Leu Val Trp Gly Thr Lys Ala Gly Gln
 100 105 110

Pro Leu Trp Pro Pro Val Phe Val Asn Leu Glu Thr Gln Met Lys Pro
 115 120 125

Asn Ala Pro Arg Leu Gly Pro Asp Val Asp Phe Ser Glu Asp Asp Pro
 130 135 140

Leu Glu Ala Thr Val His Trp Ala Pro Pro Thr Trp Pro Ser His Lys
 145 150 155 160

Val Leu Ile Cys Gln Phe His Tyr Arg Arg Cys Gln Glu Ala Ala Trp
 165 170 175

Thr Leu Leu Glu Pro Glu Leu Lys Thr Ile Pro Leu Thr Pro Val Glu
 180 185 190

Ile Gln Asp Leu Glu Leu Ala Thr Gly Tyr Lys Val Tyr Gly Arg Cys
 195 200 205

Arg Met Glu Lys Glu Glu Asp Leu Trp Gly Glu Trp Ser Pro Ile Leu
 210 215 220

Ser Phe Gln Thr Pro Pro Ser Ala Pro Lys Asp Val Trp Val Ser Gly
 225 230 235 240

Asn Leu Cys Gly Thr Pro Gly Gly Glu Glu Pro Leu Leu Leu Trp Lys
 245 250 255

Ala Pro Gly Pro Cys Val Gln Val Ser Tyr Lys Val Trp Phe Trp Val
 260 265 270

Gly Gly Arg Glu Leu Ser Pro Glu Gly Ile Thr Cys Cys Cys Ser Leu
 275 280 285

Ile Pro Ser Gly Ala Glu Trp Ala Arg Val Ser Ala Val Asn Ala Thr
 290 295 300

Ser Trp Glu Pro Leu Thr Asn Leu Ser Leu Val Cys Leu Asp Ser Ala
 305 310 315 320

Ser Ala Pro Arg Ser Val Ala Val Ser Ser Ile Ala Gly Ser Thr Glu
 325 330 335

Leu Leu Val Thr Trp Gln Pro Gly Pro Gly Glu Pro Leu Glu His Val
 340 345 350

Val Asp Trp Ala Arg Asp Gly Asp Pro Leu Glu Lys Leu Asn Trp Val
 355 360 365

Arg Leu Pro Pro Gly Asn Leu Ser Ala Leu Leu Pro Gly Asn Phe Thr
 370 375 380

Val Gly Val Pro Tyr Arg Ile Thr Val Thr Ala Val Ser Ala Ser Gly
 385 390 395 400

Leu Ala Ser Ala Ser Ser Val Trp Gly Phe Arg Glu Glu Leu Ala Pro
 405 410 415

Leu Val Gly Pro Thr Leu Trp Arg Leu Gln Asp Ala Pro Pro Gly Thr
 420 425 430

Pro Ala Ile Ala Trp Gly Glu Val Pro Arg His Gln Leu Arg Gly His
 435 440 445

Leu Thr His Tyr Thr Leu Cys Ala Gln Ser Gly Thr Ser Pro Ser Val
 450 455 460

Cys Met Asn Val Ser Gly Asn Thr Gln Ser Val Thr Leu Pro Asp Leu
 465 470 475 480

Pro Trp Gly Pro Cys Glu Leu Trp Val Thr Ala Ser Thr Ile Ala Gly
 485 490 495

Gln Gly Pro Pro Gly Pro Ile Leu Arg Leu His Leu Pro Asp Asn Thr
 500 505 510

Leu Arg Trp Lys Val Leu Pro Gly Ile Leu Phe Leu Trp Gly Leu Phe
 515 520 525

Leu Leu Gly Cys Gly Leu Ser Leu Ala Thr Ser Gly Arg Cys Tyr His
 530 535 540

Leu Arg His Lys Val Leu Pro Arg Trp Val Trp Glu Lys Val Pro Asp
 545 550 555 560

Pro Ala Asn Ser Ser Ser Gly Gln Pro His Met Glu Gln Val Pro Glu
 565 570 575

Ala Gln Pro Leu Gly Asp Leu Pro Ile Leu Glu Val Glu Glu Met Glu
 580 585 590

Pro Pro Pro Val Met Glu Ser Ser Gln Pro Ala Gln Ala Thr Ala Pro
 595 600 605

Leu Asp Ser Gly Tyr Glu Lys His Phe Leu Pro Thr Pro Glu Glu Leu
 610 615 620

Gly Leu Leu Gly Pro Pro Arg Pro Gln Val Leu Ala
 625 630 635

<210> 549
 <211> 825
 <212> PRT
 <213> Homo sapiens

<400> 549

Met Gly Trp Leu Cys Ser Gly Leu Leu Phe Pro Val Ser Cys Leu Val
 1 5 10 15

Leu Leu Gln Val Ala Ser Ser Gly Asn Met Lys Val Leu Gln Glu Pro
 20 25 30

Thr Cys Val Ser Asp Tyr Met Ser Ile Ser Thr Cys Glu Trp Lys Met
 35 40 45

Asn Gly Pro Thr Asn Cys Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu
 50 55 60

Val Phe Leu Leu Ser Glu Ala His Thr Cys Ile Pro Glu Asn Asn Gly
 65 70 75 80

Gly Ala Gly Cys Val Cys His Leu Leu Met Asp Asp Val Val Ser Ala
 85 90 95

Asp Asn Tyr Thr Leu Asp Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys
 100 105 110

Gly Ser Phe Lys Pro Ser Glu His Val Lys Pro Arg Ala Pro Gly Asn
 Page 780

115

120

125

Leu Thr Val His Thr Asn Val Ser Asp Thr Leu Leu Leu Thr Trp Ser
 130 135 140

Asn Pro Tyr Pro Pro Asp Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala
 145 150 155 160

Val Asn Ile Trp Ser Glu Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn
 165 170 175

Val Thr Tyr Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys
 180 185 190

Ser Gly Ile Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr
 195 200 205

Asn Thr Thr Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser
 210 215 220

Tyr Arg Glu Pro Phe Glu Gln His Leu Leu Leu Gly Val Ser Val Ser
 225 230 235 240

Cys Ile Val Ile Leu Ala Val Cys Leu Leu Cys Tyr Val Ser Ile Thr
 245 250 255

Lys Ile Lys Lys Glu Trp Trp Asp Gln Ile Pro Asn Pro Ala Arg Ser
 260 265 270

Arg Leu Val Ala Ile Ile Ile Gln Asp Ala Gln Gly Ser Gln Trp Glu
 275 280 285

Lys Arg Ser Arg Gly Gln Glu Pro Ala Lys Cys Pro His Trp Lys Asn
 290 295 300

Cys Leu Thr Lys Leu Leu Pro Cys Phe Leu Glu His Asn Met Lys Arg
 305 310 315 320

Asp Glu Asp Pro His Lys Ala Ala Lys Glu Met Pro Phe Gln Gly Ser
 325 330 335

Gly Lys Ser Ala Trp Cys Pro Val Glu Ile Ser Lys Thr Val Leu Trp
 340 345 350

Pro Glu Ser Ile Ser Val Val Arg Cys Val Glu Leu Phe Glu Ala Pro
 355 360 365

Val Glu Cys Glu Glu Glu Glu Glu Val Glu Glu Glu Lys Gly Ser Phe
 370 375 380

Cys Ala Ser Pro Glu Ser Ser Arg Asp Asp Phe Gln Glu Gly Arg Glu
 Page 781

385 390 395 400
 Gly Ile Val Ala Arg Leu Thr Glu Ser Leu Phe Leu Asp Leu Leu Gly
 405 410 415
 Glu Glu Asn Gly Gly Phe Cys Gln Gln Asp Met Gly Glu Ser Cys Leu
 420 425 430
 Leu Pro Pro Ser Gly Ser Thr Ser Ala His Met Pro Trp Asp Glu Phe
 435 440 445
 Pro Ser Ala Gly Pro Lys Glu Ala Pro Pro Trp Gly Lys Glu Gln Pro
 450 455 460
 Leu His Leu Glu Pro Ser Pro Pro Ala Ser Pro Thr Gln Ser Pro Asp
 465 470 475 480
 Asn Leu Thr Cys Thr Glu Thr Pro Leu Val Ile Ala Gly Asn Pro Ala
 485 490 495
 Tyr Arg Ser Phe Ser Asn Ser Leu Ser Gln Ser Pro Cys Pro Arg Glu
 500 505 510
 Leu Gly Pro Asp Pro Leu Leu Ala Arg His Leu Glu Glu Val Glu Pro
 515 520 525
 Glu Met Pro Cys Val Pro Gln Leu Ser Glu Pro Thr Thr Val Pro Gln
 530 535 540
 Pro Glu Pro Glu Thr Trp Glu Gln Ile Leu Arg Arg Asn Val Leu Gln
 545 550 555 560
 His Gly Ala Ala Ala Ala Pro Val Ser Ala Pro Thr Ser Gly Tyr Gln
 565 570 575
 Glu Phe Val His Ala Val Glu Gln Gly Gly Thr Gln Ala Ser Ala Val
 580 585 590
 Val Gly Leu Gly Pro Pro Gly Glu Ala Gly Tyr Lys Ala Phe Ser Ser
 595 600 605
 Leu Leu Ala Ser Ser Ala Val Ser Pro Glu Lys Cys Gly Phe Gly Ala
 610 615 620
 Ser Ser Gly Glu Glu Gly Tyr Lys Pro Phe Gln Asp Leu Ile Pro Gly
 625 630 635 640
 Cys Pro Gly Asp Pro Ala Pro Val Pro Val Pro Leu Phe Thr Phe Gly
 645 650 655
 Leu Asp Arg Glu Pro Pro Arg Ser Pro Gln Ser Ser His Leu Pro Ser
 Page 782

660

665

670

Ser Ser Pro Glu His Leu Gly Leu Glu Pro Gly Glu Lys Val Glu Asp
675 680 685

Met Pro Lys Pro Pro Leu Pro Gln Glu Gln Ala Thr Asp Pro Leu Val
690 695 700

Asp Ser Leu Gly Ser Gly Ile Val Tyr Ser Ala Leu Thr Cys His Leu
705 710 715 720

Cys Gly His Leu Lys Gln Cys His Gly Gln Glu Asp Gly Gly Gln Thr
725 730 735

Pro Val Met Ala Ser Pro Cys Cys Gly Cys Cys Cys Gly Asp Arg Ser
740 745 750

Ser Pro Pro Thr Thr Pro Leu Arg Ala Pro Asp Pro Ser Pro Gly Gly
755 760 765

Val Pro Leu Glu Ala Ser Leu Cys Pro Ala Ser Leu Ala Pro Ser Gly
770 775 780

Ile Ser Glu Lys Ser Lys Ser Ser Ser Ser Phe His Pro Ala Pro Gly
785 790 795 800

Asn Ala Gln Ser Ser Ser Gln Thr Pro Lys Ile Val Asn Phe Val Ser
805 810 815

Val Gly Pro Thr Tyr Met Arg Val Ser
820 825

<210> 550
<211> 468
<212> PRT
<213> Homo sapiens

<400> 550

Met Leu Ala Val Gly Cys Ala Leu Leu Ala Ala Leu Leu Ala Ala Pro
1 5 10 15

Gly Ala Ala Leu Ala Pro Arg Arg Cys Pro Ala Gln Glu Val Ala Arg
20 25 30

Gly Val Leu Thr Ser Leu Pro Gly Asp Ser Val Thr Leu Thr Cys Pro
35 40 45

Gly Val Glu Pro Glu Asp Asn Ala Thr Val His Trp Val Leu Arg Lys
50 55 60

Pro Ala Ala Gly Ser His Pro Ser Arg Trp Ala Gly Met Gly Arg Arg
65 70 75 80

Leu Leu Leu Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys
 85 90 95
 Tyr Arg Ala Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val
 100 105 110
 Pro Pro Glu Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser
 115 120 125
 Asn Val Val Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Leu Thr Thr
 130 135 140
 Lys Ala Val Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp
 145 150 155 160
 Phe Gln Glu Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys
 165 170 175
 Gln Leu Ala Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met
 180 185 190
 Cys Val Ala Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe
 195 200 205
 Gln Gly Cys Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val
 210 215 220
 Thr Ala Val Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp
 225 230 235 240
 Pro His Ser Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg
 245 250 255
 Tyr Arg Ala Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp
 260 265 270
 Leu Gln His His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His
 275 280 285
 Val Val Gln Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser
 290 295 300
 Glu Trp Ser Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser
 305 310 315 320
 Pro Pro Ala Glu Asn Glu Val Ser Thr Pro Met Gln Ala Leu Thr Thr
 325 330 335
 Asn Lys Asp Asp Asp Asn Ile Leu Phe Arg Asp Ser Ala Asn Ala Thr
 340 345 350

Ser Leu Pro Val Gln Asp Ser Ser Ser Val Pro Leu Pro Thr Phe Leu
355 360 365

Val Ala Gly Gly Ser Leu Ala Phe Gly Thr Leu Leu Cys Ile Ala Ile
370 375 380

Val Leu Arg Phe Lys Lys Thr Trp Lys Leu Arg Ala Leu Lys Glu Gly
385 390 395 400

Lys Thr Ser Met His Pro Pro Tyr Ser Leu Gly Gln Leu Val Pro Glu
405 410 415

Arg Pro Arg Pro Thr Pro Val Leu Val Pro Leu Ile Ser Pro Pro Val
420 425 430

Ser Pro Ser Ser Leu Gly Ser Asp Asn Thr Ser Ser His Asn Arg Pro
435 440 445

Asp Ala Arg Asp Pro Arg Ser Pro Tyr Asp Ile Ser Asn Thr Asp Tyr
450 455 460

Phe Phe Pro Arg
465

<210> 551
<211> 918
<212> PRT
<213> Homo sapiens

<400> 551

Met Leu Thr Leu Gln Thr Trp Leu Val Gln Ala Leu Phe Ile Phe Leu
1 5 10 15

Thr Thr Glu Ser Thr Gly Glu Leu Leu Asp Pro Cys Gly Tyr Ile Ser
20 25 30

Pro Glu Ser Pro Val Val Gln Leu His Ser Asn Phe Thr Ala Val Cys
35 40 45

Val Leu Lys Glu Lys Cys Met Asp Tyr Phe His Val Asn Ala Asn Tyr
50 55 60

Ile Val Trp Lys Thr Asn His Phe Thr Ile Pro Lys Glu Gln Tyr Thr
65 70 75 80

Ile Ile Asn Arg Thr Ala Ser Ser Val Thr Phe Thr Asp Ile Ala Ser
85 90 95

Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu Thr Phe Gly Gln Leu Glu
100 105 110

Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser Gly Leu Pro Pro Glu Lys
 115 120 125

Pro Lys Asn Leu Ser Cys Ile Val Asn Glu Gly Lys Lys Met Arg Cys
 130 135 140

Glu Trp Asp Gly Gly Arg Glu Thr His Leu Glu Thr Asn Phe Thr Leu
 145 150 155 160

Lys Ser Glu Trp Ala Thr His Lys Phe Ala Asp Cys Lys Ala Lys Arg
 165 170 175

Asp Thr Pro Thr Ser Cys Thr Val Asp Tyr Ser Thr Val Tyr Phe Val
 180 185 190

Asn Ile Glu Val Trp Val Glu Ala Glu Asn Ala Leu Gly Lys Val Thr
 195 200 205

Ser Asp His Ile Asn Phe Asp Pro Val Tyr Lys Val Lys Pro Asn Pro
 210 215 220

Pro His Asn Leu Ser Val Ile Asn Ser Glu Glu Leu Ser Ser Ile Leu
 225 230 235 240

Lys Leu Thr Trp Thr Asn Pro Ser Ile Lys Ser Val Ile Ile Leu Lys
 245 250 255

Tyr Asn Ile Gln Tyr Arg Thr Lys Asp Ala Ser Thr Trp Ser Gln Ile
 260 265 270

Pro Pro Glu Asp Thr Ala Ser Thr Arg Ser Ser Phe Thr Val Gln Asp
 275 280 285

Leu Lys Pro Phe Thr Glu Tyr Val Phe Arg Ile Arg Cys Met Lys Glu
 290 295 300

Asp Gly Lys Gly Tyr Trp Ser Asp Trp Ser Glu Glu Ala Ser Gly Ile
 305 310 315 320

Thr Tyr Glu Asp Arg Pro Ser Lys Ala Pro Ser Phe Trp Tyr Lys Ile
 325 330 335

Asp Pro Ser His Thr Gln Gly Tyr Arg Thr Val Gln Leu Val Trp Lys
 340 345 350

Thr Leu Pro Pro Phe Glu Ala Asn Gly Lys Ile Leu Asp Tyr Glu Val
 355 360 365

Thr Leu Thr Arg Trp Lys Ser His Leu Gln Asn Tyr Thr Val Asn Ala
 370 375 380

Thr Lys Leu Thr Val Asn Leu Thr Asn Asp Arg Tyr Leu Ala Thr Leu
 385 390 395 400
 Thr Val Arg Asn Leu Val Gly Lys Ser Asp Ala Ala Val Leu Thr Ile
 405 410 415
 Pro Ala Cys Asp Phe Gln Ala Thr His Pro Val Met Asp Leu Lys Ala
 420 425 430
 Phe Pro Lys Asp Asn Met Leu Trp Val Glu Trp Thr Thr Pro Arg Glu
 435 440 445
 Ser Val Lys Lys Tyr Ile Leu Glu Trp Cys Val Leu Ser Asp Lys Ala
 450 455 460
 Pro Cys Ile Thr Asp Trp Gln Gln Glu Asp Gly Thr Val His Arg Thr
 465 470 475 480
 Tyr Leu Arg Gly Asn Leu Ala Glu Ser Lys Cys Tyr Leu Ile Thr Val
 485 490 495
 Thr Pro Val Tyr Ala Asp Gly Pro Gly Ser Pro Glu Ser Ile Lys Ala
 500 505 510
 Tyr Leu Lys Gln Ala Pro Pro Ser Lys Gly Pro Thr Val Arg Thr Lys
 515 520 525
 Lys Val Gly Lys Asn Glu Ala Val Leu Glu Trp Asp Gln Leu Pro Val
 530 535 540
 Asp Val Gln Asn Gly Phe Ile Arg Asn Tyr Thr Ile Phe Tyr Arg Thr
 545 550 555 560
 Ile Ile Gly Asn Glu Thr Ala Val Asn Val Asp Ser Ser His Thr Glu
 565 570 575
 Tyr Thr Leu Ser Ser Leu Thr Ser Asp Thr Leu Tyr Met Val Arg Met
 580 585 590
 Ala Ala Tyr Thr Asp Glu Gly Gly Lys Asp Gly Pro Glu Phe Thr Phe
 595 600 605
 Thr Thr Pro Lys Phe Ala Gln Gly Glu Ile Glu Ala Ile Val Val Pro
 610 615 620
 Val Cys Leu Ala Phe Leu Leu Thr Thr Leu Leu Gly Val Leu Phe Cys
 625 630 635 640
 Phe Asn Lys Arg Asp Leu Ile Lys Lys His Ile Trp Pro Asn Val Pro
 645 650 655

Asp Pro Ser Lys Ser His Ile Ala Gln Trp Ser Pro His Thr Pro Pro
 660 665 670
 Arg His Asn Phe Asn Ser Lys Asp Gln Met Tyr Ser Asp Gly Asn Phe
 675 680 685
 Thr Asp Val Ser Val Val Glu Ile Glu Ala Asn Asp Lys Lys Pro Phe
 690 695 700
 Pro Glu Asp Leu Lys Ser Leu Asp Leu Phe Lys Lys Glu Lys Ile Asn
 705 710 715 720
 Thr Glu Gly His Ser Ser Gly Ile Gly Gly Ser Ser Cys Met Ser Ser
 725 730 735
 Ser Arg Pro Ser Ile Ser Ser Ser Asp Glu Asn Glu Ser Ser Gln Asn
 740 745 750
 Thr Ser Ser Thr Val Gln Tyr Ser Thr Val Val His Ser Gly Tyr Arg
 755 760 765
 His Gln Val Pro Ser Val Gln Val Phe Ser Arg Ser Glu Ser Thr Gln
 770 775 780
 Pro Leu Leu Asp Ser Glu Glu Arg Pro Glu Asp Leu Gln Leu Val Asp
 785 790 795 800
 His Val Asp Gly Gly Asp Gly Ile Leu Pro Arg Gln Gln Tyr Phe Lys
 805 810 815
 Gln Asn Cys Ser Gln His Glu Ser Ser Pro Asp Ile Ser His Phe Glu
 820 825 830
 Arg Ser Lys Gln Val Ser Ser Val Asn Glu Glu Asp Phe Val Arg Leu
 835 840 845
 Lys Gln Gln Ile Ser Asp His Ile Ser Gln Ser Cys Gly Ser Gly Gln
 850 855 860
 Met Lys Met Phe Gln Glu Val Ser Ala Ala Asp Ala Phe Gly Pro Gly
 865 870 875 880
 Thr Glu Gly Gln Val Glu Arg Phe Glu Thr Val Gly Met Glu Ala Ala
 885 890 895
 Thr Asp Glu Gly Met Pro Lys Ser Tyr Leu Pro Gln Thr Val Arg Gln
 900 905 910
 Gly Gly Tyr Met Pro Gln
 915

<210> 552
 <211> 1188
 <212> PRT
 <213> Homo sapiens

<400> 552

Met Val Pro Cys Trp Asn His Gly Asn Ile Thr Arg Ser Lys Ala Glu
 1 5 10 15

Glu Leu Leu Ser Arg Thr Gly Lys Asp Gly Ser Phe Leu Val Arg Ala
 20 25 30

Ser Glu Ser Ile Ser Arg Ala Tyr Ala Leu Cys Val Leu Tyr Arg Asn
 35 40 45

Cys Val Tyr Thr Tyr Arg Ile Leu Pro Asn Glu Asp Asp Lys Phe Thr
 50 55 60

Val Gln Ala Ser Glu Gly Val Ser Met Arg Phe Phe Thr Lys Leu Asp
 65 70 75 80

Gln Leu Ile Glu Phe Tyr Lys Lys Glu Asn Met Gly Leu Val Thr His
 85 90 95

Leu Gln Tyr Pro Val Pro Leu Glu Glu Glu Asp Thr Gly Asp Asp Pro
 100 105 110

Glu Glu Asp Thr Glu Ser Val Val Ser Pro Pro Glu Leu Pro Pro Arg
 115 120 125

Asn Ile Pro Leu Thr Ala Ser Ser Cys Glu Ala Lys Glu Val Pro Phe
 130 135 140

Ser Asn Glu Asn Pro Arg Ala Thr Glu Thr Ser Arg Pro Ser Leu Ser
 145 150 155 160

Glu Thr Leu Phe Gln Arg Leu Gln Ser Met Asp Thr Ser Gly Leu Pro
 165 170 175

Glu Glu His Leu Lys Ala Ile Gln Asp Tyr Leu Ser Thr Gln Leu Ala
 180 185 190

Gln Asp Ser Glu Phe Val Lys Thr Gly Ser Ser Ser Leu Pro His Leu
 195 200 205

Lys Lys Leu Thr Thr Leu Leu Cys Lys Glu Leu Tyr Gly Glu Val Ile
 210 215 220

Arg Thr Leu Pro Ser Leu Glu Ser Leu Gln Arg Leu Phe Asp Gln Gln
 225 230 235 240

Leu Ser Pro Gly Leu Arg Pro Arg Pro Gln Val Pro Gly Glu Ala Asn
 245 250 255
 Pro Ile Asn Met Val Ser Lys Leu Ser Gln Leu Thr Ser Leu Leu Ser
 260 265 270
 Ser Ile Glu Asp Lys Val Lys Ala Leu Leu His Glu Gly Pro Glu Ser
 275 280 285
 Pro His Arg Pro Ser Leu Ile Pro Pro Val Thr Phe Glu Val Lys Ala
 290 295 300
 Glu Ser Leu Gly Ile Pro Gln Lys Met Gln Leu Lys Val Asp Val Glu
 305 310 315 320
 Ser Gly Lys Leu Ile Ile Lys Lys Ser Lys Asp Gly Ser Glu Asp Lys
 325 330 335
 Phe Tyr Ser His Lys Lys Ile Leu Gln Leu Ile Lys Ser Gln Lys Phe
 340 345 350
 Leu Asn Lys Leu Val Ile Leu Val Glu Thr Glu Lys Glu Lys Ile Leu
 355 360 365
 Arg Lys Glu Tyr Val Phe Ala Asp Ser Lys Lys Arg Glu Gly Phe Cys
 370 375 380
 Gln Leu Leu Gln Gln Met Lys Asn Lys His Ser Glu Gln Pro Glu Pro
 385 390 395 400
 Asp Met Ile Thr Ile Phe Ile Gly Thr Trp Asn Met Gly Asn Ala Pro
 405 410 415
 Pro Pro Lys Lys Ile Thr Ser Trp Phe Leu Ser Lys Gly Gln Gly Lys
 420 425 430
 Thr Arg Asp Asp Ser Ala Asp Tyr Ile Pro His Asp Ile Tyr Val Ile
 435 440 445
 Gly Thr Gln Glu Asp Pro Leu Ser Glu Lys Glu Trp Leu Glu Ile Leu
 450 455 460
 Lys His Ser Leu Gln Glu Ile Thr Ser Val Thr Phe Lys Thr Val Ala
 465 470 475 480
 Ile His Thr Leu Trp Asn Ile Arg Ile Val Val Leu Ala Lys Pro Glu
 485 490 495
 His Glu Asn Arg Ile Ser His Ile Cys Thr Asp Asn Val Lys Thr Gly
 500 505 510

Ile Ala Asn Thr Leu Gly Asn Lys Gly Ala Val Gly Val Ser Phe Met
 515 520 525
 Phe Asn Gly Thr Ser Leu Gly Phe Val Asn Ser His Leu Thr Ser Gly
 530 535 540
 Ser Glu Lys Lys Leu Arg Arg Asn Gln Asn Tyr Met Asn Ile Leu Arg
 545 550 555 560
 Phe Leu Ala Leu Gly Asp Lys Lys Leu Ser Pro Phe Asn Ile Thr His
 565 570 575
 Arg Phe Thr His Leu Phe Trp Phe Gly Asp Leu Asn Tyr Arg Val Asp
 580 585 590
 Leu Pro Thr Trp Glu Ala Glu Thr Ile Ile Gln Lys Ile Lys Gln Gln
 595 600 605
 Gln Tyr Ala Asp Leu Leu Ser His Asp Gln Leu Leu Thr Glu Arg Arg
 610 615 620
 Glu Gln Lys Val Phe Leu His Phe Glu Glu Glu Glu Ile Thr Phe Ala
 625 630 635 640
 Pro Thr Tyr Arg Phe Glu Arg Leu Thr Arg Asp Lys Tyr Ala Tyr Thr
 645 650 655
 Lys Gln Lys Ala Thr Gly Met Lys Tyr Asn Leu Pro Ser Trp Cys Asp
 660 665 670
 Arg Val Leu Trp Lys Ser Tyr Pro Leu Val His Val Val Cys Gln Ser
 675 680 685
 Tyr Gly Ser Thr Ser Asp Ile Met Thr Ser Asp His Ser Pro Val Phe
 690 695 700
 Ala Thr Phe Glu Ala Gly Val Thr Ser Gln Phe Val Ser Lys Asn Gly
 705 710 715 720
 Pro Gly Thr Val Asp Ser Gln Gly Gln Ile Glu Phe Leu Arg Cys Tyr
 725 730 735
 Ala Thr Leu Lys Thr Lys Ser Gln Thr Lys Phe Tyr Leu Glu Phe His
 740 745 750
 Ser Ser Cys Leu Glu Ser Phe Val Lys Ser Gln Glu Gly Glu Asn Glu
 755 760 765
 Glu Gly Ser Glu Gly Glu Leu Val Val Lys Phe Gly Glu Thr Leu Pro
 770 775 780

Lys Leu Lys Pro Ile Ile Ser Asp Pro Glu Tyr Leu Leu Asp Gln His
 785 790 795 800

 Ile Leu Ile Ser Ile Lys Ser Ser Asp Ser Asp Glu Ser Tyr Gly Glu
 805 810 815

 Gly Cys Ile Ala Leu Arg Leu Glu Ala Thr Glu Thr Gln Leu Pro Ile
 820 825 830

 Tyr Thr Pro Leu Thr His His Gly Glu Leu Thr Gly His Phe Gln Gly
 835 840 845

 Glu Ile Lys Leu Gln Thr Ser Gln Gly Lys Thr Arg Glu Lys Leu Tyr
 850 855 860

 Asp Phe Val Lys Thr Glu Arg Asp Glu Ser Ser Gly Pro Lys Thr Leu
 865 870 875 880

 Lys Ser Leu Thr Ser His Asp Pro Met Lys Gln Trp Glu Val Thr Ser
 885 890 895

 Arg Ala Pro Pro Cys Ser Gly Ser Ser Ile Thr Glu Ile Ile Asn Pro
 900 905 910

 Asn Tyr Met Gly Val Gly Pro Phe Gly Pro Pro Met Pro Leu His Val
 915 920 925

 Lys Gln Thr Leu Ser Pro Asp Gln Gln Pro Thr Ala Trp Ser Tyr Asp
 930 935 940

 Gln Pro Pro Lys Asp Ser Pro Leu Gly Pro Cys Arg Gly Glu Ser Pro
 945 950 955 960

 Pro Thr Pro Pro Gly Gln Pro Pro Ile Ser Pro Lys Lys Phe Leu Pro
 965 970 975

 Ser Thr Ala Asn Arg Gly Leu Pro Pro Arg Thr Gln Glu Ser Arg Pro
 980 985 990

 Ser Asp Leu Gly Lys Asn Ala Gly Asp Thr Leu Pro Gln Glu Asp Leu
 995 1000 1005

 Pro Leu Thr Lys Pro Glu Met Phe Glu Asn Pro Leu Tyr Gly Ser
 1010 1015 1020

 Leu Ser Ser Phe Pro Lys Pro Ala Pro Arg Lys Asp Gln Glu Ser
 1025 1030 1035

 Pro Lys Met Pro Arg Lys Glu Pro Pro Pro Cys Pro Glu Pro Gly
 1040 1045 1050

Ile Leu Ser Pro Ser Ile Val Leu Thr Lys Ala Gln Glu Ala Asp
 1055 1060 1065

Arg Gly Glu Gly Pro Gly Lys Gln Val Pro Ala Pro Arg Leu Arg
 1070 1075 1080

Ser Phe Thr Cys Ser Ser Ser Ala Glu Gly Arg Ala Ala Gly Gly
 1085 1090 1095

Asp Lys Ser Gln Gly Lys Pro Lys Thr Pro Val Ser Ser Gln Ala
 1100 1105 1110

Pro Val Pro Ala Lys Arg Pro Ile Lys Pro Ser Arg Ser Glu Ile
 1115 1120 1125

Asn Gln Gln Thr Pro Pro Thr Pro Thr Pro Arg Pro Pro Leu Pro
 1130 1135 1140

Val Lys Ser Pro Ala Val Leu His Leu Gln His Ser Lys Gly Arg
 1145 1150 1155

Asp Tyr Arg Asp Asn Thr Glu Leu Pro His His Gly Lys His Arg
 1160 1165 1170

Pro Glu Glu Gly Pro Pro Gly Pro Leu Gly Arg Thr Ala Met Gln
 1175 1180 1185

<210> 553
 <211> 963
 <212> PRT
 <213> Homo sapiens

<400> 553

Met Trp Cys Leu His Cys Asn Ser Glu Arg Thr Gln Ser Leu Leu Glu
 1 5 10 15

Leu Glu Leu Asp Ser Gly Val Glu Gly Glu Ala Pro Ser Ser Glu Thr
 20 25 30

Gly Thr Ser Leu Asp Ser Pro Ser Ala Tyr Pro Gln Gly Pro Leu Val
 35 40 45

Pro Gly Ser Ser Leu Ser Pro Asp His Tyr Glu His Thr Ser Val Gly
 50 55 60

Ala Tyr Gly Leu Tyr Ser Gly Pro Pro Gly Gln Gln Gln Arg Thr Arg
 65 70 75 80

Arg Pro Lys Leu Gln His Ser Thr Ser Ile Leu Arg Lys Gln Ala Glu
 85 90 95

Glu Glu Ala Ile Lys Arg Ser Arg Ser Leu Ser Glu Ser Tyr Glu Leu
 Page 793

100

105

110

Ser Ser Asp Leu Gln Asp Lys Gln Val Glu Met Leu Glu Arg Lys Tyr
 115 120 125

Gly Gly Arg Leu Val Thr Arg His Ala Ala Arg Thr Ile Gln Thr Ala
 130 135 140

Phe Arg Gln Tyr Gln Met Asn Lys Asn Phe Glu Arg Leu Arg Ser Ser
 145 150 155 160

Met Ser Glu Asn Arg Met Ser Arg Arg Ile Val Leu Ser Asn Met Arg
 165 170 175

Met Gln Phe Ser Phe Glu Gly Pro Glu Lys Val His Ser Ser Tyr Phe
 180 185 190

Glu Gly Lys Gln Val Ser Val Thr Asn Asp Gly Ser Gln Leu Gly Ala
 195 200 205

Leu Val Ser Pro Glu Cys Gly Asp Leu Ser Glu Pro Thr Thr Leu Lys
 210 215 220

Ser Pro Ala Pro Ser Ser Asp Phe Ala Asp Ala Ile Thr Glu Leu Glu
 225 230 235 240

Asp Ala Phe Ser Arg Gln Val Lys Ser Leu Ala Glu Ser Ile Asp Asp
 245 250 255

Ala Leu Asn Cys Arg Ser Leu His Thr Glu Glu Ala Pro Ala Leu Asp
 260 265 270

Ala Ala Arg Ala Arg Asp Thr Glu Pro Gln Thr Ala Leu His Gly Met
 275 280 285

Asp His Arg Lys Leu Asp Glu Met Thr Ala Ser Tyr Ser Asp Val Thr
 290 295 300

Leu Tyr Ile Asp Glu Glu Glu Leu Ser Pro Pro Leu Pro Leu Ser Gln
 305 310 315 320

Ala Gly Asp Arg Pro Ser Ser Thr Glu Ser Asp Leu Arg Leu Arg Ala
 325 330 335

Gly Gly Ala Ala Pro Asp Tyr Trp Ala Leu Ala His Lys Glu Asp Lys
 340 345 350

Ala Asp Thr Asp Thr Ser Cys Arg Ser Thr Pro Ser Leu Glu Arg Gln
 355 360 365

Glu Gln Arg Leu Arg Val Glu His Leu Pro Leu Leu Thr Ile Glu Pro
 Page 794

370

375

380

Pro Ser Asp Ser Ser Val Asp Leu Ser Asp Arg Ser Glu Arg Gly Ser
385 390 395 400

Leu Lys Arg Gln Ser Ala Tyr Glu Arg Ser Leu Gly Gly Gln Gln Gly
405 410 415

Ser Pro Lys His Gly Pro His Ser Gly Ala Pro Lys Ser Leu Pro Arg
420 425 430

Glu Glu Pro Glu Leu Arg Pro Arg Pro Pro Arg Pro Leu Asp Ser His
435 440 445

Leu Ala Ile Asn Gly Ser Ala Asn Arg Gln Ser Lys Ser Glu Ser Asp
450 455 460

Tyr Ser Asp Gly Asp Asn Asp Ser Ile Asn Ser Thr Ser Asn Ser Asn
465 470 475 480

Asp Thr Ile Asn Cys Ser Ser Glu Ser Ser Ser Arg Asp Ser Leu Arg
485 490 495

Glu Gln Thr Leu Ser Lys Gln Thr Tyr His Lys Glu Ala Arg Asn Ser
500 505 510

Trp Asp Ser Pro Ala Phe Ser Asn Asp Val Ile Arg Lys Arg His Tyr
515 520 525

Arg Ile Gly Leu Asn Leu Phe Asn Lys Lys Pro Glu Lys Gly Val Gln
530 535 540

Tyr Leu Ile Glu Arg Gly Phe Val Pro Asp Thr Pro Val Gly Val Ala
545 550 555 560

His Phe Leu Leu Gln Arg Lys Gly Leu Ser Arg Gln Met Ile Gly Glu
565 570 575

Phe Leu Gly Asn Arg Gln Lys Gln Phe Asn Arg Asp Val Leu Asp Cys
580 585 590

Val Val Asp Glu Met Asp Phe Ser Thr Met Glu Leu Asp Glu Ala Leu
595 600 605

Arg Lys Phe Gln Ala His Ile Arg Val Gln Gly Glu Ala Gln Lys Val
610 615 620

Glu Arg Leu Ile Glu Ala Phe Ser Gln Arg Tyr Cys Ile Cys Asn Pro
625 630 635 640

Gly Val Val Arg Gln Phe Arg Asn Pro Asp Thr Ile Phe Ile Leu Ala
Page 795

Phe Ala Ile Ile Leu Leu Asn Thr Asp Met Tyr Ser Pro Asn Val Lys
660 665 670

Pro Glu Arg Lys Met Lys Leu Glu Asp Phe Ile Lys Asn Leu Arg Gly
675 680 685

Val Asp Asp Gly Glu Asp Ile Pro Arg Glu Met Leu Met Gly Ile Tyr
690 695 700

Glu Arg Ile Arg Lys Arg Glu Leu Lys Thr Asn Glu Asp His Val Ser
705 710 715 720

Gln Val Gln Lys Val Glu Lys Leu Ile Val Gly Lys Lys Pro Ile Gly
725 730 735

Ser Leu His Pro Gly Leu Gly Cys Val Leu Ser Leu Pro His Arg Arg
740 745 750

Leu Val Cys Tyr Cys Arg Leu Phe Glu Val Pro Asp Pro Asn Lys Pro
755 760 765

Gln Lys Leu Gly Leu His Gln Arg Glu Ile Phe Leu Phe Asn Asp Leu
770 775 780

Leu Val Val Thr Lys Ile Phe Gln Lys Lys Lys Asn Ser Val Thr Tyr
785 790 795 800

Ser Phe Arg Gln Ser Phe Ser Leu Tyr Gly Met Gln Val Leu Leu Phe
805 810 815

Glu Asn Gln Tyr Tyr Pro Asn Gly Ile Arg Leu Thr Ser Ser Val Pro
820 825 830

Gly Ala Asp Ile Lys Val Leu Ile Asn Phe Asn Ala Pro Asn Pro Gln
835 840 845

Asp Arg Lys Lys Phe Thr Asp Asp Leu Arg Glu Ser Ile Ala Glu Val
850 855 860

Gln Glu Met Glu Lys His Arg Ile Glu Ser Glu Leu Glu Lys Gln Lys
865 870 875 880

Gly Val Val Arg Pro Ser Met Ser Gln Cys Ser Ser Leu Lys Lys Glu
885 890 895

Ser Gly Asn Gly Thr Leu Ser Arg Ala Cys Leu Asp Asp Ser Tyr Ala
900 905 910

Ser Gly Glu Gly Leu Lys Arg Ser Ala Leu Ser Ser Ser Leu Arg Asp
Page 796

915

920

925

Leu Ser Glu Ala Gly Lys Arg Gly Arg Arg Ser Ser Ala Gly Ser Leu
 930 935 940

Glu Ser Asn Val Glu Phe Gln Pro Phe Glu Pro Leu Gln Pro Ser Val
 945 950 955 960

Leu Cys Ser

<210> 554
 <211> 165
 <212> PRT
 <213> Homo sapiens

<400> 554

Met Gly Trp Asp Leu Thr Val Lys Met Leu Ala Gly Asn Glu Phe Gln
 1 5 10 15

Val Ser Leu Ser Ser Ser Met Ser Val Ser Glu Leu Lys Ala Gln Ile
 20 25 30

Thr Gln Lys Ile Gly Val His Ala Phe Gln Gln Arg Leu Ala Val His
 35 40 45

Pro Ser Gly Val Ala Leu Gln Asp Arg Val Pro Leu Ala Ser Gln Gly
 50 55 60

Leu Gly Pro Gly Ser Thr Val Leu Leu Val Val Asp Lys Cys Asp Glu
 65 70 75 80

Pro Leu Ser Ile Leu Val Arg Asn Asn Lys Gly Arg Ser Ser Thr Tyr
 85 90 95

Glu Val Arg Leu Thr Gln Thr Val Ala His Leu Lys Gln Gln Val Ser
 100 105 110

Gly Leu Glu Gly Val Gln Asp Asp Leu Phe Trp Leu Thr Phe Glu Gly
 115 120 125

Lys Pro Leu Glu Asp Gln Leu Pro Leu Gly Glu Tyr Gly Leu Lys Pro
 130 135 140

Leu Ser Thr Val Phe Met Asn Leu Arg Leu Arg Gly Gly Gly Thr Glu
 145 150 155 160

Pro Gly Gly Arg Ser
 165

<210> 555
 <211> 1163

<212> PRT
 <213> Homo sapiens

<400> 555

Met Thr Arg Thr Arg Ala Ala Leu Leu Leu Phe Thr Ala Leu Ala Thr
 1 5 10 15

Ser Leu Gly Phe Asn Leu Asp Thr Glu Glu Leu Thr Ala Phe Arg Val
 20 25 30

Asp Ser Ala Gly Phe Gly Asp Ser Val Val Gln Tyr Ala Asn Ser Trp
 35 40 45

Val Val Val Gly Ala Pro Gln Lys Ile Thr Ala Ala Asn Gln Thr Gly
 50 55 60

Gly Leu Tyr Gln Cys Gly Tyr Ser Thr Gly Ala Cys Glu Pro Ile Gly
 65 70 75 80

Leu Gln Val Pro Pro Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu
 85 90 95

Ala Ser Thr Thr Ser Pro Ser Gln Leu Leu Ala Cys Gly Pro Thr Val
 100 105 110

His His Glu Cys Gly Arg Asn Met Tyr Leu Thr Gly Leu Cys Phe Leu
 115 120 125

Leu Gly Pro Thr Gln Leu Thr Gln Arg Leu Pro Val Ser Arg Gln Glu
 130 135 140

Cys Pro Arg Gln Glu Gln Asp Ile Val Phe Leu Ile Asp Gly Ser Gly
 145 150 155 160

Ser Ile Ser Ser Arg Asn Phe Ala Thr Met Met Asn Phe Val Arg Ala
 165 170 175

Val Ile Ser Gln Phe Gln Arg Pro Ser Thr Gln Phe Ser Leu Met Gln
 180 185 190

Phe Ser Asn Lys Phe Gln Thr His Phe Thr Phe Glu Glu Phe Arg Arg
 195 200 205

Ser Ser Asn Pro Leu Ser Leu Leu Ala Ser Val His Gln Leu Gln Gly
 210 215 220

Phe Thr Tyr Thr Ala Thr Ala Ile Gln Asn Val Val His Arg Leu Phe
 225 230 235 240

His Ala Ser Tyr Gly Ala Arg Arg Asp Ala Ala Lys Ile Leu Ile Val
 245 250 255

Ile Thr Asp Gly Lys Lys Glu Gly Asp Ser Leu Asp Tyr Lys Asp Val
 260 265 270

Ile Pro Met Ala Asp Ala Ala Gly Ile Ile Arg Tyr Ala Ile Gly Val
 275 280 285

Gly Leu Ala Phe Gln Asn Arg Asn Ser Trp Lys Glu Leu Asn Asp Ile
 290 295 300

Ala Ser Lys Pro Ser Gln Glu His Ile Phe Lys Val Glu Asp Phe Asp
 305 310 315 320

Ala Leu Lys Asp Ile Gln Asn Gln Leu Lys Glu Lys Ile Phe Ala Ile
 325 330 335

Glu Gly Thr Glu Thr Thr Ser Ser Ser Ser Phe Glu Leu Glu Met Ala
 340 345 350

Gln Glu Gly Phe Ser Ala Val Phe Thr Pro Asp Gly Pro Val Leu Gly
 355 360 365

Ala Val Gly Ser Phe Thr Trp Ser Gly Gly Ala Phe Leu Tyr Pro Pro
 370 375 380

Asn Met Ser Pro Thr Phe Ile Asn Met Ser Gln Glu Asn Val Asp Met
 385 390 395 400

Arg Asp Ser Tyr Leu Gly Tyr Ser Thr Glu Leu Ala Leu Trp Lys Gly
 405 410 415

Val Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His Thr Gly Lys
 420 425 430

Ala Val Ile Phe Thr Gln Val Ser Arg Gln Trp Arg Met Lys Ala Glu
 435 440 445

Val Thr Gly Thr Gln Ile Gly Ser Tyr Phe Gly Ala Ser Leu Cys Ser
 450 455 460

Val Asp Val Asp Ser Asp Gly Ser Thr Asp Leu Val Leu Ile Gly Ala
 465 470 475 480

Pro His Tyr Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser Val Cys Pro
 485 490 495

Leu Pro Arg Gly Trp Arg Arg Trp Trp Cys Asp Ala Val Leu Tyr Gly
 500 505 510

Glu Gln Gly His Pro Trp Gly Arg Phe Gly Ala Ala Leu Thr Val Leu
 515 520 525

Gly Asp Val Asn Gly Asp Lys Leu Thr Asp Val Val Ile Gly Ala Pro
 530 535 540

Gly Glu Glu Glu Asn Arg Gly Ala Val Tyr Leu Phe His Gly Val Leu
 545 550 555 560

Gly Pro Ser Ile Ser Pro Ser His Ser Gln Arg Ile Ala Gly Ser Gln
 565 570 575

Leu Ser Ser Arg Leu Gln Tyr Phe Gly Gln Ala Leu Ser Gly Gly Gln
 580 585 590

Asp Leu Thr Gln Asp Gly Leu Val Asp Leu Ala Val Gly Ala Arg Gly
 595 600 605

Gln Val Leu Leu Leu Arg Thr Arg Pro Val Leu Trp Val Gly Val Ser
 610 615 620

Met Gln Phe Ile Pro Ala Glu Ile Pro Arg Ser Ala Phe Glu Cys Arg
 625 630 635 640

Glu Gln Val Val Ser Glu Gln Thr Leu Val Gln Ser Asn Ile Cys Leu
 645 650 655

Tyr Ile Asp Lys Arg Ser Lys Asn Leu Leu Gly Ser Arg Asp Leu Gln
 660 665 670

Ser Ser Val Thr Leu Asp Leu Ala Leu Asp Pro Gly Arg Leu Ser Pro
 675 680 685

Arg Ala Thr Phe Gln Glu Thr Lys Asn Arg Ser Leu Ser Arg Val Arg
 690 695 700

Val Leu Gly Leu Lys Ala His Cys Glu Asn Phe Asn Leu Leu Leu Pro
 705 710 715 720

Ser Cys Val Glu Asp Ser Val Thr Pro Ile Thr Leu Arg Leu Asn Phe
 725 730 735

Thr Leu Val Gly Lys Pro Leu Leu Ala Phe Arg Asn Leu Arg Pro Met
 740 745 750

Leu Ala Ala Asp Ala Gln Arg Tyr Phe Thr Ala Ser Leu Pro Phe Glu
 755 760 765

Lys Asn Cys Gly Ala Asp His Ile Cys Gln Asp Asn Leu Gly Ile Ser
 770 775 780

Phe Ser Phe Pro Gly Leu Lys Ser Leu Leu Val Gly Ser Asn Leu Glu
 785 790 795 800

Leu Asn Ala Glu Val Met Val Trp Asn Asp Gly Glu Asp Ser Tyr Gly
 805 810 815
 Thr Thr Ile Thr Phe Ser His Pro Ala Gly Leu Ser Tyr Arg Tyr Val
 820 825 830
 Ala Glu Gly Gln Lys Gln Gly Gln Leu Arg Ser Leu His Leu Thr Cys
 835 840 845
 Asp Ser Ala Pro Val Gly Ser Gln Gly Thr Trp Ser Thr Ser Cys Arg
 850 855 860
 Ile Asn His Leu Ile Phe Arg Gly Gly Ala Gln Ile Thr Phe Leu Ala
 865 870 875 880
 Thr Phe Asp Val Ser Pro Lys Ala Val Leu Gly Asp Arg Leu Leu Leu
 885 890 895
 Thr Ala Asn Val Ser Ser Glu Asn Asn Thr Pro Arg Thr Ser Lys Thr
 900 905 910
 Thr Phe Gln Leu Glu Leu Pro Val Lys Tyr Ala Val Tyr Thr Val Val
 915 920 925
 Ser Ser His Glu Gln Phe Thr Lys Tyr Leu Asn Phe Ser Glu Ser Glu
 930 935 940
 Glu Lys Glu Ser His Val Ala Met His Arg Tyr Gln Val Asn Asn Leu
 945 950 955 960
 Gly Gln Arg Asp Leu Pro Val Ser Ile Asn Phe Trp Val Pro Val Glu
 965 970 975
 Leu Asn Gln Glu Ala Val Trp Met Asp Val Glu Val Ser His Pro Gln
 980 985 990
 Asn Pro Ser Leu Arg Cys Ser Ser Glu Lys Ile Ala Pro Pro Ala Ser
 995 1000 1005
 Asp Phe Leu Ala His Ile Gln Lys Asn Pro Val Leu Asp Cys Ser
 1010 1015 1020
 Ile Ala Gly Cys Leu Arg Phe Arg Cys Asp Val Pro Ser Phe Ser
 1025 1030 1035
 Val Gln Glu Glu Leu Asp Phe Thr Leu Lys Gly Asn Leu Ser Phe
 1040 1045 1050
 Gly Trp Val Arg Gln Ile Leu Gln Lys Lys Val Ser Val Val Ser
 1055 1060 1065

Val Ala Glu Ile Thr Phe Asp Thr Ser Val Tyr Ser Gln Leu Pro
 1070 1075 1080

Gly Gln Glu Ala Phe Met Arg Ala Gln Thr Thr Thr Val Leu Glu
 1085 1090 1095

Lys Tyr Lys Val His Asn Pro Thr Pro Leu Ile Val Gly Ser Ser
 1100 1105 1110

Ile Gly Gly Leu Leu Leu Leu Ala Leu Ile Thr Ala Val Leu Tyr
 1115 1120 1125

Lys Val Gly Phe Phe Lys Arg Gln Tyr Lys Glu Met Met Glu Glu
 1130 1135 1140

Ala Asn Gly Gln Ile Ala Pro Glu Asn Gly Thr Gln Thr Pro Ser
 1145 1150 1155

Pro Pro Ser Glu Lys
 1160

<210> 556
 <211> 769
 <212> PRT
 <213> Homo sapiens

<400> 556

Met Leu Gly Leu Arg Pro Pro Leu Leu Ala Leu Val Gly Leu Leu Ser
 1 5 10 15

Leu Gly Cys Val Leu Ser Gln Glu Cys Thr Lys Phe Lys Val Ser Ser
 20 25 30

Cys Arg Glu Cys Ile Glu Ser Gly Pro Gly Cys Thr Trp Cys Gln Lys
 35 40 45

Leu Asn Phe Thr Gly Pro Gly Asp Pro Asp Ser Ile Arg Cys Asp Thr
 50 55 60

Arg Pro Gln Leu Leu Met Arg Gly Cys Ala Ala Asp Asp Ile Met Asp
 65 70 75 80

Pro Thr Ser Leu Ala Glu Thr Gln Glu Asp His Asn Gly Gly Gln Lys
 85 90 95

Gln Leu Ser Pro Gln Lys Val Thr Leu Tyr Leu Arg Pro Gly Gln Ala
 100 105 110

Ala Ala Phe Asn Val Thr Phe Arg Arg Ala Lys Gly Tyr Pro Ile Asp
 115 120 125

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Leu Asp Asp Leu Arg
 130 135 140
 Asn Val Lys Lys Leu Gly Gly Asp Leu Leu Arg Ala Leu Asn Glu Ile
 145 150 155 160
 Thr Glu Ser Gly Arg Ile Gly Phe Gly Ser Phe Val Asp Lys Thr Val
 165 170 175
 Leu Pro Phe Val Asn Thr His Pro Asp Lys Leu Arg Asn Pro Cys Pro
 180 185 190
 Asn Lys Glu Lys Glu Cys Gln Pro Pro Phe Ala Phe Arg His Val Leu
 195 200 205
 Lys Leu Thr Asn Asn Ser Asn Gln Phe Gln Thr Glu Val Gly Lys Gln
 210 215 220
 Leu Ile Ser Gly Asn Leu Asp Ala Pro Glu Gly Gly Leu Asp Ala Met
 225 230 235 240
 Met Gln Val Ala Ala Cys Pro Glu Glu Ile Gly Trp Arg Asn Val Thr
 245 250 255
 Arg Leu Leu Val Phe Ala Thr Asp Asp Gly Phe His Phe Ala Gly Asp
 260 265 270
 Gly Lys Leu Gly Ala Ile Leu Thr Pro Asn Asp Gly Arg Cys His Leu
 275 280 285
 Glu Asp Asn Leu Tyr Lys Arg Ser Asn Glu Phe Asp Tyr Pro Ser Val
 290 295 300
 Gly Gln Leu Ala His Lys Leu Ala Glu Asn Asn Ile Gln Pro Ile Phe
 305 310 315 320
 Ala Val Thr Ser Arg Met Val Lys Thr Tyr Glu Lys Leu Thr Glu Ile
 325 330 335
 Ile Pro Lys Ser Ala Val Gly Glu Leu Ser Glu Asp Ser Ser Asn Val
 340 345 350
 Val His Leu Ile Lys Asn Ala Tyr Asn Lys Leu Ser Ser Arg Val Phe
 355 360 365
 Leu Asp His Asn Ala Leu Pro Asp Thr Leu Lys Val Thr Tyr Asp Ser
 370 375 380
 Phe Cys Ser Asn Gly Val Thr His Arg Asn Gln Pro Arg Gly Asp Cys
 385 390 395 400

Asp Gly Val Gln Ile Asn Val Pro Ile Thr Phe Gln Val Lys Val Thr
 405 410 415
 Ala Thr Glu Cys Ile Gln Glu Gln Ser Phe Val Ile Arg Ala Leu Gly
 420 425 430
 Phe Thr Asp Ile Val Thr Val Gln Val Leu Pro Gln Cys Glu Cys Arg
 435 440 445
 Cys Arg Asp Gln Ser Arg Asp Arg Ser Leu Cys His Gly Lys Gly Phe
 450 455 460
 Leu Glu Cys Gly Ile Cys Arg Cys Asp Thr Gly Tyr Ile Gly Lys Asn
 465 470 475 480
 Cys Glu Cys Gln Thr Gln Gly Arg Ser Ser Gln Glu Leu Glu Gly Ser
 485 490 495
 Cys Arg Lys Asp Asn Asn Ser Ile Ile Cys Ser Gly Leu Gly Asp Cys
 500 505 510
 Val Cys Gly Gln Cys Leu Cys His Thr Ser Asp Val Pro Gly Lys Leu
 515 520 525
 Ile Tyr Gly Gln Tyr Cys Glu Cys Asp Thr Ile Asn Cys Glu Arg Tyr
 530 535 540
 Asn Gly Gln Val Cys Gly Gly Pro Gly Arg Gly Leu Cys Phe Cys Gly
 545 550 555 560
 Lys Cys Arg Cys His Pro Gly Phe Glu Gly Ser Ala Cys Gln Cys Glu
 565 570 575
 Arg Thr Thr Glu Gly Cys Leu Asn Pro Arg Arg Val Glu Cys Ser Gly
 580 585 590
 Arg Gly Arg Cys Arg Cys Asn Val Cys Glu Cys His Ser Gly Tyr Gln
 595 600 605
 Leu Pro Leu Cys Gln Glu Cys Pro Gly Cys Pro Ser Pro Cys Gly Lys
 610 615 620
 Tyr Ile Ser Cys Ala Glu Cys Leu Lys Phe Glu Lys Gly Pro Phe Gly
 625 630 635 640
 Lys Asn Cys Ser Ala Ala Cys Pro Gly Leu Gln Leu Ser Asn Asn Pro
 645 650 655
 Val Lys Gly Arg Thr Cys Lys Glu Arg Asp Ser Glu Gly Cys Trp Val
 660 665 670

Ala Tyr Thr Leu Glu Gln Gln Asp Gly Met Asp Arg Tyr Leu Ile Tyr
675 680 685

Val Asp Glu Ser Arg Glu Cys Val Ala Gly Pro Asn Ile Ala Ala Ile
690 695 700

Val Gly Gly Thr Val Ala Gly Ile Val Leu Ile Gly Ile Leu Leu Leu
705 710 715 720

Val Ile Trp Lys Ala Leu Ile His Leu Ser Asp Leu Arg Glu Tyr Arg
725 730 735

Arg Phe Glu Lys Glu Lys Leu Lys Ser Gln Trp Asn Asn Asp Asn Pro
740 745 750

Leu Phe Lys Ser Ala Thr Thr Thr Val Met Asn Pro Lys Phe Ala Glu
755 760 765

Ser

<210> 557
<211> 946
<212> PRT
<213> Homo sapiens

<400> 557

Met Ala Val Tyr Cys Tyr Ala Leu Asn Ser Leu Val Ile Met Asn Ser
1 5 10 15

Ala Asn Glu Met Lys Ser Gly Gly Gly Pro Gly Pro Ser Gly Ser Glu
20 25 30

Thr Pro Pro Pro Pro Arg Arg Ala Val Leu Ser Pro Gly Ser Val Phe
35 40 45

Ser Pro Gly Arg Gly Ala Ser Phe Leu Phe Pro Pro Ala Glu Ser Leu
50 55 60

Ser Pro Glu Glu Pro Arg Ser Pro Gly Gly Trp Arg Ser Gly Arg Arg
65 70 75 80

Arg Leu Asn Ser Ser Ser Gly Ser Gly Ser Gly Ser Ser Gly Ser Ser
85 90 95

Val Ser Ser Pro Ser Trp Ala Gly Arg Leu Arg Gly Asp Arg Gln Gln
100 105 110

Val Val Ala Ala Gly Thr Leu Ser Pro Pro Gly Pro Glu Glu Ala Lys
115 120 125

Arg Lys Leu Arg Ile Leu Gln Arg Glu Leu Gln Asn Val Gln Val Asn
Page 805

130

135

140

Gln Lys Val Gly Met Phe Glu Ala His Ile Gln Ala Gln Ser Ser Ala
 145 150 155 160

Ile Gln Ala Pro Arg Ser Pro Arg Leu Gly Arg Ala Arg Ser Pro Ser
 165 170 175

Pro Cys Pro Phe Arg Ser Ser Ser Gln Pro Pro Gly Arg Val Leu Val
 180 185 190

Gln Gly Ala Arg Ser Glu Glu Arg Arg Thr Lys Ser Trp Gly Glu Gln
 195 200 205

Cys Pro Glu Thr Ser Gly Thr Asp Ser Gly Arg Lys Gly Gly Pro Ser
 210 215 220

Leu Cys Ser Ser Gln Val Lys Lys Gly Met Pro Pro Leu Pro Gly Arg
 225 230 235 240

Ala Ala Pro Thr Gly Ser Glu Ala Gln Gly Pro Ser Ala Phe Val Arg
 245 250 255

Met Glu Lys Gly Ile Pro Ala Ser Pro Arg Cys Gly Ser Pro Thr Ala
 260 265 270

Met Glu Ile Asp Lys Arg Gly Ser Pro Thr Pro Gly Thr Arg Ser Cys
 275 280 285

Leu Ala Pro Ser Leu Gly Leu Phe Gly Ala Ser Leu Thr Met Ala Thr
 290 295 300

Glu Val Ala Ala Arg Val Thr Ser Thr Gly Pro His Arg Pro Gln Asp
 305 310 315 320

Leu Ala Leu Thr Glu Pro Ser Gly Arg Ala Arg Glu Leu Glu Asp Leu
 325 330 335

Gln Pro Pro Glu Ala Leu Val Glu Arg Gln Gly Gln Phe Leu Gly Ser
 340 345 350

Glu Thr Ser Pro Ala Pro Glu Arg Gly Gly Pro Arg Asp Gly Glu Pro
 355 360 365

Pro Gly Lys Met Gly Lys Gly Tyr Leu Pro Cys Gly Met Pro Gly Ser
 370 375 380

Gly Glu Pro Glu Val Gly Lys Arg Pro Glu Glu Thr Thr Val Ser Val
 385 390 395 400

Gln Ser Ala Glu Ser Ser Asp Ser Leu Ser Trp Ser Arg Leu Pro Arg
 Page 806

Ala Leu Ala Ser Val Gly Pro Glu Glu Ala Arg Ser Gly Ala Pro Val
420 425 430

Gly Gly Gly Arg Trp Gln Leu Ser Asp Arg Val Glu Gly Gly Ser Pro
435 440 445

Thr Leu Gly Leu Leu Gly Gly Ser Pro Ser Ala Gln Pro Gly Thr Gly
450 455 460

Asn Val Glu Ala Gly Ile Pro Ser Gly Arg Met Leu Glu Pro Leu Pro
465 470 475 480

Cys Trp Asp Ala Ala Lys Asp Leu Lys Glu Pro Gln Cys Pro Pro Gly
485 490 495

Asp Arg Val Gly Val Gln Pro Gly Asn Ser Arg Val Trp Gln Gly Thr
500 505 510

Met Glu Lys Ala Gly Leu Ala Trp Thr Arg Gly Thr Gly Val Gln Ser
515 520 525

Glu Gly Thr Trp Glu Ser Gln Arg Gln Asp Ser Asp Ala Leu Pro Ser
530 535 540

Pro Glu Leu Leu Pro Gln Asp Pro Asp Lys Pro Phe Leu Arg Lys Ala
545 550 555 560

Cys Ser Pro Ser Asn Ile Pro Ala Val Ile Ile Thr Asp Met Gly Thr
565 570 575

Gln Glu Asp Gly Ala Leu Glu Glu Thr Gln Gly Ser Pro Arg Gly Asn
580 585 590

Leu Pro Leu Arg Lys Leu Ser Ser Ser Ala Ser Ser Thr Gly Phe
595 600 605

Ser Ser Ser Tyr Glu Asp Ser Glu Glu Asp Ile Ser Ser Asp Pro Glu
610 615 620

Arg Thr Leu Asp Pro Asn Ser Ala Phe Leu His Thr Leu Asp Gln Gln
625 630 635 640

Lys Pro Arg Val Ser Lys Ser Trp Arg Lys Ile Lys Asn Met Val His
645 650 655

Trp Ser Pro Phe Val Met Ser Phe Lys Lys Lys Tyr Pro Trp Ile Gln
660 665 670

Leu Ala Gly His Ala Gly Ser Phe Lys Ala Ala Ala Asn Gly Arg Ile
Page 807

675

680

685

Leu Lys Lys His Cys Glu Ser Glu Gln Arg Cys Leu Asp Arg Leu Met
 690 695 700

Val Asp Val Leu Arg Pro Phe Val Pro Ala Tyr His Gly Asp Val Val
 705 710 715 720

Lys Asp Gly Glu Arg Tyr Asn Gln Met Asp Asp Leu Leu Ala Asp Phe
 725 730 735

Asp Ser Pro Cys Val Met Asp Cys Lys Met Gly Ile Arg Thr Tyr Leu
 740 745 750

Glu Glu Glu Leu Thr Lys Ala Arg Lys Lys Pro Ser Leu Arg Lys Asp
 755 760 765

Met Tyr Gln Lys Met Ile Glu Val Asp Pro Glu Ala Pro Thr Glu Glu
 770 775 780

Glu Lys Ala Gln Arg Ala Val Thr Lys Pro Arg Tyr Met Gln Trp Arg
 785 790 795 800

Glu Thr Ile Ser Ser Thr Ala Thr Leu Gly Phe Arg Ile Glu Gly Ile
 805 810 815

Lys Lys Glu Asp Gly Thr Val Asn Arg Asp Phe Lys Lys Thr Lys Thr
 820 825 830

Arg Glu Gln Val Thr Glu Ala Phe Arg Glu Phe Thr Lys Gly Asn His
 835 840 845

Asn Ile Leu Ile Ala Tyr Arg Asp Arg Leu Lys Ala Ile Arg Thr Thr
 850 855 860

Leu Glu Val Ser Pro Phe Phe Lys Cys His Glu Val Ile Gly Ser Ser
 865 870 875 880

Leu Leu Phe Ile His Asp Lys Lys Glu Gln Ala Lys Val Trp Met Ile
 885 890 895

Asp Phe Gly Lys Thr Thr Pro Leu Pro Glu Gly Gln Thr Leu Gln His
 900 905 910

Asp Val Pro Trp Gln Glu Gly Asn Arg Glu Asp Gly Tyr Leu Ser Gly
 915 920 925

Leu Asn Asn Leu Val Asp Ile Leu Thr Glu Met Ser Gln Asp Ala Pro
 930 935 940

Leu Ala

945

<210> 558
 <211> 1697
 <212> PRT
 <213> Homo sapiens

<400> 558

Met Met Ala Gln Phe Pro Thr Ala Met Asn Gly Gly Pro Asn Met Trp
 1 5 10 15

Ala Ile Thr Ser Glu Glu Arg Thr Lys His Asp Arg Gln Phe Asp Asn
 20 25 30

Leu Lys Pro Ser Gly Gly Tyr Ile Thr Gly Asp Gln Ala Arg Asn Phe
 35 40 45

Phe Leu Gln Ser Gly Leu Pro Ala Pro Val Leu Ala Glu Ile Trp Ala
 50 55 60

Leu Ser Asp Leu Asn Lys Asp Gly Lys Met Asp Gln Gln Glu Phe Ser
 65 70 75 80

Ile Ala Met Lys Leu Ile Lys Leu Lys Leu Gln Gly Gln Gln Leu Pro
 85 90 95

Val Val Leu Pro Pro Ile Met Lys Gln Pro Pro Met Phe Ser Pro Leu
 100 105 110

Ile Ser Ala Arg Phe Gly Met Gly Ser Met Pro Asn Leu Ser Ile Pro
 115 120 125

Gln Pro Leu Pro Pro Ala Ala Pro Ile Thr Ser Leu Ser Ser Ala Thr
 130 135 140

Ser Gly Thr Asn Leu Pro Pro Leu Met Met Pro Thr Pro Leu Val Pro
 145 150 155 160

Ser Val Ser Thr Ser Ser Leu Pro Asn Gly Thr Ala Ser Leu Ile Gln
 165 170 175

Pro Leu Pro Ile Pro Tyr Ser Ser Ser Thr Leu Pro His Gly Ser Ser
 180 185 190

Tyr Ser Leu Met Met Gly Gly Phe Gly Gly Ala Ser Ile Gln Lys Ala
 195 200 205

Gln Ser Leu Ile Asp Leu Gly Ser Ser Ser Ser Thr Ser Ser Thr Ala
 210 215 220

Ser Leu Ser Gly Asn Ser Pro Lys Thr Gly Thr Ser Glu Trp Ala Val
 225 230 235 240

Pro Gln Pro Thr Arg₂₄₅ Leu Lys Tyr Arg Gln₂₅₀ Lys Phe Asn Thr Leu₂₅₅ Asp
 Lys Ser Met Ser₂₆₀ Gly Tyr Leu Ser Gly₂₆₅ Phe Gln Ala Arg Asn₂₇₀ Ala Leu
 Leu Gln Ser₂₇₅ Asn Leu Ser Gln Thr₂₈₀ Gln Leu Ala Thr Ile₂₈₅ Trp Thr Leu
 Ala Asp₂₉₀ Val Asp Gly Asp Gly₂₉₅ Gln Leu Lys Ala Glu₃₀₀ Glu Phe Ile Leu
 Ala₃₀₅ Met His Leu Thr Asp₃₁₀ Met Ala Lys Ala Gly₃₁₅ Gln Pro Leu Pro Leu₃₂₀
 Thr Leu Pro Pro Glu₃₂₅ Leu Val Pro Pro Ser₃₃₀ Phe Arg Gly Gly Lys₃₃₅ Gln
 Ile Asp Ser Ile₃₄₀ Asn Gly Thr Leu Pro₃₄₅ Ser Tyr Gln Lys Met₃₅₀ Gln Glu
 Glu Glu Pro₃₅₅ Gln Lys Lys Leu Pro₃₆₀ Val Thr Phe Glu Asp₃₆₅ Lys Arg Lys
 Ala Asn₃₇₀ Tyr Glu Arg Gly Asn₃₇₅ Met Glu Leu Glu Lys₃₈₀ Arg Arg Gln Ala
 Leu₃₈₅ Met Glu Gln Gln Gln Arg Glu Ala Glu Arg₃₉₅ Lys Ala Gln Lys Glu₄₀₀
 Lys Glu Glu Trp Glu₄₀₅ Arg Lys Gln Arg Glu₄₁₀ Leu Gln Glu Gln Glu₄₁₅ Trp
 Lys Lys Gln Leu₄₂₀ Glu Leu Glu Lys Arg₄₂₅ Leu Glu Lys Gln Arg₄₃₀ Glu Leu
 Glu Arg Gln₄₃₅ Arg Glu Glu Glu Arg₄₄₀ Arg Lys Asp Ile Glu₄₄₅ Arg Arg Glu
 Ala Ala Lys Gln Glu Leu Glu₄₅₅ Arg Gln Arg Arg Leu₄₆₀ Glu Trp Glu Arg
 Ile₄₆₅ Arg Arg Gln Glu Leu₄₇₀ Leu Asn Gln Lys Asn₄₇₅ Arg Glu Gln Glu Glu₄₈₀
 Ile Val Arg Leu Asn₄₈₅ Ser Lys Lys Lys Asn₄₉₀ Leu His Leu Glu Leu₄₉₅ Glu
 Ala Leu Asn Gly₅₀₀ Lys His Gln Gln Ile₅₀₅ Ser Gly Arg Leu Gln₅₁₀ Asp Val

Arg Leu Lys Lys Gln Thr Gln Lys Thr Glu Leu Glu Val Leu Asp Lys
 515 520 525
 Gln Cys Asp Leu Glu Ile Met Glu Ile Lys Gln Leu Gln Gln Glu Leu
 530 535 540
 Gln Glu Tyr Gln Asn Lys Leu Ile Tyr Leu Val Pro Glu Lys Gln Leu
 545 550 555 560
 Leu Asn Glu Arg Ile Lys Asn Met Gln Phe Ser Asn Thr Pro Asp Ser
 565 570 575
 Gly Val Ser Leu Leu His Lys Lys Ser Leu Glu Lys Glu Glu Leu Cys
 580 585 590
 Gln Arg Leu Lys Glu Gln Leu Asp Ala Leu Glu Lys Glu Thr Ala Ser
 595 600 605
 Lys Leu Ser Glu Met Asp Ser Phe Asn Asn Gln Leu Lys Cys Gly Asn
 610 615 620
 Met Asp Asp Ser Val Leu Gln Cys Leu Leu Ser Leu Leu Ser Cys Leu
 625 630 635 640
 Asn Asn Leu Phe Leu Leu Leu Lys Glu Leu Arg Glu Thr Tyr Asn Thr
 645 650 655
 Gln Gln Leu Ala Leu Glu Gln Leu Tyr Lys Ile Lys Arg Asp Lys Leu
 660 665 670
 Lys Glu Ile Glu Arg Lys Arg Leu Glu Leu Met Gln Lys Lys Lys Leu
 675 680 685
 Glu Asp Glu Ala Ala Arg Lys Ala Lys Gln Gly Lys Glu Asn Leu Trp
 690 695 700
 Lys Glu Asn Leu Arg Lys Glu Glu Glu Glu Lys Gln Lys Arg Leu Gln
 705 710 715 720
 Glu Glu Lys Thr Gln Glu Lys Ile Gln Glu Glu Glu Arg Lys Ala Glu
 725 730 735
 Glu Lys Gln Arg Lys Asp Lys Asp Thr Leu Lys Ala Glu Glu Lys Lys
 740 745 750
 Arg Glu Thr Ala Ser Val Leu Val Asn Tyr Arg Ala Leu Tyr Pro Phe
 755 760 765
 Glu Ala Arg Asn His Asp Glu Met Ser Phe Asn Ser Gly Asp Ile Ile
 770 775 780

Gln Val Asp Glu Lys Thr Val Gly Glu Pro Gly Trp Leu Tyr Gly Ser
 785 790 795 800
 Phe Gln Gly Asn Phe Gly Trp Phe Pro Cys Asn Tyr Val Glu Lys Met
 805 810 815
 Pro Ser Ser Glu Asn Glu Lys Ala Val Ser Pro Lys Lys Ala Leu Leu
 820 825 830
 Pro Pro Thr Val Ser Leu Ser Ala Thr Ser Thr Ser Ser Glu Pro Leu
 835 840 845
 Ser Ser Asn Gln Pro Ala Ser Val Thr Asp Tyr Gln Asn Val Ser Phe
 850 855 860
 Ser Asn Leu Thr Val Asn Thr Ser Trp Gln Lys Lys Ser Ala Phe Thr
 865 870 875 880
 Arg Thr Val Ser Pro Gly Ser Val Ser Pro Ile His Gly Gln Gly Gln
 885 890 895
 Val Val Glu Asn Leu Lys Ala Gln Ala Leu Cys Ser Trp Thr Ala Lys
 900 905 910
 Lys Asp Asn His Leu Asn Phe Ser Lys His Asp Ile Ile Thr Val Leu
 915 920 925
 Glu Gln Gln Glu Asn Trp Trp Phe Gly Glu Val His Gly Gly Arg Gly
 930 935 940
 Trp Phe Pro Lys Ser Tyr Val Lys Ile Ile Pro Gly Ser Glu Val Lys
 945 950 955 960
 Arg Glu Glu Pro Glu Ala Leu Tyr Ala Ala Val Asn Lys Lys Pro Thr
 965 970 975
 Ser Ala Ala Tyr Ser Val Gly Glu Glu Tyr Ile Ala Leu Tyr Pro Tyr
 980 985 990
 Ser Ser Val Glu Pro Gly Asp Leu Thr Phe Thr Glu Gly Glu Glu Ile
 995 1000 1005
 Leu Val Thr Gln Lys Asp Gly Glu Trp Trp Thr Gly Ser Ile Gly
 1010 1015 1020
 Asp Arg Ser Gly Ile Phe Pro Ser Asn Tyr Val Lys Pro Lys Asp
 1025 1030 1035
 Gln Glu Ser Phe Gly Ser Ala Ser Lys Ser Gly Ala Ser Asn Lys
 1040 1045 1050

Lys	Pro	Glu	Ile	Ala	Gln	Val	Thr	Ser	Ala	Tyr	Val	Ala	Ser	Gly
	1055					1060					1065			
Ser	Glu	Gln	Leu	Ser	Leu	Ala	Pro	Gly	Gln	Leu	Ile	Leu	Ile	Leu
	1070					1075					1080			
Lys	Lys	Asn	Thr	Ser	Gly	Trp	Trp	Gln	Gly	Glu	Leu	Gln	Ala	Arg
	1085					1090					1095			
Gly	Lys	Lys	Arg	Gln	Lys	Gly	Trp	Phe	Pro	Ala	Ser	His	Val	Lys
	1100					1105					1110			
Leu	Leu	Gly	Pro	Ser	Ser	Glu	Arg	Ala	Thr	Pro	Ala	Phe	His	Pro
	1115					1120					1125			
Val	Cys	Gln	Val	Ile	Ala	Met	Tyr	Asp	Tyr	Ala	Ala	Asn	Asn	Glu
	1130					1135					1140			
Asp	Glu	Leu	Ser	Phe	Ser	Lys	Gly	Gln	Leu	Ile	Asn	Val	Met	Asn
	1145					1150					1155			
Lys	Asp	Asp	Pro	Asp	Trp	Trp	Gln	Gly	Glu	Ile	Asn	Gly	Val	Thr
	1160					1165					1170			
Gly	Leu	Phe	Pro	Ser	Asn	Tyr	Val	Lys	Met	Thr	Thr	Asp	Ser	Asp
	1175					1180					1185			
Pro	Ser	Gln	Gln	Trp	Cys	Ala	Asp	Leu	Gln	Thr	Leu	Asp	Thr	Met
	1190					1195					1200			
Gln	Pro	Ile	Glu	Arg	Lys	Arg	Gln	Gly	Tyr	Ile	His	Glu	Leu	Ile
	1205					1210					1215			
Gln	Thr	Glu	Glu	Arg	Tyr	Met	Ala	Asp	Leu	Gln	Leu	Val	Val	Glu
	1220					1225					1230			
Val	Phe	Gln	Lys	Arg	Met	Ala	Glu	Ser	Gly	Phe	Leu	Thr	Glu	Gly
	1235					1240					1245			
Glu	Met	Ala	Leu	Ile	Phe	Val	Asn	Trp	Lys	Glu	Leu	Ile	Met	Ser
	1250					1255					1260			
Asn	Thr	Lys	Leu	Leu	Lys	Ala	Leu	Arg	Val	Arg	Lys	Lys	Thr	Gly
	1265					1270					1275			
Gly	Glu	Lys	Met	Pro	Val	Gln	Met	Ile	Gly	Asp	Ile	Leu	Ala	Ala
	1280					1285					1290			
Glu	Leu	Ser	His	Met	Gln	Ala	Tyr	Ile	Arg	Phe	Cys	Ser	Cys	Gln
	1295					1300					1305			

Leu	Asn	Gly	Ala	Ala	Leu	Leu	Gln	Gln	Lys	Thr	Asp	Glu	Asp	Thr
	1310					1315					1320			
Asp	Phe	Lys	Glu	Phe	Leu	Lys	Lys	Leu	Ala	Ser	Asp	Pro	Arg	Cys
	1325					1330					1335			
Lys	Gly	Met	Pro	Leu	Ser	Ser	Phe	Leu	Leu	Lys	Pro	Met	Gln	Arg
	1340					1345					1350			
Ile	Thr	Arg	Tyr	Pro	Leu	Leu	Ile	Arg	Ser	Ile	Leu	Glu	Asn	Thr
	1355					1360					1365			
Pro	Glu	Ser	His	Ala	Asp	His	Ser	Ser	Leu	Lys	Leu	Ala	Leu	Glu
	1370					1375					1380			
Arg	Ala	Glu	Glu	Leu	Cys	Ser	Gln	Val	Asn	Glu	Gly	Val	Arg	Glu
	1385					1390					1395			
Lys	Glu	Asn	Ser	Asp	Arg	Leu	Glu	Trp	Ile	Gln	Ala	His	Val	Gln
	1400					1405					1410			
Cys	Glu	Gly	Leu	Ala	Glu	Gln	Leu	Ile	Phe	Asn	Ser	Leu	Thr	Asn
	1415					1420					1425			
Cys	Leu	Gly	Pro	Arg	Lys	Leu	Leu	His	Ser	Gly	Lys	Leu	Tyr	Lys
	1430					1435					1440			
Thr	Lys	Ser	Asn	Lys	Glu	Leu	His	Gly	Phe	Leu	Phe	Asn	Asp	Phe
	1445					1450					1455			
Leu	Leu	Leu	Thr	Tyr	Met	Val	Lys	Gln	Phe	Ala	Val	Ser	Ser	Gly
	1460					1465					1470			
Ser	Glu	Lys	Leu	Phe	Ser	Ser	Lys	Ser	Asn	Ala	Gln	Phe	Lys	Met
	1475					1480					1485			
Tyr	Lys	Thr	Pro	Ile	Phe	Leu	Asn	Glu	Val	Leu	Val	Lys	Leu	Pro
	1490					1495					1500			
Thr	Asp	Pro	Ser	Ser	Asp	Glu	Pro	Val	Phe	His	Ile	Ser	His	Ile
	1505					1510					1515			
Asp	Arg	Val	Tyr	Thr	Leu	Arg	Thr	Asp	Asn	Ile	Asn	Glu	Arg	Thr
	1520					1525					1530			
Ala	Trp	Val	Gln	Lys	Ile	Lys	Ala	Ala	Ser	Glu	Gln	Tyr	Ile	Asp
	1535					1540					1545			
Thr	Glu	Lys	Lys	Lys	Arg	Glu	Lys	Ala	Tyr	Gln	Ala	Arg	Ser	Gln
	1550					1555					1560			

Lys Thr Ser Gly Ile Gly Arg Leu Met Val His Val Ile Glu Ala
1565 1570 1575

Thr Glu Leu Lys Ala Cys Lys Pro Asn Gly Lys Ser Asn Pro Tyr
1580 1585 1590

Cys Glu Ile Ser Met Gly Ser Gln Ser Tyr Thr Thr Arg Thr Ile
1595 1600 1605

Gln Asp Thr Leu Asn Pro Lys Trp Asn Phe Asn Cys Gln Phe Phe
1610 1615 1620

Ile Lys Asp Leu Tyr Gln Asp Val Leu Cys Leu Thr Leu Phe Asp
1625 1630 1635

Arg Asp Gln Phe Ser Pro Asp Asp Phe Leu Gly Arg Thr Glu Ile
1640 1645 1650

Pro Val Ala Lys Ile Arg Thr Glu Gln Glu Ser Lys Gly Pro Met
1655 1660 1665

Thr Arg Arg Leu Leu Leu His Glu Val Pro Thr Gly Glu Val Trp
1670 1675 1680

Val Arg Phe Asp Leu Gln Leu Phe Glu Gln Lys Thr Leu Leu
1685 1690 1695

<210> 559
<211> 1154
<212> PRT
<213> Homo sapiens

<400> 559

Met Gln Tyr Leu Asn Ile Lys Glu Asp Cys Asn Ala Met Ala Phe Cys
1 5 10 15

Ala Lys Met Arg Ser Ser Lys Lys Thr Glu Val Asn Leu Glu Ala Pro
20 25 30

Glu Pro Gly Val Glu Val Ile Phe Tyr Leu Ser Asp Arg Glu Pro Leu
35 40 45

Arg Leu Gly Ser Gly Glu Tyr Thr Ala Glu Glu Leu Cys Ile Arg Ala
50 55 60

Ala Gln Ala Cys Arg Ile Ser Pro Leu Cys His Asn Leu Phe Ala Leu
65 70 75 80

Tyr Asp Glu Asn Thr Lys Leu Trp Tyr Ala Pro Asn Arg Thr Ile Thr
85 90 95

Val Asp Asp Lys Met Ser Leu Arg Leu His Tyr Arg Met Arg Phe Tyr
 100 105 110
 Phe Thr Asn Trp His Gly Thr Asn Asp Asn Glu Gln Ser Val Trp Arg
 115 120 125
 His Ser Pro Lys Lys Gln Lys Asn Gly Tyr Glu Lys Lys Lys Ile Pro
 130 135 140
 Asp Ala Thr Pro Leu Leu Asp Ala Ser Ser Leu Glu Tyr Leu Phe Ala
 145 150 155 160
 Gln Gly Gln Tyr Asp Leu Val Lys Cys Leu Ala Pro Ile Arg Asp Pro
 165 170 175
 Lys Thr Glu Gln Asp Gly His Asp Ile Glu Asn Glu Cys Leu Gly Met
 180 185 190
 Ala Val Leu Ala Ile Ser His Tyr Ala Met Met Lys Lys Met Gln Leu
 195 200 205
 Pro Glu Leu Pro Lys Asp Ile Ser Tyr Lys Arg Tyr Ile Pro Glu Thr
 210 215 220
 Leu Asn Lys Ser Ile Arg Gln Arg Asn Leu Leu Thr Arg Met Arg Ile
 225 230 235 240
 Asn Asn Val Phe Lys Asp Phe Leu Lys Glu Phe Asn Asn Lys Thr Ile
 245 250 255
 Cys Asp Ser Ser Val Ser Thr His Asp Leu Lys Val Lys Tyr Leu Ala
 260 265 270
 Thr Leu Glu Thr Leu Thr Lys His Tyr Gly Ala Glu Ile Phe Glu Thr
 275 280 285
 Ser Met Leu Leu Ile Ser Ser Glu Asn Glu Met Asn Trp Phe His Ser
 290 295 300
 Asn Asp Gly Gly Asn Val Leu Tyr Tyr Glu Val Met Val Thr Gly Asn
 305 310 315 320
 Leu Gly Ile Gln Trp Arg His Lys Pro Asn Val Val Ser Val Glu Lys
 325 330 335
 Glu Lys Asn Lys Leu Lys Arg Lys Lys Leu Glu Asn Lys His Lys Lys
 340 345 350
 Asp Glu Glu Lys Asn Lys Ile Arg Glu Glu Trp Asn Asn Phe Ser Tyr
 355 360 365

Phe Pro Glu Ile Thr His Ile Val Ile Lys Glu Ser Val Val Ser Ile
 370 375 380

Asn Lys Gln Asp Asn Lys Lys Met Glu Leu Lys Leu Ser Ser His Glu
 385 390 395 400

Glu Ala Leu Ser Phe Val Ser Leu Val Asp Gly Tyr Phe Arg Leu Thr
 405 410 415

Ala Asp Ala His His Tyr Leu Cys Thr Asp Val Ala Pro Pro Leu Ile
 420 425 430

Val His Asn Ile Gln Asn Gly Cys His Gly Pro Ile Cys Thr Glu Tyr
 435 440 445

Ala Ile Asn Lys Leu Arg Gln Glu Gly Ser Glu Glu Gly Met Tyr Val
 450 455 460

Leu Arg Trp Ser Cys Thr Asp Phe Asp Asn Ile Leu Met Thr Val Thr
 465 470 475 480

Cys Phe Glu Lys Ser Glu Gln Val Gln Gly Ala Gln Lys Gln Phe Lys
 485 490 495

Asn Phe Gln Ile Glu Val Gln Lys Gly Arg Tyr Ser Leu His Gly Ser
 500 505 510

Asp Arg Ser Phe Pro Ser Leu Gly Asp Leu Met Ser His Leu Lys Lys
 515 520 525

Gln Ile Leu Arg Thr Asp Asn Ile Ser Phe Met Leu Lys Arg Cys Cys
 530 535 540

Gln Pro Lys Pro Arg Glu Ile Ser Asn Leu Leu Val Ala Thr Lys Lys
 545 550 555 560

Ala Gln Glu Trp Gln Pro Val Tyr Pro Met Ser Gln Leu Ser Phe Asp
 565 570 575

Arg Ile Leu Lys Lys Asp Leu Val Gln Gly Glu His Leu Gly Arg Gly
 580 585 590

Thr Arg Thr His Ile Tyr Ser Gly Thr Leu Met Asp Tyr Lys Asp Asp
 595 600 605

Glu Gly Thr Ser Glu Glu Lys Lys Ile Lys Val Ile Leu Lys Val Leu
 610 615 620

Asp Pro Ser His Arg Asp Ile Ser Leu Ala Phe Phe Glu Ala Ala Ser
 625 630 635 640

Met Met Arg Gln Val Ser His Lys His Ile Val Tyr Leu Tyr Gly Val
 645 650 655
 Cys Val Arg Asp Val Glu Asn Ile Met Val Glu Glu Phe Val Glu Gly
 660 665 670
 Gly Pro Leu Asp Leu Phe Met His Arg Lys Ser Asp Val Leu Thr Thr
 675 680 685
 Pro Trp Lys Phe Lys Val Ala Lys Gln Leu Ala Ser Ala Leu Ser Tyr
 690 695 700
 Leu Glu Asp Lys Asp Leu Val His Gly Asn Val Cys Thr Lys Asn Leu
 705 710 715 720
 Leu Leu Ala Arg Glu Gly Ile Asp Ser Glu Cys Gly Pro Phe Ile Lys
 725 730 735
 Leu Ser Asp Pro Gly Ile Pro Ile Thr Val Leu Ser Arg Gln Glu Cys
 740 745 750
 Ile Glu Arg Ile Pro Trp Ile Ala Pro Glu Cys Val Glu Asp Ser Lys
 755 760 765
 Asn Leu Ser Val Ala Ala Asp Lys Trp Ser Phe Gly Thr Thr Leu Trp
 770 775 780
 Glu Ile Cys Tyr Asn Gly Glu Ile Pro Leu Lys Asp Lys Thr Leu Ile
 785 790 795 800
 Glu Lys Glu Arg Phe Tyr Glu Ser Arg Cys Arg Pro Val Thr Pro Ser
 805 810 815
 Cys Lys Glu Leu Ala Asp Leu Met Thr Arg Cys Met Asn Tyr Asp Pro
 820 825 830
 Asn Gln Arg Pro Phe Phe Arg Ala Ile Met Arg Asp Ile Asn Lys Leu
 835 840 845
 Glu Glu Gln Asn Pro Asp Ile Val Ser Glu Lys Lys Pro Ala Thr Glu
 850 855 860
 Val Asp Pro Thr His Phe Glu Lys Arg Phe Leu Lys Arg Ile Arg Asp
 865 870 875 880
 Leu Gly Glu Gly His Phe Gly Lys Val Glu Leu Cys Arg Tyr Asp Pro
 885 890 895
 Glu Gly Asp Asn Thr Gly Glu Gln Val Ala Val Lys Ser Leu Lys Pro
 900 905 910

Glu Ser Gly Gly Asn His Ile Ala Asp Leu Lys Lys Glu Ile Glu Ile
 915 920 925

Leu Arg Asn Leu Tyr His Glu Asn Ile Val Lys Tyr Lys Gly Ile Cys
 930 935 940

Thr Glu Asp Gly Gly Asn Gly Ile Lys Leu Ile Met Glu Phe Leu Pro
 945 950 955 960

Ser Gly Ser Leu Lys Glu Tyr Leu Pro Lys Asn Lys Asn Lys Ile Asn
 965 970 975

Leu Lys Gln Gln Leu Lys Tyr Ala Val Gln Ile Cys Lys Gly Met Asp
 980 985 990

Tyr Leu Gly Ser Arg Gln Tyr Val His Arg Asp Leu Ala Ala Arg Asn
 995 1000 1005

Val Leu Val Glu Ser Glu His Gln Val Lys Ile Gly Asp Phe Gly
 1010 1015 1020

Leu Thr Lys Ala Ile Glu Thr Asp Lys Glu Tyr Tyr Thr Val Lys
 1025 1030 1035

Asp Asp Arg Asp Ser Pro Val Phe Trp Tyr Ala Pro Glu Cys Leu
 1040 1045 1050

Met Gln Ser Lys Phe Tyr Ile Ala Ser Asp Val Trp Ser Phe Gly
 1055 1060 1065

Val Thr Leu His Glu Leu Leu Thr Tyr Cys Asp Ser Asp Ser Ser
 1070 1075 1080

Pro Met Ala Leu Phe Leu Lys Met Ile Gly Pro Thr His Gly Gln
 1085 1090 1095

Met Thr Val Thr Arg Leu Val Asn Thr Leu Lys Glu Gly Lys Arg
 1100 1105 1110

Leu Pro Cys Pro Pro Asn Cys Pro Asp Glu Val Tyr Gln Leu Met
 1115 1120 1125

Arg Lys Cys Trp Glu Phe Gln Pro Ser Asn Arg Thr Ser Phe Gln
 1130 1135 1140

Asn Leu Ile Glu Gly Phe Glu Ala Leu Leu Lys
 1145 1150

<210> 560
 <211> 623
 <212> PRT

<213> Homo sapiens

<400> 560

Met Ser Thr Gln Asp Glu Arg Gln Ile Asn Thr Glu Tyr Ala Val Ser
 1 5 10 15
 Leu Leu Glu Gln Leu Lys Leu Phe Tyr Glu Gln Gln Leu Phe Thr Asp
 20 25 30
 Ile Val Leu Ile Val Glu Gly Thr Glu Phe Pro Cys His Lys Met Val
 35 40 45
 Leu Ala Thr Cys Ser Ser Tyr Phe Arg Ala Met Phe Met Ser Gly Leu
 50 55 60
 Ser Glu Ser Lys Gln Thr His Val His Leu Arg Asn Val Asp Ala Ala
 65 70 75 80
 Thr Leu Gln Ile Ile Ile Thr Tyr Ala Tyr Thr Gly Asn Leu Ala Met
 85 90 95
 Asn Asp Ser Thr Val Glu Gln Leu Tyr Glu Thr Ala Cys Phe Leu Gln
 100 105 110
 Val Glu Asp Val Leu Gln Arg Cys Arg Glu Tyr Leu Ile Lys Lys Ile
 115 120 125
 Asn Ala Glu Asn Cys Val Arg Leu Leu Ser Phe Ala Asp Leu Phe Ser
 130 135 140
 Cys Glu Glu Leu Lys Gln Ser Ala Lys Arg Met Val Glu His Lys Phe
 145 150 155 160
 Thr Ala Val Tyr His Gln Asp Ala Phe Met Gln Leu Ser His Asp Leu
 165 170 175
 Leu Ile Asp Ile Leu Ser Ser Asp Asn Leu Asn Val Glu Lys Glu Glu
 180 185 190
 Thr Val Arg Glu Ala Ala Met Leu Trp Leu Glu Tyr Asn Thr Glu Ser
 195 200 205
 Arg Ser Gln Tyr Leu Ser Ser Val Leu Ser Gln Ile Arg Ile Asp Ala
 210 215 220
 Leu Ser Glu Val Thr Gln Arg Ala Trp Phe Gln Gly Leu Pro Pro Asn
 225 230 235 240
 Asp Lys Ser Val Val Val Gln Gly Leu Tyr Lys Ser Met Pro Lys Phe
 245 250 255

Phe Lys Pro Arg Leu Gly Met Thr Lys Glu Glu Met Met Ile Phe Ile
 260 265 270

Glu Ala Ser Ser Glu Asn Pro Cys Ser Leu Tyr Ser Ser Val Cys Tyr
 275 280 285

Ser Pro Gln Ala Glu Lys Val Tyr Lys Leu Cys Ser Pro Pro Ala Asp
 290 295 300

Leu His Lys Val Gly Thr Val Val Thr Pro Asp Asn Asp Ile Tyr Ile
 305 310 315 320

Ala Gly Gly Gln Val Pro Leu Lys Asn Thr Lys Thr Asn His Ser Lys
 325 330 335

Thr Ser Lys Leu Gln Thr Ala Phe Arg Thr Val Asn Cys Phe Tyr Trp
 340 345 350

Phe Asp Ala Gln Gln Asn Thr Trp Phe Pro Lys Thr Pro Met Leu Phe
 355 360 365

Val Arg Ile Lys Pro Ser Leu Val Cys Cys Glu Gly Tyr Ile Tyr Ala
 370 375 380

Ile Gly Gly Asp Ser Val Gly Gly Glu Leu Asn Arg Arg Thr Val Glu
 385 390 395 400

Arg Tyr Asp Thr Glu Lys Asp Glu Trp Thr Met Val Ser Pro Leu Pro
 405 410 415

Cys Ala Trp Gln Trp Ser Ala Ala Val Val Val His Asp Cys Ile Tyr
 420 425 430

Val Met Thr Leu Asn Leu Met Tyr Cys Tyr Phe Pro Arg Ser Asp Ser
 435 440 445

Trp Val Glu Met Ala Met Arg Gln Thr Ser Arg Ser Phe Ala Ser Ala
 450 455 460

Ala Ala Phe Gly Asp Lys Ile Phe Tyr Ile Gly Gly Leu His Ile Ala
 465 470 475 480

Thr Asn Ser Gly Ile Arg Leu Pro Ser Gly Thr Val Asp Gly Ser Ser
 485 490 495

Val Thr Val Glu Ile Tyr Asp Val Asn Lys Asn Glu Trp Lys Met Ala
 500 505 510

Ala Asn Ile Pro Ala Lys Arg Tyr Ser Asp Pro Cys Val Arg Ala Val
 515 520 525

Val Ile Ser Asn Ser Leu Cys Val Phe Met Arg Glu Thr His Leu Asn
 530 535 540

Glu Arg Ala Lys Tyr Val Thr Tyr Gln Tyr Asp Leu Glu Leu Asp Arg
 545 550 555 560

Trp Ser Leu Arg Gln His Ile Ser Glu Arg Val Leu Trp Asp Leu Gly
 565 570 575

Arg Asp Phe Arg Cys Thr Val Gly Lys Leu Tyr Pro Ser Cys Leu Glu
 580 585 590

Glu Ser Pro Trp Lys Pro Pro Thr Tyr Leu Phe Ser Thr Asp Gly Thr
 595 600 605

Glu Glu Phe Glu Leu Asp Gly Glu Met Val Ala Leu Pro Pro Val
 610 615 620

<210> 561
 <211> 1395
 <212> PRT
 <213> Homo sapiens

<400> 561

Met Tyr Pro Ile Cys Thr Val Val Val Asp Gly Leu Pro Ser Glu Ser
 1 5 10 15

Ser Ser Ser Ser Tyr Pro Gly Pro Val Ser Val Ser Glu Met Ser Leu
 20 25 30

Leu His Ala Leu Gly Pro Val Gln Thr Trp Leu Gly Gln Glu Leu Glu
 35 40 45

Lys Cys Gly Ile Asp Ala Met Ile Tyr Thr Arg Tyr Val Leu Ser Leu
 50 55 60

Leu Leu His Asp Ser Tyr Asp Tyr Asp Leu Gln Glu Gln Glu Asn Asp
 65 70 75 80

Ile Phe Leu Gly Trp Glu Lys Gly Ala Tyr Lys Lys Trp Gly Lys Ser
 85 90 95

Lys Lys Lys Cys Ser Asp Leu Thr Leu Glu Glu Met Lys Lys Gln Ala
 100 105 110

Ala Val Gln Cys Leu Arg Ser Ala Ser Asp Glu Ser Ser Gly Ile Glu
 115 120 125

Thr Leu Val Glu Glu Leu Cys Ser Arg Leu Lys Asp Leu Gln Ser Lys
 130 135 140

Gln Glu Glu Lys Ile His Lys Lys Leu Glu Gly Ser Pro Ser Pro Glu
 Page 822

145 150 155 160

Ala Glu Leu Ser Pro Pro Ala Lys Asp Gln Val Glu Met Tyr Tyr Glu
165 170 175

Ala Phe Pro Pro Leu Ser Glu Lys Pro Val Cys Leu Gln Glu Ile Met
180 185 190

Thr Val Trp Asn Lys Ser Lys Val Cys Ser Tyr Ser Ser Ser Ser
195 200 205

Ser Ser Thr Ala Pro Pro Ala Ser Thr Asp Thr Ser Ser Pro Lys Asp
210 215 220

Cys Asn Ser Glu Ser Glu Val Thr Lys Glu Arg Ser Ser Glu Val Pro
225 230 235 240

Thr Thr Val His Glu Lys Thr Gln Ser Lys Ser Lys Asn Glu Lys Glu
245 250 255

Asn Lys Phe Ser Asn Gly Thr Ile Glu Glu Lys Pro Ala Leu Tyr Lys
260 265 270

Lys Gln Ile Arg His Lys Pro Glu Gly Lys Ile Arg Pro Arg Ser Trp
275 280 285

Ser Ser Gly Ser Ser Glu Ala Gly Ser Ser Ser Ser Gly Asn Gln Gly
290 295 300

Glu Leu Lys Ala Ser Met Lys Tyr Val Lys Val Arg His Lys Ala Arg
305 310 315 320

Glu Ile Arg Asn Lys Lys Gly Arg Asn Gly Gln Ser Arg Leu Ser Leu
325 330 335

Lys His Gly Glu Lys Ala Glu Arg Asn Ile His Thr Gly Ser Ser Ser
340 345 350

Ser Ser Ser Ser Gly Ser Val Lys Gln Leu Cys Lys Arg Gly Lys Arg
355 360 365

Pro Leu Lys Glu Ile Gly Arg Lys Asp Pro Gly Ser Thr Glu Gly Lys
370 375 380

Asp Leu Tyr Met Glu Asn Arg Lys Asp Thr Glu Tyr Lys Glu Glu Pro
385 390 395 400

Leu Trp Tyr Thr Glu Pro Ile Ala Glu Tyr Phe Val Pro Leu Ser Arg
405 410 415

Lys Ser Lys Leu Glu Thr Thr Tyr Arg Asn Arg Gln Asp Thr Ser Asp
Page 823

420

425

430

Leu Thr Ser Glu Ala Val Glu Glu Leu Ser Glu Ser Val His Gly Leu
 435 440 445

Cys Ile Ser Asn Asn Asn Leu His Lys Thr Tyr Leu Ala Ala Gly Thr
 450 455 460

Phe Ile Asp Gly His Phe Val Glu Met Pro Ala Val Ile Asn Glu Asp
 465 470 475 480

Ile Asp Leu Thr Gly Thr Ser Leu Cys Ser Leu Pro Glu Asp Asn Lys
 485 490 495

Tyr Leu Asp Asp Ile His Leu Ser Glu Leu Thr His Phe Tyr Glu Val
 500 505 510

Asp Ile Asp Gln Ser Met Leu Asp Pro Gly Ala Ser Glu Thr Met Gln
 515 520 525

Gly Glu Ser Arg Ile Leu Asn Met Ile Arg Gln Lys Ser Lys Glu Asn
 530 535 540

Thr Asp Phe Glu Ala Glu Cys Cys Ile Val Leu Asp Gly Met Glu Leu
 545 550 555 560

Gln Gly Glu Arg Ala Ile Trp Thr Asp Ser Thr Ser Ser Val Gly Ala
 565 570 575

Glu Gly Leu Phe Leu Gln Asp Leu Gly Asn Leu Ala Gln Phe Trp Glu
 580 585 590

Cys Cys Ser Ser Ser Ser Gly Asp Ala Asp Gly Glu Ser Phe Gly Gly
 595 600 605

Asp Ser Pro Val Arg Leu Ser Pro Ile Leu Asp Ser Thr Val Leu Asn
 610 615 620

Ser His Leu Leu Ala Gly Asn Gln Glu Leu Phe Ser Asp Ile Asn Glu
 625 630 635 640

Gly Ser Gly Ile Asn Ser Cys Phe Ser Val Phe Glu Val Gln Cys Ser
 645 650 655

Asn Ser Val Leu Pro Phe Ser Phe Glu Thr Leu Asn Leu Gly Asn Glu
 660 665 670

Asn Thr Asp Ser Ser Ala Asn Met Leu Gly Lys Thr Gln Ser Arg Leu
 675 680 685

Leu Ile Trp Thr Lys Asn Ser Ala Phe Glu Glu Asn Glu His Cys Ser

690

695

700

Asn Leu Ser Thr Arg Thr Cys Ser Pro Trp Ser His Ser Glu Glu Thr
705 710 715 720

Arg Ser Asp Asn Glu Thr Leu Asn Ile Gln Phe Glu Glu Ser Thr Gln
725 730 735

Phe Asn Ala Glu Asp Ile Asn Tyr Val Val Pro Arg Val Ser Ser Asn
740 745 750

Tyr Val Asp Glu Glu Leu Leu Asp Phe Leu Gln Asp Glu Thr Cys Gln
755 760 765

Gln Asn Ser Arg Thr Leu Gly Glu Ile Pro Thr Leu Val Phe Lys Lys
770 775 780

Thr Ser Lys Leu Glu Ser Val Cys Gly Ile Gln Leu Glu Gln Lys Thr
785 790 795 800

Glu Asn Lys Asn Phe Glu Thr Thr Gln Val Cys Asn Glu Ser Pro His
805 810 815

Gly Asp Gly Tyr Ser Ser Gly Val Ile Lys Asp Ile Trp Thr Lys Met
820 825 830

Ala Asp Thr Asn Ser Val Ala Thr Val Glu Ile Glu Arg Thr Asp Ala
835 840 845

Glu Leu Phe Ser Ala Asp Val Asn Asn Tyr Cys Cys Cys Leu Asp Ala
850 855 860

Glu Ala Glu Leu Glu Thr Leu Gln Glu Pro Asp Lys Ala Val Arg Arg
865 870 875 880

Ser Glu Tyr His Leu Trp Glu Gly Gln Lys Glu Ser Leu Glu Lys Arg
885 890 895

Ala Phe Ala Ser Ser Glu Leu Ser Asn Val Asp Gly Gly Asp Tyr Thr
900 905 910

Thr Pro Ser Lys Pro Trp Asp Val Ala Gln Asp Lys Glu Asn Thr Phe
915 920 925

Ile Leu Gly Gly Val Tyr Gly Glu Leu Lys Thr Phe Asn Ser Asp Gly
930 935 940

Glu Trp Ala Val Val Pro Pro Ser His Thr Lys Gly Ser Leu Leu Gln
945 950 955 960

Cys Ala Ala Ser Asp Val Val Thr Ile Ala Gly Thr Asp Val Phe Met
Page 825

Thr Pro Gly Asn Ser Phe Ala Pro Gly His Arg Gln Leu Trp Lys Pro
980 985 990

Phe Val Ser Phe Glu Gln Asn Asp Gln Pro Lys Ser Gly Glu Asn Gly
995 1000 1005

Leu Asn Lys Gly Phe Ser Phe Ile Phe His Glu Asp Leu Leu Gly
1010 1015 1020

Ala Cys Gly Asn Phe Gln Val Glu Asp Pro Gly Leu Glu Tyr Ser
1025 1030 1035

Phe Ser Ser Phe Asp Leu Ser Asn Pro Phe Ser Gln Val Leu His
1040 1045 1050

Val Glu Cys Ser Phe Glu Pro Glu Gly Ile Ala Ser Phe Ser Pro
1055 1060 1065

Ser Phe Lys Pro Lys Ser Ile Leu Cys Ser Asp Ser Asp Ser Glu
1070 1075 1080

Val Phe His Pro Arg Ile Cys Gly Val Asp Arg Thr Gln Tyr Arg
1085 1090 1095

Ala Ile Arg Ile Ser Pro Arg Thr His Phe Arg Pro Ile Ser Ala
1100 1105 1110

Ser Glu Leu Ser Pro Gly Gly Gly Ser Glu Ser Glu Phe Glu Ser
1115 1120 1125

Glu Lys Asp Glu Ala Asn Ile Pro Ile Pro Ser Gln Val Asp Ile
1130 1135 1140

Phe Glu Asp Pro Gln Ala Asp Leu Lys Pro Leu Glu Glu Asp Ala
1145 1150 1155

Glu Lys Glu Gly His Tyr Tyr Gly Lys Ser Glu Leu Glu Ser Gly
1160 1165 1170

Lys Phe Leu Pro Arg Leu Lys Lys Ser Gly Met Glu Lys Ser Ala
1175 1180 1185

Gln Thr Ser Leu Asp Ser Gln Glu Glu Ser Thr Gly Ile Leu Ser
1190 1195 1200

Val Gly Lys Gln Asn Gln Cys Leu Glu Cys Ser Met Asn Glu Ser
1205 1210 1215

Leu Glu Ile Asp Leu Glu Ser Ser Glu Ala Asn Cys Lys Ile Met

1220

1225

1230

Ala Gln Cys Glu Glu Glu Ile Asn Asn Phe Cys Gly Cys Lys Ala
 1235 1240 1245

Gly Cys Gln Phe Pro Ala Tyr Glu Asp Asn Pro Val Ser Ser Gly
 1250 1255 1260

Gln Leu Glu Glu Phe Pro Val Leu Asn Thr Asp Ile Gln Gly Met
 1265 1270 1275

Asn Arg Ser Gln Glu Lys Gln Thr Trp Trp Glu Lys Ala Leu Tyr
 1280 1285 1290

Ser Pro Leu Phe Pro Ala Ser Glu Cys Glu Glu Cys Tyr Thr Asn
 1295 1300 1305

Ala Lys Gly Glu Ser Gly Leu Glu Glu Tyr Pro Asp Ala Lys Glu
 1310 1315 1320

Thr Pro Ser Asn Glu Glu Arg Leu Leu Asp Phe Asn Arg Val Ser
 1325 1330 1335

Ser Val Tyr Glu Ala Arg Cys Thr Gly Glu Arg Asp Ser Gly Ala
 1340 1345 1350

Lys Ser Asp Gly Phe Arg Gly Lys Met Cys Ser Ser Ala Ser Ser
 1355 1360 1365

Thr Ser Glu Glu Thr Gly Ser Glu Gly Gly Gly Glu Trp Val Gly
 1370 1375 1380

Pro Ser Glu Glu Glu Leu Phe Ser Arg Thr His Leu
 1385 1390 1395

<210> 562
 <211> 303
 <212> PRT
 <213> Homo sapiens

<400> 562

Met Cys His Gly Arg Ile Ala Pro Lys Ser Thr Ser Val Phe Ala Val
 1 5 10 15

Ala Ser Val Gly His Gly Val Phe Leu Pro Leu Val Ile Leu Cys Thr
 20 25 30

Leu Leu Gly Asp Gly Leu Ala Ser Val Cys Pro Leu Pro Pro Glu Pro
 35 40 45

Glu Asn Gly Gly Tyr Ile Cys His Pro Arg Pro Cys Arg Asp Pro Leu
 50 55 60

Thr Ala Gly Ser Val Ile Glu Tyr Leu Cys Ala Glu Gly Tyr Met Leu
65 70 75 80

Lys Gly Asp Tyr Lys Tyr Leu Thr Cys Lys Asn Gly Glu Trp Lys Pro
85 90 95

Ala Met Glu Ile Ser Cys Arg Leu Asn Glu Asp Lys Asp Thr His Thr
100 105 110

Ser Leu Gly Val Pro Thr Leu Ser Ile Val Ala Ser Thr Ala Ser Ser
115 120 125

Val Ala Leu Ile Leu Leu Val Val Leu Phe Val Leu Leu Gln Pro
130 135 140

Lys Leu Lys Ser Phe His His Ser Arg Arg Asp Gln Gly Val Ser Gly
145 150 155 160

Asp Gln Val Ser Ile Met Val Asp Gly Val Gln Val Ala Leu Pro Ser
165 170 175

Tyr Glu Glu Ala Val Tyr Gly Ser Ser Gly His Cys Val Pro Pro Ala
180 185 190

Asp Pro Arg Val Gln Ile Val Leu Ser Glu Gly Ser Gly Pro Ser Gly
195 200 205

Arg Ser Val Pro Arg Glu Gln Gln Leu Pro Asp Gln Gly Ala Cys Ser
210 215 220

Ser Ala Gly Gly Glu Asp Glu Ala Pro Gly Gln Ser Gly Leu Cys Glu
225 230 235 240

Ala Trp Gly Ser Arg Ala Ser Glu Thr Val Met Val His Gln Ala Thr
245 250 255

Thr Ser Ser Trp Val Ala Gly Ser Gly Asn Arg Gln Leu Ala His Lys
260 265 270

Glu Thr Ala Asp Ser Glu Asn Ser Asp Ile Gln Ser Leu Leu Ser Leu
275 280 285

Thr Ser Glu Glu Tyr Thr Asp Asp Ile Pro Leu Leu Lys Glu Ala
290 295 300

<210> 563
<211> 411
<212> PRT
<213> Homo sapiens

<400> 563

Met Glu Thr Pro Glu Val Pro Val Gly Ser Leu Ile Asp Phe Gly Pro
 1 5 10 15
 Glu Ala Pro Thr Ser Ser Pro Leu Glu Ala Pro Pro Pro Val Leu Gln
 20 25 30
 Asp Gly Asp Gly Ser Leu Gly Asp Gly Ala Ser Glu Ser Glu Thr Thr
 35 40 45
 Glu Ser Ala Asp Ser Glu Asn Asp Met Gly Glu Ser Pro Ser His Pro
 50 55 60
 Ser Trp Asp Gln Asp Arg Arg Ser Ser Ser Asn Glu Ser Phe Ser Ser
 65 70 75 80
 Asn Gln Ser Thr Glu Ser Thr Gln Asp Glu Glu Thr Leu Ala Leu Arg
 85 90 95
 Asp Phe Met Arg Gly Tyr Val Glu Lys Ile Phe Ser Gly Gly Glu Asp
 100 105 110
 Leu Asp Gln Glu Glu Lys Ala Lys Phe Gly Glu Tyr Cys Ser Ser Glu
 115 120 125
 Asn Gly Lys Gly Arg Glu Trp Phe Ala Arg Tyr Val Ser Ala Gln Arg
 130 135 140
 Cys Asn Ser Lys Cys Val Ser Glu Ala Thr Phe Tyr Arg Leu Val Gln
 145 150 155 160
 Ser Phe Ala Val Val Leu Phe Glu Cys His Gln Met Asp Asp Phe Gly
 165 170 175
 Pro Ala Lys Asn Leu Met Thr Met Cys Phe Thr Tyr Tyr His Ile Gly
 180 185 190
 Lys Pro Gln Leu Leu Pro Pro Glu Ser Arg Glu Lys Pro Ala Gly Ser
 195 200 205
 Ile Asp Ser Tyr Leu Lys Ser Ala Asn Ser Trp Leu Ala Glu Lys Lys
 210 215 220
 Asp Ile Ala Glu Arg Leu Leu Lys Asn Thr Ser Ala Arg Thr Glu Asn
 225 230 235 240
 Val Lys Gly Phe Phe Gly Gly Leu Glu Thr Lys Leu Lys Gly Pro Leu
 245 250 255
 Ala Arg Arg Asn Glu Glu Asp Glu Asn Lys Pro Gln Glu Lys Arg Pro
 260 265 270

Arg Ala Val Thr Ala Tyr Ser Pro Glu Asp Glu Lys Lys Gly Glu Lys
 275 280 285

Ile Tyr Leu Tyr Thr His Leu Lys Gln Gln Pro Ile Trp His Thr Leu
 290 295 300

Arg Phe Trp Asn Ala Ala Phe Phe Asp Ala Val His Cys Glu Arg Thr
 305 310 315 320

Lys Arg Ser Pro Thr Thr Arg Gly Asp Ala Gly Glu Glu Glu Glu Lys
 325 330 335

Arg Glu Lys Trp Cys His Met Thr Gln Glu Glu Arg Asp Asp Ser Leu
 340 345 350

Arg Phe Asn Glu Asn Ile Thr Phe Gly Gln Leu Gly Thr Phe Thr His
 355 360 365

Asn Met Leu Ala Phe Gly Leu Asn Lys Lys Leu Cys Asn Asp Phe Leu
 370 375 380

Lys Lys Gln Ala Val Ile Gly Asn Leu Asp Glu Glu Gln Tyr Lys Leu
 385 390 395 400

Leu Ser Asp His Ile Glu Gln Met Ala Thr Glu
 405 410

<210> 564
 <211> 345
 <212> PRT
 <213> Homo sapiens

<400> 564

Met Leu Met Phe Asp Pro Val Pro Val Lys Gln Glu Ala Met Asp Pro
 1 5 10 15

Val Ser Val Ser Tyr Pro Ser Asn Tyr Met Glu Ser Met Lys Pro Asn
 20 25 30

Lys Tyr Gly Val Ile Tyr Ser Thr Pro Leu Pro Glu Lys Phe Phe Gln
 35 40 45

Thr Pro Glu Gly Leu Ser His Gly Ile Gln Met Glu Pro Val Asp Leu
 50 55 60

Thr Val Asn Lys Arg Ser Ser Pro Pro Ser Ala Gly Asn Ser Pro Ser
 65 70 75 80

Ser Leu Lys Phe Pro Ser Ser His Arg Arg Ala Ser Pro Gly Leu Ser
 85 90 95

Met Pro Ser Ser Ser Pro Pro Ile Lys Lys Tyr Ser Pro Pro Ser Pro
 100 105 110

Gly Val Gln Pro Phe Gly Val Pro Leu Ser Met Pro Pro Val Met Ala
 115 120 125

Ala Ala Leu Ser Arg His Gly Ile Arg Ser Pro Gly Ile Leu Pro Val
 130 135 140

Ile Gln Pro Val Val Val Gln Pro Val Pro Phe Met Tyr Thr Ser His
 145 150 155 160

Leu Gln Gln Pro Leu Met Val Ser Leu Ser Glu Glu Met Glu Asn Ser
 165 170 175

Ser Ser Ser Met Gln Val Pro Val Ile Glu Ser Tyr Glu Lys Pro Ile
 180 185 190

Ser Gln Lys Lys Ile Lys Ile Glu Pro Gly Ile Glu Pro Gln Arg Thr
 195 200 205

Asp Tyr Tyr Pro Glu Glu Met Ser Pro Pro Leu Met Asn Ser Val Ser
 210 215 220

Pro Pro Gln Ala Leu Leu Gln Glu Asn His Pro Ser Val Ile Val Gln
 225 230 235 240

Pro Gly Lys Arg Pro Leu Pro Val Glu Ser Pro Asp Thr Gln Arg Lys
 245 250 255

Arg Arg Ile His Arg Cys Asp Tyr Asp Gly Cys Asn Lys Val Tyr Thr
 260 265 270

Lys Ser Ser His Leu Lys Ala His Arg Arg Thr His Thr Gly Glu Lys
 275 280 285

Pro Tyr Lys Cys Thr Trp Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser
 290 295 300

Asp Glu Leu Thr Arg His Phe Arg Lys His Thr Gly Ile Lys Pro Phe
 305 310 315 320

Gln Cys Pro Asp Cys Asp Arg Ser Phe Ser Arg Ser Asp His Leu Ala
 325 330 335

Leu His Arg Lys Arg His Met Leu Val
 340 345

<210> 565
 <211> 283
 <212> PRT
 <213> Homo sapiens

<400> 565

Met Asp Val Leu Pro Met Cys Ser Ile Phe Gln Glu Leu Gln Ile Val
 1 5 10 15

His Glu Thr Gly Tyr Phe Ser Ala Leu Pro Ser Leu Glu Glu Tyr Trp
 20 25 30

Gln Gln Thr Cys Leu Glu Leu Glu Arg Tyr Leu Gln Ser Glu Pro Cys
 35 40 45

Tyr Val Ser Ala Ser Glu Ile Lys Phe Asp Ser Gln Glu Asp Leu Trp
 50 55 60

Thr Lys Ile Ile Leu Ala Arg Glu Lys Lys Glu Glu Ser Glu Leu Lys
 65 70 75 80

Ile Ser Ser Ser Pro Pro Glu Asp Thr Leu Ile Ser Pro Ser Phe Cys
 85 90 95

Tyr Asn Leu Glu Thr Asn Ser Leu Asn Ser Asp Val Ser Ser Glu Ser
 100 105 110

Ser Asp Ser Ser Glu Glu Leu Ser Pro Thr Ala Lys Phe Thr Ser Asp
 115 120 125

Pro Ile Gly Glu Val Leu Val Ser Ser Gly Lys Leu Ser Ser Ser Val
 130 135 140

Thr Ser Thr Pro Pro Ser Ser Pro Glu Leu Ser Arg Glu Pro Ser Gln
 145 150 155 160

Leu Trp Gly Cys Val Pro Gly Glu Leu Pro Ser Pro Gly Lys Val Arg
 165 170 175

Ser Gly Thr Ser Gly Lys Pro Gly Asp Lys Gly Asn Gly Asp Ala Ser
 180 185 190

Pro Asp Gly Arg Arg Arg Val His Arg Cys His Phe Asn Gly Cys Arg
 195 200 205

Lys Val Tyr Thr Lys Ser Ser His Leu Lys Ala His Gln Arg Thr His
 210 215 220

Thr Gly Glu Lys Pro Tyr Arg Cys Ser Trp Glu Gly Cys Glu Trp Arg
 225 230 235 240

Phe Ala Arg Ser Asp Glu Leu Thr Arg His Phe Arg Lys His Thr Gly
 245 250 255

Ala Lys Pro Phe Lys Cys Ser His Cys Asp Arg Cys Phe Ser Arg Ser
 Page 832

260

265

270

Asp His Leu Ala Leu His Met Lys Arg His Leu
 275 280

<210> 566
 <211> 302
 <212> PRT
 <213> Homo sapiens

<400> 566

Met Asp Val Leu Ala Ser Tyr Ser Ile Phe Gln Glu Leu Gln Leu Val
 1 5 10 15

His Asp Thr Gly Tyr Phe Ser Ala Leu Pro Ser Leu Glu Glu Thr Trp
 20 25 30

Gln Gln Thr Cys Leu Glu Leu Glu Arg Tyr Leu Gln Thr Glu Pro Arg
 35 40 45

Arg Ile Ser Glu Thr Phe Gly Glu Asp Leu Asp Cys Phe Leu His Ala
 50 55 60

Ser Pro Pro Pro Cys Ile Glu Glu Ser Phe Arg Arg Leu Asp Pro Leu
 65 70 75 80

Leu Leu Pro Val Glu Ala Ala Ile Cys Glu Lys Ser Ser Ala Val Asp
 85 90 95

Ile Leu Leu Ser Arg Asp Lys Leu Leu Ser Glu Thr Cys Leu Ser Leu
 100 105 110

Gln Pro Ala Ser Ser Ser Leu Asp Ser Tyr Thr Ala Val Asn Gln Ala
 115 120 125

Gln Leu Asn Ala Val Thr Ser Leu Thr Pro Pro Ser Ser Pro Glu Leu
 130 135 140

Ser Arg His Leu Val Lys Thr Ser Gln Thr Leu Ser Ala Val Asp Gly
 145 150 155 160

Thr Val Thr Leu Lys Leu Val Ala Lys Lys Ala Ala Leu Ser Ser Val
 165 170 175

Lys Val Gly Gly Val Ala Thr Ala Ala Ala Val Thr Ala Ala Gly
 180 185 190

Ala Val Lys Ser Gly Gln Ser Asp Ser Asp Gln Gly Gly Leu Gly Ala
 195 200 205

Glu Ala Cys Pro Glu Asn Lys Lys Arg Val His Arg Cys Gln Phe Asn
 210 215 220

Gly Cys Arg Lys Val Tyr Thr Lys Ser Ser His Leu Lys Ala His Gln
 225 230 235 240

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Ser Trp Glu Gly Cys
 245 250 255

Glu Trp Arg Phe Ala Arg Ser Asp Glu Leu Thr Arg His Tyr Arg Lys
 260 265 270

His Thr Gly Ala Lys Pro Phe Lys Cys Asn His Cys Asp Arg Cys Phe
 275 280 285

Ser Arg Ser Asp His Leu Ala Leu His Met Lys Arg His Ile
 290 295 300

<210> 567
 <211> 593
 <212> PRT
 <213> Homo sapiens

<400> 567

Met Glu Thr Pro Pro Leu Pro Pro Ala Cys Thr Lys Gln Gly His Gln
 1 5 10 15

Lys Pro Leu Asp Ser Lys Asp Asp Asn Thr Glu Lys His Cys Pro Val
 20 25 30

Thr Val Asn Pro Trp His Met Lys Lys Ala Phe Lys Val Met Asn Glu
 35 40 45

Leu Arg Ser Gln Asn Leu Leu Cys Asp Val Thr Ile Val Ala Glu Asp
 50 55 60

Met Glu Ile Ser Ala His Arg Val Val Leu Ala Ala Cys Ser Pro Tyr
 65 70 75 80

Phe His Ala Met Phe Thr Gly Glu Met Ser Glu Ser Arg Ala Lys Arg
 85 90 95

Val Arg Ile Lys Glu Val Asp Gly Trp Thr Leu Arg Met Leu Ile Asp
 100 105 110

Tyr Val Tyr Thr Ala Glu Ile Gln Val Thr Glu Glu Asn Val Gln Val
 115 120 125

Leu Leu Pro Ala Ala Gly Leu Leu Gln Leu Gln Asp Val Lys Lys Thr
 130 135 140

Cys Cys Glu Phe Leu Glu Ser Gln Leu His Pro Val Asn Cys Leu Gly
 145 150 155 160

Ile Arg Ala Phe Ala Asp Met His Ala Cys Thr Asp Leu Leu Asn Lys
 165 170 175
 Ala Asn Thr Tyr Ala Glu Gln His Phe Ala Asp Val Val Leu Ser Glu
 180 185 190
 Glu Phe Leu Asn Leu Gly Ile Glu Gln Val Cys Ser Leu Ile Ser Ser
 195 200 205
 Asp Lys Leu Thr Ile Ser Ser Glu Glu Lys Val Phe Glu Ala Val Ile
 210 215 220
 Ala Trp Val Asn His Asp Lys Asp Val Arg Gln Glu Phe Met Ala Arg
 225 230 235 240
 Leu Met Glu His Val Arg Leu Pro Leu Leu Pro Arg Glu Tyr Leu Val
 245 250 255
 Gln Arg Val Glu Glu Glu Ala Leu Val Lys Asn Ser Ser Ala Cys Lys
 260 265 270
 Asp Tyr Leu Ile Glu Ala Met Lys Tyr His Leu Leu Pro Thr Glu Gln
 275 280 285
 Arg Ile Leu Met Lys Ser Val Arg Thr Arg Leu Arg Thr Pro Met Asn
 290 295 300
 Leu Pro Lys Leu Met Val Val Val Gly Gly Gln Ala Pro Lys Ala Ile
 305 310 315 320
 Arg Ser Val Glu Cys Tyr Asp Phe Lys Glu Glu Arg Trp His Gln Val
 325 330 335
 Ala Glu Leu Pro Ser Arg Arg Cys Arg Ala Gly Met Val Tyr Met Ala
 340 345 350
 Gly Leu Val Phe Ala Val Gly Gly Phe Asn Gly Ser Leu Arg Val Arg
 355 360 365
 Thr Val Asp Ser Tyr Asp Pro Val Lys Asp Gln Trp Thr Ser Val Ala
 370 375 380
 Asn Met Arg Asp Arg Arg Ser Thr Leu Gly Ala Ala Val Leu Asn Gly
 385 390 395 400
 Leu Leu Tyr Ala Val Gly Gly Phe Asp Gly Ser Thr Gly Leu Ser Ser
 405 410 415
 Val Glu Ala Tyr Asn Ile Lys Ser Asn Glu Trp Phe His Val Ala Pro
 420 425 430

Met Asn Thr Arg Arg Ser Ser Val Gly Val Gly Val Val Gly Gly Leu
 435 440 445

Leu Tyr Ala Val Gly Gly Tyr Asp Gly Ala Ser Arg Gln Cys Leu Ser
 450 455 460

Thr Val Glu Cys Tyr Asn Ala Thr Thr Asn Glu Trp Thr Tyr Ile Ala
 465 470 475 480

Glu Met Ser Thr Arg Arg Ser Gly Ala Gly Val Gly Val Leu Asn Asn
 485 490 495

Leu Leu Tyr Ala Val Gly Gly His Asp Gly Pro Leu Val Arg Lys Ser
 500 505 510

Val Glu Val Tyr Asp Pro Thr Thr Asn Ala Trp Arg Gln Val Ala Asp
 515 520 525

Met Asn Met Cys Arg Arg Asn Ala Gly Val Cys Ala Val Asn Gly Leu
 530 535 540

Leu Tyr Val Val Gly Gly Asp Asp Gly Ser Cys Asn Leu Ala Ser Val
 545 550 555 560

Glu Tyr Tyr Asn Pro Thr Thr Asp Lys Trp Thr Val Val Ser Ser Cys
 565 570 575

Met Ser Thr Gly Arg Ser Tyr Ala Gly Val Thr Val Ile Asp Lys Pro
 580 585 590

Leu

<210> 568
 <211> 519
 <212> PRT
 <213> Homo sapiens

<400> 568

Met Phe Leu Leu Pro Leu Pro Ala Ala Gly Arg Val Val Val Arg Arg
 1 5 10 15

Leu Ala Val Arg Arg Phe Gly Ser Arg Ser Leu Ser Thr Ala Asp Met
 20 25 30

Thr Lys Gly Leu Val Leu Gly Ile Tyr Ser Lys Glu Lys Glu Asp Asp
 35 40 45

Val Pro Gln Phe Thr Ser Ala Gly Glu Asn Phe Asp Lys Leu Leu Ala
 50 55 60

Gly Lys Leu Arg Glu Thr Leu Asn Ile Ser Gly Pro Pro Leu Lys Ala
 65 70 75 80

Gly Lys Thr Arg Thr Phe Tyr Gly Leu His Gln Asp Phe Pro Ser Val
 85 90 95

Val Leu Val Gly Leu Gly Lys Lys Ala Ala Gly Ile Asp Glu Gln Glu
 100 105 110

Asn Trp His Glu Gly Lys Glu Asn Ile Arg Ala Ala Val Ala Ala Gly
 115 120 125

Cys Arg Gln Ile Gln Asp Leu Glu Leu Ser Ser Val Glu Val Asp Pro
 130 135 140

Cys Gly Asp Ala Gln Ala Ala Ala Glu Gly Ala Val Leu Gly Leu Tyr
 145 150 155 160

Glu Tyr Asp Asp Leu Lys Gln Lys Lys Lys Met Ala Val Ser Ala Lys
 165 170 175

Leu Tyr Gly Ser Gly Asp Gln Glu Ala Trp Gln Lys Gly Val Leu Phe
 180 185 190

Ala Ser Gly Gln Asn Leu Ala Arg Gln Leu Met Glu Thr Pro Ala Asn
 195 200 205

Glu Met Thr Pro Thr Arg Phe Ala Glu Ile Ile Glu Lys Asn Leu Lys
 210 215 220

Ser Ala Ser Ser Lys Thr Glu Val His Ile Arg Pro Lys Ser Trp Ile
 225 230 235 240

Glu Glu Gln Ala Met Gly Ser Phe Leu Ser Val Ala Lys Gly Ser Asp
 245 250 255

Glu Pro Pro Val Phe Leu Glu Ile His Tyr Lys Gly Ser Pro Asn Ala
 260 265 270

Asn Glu Pro Pro Leu Val Phe Val Gly Lys Gly Ile Thr Phe Asp Ser
 275 280 285

Gly Gly Ile Ser Ile Lys Ala Ser Ala Asn Met Asp Leu Met Arg Ala
 290 295 300

Asp Met Gly Gly Ala Ala Thr Ile Cys Ser Ala Ile Val Ser Ala Ala
 305 310 315 320

Lys Leu Asn Leu Pro Ile Asn Ile Ile Gly Leu Ala Pro Leu Cys Glu
 325 330 335

Asn Met Pro Ser Gly Lys Ala Asn Lys Pro Gly Asp Val Val Arg Ala
 340 345 350

Lys Asn Gly Lys Thr Ile Gln Val Asp Asn Thr Asp Ala Glu Gly Arg
 355 360 365

Leu Ile Leu Ala Asp Ala Leu Cys Tyr Ala His Thr Phe Asn Pro Lys
 370 375 380

Val Ile Leu Asn Ala Ala Thr Leu Thr Gly Ala Met Asp Val Ala Leu
 385 390 395 400

Gly Ser Gly Ala Thr Gly Val Phe Thr Asn Ser Ser Trp Leu Trp Asn
 405 410 415

Lys Leu Phe Glu Ala Ser Ile Glu Thr Gly Asp Arg Val Trp Arg Met
 420 425 430

Pro Leu Phe Glu His Tyr Thr Arg Gln Val Val Asp Cys Gln Leu Ala
 435 440 445

Asp Val Asn Asn Ile Gly Lys Tyr Arg Ser Ala Gly Ala Cys Thr Ala
 450 455 460

Ala Ala Phe Leu Lys Glu Phe Val Thr His Pro Lys Trp Ala His Leu
 465 470 475 480

Asp Ile Ala Gly Val Met Thr Asn Lys Asp Glu Val Pro Tyr Leu Arg
 485 490 495

Lys Gly Met Thr Gly Arg Pro Thr Arg Thr Leu Ile Glu Phe Leu Leu
 500 505 510

Arg Phe Ser Gln Asp Asn Ala
 515

<210> 569
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 569

Met Asp Pro Arg Leu Ser Thr Val Arg Gln Thr Cys Cys Cys Phe Asn
 1 5 10 15

Val Arg Ile Ala Thr Thr Ala Leu Ala Ile Tyr His Val Ile Met Ser
 20 25 30

Val Leu Leu Phe Ile Glu His Ser Val Glu Val Ala His Gly Lys Ala
 35 40 45

Ser Cys Lys Leu Ser Gln Met Gly Tyr Leu Arg Ile Ala Asp Leu Ile
 Page 838

50

55

60

Ser Ser Phe Leu Leu Ile Thr Met Leu Phe Ile Ile Ser Leu Ser Leu
65 70 75 80

Leu Ile Gly Val Val Lys Asn Arg Glu Lys Tyr Leu Leu Pro Phe Leu
85 90 95

Ser Leu Gln Ile Met Asp Tyr Leu Leu Cys Leu Leu Thr Leu Leu Gly
100 105 110

Ser Tyr Ile Glu Leu Pro Ala Tyr Leu Lys Leu Ala Ser Arg Ser Arg
115 120 125

Ala Ser Ser Ser Lys Phe Pro Leu Met Thr Leu Gln Leu Leu Asp Phe
130 135 140

Cys Leu Ser Ile Leu Thr Leu Cys Ser Ser Tyr Met Glu Val Pro Thr
145 150 155 160

Tyr Leu Asn Phe Lys Ser Met Asn His Met Asn Tyr Leu Pro Ser Gln
165 170 175

Glu Asp Met Pro His Asn Gln Phe Ile Lys Met Met Ile Ile Phe Ser
180 185 190

Ile Ala Phe Ile Thr Val Leu Ile Phe Lys Val Tyr Met Phe Lys Cys
195 200 205

Val Trp Arg Cys Tyr Arg Leu Ile Lys Cys Met Asn Ser Val Glu Glu
210 215 220

Lys Arg Asn Ser Lys Met Leu Gln Lys Val Val Leu Pro Ser Tyr Glu
225 230 235 240

Glu Ala Leu Ser Leu Pro Ser Lys Thr Pro Glu Gly Gly Pro Ala Pro
245 250 255

Pro Pro Tyr Ser Glu Val
260

<210> 570
<211> 243
<212> PRT
<213> Homo sapiens

<400> 570

Met Ser Ser Gly Thr Glu Leu Leu Trp Pro Gly Ala Ala Leu Leu Val
1 5 10 15

Leu Leu Gly Val Ala Ala Ser Leu Cys Val Arg Cys Ser Arg Pro Gly
20 25 30

Ala Lys Arg Ser Glu Lys Ile Tyr Gln Gln Arg Ser Leu Arg Glu Asp
 35 40 45

Gln Gln Ser Phe Thr Gly Ser Arg Thr Tyr Ser Leu Val Gly Gln Ala
 50 55 60

Trp Pro Gly Pro Leu Ala Asp Met Ala Pro Thr Arg Lys Asp Lys Leu
 65 70 75 80

Leu Gln Phe Tyr Pro Ser Leu Glu Asp Pro Ala Ser Ser Arg Tyr Gln
 85 90 95

Asn Phe Ser Lys Gly Ser Arg His Gly Ser Glu Glu Ala Tyr Ile Asp
 100 105 110

Pro Ile Ala Met Glu Tyr Tyr Asn Trp Gly Arg Phe Ser Lys Pro Pro
 115 120 125

Glu Asp Asp Asp Ala Asn Ser Tyr Glu Asn Val Leu Ile Cys Lys Gln
 130 135 140

Lys Thr Thr Glu Thr Gly Ala Gln Gln Glu Gly Ile Gly Gly Leu Cys
 145 150 155 160

Arg Gly Asp Leu Ser Leu Ser Leu Ala Leu Lys Thr Gly Pro Thr Ser
 165 170 175

Gly Leu Cys Pro Ser Ala Ser Pro Glu Glu Asp Glu Glu Ser Glu Asp
 180 185 190

Tyr Gln Asn Ser Ala Ser Ile His Gln Trp Arg Glu Ser Arg Lys Val
 195 200 205

Met Gly Gln Leu Gln Arg Glu Ala Ser Pro Gly Pro Val Gly Ser Pro
 210 215 220

Asp Glu Glu Asp Gly Glu Pro Asp Tyr Val Asn Gly Glu Val Ala Ala
 225 230 235 240

Thr Glu Ala

<210> 571
 <211> 533
 <212> PRT
 <213> Homo sapiens

<400> 571

Met Ala Leu Arg Asn Val Pro Phe Arg Ser Glu Val Leu Gly Trp Asp
 1 5 10 15

Pro Asp Ser Leu Ala Asp Tyr Phe Lys Lys Leu Asn Tyr Lys Asp Cys
 20 25 30
 Glu Lys Ala Val Lys Lys Tyr His Ile Asp Gly Ala Arg Phe Leu Asn
 35 40 45
 Leu Thr Glu Asn Asp Ile Gln Lys Phe Pro Lys Leu Arg Val Pro Ile
 50 55 60
 Leu Ser Lys Leu Ser Gln Glu Ile Asn Lys Asn Glu Glu Arg Arg Ser
 65 70 75 80
 Ile Phe Thr Arg Lys Pro Gln Val Pro Arg Phe Pro Glu Glu Thr Glu
 85 90 95
 Ser His Glu Glu Asp Asn Gly Gly Trp Ser Ser Phe Glu Glu Asp Asp
 100 105 110
 Tyr Glu Ser Pro Asn Asp Asp Gln Asp Gly Glu Asp Asp Gly Asp Tyr
 115 120 125
 Glu Ser Pro Asn Glu Glu Glu Glu Ala Pro Val Glu Asp Asp Ala Asp
 130 135 140
 Tyr Glu Pro Pro Pro Ser Asn Asp Glu Glu Ala Leu Gln Asn Ser Ile
 145 150 155 160
 Leu Pro Ala Lys Pro Phe Pro Asn Ser Asn Ser Met Tyr Ile Asp Arg
 165 170 175
 Pro Pro Ser Gly Lys Thr Pro Gln Gln Pro Pro Val Pro Pro Gln Arg
 180 185 190
 Pro Met Ala Ala Leu Pro Pro Pro Pro Ala Gly Arg Asn His Ser Pro
 195 200 205
 Leu Pro Pro Pro Gln Thr Asn His Glu Glu Pro Ser Arg Ser Arg Asn
 210 215 220
 His Lys Thr Ala Lys Leu Pro Ala Pro Ser Ile Asp Arg Ser Thr Lys
 225 230 235 240
 Pro Pro Leu Asp Arg Ser Leu Ala Pro Phe Asp Arg Glu Pro Phe Thr
 245 250 255
 Leu Gly Lys Lys Pro Pro Phe Ser Asp Lys Pro Ser Ile Pro Ala Gly
 260 265 270
 Arg Ser Leu Gly Glu His Leu Pro Lys Ile Gln Lys Pro Pro Leu Pro
 275 280 285

Pro Thr Thr Glu Arg His Glu Arg Ser Ser Pro Leu Pro Gly Lys Lys
 290 295 300

Pro Pro Val Pro Lys His Gly Trp Gly Pro Asp Arg Arg Glu Asn Asp
 305 310 315 320

Glu Asp Asp Val His Gln Arg Pro Leu Pro Gln Pro Ala Leu Leu Pro
 325 330 335

Met Ser Ser Asn Thr Phe Pro Ser Arg Ser Thr Lys Pro Ser Pro Met
 340 345 350

Asn Pro Leu Pro Ser Ser His Met Pro Gly Ala Phe Ser Glu Ser Asn
 355 360 365

Ser Ser Phe Pro Gln Ser Ala Ser Leu Pro Pro Tyr Phe Ser Gln Gly
 370 375 380

Pro Ser Asn Arg Pro Pro Ile Arg Ala Glu Gly Arg Asn Phe Pro Leu
 385 390 395 400

Pro Leu Pro Asn Lys Pro Arg Pro Pro Ser Pro Ala Glu Glu Glu Asn
 405 410 415

Ser Leu Asn Glu Glu Trp Tyr Val Ser Tyr Ile Thr Arg Pro Glu Ala
 420 425 430

Glu Ala Ala Leu Arg Lys Ile Asn Gln Asp Gly Thr Phe Leu Val Arg
 435 440 445

Asp Ser Ser Lys Lys Thr Thr Thr Asn Pro Tyr Val Leu Met Val Leu
 450 455 460

Tyr Lys Asp Lys Val Tyr Asn Ile Gln Ile Arg Tyr Gln Lys Glu Ser
 465 470 475 480

Gln Val Tyr Leu Leu Gly Thr Gly Leu Arg Gly Lys Glu Asp Phe Leu
 485 490 495

Ser Val Ser Asp Ile Ile Asp Tyr Phe Arg Lys Met Pro Leu Leu Leu
 500 505 510

Ile Asp Gly Lys Asn Arg Gly Ser Arg Tyr Gln Cys Thr Leu Thr His
 515 520 525

Ala Ala Gly Tyr Pro
 530

<210> 572
 <211> 308
 <212> PRT

<213> Homo sapiens

<400> 572

Met Asp Ala Leu Lys Ser Ala Gly Arg Ala Leu Ile Arg Ser Pro Ser
 1 5 10 15
 Leu Ala Lys Gln Ser Trp Gly Gly Gly Gly Arg His Arg Lys Leu Pro
 20 25 30
 Glu Asn Trp Thr Asp Thr Arg Glu Thr Leu Leu Glu Gly Met Leu Phe
 35 40 45
 Ser Leu Lys Tyr Leu Gly Met Thr Leu Val Glu Gln Pro Lys Gly Glu
 50 55 60
 Glu Leu Ser Ala Ala Ala Ile Lys Arg Ile Val Ala Thr Ala Lys Ala
 65 70 75 80
 Ser Gly Lys Lys Leu Gln Lys Val Thr Leu Lys Val Ser Pro Arg Gly
 85 90 95
 Ile Ile Leu Thr Asp Asn Leu Thr Asn Gln Leu Ile Glu Asn Val Ser
 100 105 110
 Ile Tyr Arg Ile Ser Tyr Cys Thr Ala Asp Lys Met His Asp Lys Val
 115 120 125
 Phe Ala Tyr Ile Ala Gln Ser Gln His Asn Gln Ser Leu Glu Cys His
 130 135 140
 Ala Phe Leu Cys Thr Lys Arg Lys Met Ala Gln Ala Val Thr Leu Thr
 145 150 155 160
 Val Ala Gln Ala Phe Lys Val Ala Phe Glu Phe Trp Gln Val Ser Lys
 165 170 175
 Glu Glu Lys Glu Lys Arg Asp Lys Ala Ser Gln Glu Gly Gly Asp Val
 180 185 190
 Leu Gly Ala Arg Gln Asp Cys Thr Pro Ser Leu Lys Ser Leu Val Ala
 195 200 205
 Thr Gly Asn Leu Leu Asp Leu Glu Glu Thr Ala Lys Ala Pro Leu Ser
 210 215 220
 Thr Val Ser Ala Asn Thr Thr Asn Met Asp Glu Val Pro Arg Pro Gln
 225 230 235 240
 Ala Leu Ser Gly Ser Ser Val Val Trp Glu Leu Asp Asp Gly Leu Asp
 245 250 255

Glu Ala Phe Ser Arg Leu Ala Gln Ser Arg Thr Asn Pro Gln Val Leu
 260 265 270

Asp Thr Gly Leu Thr Ala Gln Asp Met His Tyr Ala Gln Cys Leu Ser
 275 280 285

Pro Val Asp Trp Asp Lys Pro Asp Ser Ser Gly Thr Glu Gln Asp Asp
 290 295 300

Leu Phe Ser Phe
 305

<210> 573
 <211> 399
 <212> PRT
 <213> Homo sapiens
 <400> 573

Met Pro Gln Leu Ser Gly Gly Gly Gly Gly Gly Gly Asp Pro Glu
 1 5 10 15

Leu Cys Ala Thr Asp Glu Met Ile Pro Phe Lys Asp Glu Gly Asp Pro
 20 25 30

Gln Lys Glu Lys Ile Phe Ala Glu Ile Ser His Pro Glu Glu Glu Gly
 35 40 45

Asp Leu Ala Asp Ile Lys Ser Ser Leu Val Asn Glu Ser Glu Ile Ile
 50 55 60

Pro Ala Ser Asn Gly His Glu Val Ala Arg Gln Ala Gln Thr Ser Gln
 65 70 75 80

Glu Pro Tyr His Asp Lys Ala Arg Glu His Pro Asp Asp Gly Lys His
 85 90 95

Pro Asp Gly Gly Leu Tyr Asn Lys Gly Pro Ser Tyr Ser Ser Tyr Ser
 100 105 110

Gly Tyr Ile Met Met Pro Asn Met Asn Asn Asp Pro Tyr Met Ser Asn
 115 120 125

Gly Ser Leu Ser Pro Pro Ile Pro Arg Thr Ser Asn Lys Val Pro Val
 130 135 140

Val Gln Pro Ser His Ala Val His Pro Leu Thr Pro Leu Ile Thr Tyr
 145 150 155 160

Ser Asp Glu His Phe Ser Pro Gly Ser His Pro Ser His Ile Pro Ser
 165 170 175

Asp Val Asn Ser Lys Gln Gly Met Ser Arg His Pro Pro Ala Pro Asp
 Page 844

180

185

190

Ile Pro Thr Phe Tyr Pro Leu Ser Pro Gly Gly Val Gly Gln Ile Thr
 195 200 205

Pro Pro Leu Gly Trp Gln Gly Gln Pro Val Tyr Pro Ile Thr Gly Gly
 210 215 220

Phe Arg Gln Pro Tyr Pro Ser Ser Leu Ser Val Asp Thr Ser Met Ser
 225 230 235 240

Arg Phe Ser His His Met Ile Pro Gly Pro Pro Gly Pro His Thr Thr
 245 250 255

Gly Ile Pro His Pro Ala Ile Val Thr Pro Gln Val Lys Gln Glu His
 260 265 270

Pro His Thr Asp Ser Asp Leu Met His Val Lys Pro Gln His Glu Gln
 275 280 285

Arg Lys Glu Gln Glu Pro Lys Arg Pro His Ile Lys Lys Pro Leu Asn
 290 295 300

Ala Phe Met Leu Tyr Met Lys Glu Met Arg Ala Asn Val Val Ala Glu
 305 310 315 320

Cys Thr Leu Lys Glu Ser Ala Ala Ile Asn Gln Ile Leu Gly Arg Arg
 325 330 335

Trp His Ala Leu Ser Arg Glu Glu Gln Ala Lys Tyr Tyr Glu Leu Ala
 340 345 350

Arg Lys Glu Arg Gln Leu His Met Gln Leu Tyr Pro Gly Trp Ser Ala
 355 360 365

Arg Asp Asn Tyr Gly Lys Lys Lys Arg Lys Arg Glu Lys Leu Gln
 370 375 380

Glu Ser Ala Ser Gly Thr Gly Pro Arg Met Thr Ala Ala Tyr Ile
 385 390 395

<210> 574
 <211> 466
 <212> PRT
 <213> Homo sapiens

<400> 574

Met Thr Pro Ile Leu Thr Val Leu Ile Cys Leu Gly Leu Ser Leu Gly
 1 5 10 15

Pro Arg Thr His Val Gln Ala Gly His Leu Pro Lys Pro Thr Leu Trp
 20 25 30

Ala Glu Pro Gly Ser Val Ile Ile Gln Gly Ser Pro Val Thr Leu Arg
 35 40 45
 Cys Gln Gly Ser Leu Gln Ala Glu Glu Tyr His Leu Tyr Arg Glu Asn
 50 55 60
 Lys Ser Ala Ser Trp Val Arg Arg Ile Gln Glu Pro Gly Lys Asn Gly
 65 70 75 80
 Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr His
 85 90 95
 Cys Gln Tyr Tyr Ser His Asn His Ser Ser Glu Tyr Ser Asp Pro Leu
 100 105 110
 Glu Leu Val Val Thr Gly Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu
 115 120 125
 Pro Ser Pro Val Val Thr Ser Gly Gly Asn Val Thr Leu Gln Cys Val
 130 135 140
 Ser Gln Val Ala Phe Asp Gly Phe Ile Leu Cys Lys Glu Gly Glu Asp
 145 150 155 160
 Glu His Pro Gln Arg Leu Asn Ser His Ser His Ala Arg Gly Trp Ser
 165 170 175
 Trp Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg Trp Ser
 180 185 190
 Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Val Trp Ser Leu
 195 200 205
 Pro Ser Asp Leu Leu Glu Leu Leu Val Pro Gly Val Ser Lys Lys Pro
 210 215 220
 Ser Leu Ser Val Gln Pro Gly Pro Met Val Ala Pro Gly Glu Ser Leu
 225 230 235 240
 Thr Leu Gln Cys Val Ser Asp Val Gly Tyr Asp Arg Phe Val Leu Tyr
 245 250 255
 Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Trp Gln Pro Gln
 260 265 270
 Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro Ser
 275 280 285
 His Gly Gly Gln Tyr Arg Cys Tyr Ser Ala His Asn Leu Ser Ser Glu
 290 295 300

Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Thr Gly Gln Phe
305 310 315 320

Tyr Asp Arg Pro Ser Leu Ser Val Gln Pro Val Pro Thr Val Ala Pro
325 330 335

Gly Lys Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Gln Phe His Thr
340 345 350

Phe Leu Leu Thr Lys Glu Gly Ala Gly His Pro Pro Leu His Leu Arg
355 360 365

Ser Glu His Gln Ala Gln Gln Asn Gln Ala Glu Phe Arg Met Gly Pro
370 375 380

Val Thr Ser Ala His Val Gly Thr Tyr Arg Cys Tyr Ser Ser Leu Ser
385 390 395 400

Ser Asn Pro Tyr Leu Leu Ser Leu Pro Ser Asp Pro Leu Glu Leu Val
405 410 415

Val Ser Ala Ser Leu Gly Gln His Pro Gln Asp Tyr Thr Val Glu Asn
420 425 430

Leu Ile Arg Met Gly Val Ala Gly Leu Val Leu Val Val Leu Gly Ile
435 440 445

Leu Leu Phe Glu Ala Gln His Ser Gln Arg Ser Leu Gln Asp Ala Ala
450 455 460

Gly Arg
465

<210> 575
<211> 632
<212> PRT
<213> Homo sapiens

<400> 575

Met Thr Pro Ala Leu Thr Ala Leu Leu Cys Leu Gly Leu Ser Leu Gly
1 5 10 15

Pro Arg Thr Arg Val Gln Ala Gly Pro Phe Pro Lys Pro Thr Leu Trp
20 25 30

Ala Glu Pro Gly Ser Val Ile Ser Trp Gly Ser Pro Val Thr Ile Trp
35 40 45

Cys Gln Gly Ser Leu Glu Ala Gln Glu Tyr Gln Leu Asp Lys Glu Gly
50 55 60

Ser Pro Glu Pro Leu Asp Arg Asn Asn Pro Leu Glu Pro Lys Asn Lys
 65 70 75 80
 Ala Arg Phe Ser Ile Pro Ser Met Thr Gln His His Ala Gly Arg Tyr
 85 90 95
 Arg Cys His Tyr Tyr Ser Ser Ala Gly Trp Ser Glu Pro Ser Asp Pro
 100 105 110
 Leu Glu Leu Val Met Thr Gly Phe Tyr Asn Lys Pro Thr Leu Ser Ala
 115 120 125
 Leu Pro Ser Pro Val Val Ala Ser Gly Gly Asn Met Thr Leu Arg Cys
 130 135 140
 Gly Ser Gln Lys Gly Tyr His His Phe Val Leu Met Lys Glu Gly Glu
 145 150 155 160
 His Gln Leu Pro Arg Thr Leu Asp Ser Gln Gln Leu His Ser Gly Gly
 165 170 175
 Phe Gln Ala Leu Phe Pro Val Gly Pro Val Thr Pro Ser His Arg Trp
 180 185 190
 Arg Phe Thr Cys Tyr Tyr Tyr Tyr Thr Asn Thr Pro Arg Val Trp Ser
 195 200 205
 His Pro Ser Asp Pro Leu Glu Ile Leu Pro Ser Gly Val Ser Arg Lys
 210 215 220
 Pro Ser Leu Leu Thr Leu Gln Gly Pro Val Leu Ala Pro Gly Gln Ser
 225 230 235 240
 Leu Thr Leu Gln Cys Gly Ser Asp Val Gly Tyr Asp Arg Phe Val Leu
 245 250 255
 Tyr Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Gln Gln Pro
 260 265 270
 Gln Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro
 275 280 285
 Ser His Gly Gly Gln Tyr Arg Cys Tyr Gly Ala His Asn Leu Ser Ser
 290 295 300
 Glu Trp Ser Ala Pro Ser Asp Pro Leu Asn Ile Leu Met Ala Gly Gln
 305 310 315 320
 Ile Tyr Asp Thr Val Ser Leu Ser Ala Gln Pro Gly Pro Thr Val Ala
 325 330 335

Ser Gly Glu Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Tyr Phe Asp
 340 345 350
 Thr Phe Leu Leu Thr Lys Glu Gly Ala Ala His Pro Pro Leu Arg Leu
 355 360 365
 Arg Ser Met Tyr Gly Ala His Lys Tyr Gln Ala Glu Phe Pro Met Ser
 370 375 380
 Pro Val Thr Ser Ala His Ala Gly Thr Tyr Arg Cys Tyr Gly Ser Tyr
 385 390 395 400
 Ser Ser Asn Pro His Leu Leu Ser Phe Pro Ser Glu Pro Leu Glu Leu
 405 410 415
 Met Val Ser Gly His Ser Gly Gly Ser Ser Leu Pro Pro Thr Gly Pro
 420 425 430
 Pro Ser Thr Pro Gly Leu Gly Arg Tyr Leu Glu Val Leu Ile Gly Val
 435 440 445
 Ser Val Ala Phe Val Leu Leu Leu Phe Leu Leu Leu Phe Leu Leu Leu
 450 455 460
 Arg Arg Gln Arg His Ser Lys His Arg Thr Ser Asp Gln Arg Lys Thr
 465 470 475 480
 Asp Phe Gln Arg Pro Ala Gly Ala Ala Glu Thr Glu Pro Lys Asp Arg
 485 490 495
 Gly Leu Leu Arg Arg Ser Ser Pro Ala Ala Asp Val Gln Glu Glu Asn
 500 505 510
 Leu Tyr Ala Ala Val Lys Asp Thr Gln Ser Glu Asp Arg Val Glu Leu
 515 520 525
 Asp Ser Gln Gln Ser Pro His Asp Glu Asp Pro Gln Ala Val Thr Tyr
 530 535 540
 Ala Pro Val Lys His Ser Ser Pro Arg Arg Glu Met Ala Ser Pro Pro
 545 550 555 560
 Ser Ser Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln Val Glu
 565 570 575
 Glu Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala Ser Gln
 580 585 590
 Asp Val Thr Tyr Ala Gln Leu His Ser Leu Thr Leu Arg Arg Lys Ala
 595 600 605

Thr Glu Pro Pro Pro Ser Gln Glu Gly Glu Pro Pro Ala Glu Pro Ser
610 615 620

Ile Tyr Ala Thr Leu Ala Ile His
625 630

<210> 576
<211> 638
<212> PRT
<213> Homo sapiens
<400> 576

Met Ser Ala Leu Ala Gly Glu Asp Val Trp Arg Cys Pro Gly Cys Gly
1 5 10 15

Asp His Ile Ala Pro Ser Gln Ile Trp Tyr Arg Thr Val Asn Glu Thr
20 25 30

Trp His Gly Ser Cys Phe Arg Cys Ser Glu Cys Gln Asp Ser Leu Thr
35 40 45

Asn Trp Tyr Tyr Glu Lys Asp Gly Lys Leu Tyr Cys Pro Lys Asp Tyr
50 55 60

Trp Gly Lys Phe Gly Glu Phe Cys His Gly Cys Ser Leu Leu Met Thr
65 70 75 80

Gly Pro Phe Met Val Ala Gly Glu Phe Lys Tyr His Pro Glu Cys Phe
85 90 95

Ala Cys Met Ser Cys Lys Val Ile Ile Glu Asp Gly Asp Ala Tyr Ala
100 105 110

Leu Val Gln His Ala Thr Leu Tyr Cys Gly Lys Cys His Asn Glu Val
115 120 125

Val Leu Ala Pro Met Phe Glu Arg Leu Ser Thr Glu Ser Val Gln Glu
130 135 140

Gln Leu Pro Tyr Ser Val Thr Leu Ile Ser Met Pro Ala Thr Thr Glu
145 150 155 160

Gly Arg Arg Gly Phe Ser Val Ser Val Glu Ser Ala Cys Ser Asn Tyr
165 170 175

Ala Thr Thr Val Gln Val Lys Glu Val Asn Arg Met His Ile Ser Pro
180 185 190

Asn Asn Arg Asn Ala Ile His Pro Gly Asp Arg Ile Leu Glu Ile Asn
195 200 205

Gly Thr Pro Val Arg Thr Leu Arg Val Glu Glu Val Glu Asp Ala Ile
 210 215 220
 Ser Gln Thr Ser Gln Thr Leu Gln Leu Leu Ile Glu His Asp Pro Val
 225 230 235 240
 Ser Gln Arg Leu Asp Gln Leu Arg Leu Glu Ala Arg Leu Ala Pro His
 245 250 255
 Met Gln Asn Ala Gly His Pro His Ala Leu Ser Thr Leu Asp Thr Lys
 260 265 270
 Glu Asn Leu Glu Gly Thr Leu Arg Arg Arg Ser Leu Arg Arg Ser Asn
 275 280 285
 Ser Ile Ser Lys Ser Pro Gly Pro Ser Ser Pro Lys Glu Pro Leu Leu
 290 295 300
 Phe Ser Arg Asp Ile Ser Arg Ser Glu Ser Leu Arg Cys Ser Ser Ser
 305 310 315 320
 Tyr Ser Gln Gln Ile Phe Arg Pro Cys Asp Leu Ile His Gly Glu Val
 325 330 335
 Leu Gly Lys Gly Phe Phe Gly Gln Ala Ile Lys Val Thr His Lys Ala
 340 345 350
 Thr Gly Lys Val Met Val Met Lys Glu Leu Ile Arg Cys Asp Glu Glu
 355 360 365
 Thr Gln Lys Thr Phe Leu Thr Glu Val Lys Val Met Arg Ser Leu Asp
 370 375 380
 His Pro Asn Val Leu Lys Phe Ile Gly Val Leu Tyr Lys Asp Lys Lys
 385 390 395 400
 Leu Asn Leu Leu Thr Glu Tyr Ile Glu Gly Gly Thr Leu Lys Asp Phe
 405 410 415
 Leu Arg Ser Met Asp Pro Phe Pro Trp Gln Gln Lys Val Arg Phe Ala
 420 425 430
 Lys Gly Ile Ala Ser Gly Met Ala Tyr Leu His Ser Met Cys Ile Ile
 435 440 445
 His Arg Asp Leu Asn Ser His Asn Cys Leu Ile Lys Leu Asp Lys Thr
 450 455 460
 Val Val Val Ala Asp Phe Gly Leu Ser Arg Leu Ile Val Glu Glu Arg
 465 470 475 480

Lys Arg Ala Pro Met Glu Lys Ala Thr Thr Lys Lys Arg Thr Leu Arg
485 490 495

Lys Asn Asp Arg Lys Lys Arg Tyr Thr Val Val Gly Asn Pro Tyr Trp
500 505 510

Met Ala Pro Glu Met Leu Asn Gly Lys Ser Tyr Asp Glu Thr Val Asp
515 520 525

Ile Phe Ser Phe Gly Ile Val Leu Cys Glu Ile Ile Gly Gln Val Tyr
530 535 540

Ala Asp Pro Asp Cys Leu Pro Arg Thr Leu Asp Phe Gly Leu Asn Val
545 550 555 560

Lys Leu Phe Trp Glu Lys Phe Val Pro Thr Asp Cys Pro Pro Ala Phe
565 570 575

Phe Pro Leu Ala Ala Ile Cys Cys Arg Leu Glu Pro Glu Ser Arg Pro
580 585 590

Ala Phe Ser Lys Leu Glu Asp Ser Phe Glu Ala Leu Ser Leu Tyr Leu
595 600 605

Gly Glu Leu Gly Ile Pro Leu Pro Ala Glu Leu Glu Glu Leu Asp His
610 615 620

Thr Val Ser Met Gln Tyr Gly Leu Thr Arg Asp Ser Pro Pro
625 630 635

<210> 577
<211> 351
<212> PRT
<213> Homo sapiens

<400> 577

Met Val Ile Met Gly Gln Cys Tyr Tyr Asn Glu Thr Ile Gly Phe Phe
1 5 10 15

Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp
20 25 30

Val Val Val Val Ala Leu Gly Leu Thr Val Ser Val Leu Val Leu Leu
35 40 45

Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His
50 55 60

Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe
65 70 75 80

Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr
Page 852

Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp
100 105 110

Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu
115 120 125

Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg
130 135 140

Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly
145 150 155 160

Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp
165 170 175

Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr Leu Ala Val
180 185 190

Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val Ala Val Tyr
195 200 205

Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg Met Ala Glu
210 215 220

His Val Ser Cys His Pro Arg Tyr Arg Glu Thr Thr Leu Ser Leu Val
225 230 235 240

Lys Thr Val Val Ile Ile Leu Gly Ala Phe Val Val Cys Trp Thr Pro
245 250 255

Gly Gln Val Val Leu Leu Leu Asp Gly Leu Gly Cys Glu Ser Cys Asn
260 265 270

Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser
275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg
290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg
305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg
325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Asp Ser Thr Leu
340 345 350

<210> 578

<211> 896
 <212> PRT
 <213> Homo sapiens

<400> 578

Met Asn Tyr Val Gly Gln Leu Ala Gly Gln Val Ile Val Thr Val Lys
 1 5 10 15

Glu Leu Tyr Lys Gly Ile Asn Gln Ala Thr Leu Ser Gly Cys Ile Asp
 20 25 30

Val Ile Val Val Gln Gln Gln Asp Gly Ser Tyr Gln Cys Ser Pro Phe
 35 40 45

His Val Arg Phe Gly Lys Leu Gly Val Leu Arg Ser Lys Glu Lys Val
 50 55 60

Ile Asp Ile Glu Ile Asn Gly Ser Ala Val Asp Leu His Met Lys Leu
 65 70 75 80

Gly Asp Asn Gly Glu Ala Phe Phe Val Glu Glu Thr Glu Glu Glu Tyr
 85 90 95

Glu Lys Leu Pro Ala Tyr Leu Ala Thr Ser Pro Ile Pro Thr Glu Asp
 100 105 110

Gln Phe Phe Lys Asp Ile Asp Thr Pro Leu Val Lys Ser Gly Gly Asp
 115 120 125

Glu Thr Pro Ser Gln Ser Ser Asp Ile Ser His Val Leu Glu Thr Glu
 130 135 140

Thr Ile Phe Thr Pro Ser Ser Val Lys Lys Lys Lys Arg Arg Arg Lys
 145 150 155 160

Lys Tyr Lys Gln Asp Ser Lys Lys Glu Glu Gln Ala Ala Ser Ala Ala
 165 170 175

Ala Glu Asp Thr Cys Asp Val Gly Val Ser Ser Asp Asp Asp Lys Gly
 180 185 190

Ala Gln Ala Ala Arg Gly Ser Ser Asn Ala Ser Leu Lys Glu Glu Glu
 195 200 205

Cys Lys Glu Pro Leu Leu Phe His Ser Gly Asp His Tyr Pro Leu Ser
 210 215 220

Asp Gly Asp Trp Ser Pro Leu Glu Thr Thr Tyr Pro Gln Thr Ala Cys
 225 230 235 240

Pro Lys Ser Asp Ser Glu Leu Glu Val Lys Pro Ala Glu Ser Leu Leu
 245 250 255

Arg Ser Glu Ser His Met Glu Trp Thr Trp Gly Gly Phe Pro Glu Ser
 260 265 270
 Thr Lys Val Ser Lys Arg Glu Arg Ser Asp His His Pro Arg Thr Ala
 275 280 285
 Thr Ile Thr Pro Ser Glu Asn Thr His Phe Arg Val Ile Pro Ser Glu
 290 295 300
 Asp Asn Leu Ile Ser Glu Val Glu Lys Asp Ala Ser Met Glu Asp Thr
 305 310 315 320
 Val Cys Thr Ile Val Lys Pro Lys Pro Arg Ala Leu Gly Thr Gln Met
 325 330 335
 Ser Asp Pro Thr Ser Val Ala Glu Leu Leu Glu Pro Pro Leu Glu Ser
 340 345 350
 Thr Gln Ile Ser Ser Met Leu Asp Ala Asp His Leu Pro Asn Ala Ala
 355 360 365
 Leu Ala Glu Ala Pro Ser Glu Ser Lys Pro Ala Ala Lys Val Asp Ser
 370 375 380
 Pro Ser Lys Lys Lys Gly Val His Lys Arg Ser Gln His Gln Gly Pro
 385 390 395 400
 Asp Asp Ile Tyr Leu Asp Asp Leu Lys Gly Leu Glu Pro Glu Val Ala
 405 410 415
 Ala Leu Tyr Phe Pro Lys Ser Glu Ser Glu Pro Gly Ser Arg Gln Trp
 420 425 430
 Pro Glu Ser Asp Thr Leu Ser Gly Ser Gln Ser Pro Gln Ser Val Gly
 435 440 445
 Ser Ala Ala Ala Asp Ser Gly Thr Glu Cys Leu Ser Asp Ser Ala Met
 450 455 460
 Asp Leu Pro Asp Val Thr Leu Ser Leu Cys Gly Gly Leu Ser Glu Asn
 465 470 475 480
 Gly Glu Ile Ser Lys Glu Lys Phe Met Glu His Ile Ile Thr Tyr His
 485 490 495
 Glu Phe Ala Glu Asn Pro Gly Leu Ile Asp Asn Pro Asn Leu Val Ile
 500 505 510
 Arg Ile Tyr Asn Arg Tyr Tyr Asn Trp Ala Leu Ala Ala Pro Met Ile
 515 520 525

Leu Ser Leu Gln Val Phe Gln Lys Ser Leu Pro Lys Ala Thr Val Glu
 530 535 540
 Ser Trp Val Lys Asp Lys Met Pro Lys Lys Ser Gly Arg Trp Trp Phe
 545 550 555 560
 Trp Arg Lys Arg Glu Ser Met Thr Lys Gln Leu Pro Glu Ser Lys Glu
 565 570 575
 Gly Lys Ser Glu Ala Pro Pro Ala Ser Asp Leu Pro Ser Ser Ser Lys
 580 585 590
 Glu Pro Ala Gly Ala Arg Pro Ala Glu Asn Asp Ser Ser Ser Asp Glu
 595 600 605
 Gly Ser Gln Glu Leu Glu Glu Ser Ile Thr Val Asp Pro Ile Pro Thr
 610 615 620
 Glu Pro Leu Ser His Gly Ser Thr Thr Ser Tyr Lys Lys Ser Leu Arg
 625 630 635 640
 Leu Ser Ser Asp Gln Ile Ala Lys Leu Lys Leu His Asp Gly Pro Asn
 645 650 655
 Asp Val Val Phe Ser Ile Thr Thr Gln Tyr Gln Gly Thr Cys Arg Cys
 660 665 670
 Ala Gly Thr Ile Tyr Leu Trp Asn Trp Asn Asp Lys Ile Ile Ile Ser
 675 680 685
 Asp Ile Asp Gly Thr Ile Thr Lys Ser Asp Ala Leu Gly Gln Ile Leu
 690 695 700
 Pro Gln Leu Gly Lys Asp Trp Thr His Gln Gly Ile Ala Lys Leu Tyr
 705 710 715 720
 His Ser Ile Asn Glu Asn Gly Tyr Lys Phe Leu Tyr Cys Ser Ala Arg
 725 730 735
 Ala Ile Gly Met Ala Asp Met Thr Arg Gly Tyr Leu His Trp Val Asn
 740 745 750
 Asp Lys Gly Thr Ile Leu Pro Arg Gly Pro Leu Met Leu Ser Pro Ser
 755 760 765
 Ser Leu Phe Ser Ala Phe His Arg Glu Val Ile Glu Lys Lys Pro Glu
 770 775 780
 Lys Phe Lys Ile Glu Cys Leu Asn Asp Ile Lys Asn Leu Phe Ala Pro
 785 790 795 800

Ser Lys Gln Pro Phe Tyr Ala Ala Phe Gly Asn Arg Pro Asn Asp Val
805 810 815

Tyr Ala Tyr Thr Gln Val Gly Val Pro Asp Cys Arg Ile Phe Thr Val
820 825 830

Asn Pro Lys Gly Glu Leu Ile Gln Glu Arg Thr Lys Gly Asn Lys Ser
835 840 845

Ser Tyr His Arg Leu Ser Glu Leu Val Glu His Val Phe Pro Leu Leu
850 855 860

Ser Lys Glu Gln Asn Ser Ala Phe Pro Cys Pro Glu Phe Ser Ser Phe
865 870 875 880

Cys Tyr Trp Arg Asp Pro Ile Pro Glu Val Asp Leu Asp Asp Leu Ser
885 890 895

<210> 579
<211> 499
<212> PRT
<213> Homo sapiens

<400> 579

Met Asn Asp Asp Pro Ser Met Glu Glu Asn Gly Val Glu Arg Val Cys
1 5 10 15

Pro Glu Ser Leu Leu Gln Ser Arg Glu Tyr Ser Ser Leu Pro Leu Pro
20 25 30

Arg His Thr Ser Ser Thr Asp Gly Thr Ile Thr Ser Ser Asp Pro Gly
35 40 45

Leu Glu Ile Leu Asn Met Ala Ser Cys Asp Leu Asp Arg Asn Ser Leu
50 55 60

Cys Lys Lys Glu Glu Asp Thr Arg Ser Ala Ser Pro Thr Ile Glu Ala
65 70 75 80

Gln Gly Thr Ser Pro Ala His Asp Asn Ile Ala Phe Gln Asp Ser Thr
85 90 95

Ser Lys Asp Lys Thr Ile Leu Asn Leu Glu Ala Lys Glu Glu Pro Glu
100 105 110

Thr Ile Glu Glu His Lys Lys Glu His Ala Ser Gly Asp Ser Val Val
115 120 125

Ser Pro Leu Pro Val Thr Thr Val Lys Ser Val Asn Leu Arg Gln Ser
130 135 140

Glu Asn Thr Ser Ala Asn Glu Lys Glu Val Glu Ala Glu Phe Leu Arg
 145 150 155 160
 Leu Ser Leu Gly Phe Lys Cys Asp Trp Phe Thr Leu Glu Lys Arg Val
 165 170 175
 Lys Leu Glu Glu Arg Ser Arg Asp Leu Ala Glu Glu Asn Leu Lys Lys
 180 185 190
 Glu Ile Thr Asn Cys Leu Lys Leu Leu Glu Ser Leu Thr Pro Leu Cys
 195 200 205
 Glu Asp Asp Asn Gln Ala Gln Glu Ile Ile Lys Lys Leu Glu Lys Ser
 210 215 220
 Ile Lys Phe Leu Ser Gln Cys Ala Ala Arg Val Ala Ser Arg Ala Glu
 225 230 235 240
 Met Leu Gly Ala Ile Asn Gln Glu Ser Arg Val Ser Lys Ala Val Glu
 245 250 255
 Val Met Ile Gln His Val Glu Asn Leu Lys Arg Met Tyr Ala Lys Glu
 260 265 270
 His Ala Glu Leu Glu Glu Leu Lys Gln Val Leu Leu Gln Asn Glu Arg
 275 280 285
 Ser Phe Asn Pro Leu Glu Asp Asp Asp Asp Cys Gln Ile Lys Lys Arg
 290 295 300
 Ser Ala Ser Leu Asn Ser Lys Pro Ser Ser Leu Arg Arg Val Thr Ile
 305 310 315 320
 Ala Ser Leu Pro Arg Asn Ile Gly Asn Ala Gly Met Val Ala Gly Met
 325 330 335
 Glu Asn Asn Asp Arg Phe Ser Arg Arg Ser Ser Ser Trp Arg Ile Leu
 340 345 350
 Gly Ser Lys Gln Ser Glu His Arg Pro Ser Leu Pro Arg Phe Ile Ser
 355 360 365
 Thr Tyr Ser Trp Ala Asp Ala Glu Glu Glu Lys Cys Glu Leu Lys Thr
 370 375 380
 Lys Asp Asp Ser Glu Pro Ser Gly Glu Glu Thr Val Glu Arg Thr Arg
 385 390 395 400
 Lys Pro Ser Leu Ser Glu Lys Lys Asn Asn Pro Ser Lys Trp Asp Val
 405 410 415

Ser Ser Val Tyr Asp Thr Ile Ala Ser Trp Ala Thr Asn Leu Lys Ser
 420 425 430

Ser Ile Arg Lys Ala Asn Lys Ala Leu Trp Leu Ser Ile Ala Phe Ile
 435 440 445

Val Leu Phe Ala Ala Leu Met Ser Phe Leu Thr Gly Gln Leu Phe Gln
 450 455 460

Lys Ser Val Asp Ala Ala Pro Thr Gln Gln Glu Asp Ser Trp Thr Ser
 465 470 475 480

Leu Glu His Ile Leu Trp Pro Phe Thr Arg Leu Arg His Asn Gly Pro
 485 490 495

Pro Pro Val

<210> 580
 <211> 713
 <212> PRT
 <213> Homo sapiens

<400> 580

Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Leu Gly Gly Ala Leu Ala
 1 5 10 15

His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp Pro Pro
 20 25 30

Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro Leu Val Arg
 35 40 45

Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu Ile Leu Gly Ser
 50 55 60

Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys Leu His Leu Ala Cys
 65 70 75 80

Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro Leu Gln Pro Leu Ile Ser
 85 90 95

Leu Cys Glu Ala Pro Pro Ser Pro Leu Gln Leu Pro Gly Gly Asn Val
 100 105 110

Thr Ile Thr Tyr Ser Tyr Ala Gly Ala Arg Ala Pro Met Gly Gln Gly
 115 120 125

Phe Leu Leu Ser Tyr Ser Gln Asp Trp Leu Met Cys Leu Gln Glu Glu
 130 135 140

Phe Gln Cys Leu Asn His Arg Cys Val Ser Ala Val Gln Arg Cys Asp
 145 150 155 160
 Gly Val Asp Ala Cys Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser
 165 170 175
 Asp Pro Phe Pro Gly Leu Thr Pro Arg Pro Val Pro Ser Leu Pro Cys
 180 185 190
 Asn Val Thr Leu Glu Asp Phe Tyr Gly Val Phe Ser Ser Pro Gly Tyr
 195 200 205
 Thr His Leu Ala Ser Val Ser His Pro Gln Ser Cys His Trp Leu Leu
 210 215 220
 Asp Pro His Asp Gly Arg Arg Leu Ala Val Arg Phe Thr Ala Leu Asp
 225 230 235 240
 Leu Gly Phe Gly Asp Ala Val His Val Tyr Asp Gly Pro Gly Pro Pro
 245 250 255
 Glu Ser Ser Arg Leu Leu Arg Ser Leu Thr His Phe Ser Asn Gly Lys
 260 265 270
 Ala Val Thr Val Glu Thr Leu Ser Gly Gln Ala Val Val Ser Tyr His
 275 280 285
 Thr Val Ala Trp Ser Asn Gly Arg Gly Phe Asn Ala Thr Tyr His Val
 290 295 300
 Arg Gly Tyr Cys Leu Pro Trp Asp Arg Pro Cys Gly Leu Gly Ser Gly
 305 310 315 320
 Leu Gly Ala Gly Glu Gly Leu Gly Glu Arg Cys Tyr Ser Glu Ala Gln
 325 330 335
 Arg Cys Asp Gly Ser Trp Asp Cys Ala Asp Gly Thr Asp Glu Glu Asp
 340 345 350
 Cys Pro Gly Cys Pro Pro Gly His Phe Pro Cys Gly Ala Ala Gly Thr
 355 360 365
 Ser Gly Ala Thr Ala Cys Tyr Leu Pro Ala Asp Arg Cys Asn Tyr Gln
 370 375 380
 Thr Phe Cys Ala Asp Gly Ala Asp Glu Arg Arg Cys Arg His Cys Gln
 385 390 395 400
 Pro Gly Asn Phe Arg Cys Arg Asp Glu Lys Cys Val Tyr Glu Thr Trp
 405 410 415

Val Cys Asp Gly Gln Pro Asp Cys Ala Asp Gly Ser Asp Glu Trp Asp
 420 425 430

Cys Ser Tyr Val Leu Pro Arg Lys Val Ile Thr Ala Ala Val Ile Gly
 435 440 445

Ser Leu Val Cys Gly Leu Leu Leu Val Ile Ala Leu Gly Cys Thr Cys
 450 455 460

Lys Leu Tyr Ala Ile Arg Thr Gln Glu Tyr Ser Ile Phe Ala Pro Leu
 465 470 475 480

Ser Arg Met Glu Ala Glu Ile Val Gln Gln Gln Ala Pro Pro Ser Tyr
 485 490 495

Gly Gln Leu Ile Ala Gln Gly Ala Ile Pro Pro Val Glu Asp Phe Pro
 500 505 510

Thr Glu Asn Pro Asn Asp Asn Ser Val Leu Gly Asn Leu Arg Ser Leu
 515 520 525

Leu Gln Ile Leu Arg Gln Asp Met Thr Pro Gly Gly Gly Pro Gly Ala
 530 535 540

Arg Arg Arg Gln Arg Gly Arg Leu Met Arg Arg Leu Val Arg Arg Leu
 545 550 555 560

Arg Arg Trp Gly Leu Leu Pro Arg Thr Asn Thr Pro Ala Arg Ala Ser
 565 570 575

Glu Ala Arg Ser Gln Val Thr Pro Ser Ala Ala Pro Leu Glu Ala Leu
 580 585 590

Asp Gly Gly Thr Gly Pro Ala Arg Glu Gly Gly Ala Val Gly Gly Gln
 595 600 605

Asp Gly Glu Gln Ala Pro Pro Leu Pro Ile Lys Ala Pro Leu Pro Ser
 610 615 620

Ala Ser Thr Ser Pro Ala Pro Thr Thr Val Pro Glu Ala Pro Gly Pro
 625 630 635 640

Leu Pro Ser Leu Pro Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln
 645 650 655

Ala Leu Arg Gly Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr
 660 665 670

Arg Ser Pro Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu
 675 680 685

Asp Asp Val Leu Leu Val Pro Leu Ala Glu Pro Gly Val Trp Val Ala
 690 695 700

Glu Ala Glu Asp Glu Pro Leu Leu Thr
 705 710

<210> 581
 <211> 104
 <212> PRT
 <213> Homo sapiens

<400> 581

Met Leu Ser Arg Asn Asp Asp Ile Cys Ile Tyr Gly Gly Leu Gly Leu
 1 5 10 15

Gly Gly Leu Leu Leu Leu Ala Val Val Leu Leu Ser Ala Cys Leu Cys
 20 25 30

Trp Leu His Arg Arg Val Lys Arg Leu Glu Arg Ser Trp His Leu Leu
 35 40 45

Ser Trp Ser Gln Ala Gln Gly Ser Ser Glu Gln Glu Leu His Tyr Ala
 50 55 60

Ser Leu Gln Arg Leu Pro Val Pro Ser Ser Glu Gly Pro Asp Leu Arg
 65 70 75 80

Gly Arg Asp Lys Arg Gly Thr Lys Glu Asp Pro Arg Ala Asp Tyr Ala
 85 90 95

Cys Ile Ala Glu Asn Lys Pro Thr
 100

<210> 582
 <211> 244
 <212> PRT
 <213> Homo sapiens

<400> 582

Met Gly Ala Leu Gly Leu Glu Gly Arg Gly Gly Arg Leu Gln Gly Arg
 1 5 10 15

Gly Ser Leu Leu Leu Ala Val Ala Gly Ala Thr Ser Leu Val Thr Leu
 20 25 30

Leu Leu Ala Val Pro Ile Thr Val Leu Ala Val Leu Ala Leu Val Pro
 35 40 45

Gln Asp Gln Gly Gly Leu Val Thr Glu Thr Ala Asp Pro Gly Ala Gln
 50 55 60

Ala Gln Gln Gly Leu Gly Phe Gln Lys Leu Pro Glu Glu Glu Pro Glu
 65 70 75 80

Thr Asp Leu Ser Pro Gly Leu Pro Ala Ala His Leu Ile Gly Ala Pro
85 90 95

Leu Lys Gly Gln Gly Leu Gly Trp Glu Thr Thr Lys Glu Gln Ala Phe
100 105 110

Leu Thr Ser Gly Thr Gln Phe Ser Asp Ala Glu Gly Leu Ala Leu Pro
115 120 125

Gln Asp Gly Leu Tyr Tyr Leu Tyr Cys Leu Val Gly Tyr Arg Gly Arg
130 135 140

Ala Pro Pro Gly Gly Gly Asp Pro Gln Gly Arg Ser Val Thr Leu Arg
145 150 155 160

Ser Ser Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Pro Gly Thr Pro Glu
165 170 175

Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Leu Asp Pro Ala
180 185 190

Arg Arg Gln Gly Tyr Gly Pro Leu Trp Tyr Thr Ser Val Gly Phe Gly
195 200 205

Gly Leu Val Gln Leu Arg Arg Gly Glu Arg Val Tyr Val Asn Ile Ser
210 215 220

His Pro Asp Met Val Asp Phe Ala Arg Gly Lys Thr Phe Phe Gly Ala
225 230 235 240

Val Met Val Gly

<210> 583
<211> 280
<212> PRT
<213> Homo sapiens

<400> 583

Met Cys Pro Pro Gln Ala Gln Ala Glu Val Gly Pro Thr Met Thr Glu
1 5 10 15

Lys Ala Glu Met Val Cys Ala Pro Ser Pro Ala Pro Ala Pro Pro Pro
20 25 30

Lys Pro Ala Ser Pro Gly Pro Pro Gln Val Glu Glu Val Gly His Arg
35 40 45

Gly Gly Ser Ser Pro Pro Arg Leu Pro Pro Gly Val Pro Val Ile Ser
50 55 60

Leu Gly His Ser Arg Pro Pro Gly Val Ala Met Pro Thr Thr Glu Leu
65 70 75 80

Gly Thr Leu Arg Pro Pro Leu Leu Gln Leu Ser Thr Leu Gly Thr Ala
85 90 95

Pro Pro Thr Leu Ala Leu His Tyr His Pro His Pro Phe Leu Asn Ser
100 105 110

Val Tyr Ile Gly Pro Ala Gly Pro Phe Ser Ile Phe Pro Ser Ser Arg
115 120 125

Leu Lys Arg Arg Pro Ser His Cys Glu Leu Asp Leu Ala Glu Gly His
130 135 140

Gln Pro Gln Lys Val Ala Arg Arg Val Phe Thr Asn Ser Arg Glu Arg
145 150 155 160

Trp Arg Gln Gln Asn Val Asn Gly Ala Phe Ala Glu Leu Arg Lys Leu
165 170 175

Leu Pro Thr His Pro Pro Asp Arg Lys Leu Ser Lys Asn Glu Val Leu
180 185 190

Arg Leu Ala Met Lys Tyr Ile Gly Phe Leu Val Arg Leu Leu Arg Asp
195 200 205

Gln Ala Ala Ala Leu Ala Ala Gly Pro Thr Pro Pro Gly Pro Arg Lys
210 215 220

Arg Pro Val His Arg Val Pro Asp Asp Gly Ala Arg Arg Gly Ser Gly
225 230 235 240

Arg Arg Ala Glu Ala Ala Ala Arg Ser Gln Pro Ala Pro Pro Ala Asp
245 250 255

Pro Asp Gly Ser Pro Gly Gly Ala Ala Arg Pro Ile Lys Met Glu Gln
260 265 270

Thr Ala Leu Ser Pro Glu Val Arg
275 280

<210> 584
<211> 512
<212> PRT
<213> Homo sapiens

<400> 584

Met Gly Cys Ile Lys Ser Lys Gly Lys Asp Ser Leu Ser Asp Asp Gly
1 5 10 15

Val Asp Leu Lys Thr Gln Pro Val Arg Asn Thr Glu Arg Thr Ile Tyr
 20 25 30
 Val Arg Asp Pro Thr Ser Asn Lys Gln Gln Arg Pro Val Pro Glu Ser
 35 40 45
 Gln Leu Leu Pro Gly Gln Arg Phe Gln Thr Lys Asp Pro Glu Glu Gln
 50 55 60
 Gly Asp Ile Val Val Ala Leu Tyr Pro Tyr Asp Gly Ile His Pro Asp
 65 70 75 80
 Asp Leu Ser Phe Lys Lys Gly Glu Lys Met Lys Val Leu Glu Glu His
 85 90 95
 Gly Glu Trp Trp Lys Ala Lys Ser Leu Leu Thr Lys Lys Glu Gly Phe
 100 105 110
 Ile Pro Ser Asn Tyr Val Ala Lys Leu Asn Thr Leu Glu Thr Glu Glu
 115 120 125
 Trp Phe Phe Lys Asp Ile Thr Arg Lys Asp Ala Glu Arg Gln Leu Leu
 130 135 140
 Ala Pro Gly Asn Ser Ala Gly Ala Phe Leu Ile Arg Glu Ser Glu Thr
 145 150 155 160
 Leu Lys Gly Ser Phe Ser Leu Ser Val Arg Asp Phe Asp Pro Val His
 165 170 175
 Gly Asp Val Ile Lys His Tyr Lys Ile Arg Ser Leu Asp Asn Gly Gly
 180 185 190
 Tyr Tyr Ile Ser Pro Arg Ile Thr Phe Pro Cys Ile Ser Asp Met Ile
 195 200 205
 Lys His Tyr Gln Lys Gln Ala Asp Gly Leu Cys Arg Arg Leu Glu Lys
 210 215 220
 Ala Cys Ile Ser Pro Lys Pro Gln Lys Pro Trp Asp Lys Asp Ala Trp
 225 230 235 240
 Glu Ile Pro Arg Glu Ser Ile Lys Leu Val Lys Arg Leu Gly Ala Gly
 245 250 255
 Gln Phe Gly Glu Val Trp Met Gly Tyr Tyr Asn Asn Ser Thr Lys Val
 260 265 270
 Ala Val Lys Thr Leu Lys Pro Gly Thr Met Ser Val Gln Ala Phe Leu
 275 280 285

Glu Glu Ala Asn Leu Met Lys Thr Leu Gln His Asp Lys Leu Val Arg
 290 295 300

Leu Tyr Ala Val Val Thr Arg Glu Glu Pro Ile Tyr Ile Ile Thr Glu
 305 310 315 320

Tyr Met Ala Lys Gly Ser Leu Leu Asp Phe Leu Lys Ser Asp Glu Gly
 325 330 335

Gly Lys Val Leu Leu Pro Lys Leu Ile Asp Phe Ser Ala Gln Ile Ala
 340 345 350

Glu Gly Met Ala Tyr Ile Glu Arg Lys Asn Tyr Ile His Arg Asp Leu
 355 360 365

Arg Ala Ala Asn Val Leu Val Ser Glu Ser Leu Met Cys Lys Ile Ala
 370 375 380

Asp Phe Gly Leu Ala Arg Val Ile Glu Asp Asn Glu Tyr Thr Ala Arg
 385 390 395 400

Glu Gly Ala Lys Phe Pro Ile Lys Trp Thr Ala Pro Glu Ala Ile Asn
 405 410 415

Phe Gly Cys Phe Thr Ile Lys Ser Asp Val Trp Ser Phe Gly Ile Leu
 420 425 430

Leu Tyr Glu Ile Val Thr Tyr Gly Lys Ile Pro Tyr Pro Gly Arg Thr
 435 440 445

Asn Ala Asp Val Met Thr Ala Leu Ser Gln Gly Tyr Arg Met Pro Arg
 450 455 460

Val Glu Asn Cys Pro Asp Glu Leu Tyr Asp Ile Met Lys Met Cys Trp
 465 470 475 480

Lys Glu Lys Ala Glu Glu Arg Pro Thr Phe Asp Tyr Leu Gln Ser Val
 485 490 495

Leu Asp Asp Phe Tyr Thr Ala Thr Glu Gly Gln Tyr Gln Gln Gln Pro
 500 505 510

<210> 585
 <211> 3801
 <212> PRT
 <213> Homo sapiens

<400> 585

Met Ser Thr Asp Ser Asn Ser Leu Ala Arg Glu Phe Leu Thr Asp Val
 1 5 10 15

Asn Arg Leu Cys Asn Ala Val Val Gln Arg Val Glu Ala Arg Glu Glu
 Page 866

20

25

30

Glu Glu Glu Glu Thr His Met Ala Thr Leu Gly Gln Tyr Leu Val His
35 40 45

Gly Arg Gly Phe Leu Leu Leu Thr Lys Leu Asn Ser Ile Ile Asp Gln
50 55 60

Ala Leu Thr Cys Arg Glu Glu Leu Leu Thr Leu Leu Leu Ser Leu Leu
65 70 75 80

Pro Leu Val Trp Lys Ile Pro Val Gln Glu Glu Lys Ala Thr Asp Phe
85 90 95

Asn Leu Pro Leu Ser Ala Asp Ile Ile Leu Thr Lys Glu Lys Asn Ser
100 105 110

Ser Ser Gln Arg Ser Thr Gln Glu Lys Leu His Leu Glu Gly Ser Ala
115 120 125

Leu Ser Ser Gln Val Ser Ala Lys Val Asn Val Phe Arg Lys Ser Arg
130 135 140

Arg Gln Arg Lys Ile Thr His Arg Tyr Ser Val Arg Asp Ala Arg Lys
145 150 155 160

Thr Gln Leu Ser Thr Ser Asp Ser Glu Ala Asn Ser Asp Glu Lys Gly
165 170 175

Ile Ala Met Asn Lys His Arg Arg Pro His Leu Leu His His Phe Leu
180 185 190

Thr Ser Phe Pro Lys Gln Asp His Pro Lys Ala Lys Leu Asp Arg Leu
195 200 205

Ala Thr Lys Glu Gln Thr Pro Pro Asp Ala Met Ala Leu Glu Asn Ser
210 215 220

Arg Glu Ile Ile Pro Arg Gln Gly Ser Asn Thr Asp Ile Leu Ser Glu
225 230 235 240

Pro Ala Ala Leu Ser Val Ile Ser Asn Met Asn Asn Ser Pro Phe Asp
245 250 255

Leu Cys His Val Leu Leu Ser Leu Leu Glu Lys Val Cys Lys Phe Asp
260 265 270

Val Thr Leu Asn His Asn Ser Pro Leu Ala Ala Ser Val Val Pro Thr
275 280 285

Leu Thr Glu Phe Leu Ala Gly Phe Gly Asp Cys Cys Ser Leu Ser Asp

290

295

300

Asn Leu Glu Ser Arg Val Val Ser Ala Gly Trp Thr Glu Glu Pro Val
 305 310 315 320

Ala Leu Ile Gln Arg Met Leu Phe Arg Thr Val Leu His Leu Leu Ser
 325 330 335

Val Asp Val Ser Thr Ala Glu Met Met Pro Glu Asn Leu Arg Lys Asn
 340 345 350

Leu Thr Glu Leu Leu Arg Ala Ala Leu Lys Ile Arg Ile Cys Leu Glu
 355 360 365

Lys Gln Pro Asp Pro Phe Ala Pro Arg Gln Lys Lys Thr Leu Gln Glu
 370 375 380

Val Gln Glu Asp Phe Val Phe Ser Lys Tyr Arg His Arg Ala Leu Leu
 385 390 395 400

Leu Pro Glu Leu Leu Glu Gly Val Leu Gln Ile Leu Ile Cys Cys Leu
 405 410 415

Gln Ser Ala Ala Ser Asn Pro Phe Tyr Phe Ser Gln Ala Met Asp Leu
 420 425 430

Val Gln Glu Phe Ile Gln His His Gly Phe Asn Leu Phe Glu Thr Ala
 435 440 445

Val Leu Gln Met Glu Trp Leu Val Leu Arg Asp Gly Val Pro Pro Glu
 450 455 460

Ala Ser Glu His Leu Lys Ala Leu Ile Asn Ser Val Met Lys Ile Met
 465 470 475 480

Ser Thr Val Lys Lys Val Lys Ser Glu Gln Leu His His Ser Met Cys
 485 490 495

Thr Arg Lys Arg His Arg Arg Cys Glu Tyr Ser His Phe Met His His
 500 505 510

His Arg Asp Leu Ser Gly Leu Leu Val Ser Ala Phe Lys Asn Gln Val
 515 520 525

Ser Lys Asn Pro Phe Glu Glu Thr Ala Asp Gly Asp Val Tyr Tyr Pro
 530 535 540

Glu Arg Cys Cys Cys Ile Ala Val Cys Ala His Gln Cys Leu Arg Leu
 545 550 555 560

Leu Gln Gln Ala Ser Leu Ser Ser Thr Cys Val Gln Ile Leu Ser Gly
 Page 868

Val His Asn Ile Gly Ile Cys Cys Cys Met Asp Pro Lys Ser Val Ile
580 585 590

Ile Pro Leu Leu His Ala Phe Lys Leu Pro Ala Leu Lys Asn Phe Gln
595 600 605

Gln His Ile Leu Asn Ile Leu Asn Lys Leu Ile Leu Asp Gln Leu Gly
610 615 620

Gly Ala Glu Ile Ser Pro Lys Ile Lys Lys Ala Ala Cys Asn Ile Cys
625 630 635 640

Thr Val Asp Ser Asp Gln Leu Ala Gln Leu Glu Glu Thr Leu Gln Gly
645 650 655

Asn Leu Cys Asp Ala Glu Leu Ser Ser Ser Leu Ser Ser Pro Ser Tyr
660 665 670

Arg Phe Gln Gly Ile Leu Pro Ser Ser Gly Ser Glu Asp Leu Leu Trp
675 680 685

Lys Trp Asp Ala Leu Lys Ala Tyr Gln Asn Phe Val Phe Glu Glu Asp
690 695 700

Arg Leu His Ser Ile Gln Ile Ala Asn His Ile Cys Asn Leu Ile Gln
705 710 715 720

Lys Gly Asn Ile Val Val Gln Trp Lys Leu Tyr Asn Tyr Ile Phe Asn
725 730 735

Pro Val Leu Gln Arg Gly Val Glu Leu Ala His His Cys Gln His Leu
740 745 750

Ser Val Thr Ser Ala Gln Ser His Val Cys Ser His His Asn Gln Cys
755 760 765

Leu Pro Gln Asp Val Leu Gln Ile Tyr Val Lys Thr Leu Pro Ile Leu
770 775 780

Leu Lys Ser Arg Val Ile Arg Asp Leu Phe Leu Ser Cys Asn Gly Val
785 790 795 800

Ser Gln Ile Ile Glu Leu Asn Cys Leu Asn Gly Ile Arg Ser His Ser
805 810 815

Leu Lys Ala Phe Glu Thr Leu Ile Ile Ser Leu Gly Glu Gln Gln Lys
820 825 830

Asp Ala Ser Val Pro Asp Ile Asp Gly Ile Asp Ile Glu Gln Lys Glu
Page 869

835

840

845

Leu Ser Ser Val His Val Gly Thr Ser Phe His His Gln Gln Ala Tyr
 850 855 860

Ser Asp Ser Pro Gln Ser Leu Ser Lys Phe Tyr Ala Gly Leu Lys Glu
 865 870 875 880

Ala Tyr Pro Lys Arg Arg Lys Thr Val Asn Gln Asp Val His Ile Asn
 885 890 895

Thr Ile Asn Leu Phe Leu Cys Val Ala Phe Leu Cys Val Ser Lys Glu
 900 905 910

Ala Glu Ser Asp Arg Glu Ser Ala Asn Asp Ser Glu Asp Thr Ser Gly
 915 920 925

Tyr Asp Ser Thr Ala Ser Glu Pro Leu Ser His Met Leu Pro Cys Ile
 930 935 940

Ser Leu Glu Ser Leu Val Leu Pro Ser Pro Glu His Met His Gln Ala
 945 950 955 960

Ala Asp Ile Trp Ser Met Cys Arg Trp Ile Tyr Met Leu Ser Ser Val
 965 970 975

Phe Gln Lys Gln Phe Tyr Arg Leu Gly Gly Phe Arg Val Cys His Lys
 980 985 990

Leu Ile Phe Met Ile Ile Gln Lys Leu Phe Arg Ser His Lys Glu Glu
 995 1000 1005

Gln Gly Lys Lys Glu Gly Asp Thr Ser Val Asn Glu Asn Gln Asp
 1010 1015 1020

Leu Asn Arg Ile Ser Gln Pro Lys Arg Thr Met Lys Glu Asp Leu
 1025 1030 1035

Leu Ser Leu Ala Ile Lys Ser Asp Pro Ile Pro Ser Glu Leu Gly
 1040 1045 1050

Ser Leu Lys Lys Ser Ala Asp Ser Leu Gly Lys Leu Glu Leu Gln
 1055 1060 1065

His Ile Ser Ser Ile Asn Val Glu Glu Val Ser Ala Thr Glu Ala
 1070 1075 1080

Ala Pro Glu Glu Ala Lys Leu Phe Thr Ser Gln Glu Ser Glu Thr
 1085 1090 1095

Ser Leu Gln Ser Ile Arg Leu Leu Glu Ala Leu Leu Ala Ile Cys

1100

1105

1110

Leu His Gly Ala Arg Thr Ser Gln Gln Lys Met Glu Leu Glu Leu
 1115 1120 1125

Pro Asn Gln Asn Leu Ser Val Glu Ser Ile Leu Phe Glu Met Arg
 1130 1135 1140

Asp His Leu Ser Gln Ser Lys Val Ile Glu Thr Gln Leu Ala Lys
 1145 1150 1155

Pro Leu Phe Asp Ala Leu Leu Arg Val Ala Leu Gly Asn Tyr Ser
 1160 1165 1170

Ala Asp Phe Glu His Asn Asp Ala Met Thr Glu Lys Ser His Gln
 1175 1180 1185

Ser Ala Glu Glu Leu Ser Ser Gln Pro Gly Asp Phe Ser Glu Glu
 1190 1195 1200

Ala Glu Asp Ser Gln Cys Cys Ser Phe Lys Leu Leu Val Glu Glu
 1205 1210 1215

Glu Gly Tyr Glu Ala Asp Ser Glu Ser Asn Pro Glu Asp Gly Glu
 1220 1225 1230

Thr Gln Asp Asp Gly Val Asp Leu Lys Ser Glu Thr Glu Gly Phe
 1235 1240 1245

Ser Ala Ser Ser Ser Pro Asn Asp Leu Leu Glu Asn Leu Thr Gln
 1250 1255 1260

Gly Glu Ile Ile Tyr Pro Glu Ile Cys Met Leu Glu Leu Asn Leu
 1265 1270 1275

Leu Ser Ala Ser Lys Ala Lys Leu Asp Val Leu Ala His Val Phe
 1280 1285 1290

Glu Ser Phe Leu Lys Ile Ile Arg Gln Lys Glu Lys Asn Val Phe
 1295 1300 1305

Leu Leu Met Gln Gln Gly Thr Val Lys Asn Leu Leu Gly Gly Phe
 1310 1315 1320

Leu Ser Ile Leu Thr Gln Asp Asp Ser Asp Phe Gln Ala Cys Gln
 1325 1330 1335

Arg Val Leu Val Asp Leu Leu Val Ser Leu Met Ser Ser Arg Thr
 1340 1345 1350

Cys Ser Glu Glu Leu Thr Leu Leu Leu Arg Ile Phe Leu Glu Lys

1355

1360

1365

Ser	Pro	Cys	Thr	Lys	Ile	Leu	Leu	Leu	Gly	Ile	Leu	Lys	Ile	Ile
	1370					1375					1380			
Glu	Ser	Asp	Thr	Thr	Met	Ser	Pro	Ser	Gln	Tyr	Leu	Thr	Phe	Pro
	1385					1390					1395			
Leu	Leu	His	Ala	Pro	Asn	Leu	Ser	Asn	Gly	Val	Ser	Ser	Gln	Lys
	1400					1405					1410			
Tyr	Pro	Gly	Ile	Leu	Asn	Ser	Lys	Ala	Met	Gly	Leu	Leu	Arg	Arg
	1415					1420					1425			
Ala	Arg	Val	Ser	Arg	Ser	Lys	Lys	Glu	Ala	Asp	Arg	Glu	Ser	Phe
	1430					1435					1440			
Pro	His	Arg	Leu	Leu	Ser	Ser	Trp	His	Ile	Ala	Pro	Val	His	Leu
	1445					1450					1455			
Pro	Leu	Leu	Gly	Gln	Asn	Cys	Trp	Pro	His	Leu	Ser	Glu	Gly	Phe
	1460					1465					1470			
Ser	Val	Ser	Leu	Trp	Phe	Asn	Val	Glu	Cys	Ile	His	Glu	Ala	Glu
	1475					1480					1485			
Ser	Thr	Thr	Glu	Lys	Gly	Lys	Lys	Ile	Lys	Lys	Arg	Asn	Lys	Ser
	1490					1495					1500			
Leu	Ile	Leu	Pro	Asp	Ser	Ser	Phe	Asp	Gly	Thr	Glu	Ser	Asp	Arg
	1505					1510					1515			
Pro	Glu	Gly	Ala	Glu	Tyr	Ile	Asn	Pro	Gly	Glu	Arg	Leu	Ile	Glu
	1520					1525					1530			
Glu	Gly	Cys	Ile	His	Ile	Ile	Ser	Leu	Gly	Ser	Lys	Ala	Leu	Met
	1535					1540					1545			
Ile	Gln	Val	Trp	Ala	Asp	Pro	His	Asn	Ala	Thr	Leu	Ile	Phe	Arg
	1550					1555					1560			
Val	Cys	Met	Asp	Ser	Asn	Asp	Asp	Met	Lys	Ala	Val	Leu	Leu	Ala
	1565					1570					1575			
Gln	Val	Glu	Ser	Gln	Glu	Asn	Ile	Phe	Leu	Pro	Ser	Lys	Trp	Gln
	1580					1585					1590			
His	Leu	Val	Leu	Thr	Tyr	Leu	Gln	Gln	Pro	Gln	Gly	Lys	Arg	Arg
	1595					1600					1605			
Ile	His	Gly	Lys	Ile	Ser	Ile	Trp	Val	Ser	Gly	Gln	Arg	Lys	Pro

1610

1615

1620

Asp	Val	Thr	Leu	Asp	Phe	Met	Leu	Pro	Arg	Lys	Thr	Ser	Leu	Ser
	1625					1630					1635			
Ser	Asp	Ser	Asn	Lys	Thr	Phe	Cys	Met	Ile	Gly	His	Cys	Leu	Ser
	1640					1645					1650			
Ser	Gln	Glu	Glu	Phe	Leu	Gln	Leu	Ala	Gly	Lys	Trp	Asp	Leu	Gly
	1655					1660					1665			
Asn	Leu	Leu	Leu	Phe	Asn	Gly	Ala	Lys	Val	Gly	Ser	Gln	Glu	Ala
	1670					1675					1680			
Phe	Tyr	Leu	Tyr	Ala	Cys	Gly	Pro	Asn	His	Thr	Ser	Val	Met	Pro
	1685					1690					1695			
Cys	Lys	Tyr	Gly	Lys	Pro	Val	Asn	Asp	Tyr	Ser	Lys	Tyr	Ile	Asn
	1700					1705					1710			
Lys	Glu	Ile	Leu	Arg	Cys	Glu	Gln	Ile	Arg	Glu	Leu	Phe	Met	Thr
	1715					1720					1725			
Lys	Lys	Asp	Val	Asp	Ile	Gly	Leu	Leu	Ile	Glu	Ser	Leu	Ser	Val
	1730					1735					1740			
Val	Tyr	Thr	Thr	Tyr	Cys	Pro	Ala	Gln	Tyr	Thr	Ile	Tyr	Glu	Pro
	1745					1750					1755			
Val	Ile	Arg	Leu	Lys	Gly	Gln	Met	Lys	Thr	Gln	Leu	Ser	Gln	Arg
	1760					1765					1770			
Pro	Phe	Ser	Ser	Lys	Glu	Val	Gln	Ser	Ile	Leu	Leu	Glu	Pro	His
	1775					1780					1785			
His	Leu	Lys	Asn	Leu	Gln	Pro	Thr	Glu	Tyr	Lys	Thr	Ile	Gln	Gly
	1790					1795					1800			
Ile	Leu	His	Glu	Ile	Gly	Gly	Thr	Gly	Ile	Phe	Val	Phe	Leu	Phe
	1805					1810					1815			
Ala	Arg	Val	Val	Glu	Leu	Ser	Ser	Cys	Glu	Glu	Thr	Gln	Ala	Leu
	1820					1825					1830			
Ala	Leu	Arg	Val	Ile	Leu	Ser	Leu	Ile	Lys	Tyr	Asn	Gln	Gln	Arg
	1835					1840					1845			
Val	His	Glu	Leu	Glu	Asn	Cys	Asn	Gly	Leu	Ser	Met	Ile	His	Gln
	1850					1855					1860			
Val	Leu	Ile	Lys	Gln	Lys	Cys	Ile	Val	Gly	Phe	Tyr	Ile	Leu	Lys

1865

1870

1875

Thr	Leu	Leu	Glu	Gly	Cys	Cys	Gly	Glu	Asp	Ile	Ile	Tyr	Met	Asn
1880					1885						1890			
Glu	Asn	Gly	Glu	Phe	Lys	Leu	Asp	Val	Asp	Ser	Asn	Ala	Ile	Ile
1895						1900					1905			
Gln	Asp	Val	Lys	Leu	Leu	Glu	Glu	Leu	Leu	Leu	Asp	Trp	Lys	Ile
1910						1915					1920			
Trp	Ser	Lys	Ala	Glu	Gln	Gly	Val	Trp	Glu	Thr	Leu	Leu	Ala	Ala
1925						1930					1935			
Leu	Glu	Val	Leu	Ile	Arg	Ala	Asp	His	His	Gln	Gln	Met	Phe	Asn
1940						1945					1950			
Ile	Lys	Gln	Leu	Leu	Lys	Ala	Gln	Val	Val	His	His	Phe	Leu	Leu
1955						1960					1965			
Thr	Cys	Gln	Val	Leu	Gln	Glu	Tyr	Lys	Glu	Gly	Gln	Leu	Thr	Pro
1970						1975					1980			
Met	Pro	Arg	Glu	Val	Cys	Arg	Ser	Phe	Val	Lys	Ile	Ile	Ala	Glu
1985						1990					1995			
Val	Leu	Gly	Ser	Pro	Pro	Asp	Leu	Glu	Leu	Leu	Thr	Ile	Ile	Phe
2000						2005					2010			
Asn	Phe	Leu	Leu	Ala	Val	His	Pro	Pro	Thr	Asn	Thr	Tyr	Val	Cys
2015						2020					2025			
His	Asn	Pro	Thr	Asn	Phe	Tyr	Phe	Ser	Leu	His	Ile	Asp	Gly	Lys
2030						2035					2040			
Ile	Phe	Gln	Glu	Lys	Val	Arg	Ser	Ile	Met	Tyr	Leu	Arg	His	Ser
2045						2050					2055			
Ser	Ser	Gly	Gly	Arg	Ser	Leu	Met	Ser	Pro	Gly	Phe	Met	Val	Ile
2060						2065					2070			
Ser	Pro	Ser	Gly	Phe	Thr	Ala	Ser	Pro	Tyr	Glu	Gly	Glu	Asn	Ser
2075						2080					2085			
Ser	Asn	Ile	Ile	Pro	Gln	Gln	Met	Ala	Ala	His	Met	Leu	Arg	Ser
2090						2095					2100			
Arg	Ser	Leu	Pro	Ala	Phe	Pro	Thr	Ser	Ser	Leu	Leu	Thr	Gln	Ser
2105						2110					2115			
Gln	Lys	Leu	Thr	Gly	Ser	Leu	Gly	Cys	Ser	Ile	Asp	Arg	Leu	Gln

2120

2125

2130

Asn Ile Ala Asp Thr Tyr Val Ala Thr Gln Ser Lys Lys Gln Asn
2135 2140 2145

Ser Leu Gly Ser Ser Asp Thr Leu Lys Lys Gly Lys Glu Asp Ala
2150 2155 2160

Phe Ile Ser Ser Cys Glu Ser Ala Lys Thr Val Cys Glu Met Glu
2165 2170 2175

Ala Val Leu Ser Ala Gln Val Ser Val Ser Asp Val Pro Lys Gly
2180 2185 2190

Val Leu Gly Phe Pro Val Val Lys Ala Asp His Lys Gln Leu Gly
2195 2200 2205

Ala Glu Pro Arg Ser Glu Asp Asp Ser Pro Gly Asp Glu Ser Cys
2210 2215 2220

Pro Arg Arg Pro Asp Tyr Leu Lys Gly Leu Ala Ser Phe Gln Arg
2225 2230 2235

Ser His Ser Thr Ile Ala Ser Leu Gly Leu Ala Phe Pro Ser Gln
2240 2245 2250

Asn Gly Ser Ala Ala Val Gly Arg Trp Pro Ser Leu Val Asp Arg
2255 2260 2265

Asn Thr Asp Asp Trp Glu Asn Phe Ala Tyr Ser Leu Gly Tyr Glu
2270 2275 2280

Pro Asn Tyr Asn Arg Thr Ala Ser Ala His Ser Val Thr Glu Asp
2285 2290 2295

Cys Leu Val Pro Ile Cys Cys Gly Leu Tyr Glu Leu Leu Ser Gly
2300 2305 2310

Val Leu Leu Ile Leu Pro Asp Val Leu Leu Glu Asp Val Met Asp
2315 2320 2325

Lys Leu Ile Gln Ala Asp Thr Leu Leu Val Leu Val Asn His Pro
2330 2335 2340

Ser Pro Ala Ile Gln Gln Gly Val Ile Lys Leu Leu Asp Ala Tyr
2345 2350 2355

Phe Ala Arg Ala Ser Lys Glu Gln Lys Asp Lys Phe Leu Lys Asn
2360 2365 2370

Arg Gly Phe Ser Leu Leu Ala Asn Gln Leu Tyr Leu His Arg Gly

2375

2380

2385

Thr	Gln	Glu	Leu	Leu	Glu	Cys	Phe	Ile	Glu	Met	Phe	Phe	Gly	Arg
	2390					2395					2400			
His	Ile	Gly	Leu	Asp	Glu	Glu	Phe	Asp	Leu	Glu	Asp	Val	Arg	Asn
	2405					2410					2415			
Met	Gly	Leu	Phe	Gln	Lys	Trp	Ser	Val	Ile	Pro	Ile	Leu	Gly	Leu
	2420					2425					2430			
Ile	Glu	Thr	Ser	Leu	Tyr	Asp	Asn	Ile	Leu	Leu	His	Asn	Ala	Leu
	2435					2440					2445			
Leu	Leu	Leu	Leu	Gln	Ile	Leu	Asn	Ser	Cys	Ser	Lys	Val	Ala	Asp
	2450					2455					2460			
Met	Leu	Leu	Asp	Asn	Gly	Leu	Leu	Tyr	Val	Leu	Cys	Asn	Thr	Val
	2465					2470					2475			
Ala	Ala	Leu	Asn	Gly	Leu	Glu	Lys	Asn	Ile	Pro	Met	Ser	Glu	Tyr
	2480					2485					2490			
Lys	Leu	Leu	Ala	Cys	Asp	Ile	Gln	Gln	Leu	Phe	Ile	Ala	Val	Thr
	2495					2500					2505			
Ile	His	Ala	Cys	Ser	Ser	Ser	Gly	Ser	Gln	Tyr	Phe	Arg	Val	Ile
	2510					2515					2520			
Glu	Asp	Leu	Ile	Val	Met	Leu	Gly	Tyr	Leu	Gln	Asn	Ser	Lys	Asn
	2525					2530					2535			
Lys	Arg	Thr	Gln	Asn	Met	Ala	Val	Ala	Leu	Gln	Leu	Arg	Val	Leu
	2540					2545					2550			
Gln	Ala	Ala	Met	Glu	Phe	Ile	Arg	Thr	Thr	Ala	Asn	His	Asp	Ser
	2555					2560					2565			
Glu	Asn	Leu	Thr	Asp	Ser	Leu	Gln	Ser	Pro	Ser	Ala	Pro	His	His
	2570					2575					2580			
Ala	Val	Val	Gln	Lys	Arg	Lys	Ser	Ile	Ala	Gly	Pro	Arg	Lys	Phe
	2585					2590					2595			
Pro	Leu	Ala	Gln	Thr	Glu	Ser	Leu	Leu	Met	Lys	Met	Arg	Ser	Val
	2600					2605					2610			
Ala	Asn	Asp	Glu	Leu	His	Val	Met	Met	Gln	Arg	Arg	Met	Ser	Gln
	2615					2620					2625			
Glu	Asn	Pro	Ser	Gln	Ala	Thr	Glu	Thr	Glu	Leu	Ala	Gln	Arg	Leu

2630

2635

2640

Gln Arg Leu Thr Val Leu Ala Val Asn Arg Ile Ile Tyr Gln Glu
2645 2650 2655

Phe Asn Ser Asp Ile Ile Asp Ile Leu Arg Thr Pro Glu Asn Val
2660 2665 2670

Thr Gln Ser Lys Thr Ser Val Phe Gln Thr Glu Ile Ser Glu Glu
2675 2680 2685

Asn Ile His His Glu Gln Ser Ser Val Phe Asn Pro Phe Gln Lys
2690 2695 2700

Glu Ile Phe Thr Tyr Leu Val Glu Gly Phe Lys Val Ser Ile Gly
2705 2710 2715

Ser Ser Lys Ala Ser Gly Ser Lys Gln Gln Trp Thr Lys Ile Leu
2720 2725 2730

Trp Ser Cys Lys Glu Thr Phe Arg Met Gln Leu Gly Arg Leu Leu
2735 2740 2745

Val His Ile Leu Ser Pro Ala His Ala Ala Gln Glu Arg Lys Gln
2750 2755 2760

Ile Phe Glu Ile Val His Glu Pro Asn His Gln Glu Ile Leu Arg
2765 2770 2775

Asp Cys Leu Ser Pro Ser Leu Gln His Gly Ala Lys Leu Val Leu
2780 2785 2790

Tyr Leu Ser Glu Leu Ile His Asn His Gln Gly Glu Leu Thr Glu
2795 2800 2805

Glu Glu Leu Gly Thr Ala Glu Leu Leu Met Asn Ala Leu Lys Leu
2810 2815 2820

Cys Gly His Lys Cys Ile Pro Pro Ser Ala Ser Thr Lys Ala Asp
2825 2830 2835

Leu Ile Lys Met Ile Lys Glu Glu Gln Lys Lys Tyr Glu Thr Glu
2840 2845 2850

Glu Gly Val Asn Lys Ala Ala Trp Gln Lys Thr Val Asn Asn Asn
2855 2860 2865

Gln Gln Ser Leu Phe Gln Arg Leu Asp Ser Lys Ser Lys Asp Ile
2870 2875 2880

Ser Lys Ile Ala Ala Asp Ile Thr Gln Ala Val Ser Leu Ser Gln

2885

2890

2895

Gly	Asn	Glu	Arg	Lys	Lys	Val	Ile	Gln	His	Ile	Arg	Gly	Met	Tyr
	2900					2905					2910			
Lys	Val	Asp	Leu	Ser	Ala	Ser	Arg	His	Trp	Gln	Glu	Leu	Ile	Gln
	2915					2920					2925			
Gln	Leu	Thr	His	Asp	Arg	Ala	Val	Trp	Tyr	Asp	Pro	Ile	Tyr	Tyr
	2930					2935					2940			
Pro	Thr	Ser	Trp	Gln	Leu	Asp	Pro	Thr	Glu	Gly	Pro	Asn	Arg	Glu
	2945					2950					2955			
Arg	Arg	Arg	Leu	Gln	Arg	Cys	Tyr	Leu	Thr	Ile	Pro	Asn	Lys	Tyr
	2960					2965					2970			
Leu	Leu	Arg	Asp	Arg	Gln	Lys	Ser	Glu	Asp	Val	Val	Lys	Pro	Pro
	2975					2980					2985			
Leu	Ser	Tyr	Leu	Phe	Glu	Asp	Lys	Thr	His	Ser	Ser	Phe	Ser	Ser
	2990					2995					3000			
Thr	Val	Lys	Asp	Lys	Ala	Ala	Ser	Glu	Ser	Ile	Arg	Val	Asn	Arg
	3005					3010					3015			
Arg	Cys	Ile	Ser	Val	Ala	Pro	Ser	Arg	Glu	Thr	Ala	Gly	Glu	Leu
	3020					3025					3030			
Leu	Leu	Gly	Lys	Cys	Gly	Met	Tyr	Phe	Val	Glu	Asp	Asn	Ala	Ser
	3035					3040					3045			
Asp	Thr	Val	Glu	Ser	Ser	Ser	Leu	Gln	Gly	Glu	Leu	Glu	Pro	Ala
	3050					3055					3060			
Ser	Phe	Ser	Trp	Thr	Tyr	Glu	Glu	Ile	Lys	Glu	Val	His	Lys	Arg
	3065					3070					3075			
Trp	Trp	Gln	Leu	Arg	Asp	Asn	Ala	Val	Glu	Ile	Phe	Leu	Thr	Asn
	3080					3085					3090			
Gly	Arg	Thr	Leu	Leu	Leu	Ala	Phe	Asp	Asn	Thr	Lys	Val	Arg	Asp
	3095					3100					3105			
Asp	Val	Tyr	His	Asn	Ile	Leu	Thr	Asn	Asn	Leu	Pro	Asn	Leu	Leu
	3110					3115					3120			
Glu	Tyr	Gly	Asn	Ile	Thr	Ala	Leu	Thr	Asn	Leu	Trp	Tyr	Thr	Gly
	3125					3130					3135			
Gln	Ile	Thr	Asn	Phe	Glu	Tyr	Leu	Thr	His	Leu	Asn	Lys	His	Ala

3140

3145

3150

Gly Arg Ser Phe Asn Asp Leu Met Gln Tyr Pro Val Phe Pro Phe
 3155 3160 3165

Ile Leu Ala Asp Tyr Val Ser Glu Thr Leu Asp Leu Asn Asp Leu
 3170 3175 3180

Leu Ile Tyr Arg Asn Leu Ser Lys Pro Ile Ala Val Gln Tyr Lys
 3185 3190 3195

Glu Lys Glu Asp Arg Tyr Val Asp Thr Tyr Lys Tyr Leu Glu Glu
 3200 3205 3210

Glu Tyr Arg Lys Gly Ala Arg Glu Asp Asp Pro Met Pro Pro Val
 3215 3220 3225

Gln Pro Tyr His Tyr Gly Ser His Tyr Ser Asn Ser Gly Thr Val
 3230 3235 3240

Leu His Phe Leu Val Arg Met Pro Pro Phe Thr Lys Met Phe Leu
 3245 3250 3255

Ala Tyr Gln Asp Gln Ser Phe Asp Ile Pro Asp Arg Thr Phe His
 3260 3265 3270

Ser Thr Asn Thr Thr Trp Arg Leu Ser Ser Phe Glu Ser Met Thr
 3275 3280 3285

Asp Val Lys Glu Leu Ile Pro Glu Phe Phe Tyr Leu Pro Glu Phe
 3290 3295 3300

Leu Val Asn Arg Glu Gly Phe Asp Phe Gly Val Arg Gln Asn Gly
 3305 3310 3315

Glu Arg Val Asn His Val Asn Leu Pro Pro Trp Ala Arg Asn Asp
 3320 3325 3330

Pro Arg Leu Phe Ile Leu Ile His Arg Gln Ala Leu Glu Ser Asp
 3335 3340 3345

Tyr Val Ser Gln Asn Ile Cys Gln Trp Ile Asp Leu Val Phe Gly
 3350 3355 3360

Tyr Lys Gln Lys Gly Lys Ala Ser Val Gln Ala Ile Asn Val Phe
 3365 3370 3375

His Pro Ala Thr Tyr Phe Gly Met Asp Val Ser Ala Val Glu Asp
 3380 3385 3390

Pro Val Gln Arg Arg Ala Leu Glu Thr Met Ile Lys Thr Tyr Gly

3395

3400

3405

Gln Thr Pro Arg Gln Leu Phe His Met Ala His Val Ser Arg Pro
 3410 3415 3420

Gly Ala Lys Leu Asn Ile Glu Gly Glu Leu Pro Ala Ala Val Gly
 3425 3430 3435

Leu Leu Val Gln Phe Ala Phe Arg Glu Thr Arg Glu Gln Val Lys
 3440 3445 3450

Glu Ile Thr Tyr Pro Ser Pro Leu Ser Trp Ile Lys Gly Leu Lys
 3455 3460 3465

Trp Gly Glu Tyr Val Gly Ser Pro Ser Ala Pro Val Pro Val Val
 3470 3475 3480

Cys Phe Ser Gln Pro His Gly Glu Arg Phe Gly Ser Leu Gln Ala
 3485 3490 3495

Leu Pro Thr Arg Ala Ile Cys Gly Leu Ser Arg Asn Phe Cys Leu
 3500 3505 3510

Leu Met Thr Tyr Ser Lys Glu Gln Gly Val Arg Ser Met Asn Ser
 3515 3520 3525

Thr Asp Ile Gln Trp Ser Ala Ile Leu Ser Trp Gly Tyr Ala Asp
 3530 3535 3540

Asn Ile Leu Arg Leu Lys Ser Lys Gln Ser Glu Pro Pro Val Asn
 3545 3550 3555

Phe Ile Gln Ser Ser Gln Gln Tyr Gln Val Thr Ser Cys Ala Trp
 3560 3565 3570

Val Pro Asp Ser Cys Gln Leu Phe Thr Gly Ser Lys Cys Gly Val
 3575 3580 3585

Ile Thr Ala Tyr Thr Asn Arg Phe Thr Ser Ser Thr Pro Ser Glu
 3590 3595 3600

Ile Glu Met Glu Thr Gln Ile His Leu Tyr Gly His Thr Glu Glu
 3605 3610 3615

Ile Thr Ser Leu Phe Val Cys Lys Pro Tyr Ser Ile Leu Ile Ser
 3620 3625 3630

Val Ser Arg Asp Gly Thr Cys Ile Ile Trp Asp Leu Asn Arg Leu
 3635 3640 3645

Cys Tyr Val Gln Ser Leu Ala Gly His Lys Ser Pro Val Thr Ala

3650

3655

3660

Val Ser Ala Ser Glu Thr Ser Gly Asp Ile Ala Thr Val Cys Asp
 3665 3670 3675

Ser Ala Gly Gly Gly Ser Asp Leu Arg Leu Trp Thr Val Asn Gly
 3680 3685 3690

Asp Leu Val Gly His Val His Cys Arg Glu Ile Ile Cys Ser Val
 3695 3700 3705

Ala Phe Ser Asn Gln Pro Glu Gly Val Ser Ile Asn Val Ile Ala
 3710 3715 3720

Gly Gly Leu Glu Asn Gly Ile Val Arg Leu Trp Ser Thr Trp Asp
 3725 3730 3735

Leu Lys Pro Val Arg Glu Ile Thr Phe Pro Lys Ser Asn Lys Pro
 3740 3745 3750

Ile Ile Ser Leu Thr Phe Ser Cys Asp Gly His His Leu Tyr Thr
 3755 3760 3765

Ala Asn Ser Asp Gly Thr Val Ile Ala Trp Cys Arg Lys Asp Gln
 3770 3775 3780

Gln Arg Leu Lys Gln Pro Met Phe Tyr Ser Phe Leu Ser Ser Tyr
 3785 3790 3795

Ala Ala Gly
 3800

<210> 586
 <211> 1016
 <212> PRT
 <213> Homo sapiens

<400> 586

Met Val Leu Pro Thr Cys Pro Met Ala Glu Phe Ala Leu Pro Arg His
 1 5 10 15

Ser Ala Val Met Glu Arg Leu Arg Arg Arg Ile Glu Leu Cys Arg Arg
 20 25 30

His His Ser Thr Cys Glu Ala Arg Tyr Glu Ala Val Ser Pro Glu Arg
 35 40 45

Leu Glu Leu Glu Arg Gln His Thr Phe Ala Leu His Gln Arg Cys Ile
 50 55 60

Gln Ala Lys Ala Lys Arg Ala Gly Lys His Arg Gln Pro Pro Ala Ala
 65 70 75 80

Thr Ala Pro Ala Pro Ala Ala Pro Ala Pro Arg Leu Asp Ala Ala Asp
 85 90 95
 Gly Pro Glu His Gly Arg Pro Ala Thr His Leu His Asp Thr Val Lys
 100 105 110
 Arg Asn Leu Asp Ser Ala Thr Ser Pro Gln Asn Gly Asp Gln Gln Asn
 115 120 125
 Gly Tyr Gly Asp Leu Phe Pro Gly His Lys Lys Thr Arg Arg Glu Ala
 130 135 140
 Pro Leu Gly Val Ala Ile Ser Ser Asn Gly Leu Pro Pro Ala Ser Pro
 145 150 155 160
 Leu Gly Gln Ser Asp Lys Pro Ser Gly Ala Asp Ala Leu Gln Ser Ser
 165 170 175
 Gly Lys His Ser Leu Gly Leu Asp Ser Leu Asn Lys Lys Arg Leu Ala
 180 185 190
 Asp Ser Ser Leu His Leu Asn Gly Gly Ser Asn Pro Ser Glu Ser Phe
 195 200 205
 Pro Leu Ser Leu Asn Lys Glu Leu Lys Gln Glu Pro Val Glu Asp Leu
 210 215 220
 Pro Cys Met Ile Thr Gly Thr Val Gly Ser Ile Ser Gln Ser Asn Leu
 225 230 235 240
 Met Pro Asp Leu Asn Leu Asn Glu Gln Glu Trp Lys Glu Leu Ile Glu
 245 250 255
 Glu Leu Asn Arg Ser Val Pro Asp Glu Asp Met Lys Asp Leu Phe Asn
 260 265 270
 Glu Asp Phe Glu Glu Lys Lys Asp Pro Glu Ser Ser Gly Ser Ala Thr
 275 280 285
 Gln Thr Pro Leu Ala Gln Asp Ile Asn Ile Lys Thr Glu Phe Ser Pro
 290 295 300
 Ala Ala Phe Glu Gln Glu Gln Leu Gly Ser Pro Gln Val Arg Ala Gly
 305 310 315 320
 Ser Ala Gly Gln Thr Phe Leu Gly Pro Ser Ser Ala Pro Val Ser Thr
 325 330 335
 Asp Ser Pro Ser Leu Gly Gly Ser Gln Thr Leu Phe His Thr Ser Gly
 340 345 350

Gln Pro Arg Ala Asp Asn Pro Ser Pro Asn Leu Met Pro Ala Ser Ala
 355 360 365
 Gln Ala Gln Asn Ala Gln Arg Ala Leu Ala Gly Val Val Leu Pro Ser
 370 375 380
 Gln Gly Pro Gly Gly Ala Ser Glu Leu Ser Ser Ala His Gln Leu Gln
 385 390 395 400
 Gln Ile Ala Ala Lys Gln Lys Arg Glu Gln Met Leu Gln Asn Pro Gln
 405 410 415
 Gln Ala Thr Pro Ala Pro Ala Pro Gly Gln Met Ser Thr Trp Gln Gln
 420 425 430
 Thr Gly Pro Ser His Ser Ser Leu Asp Val Pro Tyr Pro Met Glu Lys
 435 440 445
 Pro Ala Ser Pro Ser Ser Tyr Lys Gln Asp Phe Thr Asn Ser Lys Leu
 450 455 460
 Leu Met Met Pro Ser Val Asn Lys Ser Ser Pro Arg Pro Gly Gly Pro
 465 470 475 480
 Tyr Leu Gln Pro Ser His Val Asn Leu Leu Ser His Gln Pro Pro Ser
 485 490 495
 Asn Leu Asn Gln Asn Ser Ala Asn Asn Gln Gly Ser Val Leu Asp Tyr
 500 505 510
 Gly Asn Thr Lys Pro Leu Ser His Tyr Lys Ala Asp Cys Gly Gln Gly
 515 520 525
 Ser Pro Gly Ser Gly Gln Ser Lys Pro Ala Leu Met Ala Tyr Leu Pro
 530 535 540
 Gln Gln Leu Ser His Ile Ser His Glu Gln Asn Ser Leu Phe Leu Met
 545 550 555 560
 Lys Pro Lys Pro Gly Asn Met Pro Phe Arg Ser Leu Val Pro Pro Gly
 565 570 575
 Gln Glu Gln Asn Pro Ser Ser Val Pro Val Gln Ala Gln Ala Thr Ser
 580 585 590
 Val Gly Thr Gln Pro Pro Ala Val Ser Val Ala Ser Ser His Asn Ser
 595 600 605
 Ser Pro Tyr Leu Ser Ser Gln Gln Gln Ala Ala Val Met Lys Gln His
 610 615 620

Gln Leu Leu Leu Asp Gln Gln Lys Gln Arg Glu Gln Gln Gln Lys His
 625 630 635 640
 Leu Gln Gln Gln Gln Phe Leu Gln Arg Gln Gln His Leu Leu Ala Glu
 645 650 655
 Gln Glu Lys Gln Gln Phe Gln Arg His Leu Thr Arg Pro Pro Pro Gln
 660 665 670
 Tyr Gln Asp Pro Thr Gln Gly Ser Phe Pro Gln Gln Val Gly Gln Phe
 675 680 685
 Thr Gly Ser Ser Ala Ala Val Pro Gly Met Asn Thr Leu Gly Pro Ser
 690 695 700
 Asn Ser Ser Cys Pro Arg Val Phe Pro Gln Ala Gly Asn Leu Met Pro
 705 710 715 720
 Met Gly Pro Gly His Ala Ser Val Ser Ser Leu Pro Thr Asn Ser Gly
 725 730 735
 Gln Gln Asp Arg Gly Val Ala Gln Phe Pro Gly Ser Gln Asn Met Pro
 740 745 750
 Gln Ser Ser Leu Tyr Gly Met Ala Ser Gly Ile Thr Gln Ile Val Ala
 755 760 765
 Gln Pro Pro Pro Gln Ala Thr Asn Gly His Ala His Ile Pro Arg Gln
 770 775 780
 Thr Asn Val Gly Gln Asn Thr Ser Val Ser Ala Ala Tyr Gly Gln Asn
 785 790 795 800
 Ser Leu Gly Ser Ser Gly Leu Ser Gln Gln His Asn Lys Gly Thr Leu
 805 810 815
 Asn Pro Gly Leu Thr Lys Pro Pro Val Pro Arg Val Ser Pro Ala Met
 820 825 830
 Gly Gly Gln Asn Ser Ser Trp Gln His Gln Gly Met Pro Asn Leu Ser
 835 840 845
 Gly Gln Thr Pro Gly Asn Ser Asn Val Ser Pro Phe Thr Ala Ala Ser
 850 855 860
 Ser Phe His Met Gln Gln Gln Ala His Leu Lys Met Ser Ser Pro Gln
 865 870 875 880
 Phe Ser Gln Ala Val Pro Asn Arg Pro Met Ala Pro Met Ser Ser Ala
 885 890 895

Ala Ala Val Gly Ser Leu Leu Pro Pro Val Ser Ala Gln Gln Arg Thr
 900 905 910

Ser Ala Pro Ala Pro Ala Pro Pro Pro Thr Ala Pro Gln Gln Gly Leu
 915 920 925

Pro Gly Leu Ser Pro Ala Gly Pro Glu Leu Gly Ala Phe Ser Gln Ser
 930 935 940

Pro Ala Ser Gln Met Gly Gly Arg Ala Gly Leu His Cys Thr Gln Ala
 945 950 955 960

Tyr Pro Val Arg Thr Ala Gly Gln Glu Leu Pro Phe Ala Tyr Ser Gly
 965 970 975

Gln Pro Gly Gly Ser Gly Leu Ser Ser Val Ala Gly His Thr Asp Leu
 980 985 990

Ile Asp Ser Leu Leu Lys Asn Arg Thr Ser Glu Glu Trp Met Ser Asp
 995 1000 1005

Leu Asp Asp Leu Leu Gly Ser Gln
 1010 1015

<210> 587
 <211> 431
 <212> PRT
 <213> Homo sapiens

<400> 587

Met Phe Phe Gly Gly Glu Gly Ser Leu Thr Tyr Thr Leu Val Ile Ile
 1 5 10 15

Cys Phe Leu Thr Leu Arg Leu Ser Ala Ser Gln Asn Cys Leu Lys Lys
 20 25 30

Ser Leu Glu Asp Val Val Ile Asp Ile Gln Ser Ser Leu Ser Lys Gly
 35 40 45

Ile Arg Gly Asn Glu Pro Val Tyr Thr Ser Thr Gln Glu Asp Cys Ile
 50 55 60

Asn Ser Cys Cys Ser Thr Lys Asn Ile Ser Gly Asp Lys Ala Cys Asn
 65 70 75 80

Leu Met Ile Phe Asp Thr Arg Lys Thr Ala Arg Gln Pro Asn Cys Tyr
 85 90 95

Leu Phe Phe Cys Pro Asn Glu Glu Ala Cys Pro Leu Lys Pro Ala Lys
 100 105 110

Gly Leu Met Ser Tyr Arg Ile Ile Thr Asp Phe Pro Ser Leu Thr Arg
 115 120 125

Asn Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly
 130 135 140

Gln Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp Tyr
 145 150 155 160

Ser Lys Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys Phe
 165 170 175

Gly Ser Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala Ser
 180 185 190

Ala Gln Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln
 195 200 205

Phe Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser
 210 215 220

Ala Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser Ala
 225 230 235 240

Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr Pro
 245 250 255

Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val Thr
 260 265 270

Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe Thr
 275 280 285

Arg Ala Ala Ala Thr Leu Gln Ala Met Ala Thr Thr Ala Val Leu Thr
 290 295 300

Thr Thr Phe Gln Ala Pro Thr Asp Ser Lys Gly Ser Leu Glu Thr Ile
 305 310 315 320

Pro Phe Thr Glu Ile Ser Asn Leu Thr Leu Asn Thr Gly Asn Val Tyr
 325 330 335

Asn Pro Thr Ala Leu Ser Met Ser Asn Val Glu Ser Ser Thr Met Asn
 340 345 350

Lys Thr Ala Ser Trp Glu Gly Arg Glu Ala Ser Pro Gly Ser Ser Ser
 355 360 365

Gln Gly Ser Val Pro Glu Asn Gln Tyr Gly Leu Pro Phe Glu Lys Trp
 370 375 380

Leu Leu Ile Gly Ser Leu Leu Phe Gly Val Leu Phe Leu Val Ile Gly
385 390 395 400

Leu Val Leu Leu Gly Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg
405 410 415

Tyr Ser Arg Leu Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile
420 425 430

<210> 588
<211> 125
<212> PRT
<213> Homo sapiens

<400> 588

Met Pro Ser Glu Lys Thr Phe Lys Gln Arg Arg Thr Phe Glu Gln Arg
1 5 10 15

Val Glu Asp Val Arg Leu Ile Arg Glu Gln His Pro Thr Lys Ile Pro
20 25 30

Val Ile Ile Glu Arg Tyr Lys Gly Glu Lys Gln Leu Pro Val Leu Asp
35 40 45

Lys Thr Lys Phe Leu Val Pro Asp His Val Asn Met Ser Glu Leu Ile
50 55 60

Lys Ile Ile Arg Arg Arg Leu Gln Leu Asn Ala Asn Gln Ala Phe Phe
65 70 75 80

Leu Leu Val Asn Gly His Ser Met Val Ser Val Ser Thr Pro Ile Ser
85 90 95

Glu Val Tyr Glu Ser Glu Lys Asp Glu Asp Gly Phe Leu Tyr Met Val
100 105 110

Tyr Ala Ser Gln Glu Thr Phe Gly Met Lys Leu Ser Val
115 120 125

<210> 589
<211> 847
<212> PRT
<213> Homo sapiens

<400> 589

Met Glu Pro Leu Lys Ser Leu Phe Leu Lys Ser Pro Leu Gly Ser Trp
1 5 10 15

Asn Gly Ser Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Arg Pro
20 25 30

Glu Gly Ser Pro Lys Ala Ala Gly Tyr Ala Asn Pro Val Trp Thr Ala
Page 887

35

40

45

Leu Phe Asp Tyr Glu Pro Ser Gly Gln Asp Glu Leu Ala Leu Arg Lys
 50 55 60

Gly Asp Arg Val Glu Val Leu Ser Arg Asp Ala Ala Ile Ser Gly Asp
 65 70 75 80

Glu Gly Trp Trp Ala Gly Gln Val Gly Gly Gln Val Gly Ile Phe Pro
 85 90 95

Ser Asn Tyr Val Ser Arg Gly Gly Gly Pro Pro Pro Cys Glu Val Ala
 100 105 110

Ser Phe Gln Glu Leu Arg Leu Glu Glu Val Ile Gly Ile Gly Gly Phe
 115 120 125

Gly Lys Val Tyr Arg Gly Ser Trp Arg Gly Glu Leu Val Ala Val Lys
 130 135 140

Ala Ala Arg Gln Asp Pro Asp Glu Asp Ile Ser Val Thr Ala Glu Ser
 145 150 155 160

Val Arg Gln Glu Ala Arg Leu Phe Ala Met Leu Ala His Pro Asn Ile
 165 170 175

Ile Ala Leu Lys Ala Val Cys Leu Glu Glu Pro Asn Leu Cys Leu Val
 180 185 190

Met Glu Tyr Ala Ala Gly Gly Pro Leu Ser Arg Ala Leu Ala Gly Arg
 195 200 205

Arg Val Pro Pro His Val Leu Val Asn Trp Ala Val Gln Ile Ala Arg
 210 215 220

Gly Met His Tyr Leu His Cys Glu Ala Leu Val Pro Val Ile His Arg
 225 230 235 240

Asp Leu Lys Ser Asn Asn Ile Leu Leu Leu Gln Pro Ile Glu Ser Asp
 245 250 255

Asp Met Glu His Lys Thr Leu Lys Ile Thr Asp Phe Gly Leu Ala Arg
 260 265 270

Glu Trp His Lys Thr Thr Gln Met Ser Ala Ala Gly Thr Tyr Ala Trp
 275 280 285

Met Ala Pro Glu Val Ile Lys Ala Ser Thr Phe Ser Lys Gly Ser Asp
 290 295 300

Val Trp Ser Phe Gly Val Leu Leu Trp Glu Leu Leu Thr Gly Glu Val
 Page 888

305 310 315 320
 Pro Tyr Arg Gly Ile Asp Cys Leu Ala Val Ala Tyr Gly Val Ala Val
 325 330 335
 Asn Lys Leu Thr Leu Pro Ile Pro Ser Thr Cys Pro Glu Pro Phe Ala
 340 345 350
 Gln Leu Met Ala Asp Cys Trp Ala Gln Asp Pro His Arg Arg Pro Asp
 355 360 365
 Phe Ala Ser Ile Leu Gln Gln Leu Glu Ala Leu Glu Ala Gln Val Leu
 370 375 380
 Arg Glu Met Pro Arg Asp Ser Phe His Ser Met Gln Glu Gly Trp Lys
 385 390 395 400
 Arg Glu Ile Gln Gly Leu Phe Asp Glu Leu Arg Ala Lys Glu Lys Glu
 405 410 415
 Leu Leu Ser Arg Glu Glu Glu Leu Thr Arg Ala Ala Arg Glu Gln Arg
 420 425 430
 Ser Gln Ala Glu Gln Leu Arg Arg Arg Glu His Leu Leu Ala Gln Trp
 435 440 445
 Glu Leu Glu Val Phe Glu Arg Glu Leu Thr Leu Leu Leu Gln Gln Val
 450 455 460
 Asp Arg Glu Arg Pro His Val Arg Arg Arg Arg Gly Thr Phe Lys Arg
 465 470 475 480
 Ser Lys Leu Arg Ala Arg Asp Gly Gly Glu Arg Ile Ser Met Pro Leu
 485 490 495
 Asp Phe Lys His Arg Ile Thr Val Gln Ala Ser Pro Gly Leu Asp Arg
 500 505 510
 Arg Arg Asn Val Phe Glu Val Gly Pro Gly Asp Ser Pro Thr Phe Pro
 515 520 525
 Arg Phe Arg Ala Ile Gln Leu Glu Pro Ala Glu Pro Gly Gln Ala Trp
 530 535 540
 Gly Arg Gln Ser Pro Arg Arg Leu Glu Asp Ser Ser Asn Gly Glu Arg
 545 550 555 560
 Arg Ala Cys Trp Ala Trp Gly Pro Ser Ser Pro Lys Pro Gly Glu Ala
 565 570 575
 Gln Asn Gly Arg Arg Arg Ser Arg Met Asp Glu Ala Thr Trp Tyr Leu
 Page 889

580

585

590

Asp Ser Asp Asp Ser Ser Pro Leu Gly Ser Pro Ser Thr Pro Pro Ala
595 600 605

Leu Asn Gly Asn Pro Pro Arg Pro Ser Leu Glu Pro Glu Glu Pro Lys
610 615 620

Arg Pro Val Pro Ala Glu Arg Gly Ser Ser Ser Gly Thr Pro Lys Leu
625 630 635 640

Ile Gln Arg Ala Leu Leu Arg Gly Thr Ala Leu Leu Ala Ser Leu Gly
645 650 655

Leu Gly Arg Asp Leu Gln Pro Pro Gly Gly Pro Gly Arg Glu Arg Gly
660 665 670

Glu Ser Pro Thr Thr Pro Pro Thr Pro Thr Pro Ala Pro Cys Pro Thr
675 680 685

Glu Pro Pro Pro Ser Pro Leu Ile Cys Phe Ser Leu Lys Thr Pro Asp
690 695 700

Ser Pro Pro Thr Pro Ala Pro Leu Leu Leu Asp Leu Gly Ile Pro Val
705 710 715 720

Gly Gln Arg Ser Ala Lys Ser Pro Arg Arg Glu Glu Glu Pro Arg Gly
725 730 735

Gly Thr Val Ser Pro Pro Pro Gly Thr Ser Arg Ser Ala Pro Gly Thr
740 745 750

Pro Gly Thr Pro Arg Ser Pro Pro Leu Gly Leu Ile Ser Arg Pro Arg
755 760 765

Pro Ser Pro Leu Arg Ser Arg Ile Asp Pro Trp Ser Phe Val Ser Ala
770 775 780

Gly Pro Arg Pro Ser Pro Leu Pro Ser Pro Gln Pro Ala Pro Arg Arg
785 790 795 800

Ala Pro Trp Thr Leu Phe Pro Asp Ser Asp Pro Phe Trp Asp Ser Pro
805 810 815

Pro Ala Asn Pro Phe Gln Gly Gly Pro Gln Asp Cys Arg Ala Gln Thr
820 825 830

Lys Asp Met Gly Ala Gln Ala Pro Trp Val Pro Glu Ala Gly Pro
835 840 845

<210> 590

<211> 626
 <212> PRT
 <213> Homo sapiens

<400> 590

```

Met Asp Glu Gln Glu Ala Leu Asn Ser Ile Met Asn Asp Leu Val Ala
1      5      10      15

Leu Gln Met Asn Arg Arg His Arg Met Pro Gly Tyr Glu Thr Met Lys
      20      25      30

Asn Lys Asp Thr Gly His Ser Asn Arg Gln Ser Asp Val Arg Ile Lys
      35      40      45

Phe Glu His Asn Gly Glu Arg Arg Ile Ile Ala Phe Ser Arg Pro Val
      50      55      60

Lys Tyr Glu Asp Val Glu His Lys Val Thr Thr Val Phe Gly Gln Pro
65      70      75      80

Leu Asp Leu His Tyr Met Asn Asn Glu Leu Ser Ile Leu Leu Lys Asn
      85      90      95

Gln Asp Asp Leu Asp Lys Ala Ile Asp Ile Leu Asp Arg Ser Ser Ser
      100      105      110

Met Lys Ser Leu Arg Ile Leu Leu Leu Ser Gln Asp Arg Asn His Asn
      115      120      125

Ser Ser Ser Pro His Ser Gly Val Ser Arg Gln Val Arg Ile Lys Ala
      130      135      140

Ser Gln Ser Ala Gly Asp Ile Asn Thr Ile Tyr Gln Pro Pro Glu Pro
145      150      155      160

Arg Ser Arg His Leu Ser Val Ser Ser Gln Asn Pro Gly Arg Ser Ser
      165      170      175

Pro Pro Pro Gly Tyr Val Pro Glu Arg Gln Gln His Ile Ala Arg Gln
      180      185      190

Gly Ser Tyr Thr Ser Ile Asn Ser Glu Gly Glu Phe Ile Pro Glu Thr
      195      200      205

Ser Glu Gln Cys Met Leu Asp Pro Leu Ser Ser Ala Glu Asn Ser Leu
      210      215      220

Ser Gly Ser Cys Gln Ser Leu Asp Arg Ser Ala Asp Ser Pro Ser Phe
225      230      235      240

Arg Lys Ser Arg Met Ser Arg Ala Gln Ser Phe Pro Asp Asn Arg Gln
      245      250      255

```

Glu Tyr Ser Asp Arg Glu Thr Gln Leu Tyr Asp Lys Gly Val Lys Gly
 260 265 270
 Gly Thr Tyr Pro Arg Arg Tyr His Val Ser Val His His Lys Asp Tyr
 275 280 285
 Ser Asp Gly Arg Arg Thr Phe Pro Arg Ile Arg Arg His Gln Gly Asn
 290 295 300
 Leu Phe Thr Leu Val Pro Ser Ser Arg Ser Leu Ser Thr Asn Gly Glu
 305 310 315 320
 Asn Met Gly Leu Ala Val Gln Tyr Leu Asp Pro Arg Gly Arg Leu Arg
 325 330 335
 Ser Ala Asp Ser Glu Asn Ala Leu Ser Val Gln Glu Arg Asn Val Pro
 340 345 350
 Thr Lys Ser Pro Ser Ala Pro Ile Asn Trp Arg Arg Gly Lys Leu Leu
 355 360 365
 Gly Gln Gly Ala Phe Gly Arg Val Tyr Leu Cys Tyr Asp Val Asp Thr
 370 375 380
 Gly Arg Glu Leu Ala Ser Lys Gln Val Gln Phe Asp Pro Asp Ser Pro
 385 390 395 400
 Glu Thr Ser Lys Glu Val Ser Ala Leu Glu Cys Glu Ile Gln Leu Leu
 405 410 415
 Lys Asn Leu Gln His Glu Arg Ile Val Gln Tyr Tyr Gly Cys Leu Arg
 420 425 430
 Asp Arg Ala Glu Lys Thr Leu Thr Ile Phe Met Glu Tyr Met Pro Gly
 435 440 445
 Gly Ser Val Lys Asp Gln Leu Lys Ala Tyr Gly Ala Leu Thr Glu Ser
 450 455 460
 Val Thr Arg Lys Tyr Thr Arg Gln Ile Leu Glu Gly Met Ser Tyr Leu
 465 470 475 480
 His Ser Asn Met Ile Val His Arg Asp Ile Lys Gly Ala Asn Ile Leu
 485 490 495
 Arg Asp Ser Ala Gly Asn Val Lys Leu Gly Asp Phe Gly Ala Ser Lys
 500 505 510
 Arg Leu Gln Thr Ile Cys Met Ser Gly Thr Gly Met Arg Ser Val Thr
 515 520 525

Gly Thr Pro Tyr Trp Met Ser Pro Glu Val Ile Ser Gly Glu Gly Tyr
530 535 540

Gly Arg Lys Ala Asp Val Trp Ser Leu Gly Cys Thr Val Val Glu Met
545 550 555 560

Leu Thr Glu Lys Pro Pro Trp Ala Glu Tyr Glu Ala Met Ala Ala Ile
565 570 575

Phe Lys Ile Ala Thr Gln Pro Thr Asn Pro Gln Leu Pro Ser His Ile
580 585 590

Ser Glu His Gly Arg Asp Phe Leu Arg Arg Ile Phe Val Glu Ala Arg
595 600 605

Gln Arg Pro Ser Ala Glu Glu Leu Leu Thr His His Phe Ala Gln Leu
610 615 620

Met Tyr
625

<210> 591
<211> 1374
<212> PRT
<213> Homo sapiens

<400> 591

Met Ser Thr Glu Ala Asp Glu Gly Ile Thr Phe Ser Val Pro Pro Phe
1 5 10 15

Ala Pro Ser Gly Phe Cys Thr Ile Pro Glu Gly Gly Ile Cys Arg Arg
20 25 30

Gly Gly Ala Ala Ala Val Gly Glu Gly Glu Glu His Gln Leu Pro Pro
35 40 45

Pro Pro Pro Gly Ser Phe Trp Asn Val Glu Ser Ala Ala Ala Pro Gly
50 55 60

Ile Gly Cys Pro Ala Ala Thr Ser Ser Ser Ser Ala Thr Arg Gly Arg
65 70 75 80

Gly Ser Ser Val Gly Gly Gly Ser Arg Arg Thr Thr Val Ala Tyr Val
85 90 95

Ile Asn Glu Ala Ser Gln Gly Gln Leu Val Val Ala Glu Ser Glu Ala
100 105 110

Leu Gln Ser Leu Arg Glu Ala Cys Glu Thr Val Gly Ala Thr Leu Glu
115 120 125

Thr Leu His Phe Gly Lys Leu Asp Phe Gly Glu Thr Thr Val Leu Asp
 130 135 140
 Arg Phe Tyr Asn Ala Asp Ile Ala Val Val Glu Met Ser Asp Ala Phe
 145 150 155 160
 Arg Gln Pro Ser Leu Phe Tyr His Leu Gly Val Arg Glu Ser Phe Ser
 165 170 175
 Met Ala Asn Asn Ile Ile Leu Tyr Cys Asp Thr Asn Ser Asp Ser Leu
 180 185 190
 Gln Ser Leu Lys Glu Ile Ile Cys Gln Lys Asn Thr Met Cys Thr Gly
 195 200 205
 Asn Tyr Thr Phe Val Pro Tyr Met Ile Thr Pro His Asn Lys Val Tyr
 210 215 220
 Cys Cys Asp Ser Ser Phe Met Lys Gly Leu Thr Glu Leu Met Gln Pro
 225 230 235 240
 Asn Phe Glu Leu Leu Leu Gly Pro Ile Cys Leu Pro Leu Val Asp Arg
 245 250 255
 Phe Ile Gln Leu Leu Lys Val Ala Gln Ala Ser Ser Ser Gln Tyr Phe
 260 265 270
 Arg Glu Ser Ile Leu Asn Asp Ile Arg Lys Ala Arg Asn Leu Tyr Thr
 275 280 285
 Gly Lys Glu Leu Ala Ala Glu Leu Ala Arg Ile Arg Gln Arg Val Asp
 290 295 300
 Asn Ile Glu Val Leu Thr Ala Asp Ile Val Ile Asn Leu Leu Leu Ser
 305 310 315 320
 Tyr Arg Asp Ile Gln Asp Tyr Asp Ser Ile Val Lys Leu Val Glu Thr
 325 330 335
 Leu Glu Lys Leu Pro Thr Phe Asp Leu Ala Ser His His His Val Lys
 340 345 350
 Phe His Tyr Ala Phe Ala Leu Asn Arg Arg Asn Leu Pro Gly Asp Arg
 355 360 365
 Ala Lys Ala Leu Asp Ile Met Ile Pro Met Val Gln Ser Glu Gly Gln
 370 375 380
 Val Ala Ser Asp Met Tyr Cys Leu Val Gly Arg Ile Tyr Lys Asp Met
 385 390 395 400

Phe Leu Asp Ser Asn Phe Thr Asp Thr Glu Ser Arg Asp His Gly Ala
 405 410 415
 Ser Trp Phe Lys Lys Ala Phe Glu Ser Glu Pro Thr Leu Gln Ser Gly
 420 425 430
 Ile Asn Tyr Ala Val Leu Leu Leu Ala Ala Gly His Gln Phe Glu Ser
 435 440 445
 Ser Phe Glu Leu Arg Lys Val Gly Val Lys Leu Ser Ser Leu Leu Gly
 450 455 460
 Lys Lys Gly Asn Leu Glu Lys Leu Gln Ser Tyr Trp Glu Val Gly Phe
 465 470 475 480
 Phe Leu Gly Ala Ser Val Leu Ala Asn Asp His Met Arg Val Ile Gln
 485 490 495
 Ala Ser Glu Lys Leu Phe Lys Leu Lys Thr Pro Ala Trp Tyr Leu Lys
 500 505 510
 Ser Ile Val Glu Thr Ile Leu Ile Tyr Lys His Phe Val Lys Leu Thr
 515 520 525
 Thr Glu Gln Pro Val Ala Lys Gln Glu Leu Val Asp Phe Trp Met Asp
 530 535 540
 Phe Leu Val Glu Ala Thr Lys Thr Asp Val Thr Val Val Arg Phe Pro
 545 550 555 560
 Val Leu Ile Leu Glu Pro Thr Lys Ile Tyr Gln Pro Ser Tyr Leu Ser
 565 570 575
 Ile Asn Asn Glu Val Glu Glu Lys Thr Ile Ser Ile Trp His Val Leu
 580 585 590
 Pro Asp Asp Lys Lys Gly Ile His Glu Trp Asn Phe Ser Ala Ser Ser
 595 600 605
 Val Arg Gly Val Ser Ile Ser Lys Phe Glu Glu Arg Cys Cys Phe Leu
 610 615 620
 Tyr Val Leu His Asn Ser Asp Asp Phe Gln Ile Tyr Phe Cys Thr Glu
 625 630 635 640
 Leu His Cys Lys Lys Phe Phe Glu Met Val Asn Thr Ile Thr Glu Glu
 645 650 655
 Lys Gly Arg Ser Thr Glu Glu Gly Asp Cys Glu Ser Asp Leu Leu Glu
 660 665 670

Tyr Asp Tyr Glu Tyr Asp Glu Asn Gly Asp Arg Val Val Leu Gly Lys
 675 680 685
 Gly Thr Tyr Gly Ile Val Tyr Ala Gly Arg Asp Leu Ser Asn Gln Val
 690 695 700
 Arg Ile Ala Ile Lys Glu Ile Pro Glu Arg Asp Ser Arg Tyr Ser Gln
 705 710 715 720
 Pro Leu His Glu Glu Ile Ala Leu His Lys His Leu Lys His Lys Asn
 725 730 735
 Ile Val Gln Tyr Leu Gly Ser Phe Ser Glu Asn Gly Phe Ile Lys Ile
 740 745 750
 Phe Met Glu Gln Val Pro Gly Gly Ser Leu Ser Ala Leu Leu Arg Ser
 755 760 765
 Lys Trp Gly Pro Leu Lys Asp Asn Glu Gln Thr Ile Gly Phe Tyr Thr
 770 775 780
 Lys Gln Ile Leu Glu Gly Leu Lys Tyr Leu His Asp Asn Gln Ile Val
 785 790 795 800
 His Arg Asp Ile Lys Gly Asp Asn Val Leu Ile Asn Thr Tyr Ser Gly
 805 810 815
 Val Leu Lys Ile Ser Asp Phe Gly Thr Ser Lys Arg Leu Ala Gly Ile
 820 825 830
 Asn Pro Cys Thr Glu Thr Phe Thr Gly Thr Leu Gln Tyr Met Ala Pro
 835 840 845
 Glu Ile Ile Asp Lys Gly Pro Arg Gly Tyr Gly Lys Ala Ala Asp Ile
 850 855 860
 Trp Ser Leu Gly Cys Thr Ile Ile Glu Met Ala Thr Gly Lys Pro Pro
 865 870 875 880
 Phe Tyr Glu Leu Gly Glu Pro Gln Ala Ala Met Phe Lys Val Gly Met
 885 890 895
 Phe Lys Val His Pro Glu Ile Pro Glu Ser Met Ser Ala Glu Ala Lys
 900 905 910
 Ala Phe Ile Leu Lys Cys Phe Glu Pro Asp Pro Asp Lys Arg Ala Cys
 915 920 925
 Ala Asn Asp Leu Leu Val Asp Glu Phe Leu Lys Val Ser Ser Lys Lys
 930 935 940

Lys Lys Thr Gln Pro Lys Leu Ser Ala Leu Ser Ala Gly Ser Asn Glu
 945 950 955 960

Tyr Leu Arg Ser Ile Ser Leu Pro Val Pro Val Leu Val Glu Asp Thr
 965 970 975

Ser Ser Ser Ser Glu Tyr Gly Ser Val Ser Pro Asp Thr Glu Leu Lys
 980 985 990

Val Asp Pro Phe Ser Phe Lys Thr Arg Ala Lys Ser Cys Gly Glu Arg
 995 1000 1005

Asp Val Lys Gly Ile Arg Thr Leu Phe Leu Gly Ile Pro Asp Glu
 1010 1015 1020

Asn Phe Glu Asp His Ser Ala Pro Pro Ser Pro Glu Glu Lys Asp
 1025 1030 1035

Ser Gly Phe Phe Met Leu Arg Lys Asp Ser Glu Arg Arg Ala Thr
 1040 1045 1050

Leu His Arg Ile Leu Thr Glu Asp Gln Asp Lys Ile Val Arg Asn
 1055 1060 1065

Leu Met Glu Ser Leu Ala Gln Gly Ala Glu Glu Pro Lys Leu Lys
 1070 1075 1080

Trp Glu His Ile Thr Thr Leu Ile Ala Ser Leu Arg Glu Phe Val
 1085 1090 1095

Arg Ser Thr Asp Arg Lys Ile Ile Ala Thr Thr Leu Ser Lys Leu
 1100 1105 1110

Lys Leu Glu Leu Asp Phe Asp Ser His Gly Ile Ser Gln Val Gln
 1115 1120 1125

Val Val Leu Phe Gly Phe Gln Asp Ala Val Asn Lys Val Leu Arg
 1130 1135 1140

Asn His Asn Ile Lys Pro His Trp Met Phe Ala Leu Asp Ser Ile
 1145 1150 1155

Ile Arg Lys Ala Val Gln Thr Ala Ile Thr Ile Leu Val Pro Glu
 1160 1165 1170

Leu Arg Pro His Phe Ser Leu Ala Ser Glu Ser Asp Thr Ala Asp
 1175 1180 1185

Gln Glu Asp Leu Asp Val Glu Asp Asp His Glu Glu Gln Pro Ser
 1190 1195 1200

Asn Gln Thr Val Arg Arg Pro Gln Ala Val Ile Glu Asp Ala Val
 1205 1210 1215

Ala Thr Ser Gly Val Ser Thr Leu Ser Ser Thr Val Ser His Asp
 1220 1225 1230

Ser Gln Ser Ala His Arg Ser Leu Asn Val Gln Leu Gly Arg Met
 1235 1240 1245

Lys Ile Glu Thr Asn Arg Leu Leu Glu Glu Leu Val Arg Lys Glu
 1250 1255 1260

Lys Glu Leu Gln Ala Leu Leu His Arg Ala Ile Glu Glu Lys Asp
 1265 1270 1275

Gln Glu Ile Lys His Leu Lys Leu Lys Ser Gln Pro Ile Glu Ile
 1280 1285 1290

Pro Glu Leu Pro Val Phe His Leu Asn Ser Ser Gly Thr Asn Thr
 1295 1300 1305

Glu Asp Ser Glu Leu Thr Asp Trp Leu Arg Val Asn Gly Ala Asp
 1310 1315 1320

Glu Asp Thr Ile Ser Arg Phe Leu Ala Glu Asp Tyr Thr Leu Leu
 1325 1330 1335

Asp Val Leu Tyr Tyr Val Thr Arg Asp Asp Leu Lys Cys Leu Arg
 1340 1345 1350

Leu Arg Gly Gly Met Leu Cys Thr Leu Trp Lys Ala Ile Ile Asp
 1355 1360 1365

Phe Arg Asn Lys Gln Thr
 1370

<210> 592
 <211> 1165
 <212> PRT
 <213> Homo sapiens

<400> 592

Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
 1 5 10 15

Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
 20 25 30

Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
 35 40 45

Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu
 50 55 60
 Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg
 65 70 75 80
 Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly
 85 90 95
 His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser
 100 105 110
 Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp
 115 120 125
 Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
 130 135 140
 His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
 145 150 155 160
 Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
 165 170 175
 Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
 180 185 190
 Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
 195 200 205
 Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
 210 215 220
 Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
 225 230 235 240
 Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Pro Arg Leu Lys Ser Lys
 245 250 255
 Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
 260 265 270
 Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
 275 280 285
 Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
 290 295 300
 His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
 305 310 315 320

Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
 325 330 335
 Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
 340 345 350
 Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
 355 360 365
 Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
 370 375 380
 Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
 385 390 395 400
 Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
 405 410 415
 Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
 420 425 430
 Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
 435 440 445
 Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
 450 455 460
 Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
 465 470 475 480
 Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu His Asp
 485 490 495
 His Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln
 500 505 510
 Gln Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His
 515 520 525
 Tyr Glu Pro Ala Asp Arg Ala Arg Glu Val Pro Val Arg Thr Thr Ser
 530 535 540
 Arg Ser Pro Val Leu Ser Arg Arg Asp Ser Pro Leu Gln Gly Ser Gly
 545 550 555 560
 Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn Ser Thr Ser Ile Glu Pro
 565 570 575
 Arg Leu Leu Trp Glu Arg Val Glu Lys Leu Val Pro Arg Pro Gly Ser
 580 585 590

Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser Gln Pro Gly Ser His
 595 600 605

Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe Arg Val Arg Ser Ser
 610 615 620

Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu Glu Asn Ala Val Lys
 625 630 635 640

Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro Leu Lys Pro Ala Val
 645 650 655

Arg Ile Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala Val Glu Asp
 660 665 670

Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser Ser Glu Glu
 675 680 685

Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln Glu Gly Ala
 690 695 700

Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser Ser Leu
 705 710 715 720

Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met Ile Val His
 725 730 735

Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys Glu Gly Thr
 740 745 750

Leu Ile Val Arg Gln Thr Gln Ser Ala Ser Ser Thr Leu Gln Lys His
 755 760 765

Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu Leu Gln
 770 775 780

Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val Gly Phe Ser
 785 790 795 800

Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr Arg Lys
 805 810 815

Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro Gln Ser Asp
 820 825 830

Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu Ile Leu
 835 840 845

Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly Thr Glu Ser Gly
 850 855 860

Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro Leu Ile
 865 870 875 880

Asn Arg Arg Arg Phe Gln Gln Met Asp Val Leu Glu Gly Leu Asn Val
 885 890 895

Leu Val Thr Ile Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr Tyr Leu
 900 905 910

Ser Trp Leu Arg Asn Lys Ile Leu His Asn Asp Pro Glu Val Glu Lys
 915 920 925

Lys Gln Gly Trp Thr Thr Val Gly Asp Leu Glu Gly Cys Val His Tyr
 930 935 940

Lys Val Val Lys Tyr Glu Arg Ile Lys Phe Leu Val Ile Ala Leu Lys
 945 950 955 960

Ser Ser Val Glu Val Tyr Ala Trp Ala Pro Lys Pro Tyr His Lys Phe
 965 970 975

Met Ala Phe Lys Ser Phe Gly Glu Leu Val His Lys Pro Leu Leu Val
 980 985 990

Asp Leu Thr Val Glu Glu Gly Gln Arg Leu Lys Val Ile Tyr Gly Ser
 995 1000 1005

Cys Ala Gly Phe His Ala Val Asp Val Asp Ser Gly Ser Val Tyr
 1010 1015 1020

Asp Ile Tyr Leu Pro Thr His Val Arg Lys Asn Pro His Ser Met
 1025 1030 1035

Ile Gln Cys Ser Ile Lys Pro His Ala Ile Ile Ile Leu Pro Asn
 1040 1045 1050

Thr Asp Gly Met Glu Leu Leu Val Cys Tyr Glu Asp Glu Gly Val
 1055 1060 1065

Tyr Val Asn Thr Tyr Gly Arg Ile Thr Lys Asp Val Val Leu Gln
 1070 1075 1080

Trp Gly Glu Met Pro Thr Ser Val Ala Tyr Ile Arg Ser Asn Gln
 1085 1090 1095

Thr Met Gly Trp Gly Glu Lys Ala Ile Glu Ile Arg Ser Val Glu
 1100 1105 1110

Thr Gly His Leu Asp Gly Val Phe Met His Lys Arg Ala Gln Arg
 1115 1120 1125

Leu Lys Phe Leu Cys Glu Arg Asn Asp Lys Val Phe Phe Ala Ser
 1130 1135 1140

Val Arg Ser Gly Gly Ser Ser Gln Val Tyr Phe Met Thr Leu Gly
 1145 1150 1155

Arg Thr Ser Leu Leu Ser Trp
 1160 1165

<210> 593
 <211> 360
 <212> PRT
 <213> Homo sapiens

<400> 593

Met Ala Ala Ala Ala Ala Ala Gly Ala Gly Pro Glu Met Val Arg Gly
 1 5 10 15

Gln Val Phe Asp Val Gly Pro Arg Tyr Thr Asn Leu Ser Tyr Ile Gly
 20 25 30

Glu Gly Ala Tyr Gly Met Val Cys Ser Ala Tyr Asp Asn Val Asn Lys
 35 40 45

Val Arg Val Ala Ile Lys Lys Ile Ser Pro Phe Glu His Gln Thr Tyr
 50 55 60

Cys Gln Arg Thr Leu Arg Glu Ile Lys Ile Leu Leu Arg Phe Arg His
 65 70 75 80

Glu Asn Ile Ile Gly Ile Asn Asp Ile Ile Arg Ala Pro Thr Ile Glu
 85 90 95

Gln Met Lys Asp Val Tyr Ile Val Gln Asp Leu Met Glu Thr Asp Leu
 100 105 110

Tyr Lys Leu Leu Lys Thr Gln His Leu Ser Asn Asp His Ile Cys Tyr
 115 120 125

Phe Leu Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asn
 130 135 140

Val Leu His Arg Asp Leu Lys Pro Ser Asn Leu Leu Leu Asn Thr Thr
 145 150 155 160

Cys Asp Leu Lys Ile Cys Asp Phe Gly Leu Ala Arg Val Ala Asp Pro
 165 170 175

Asp His Asp His Thr Gly Phe Leu Thr Glu Tyr Val Ala Thr Arg Trp
 180 185 190

Tyr Arg Ala Pro Glu Ile Met Leu Asn Ser Lys Gly Tyr Thr Lys Ser
 Page 903

195

200

205

Ile Asp Ile Trp Ser Val Gly Cys Ile Leu Ala Glu Met Leu Ser Asn
 210 215 220

Arg Pro Ile Phe Pro Gly Lys His Tyr Leu Asp Gln Leu Asn His Ile
 225 230 235 240

Leu Gly Ile Leu Gly Ser Pro Ser Gln Glu Asp Leu Asn Cys Ile Ile
 245 250 255

Asn Leu Lys Ala Arg Asn Tyr Leu Leu Ser Leu Pro His Lys Asn Lys
 260 265 270

Val Pro Trp Asn Arg Leu Phe Pro Asn Ala Asp Ser Lys Ala Leu Asp
 275 280 285

Leu Leu Asp Lys Met Leu Thr Phe Asn Pro His Lys Arg Ile Glu Val
 290 295 300

Glu Gln Ala Leu Ala His Pro Tyr Leu Glu Gln Tyr Tyr Asp Pro Ser
 305 310 315 320

Asp Glu Pro Ile Ala Glu Ala Pro Phe Lys Phe Asp Met Glu Leu Asp
 325 330 335

Asp Leu Pro Lys Glu Lys Leu Lys Glu Leu Ile Phe Glu Glu Thr Ala
 340 345 350

Arg Phe Gln Pro Gly Tyr Arg Ser
 355 360

<210> 594
 <211> 360
 <212> PRT
 <213> Homo sapiens

<400> 594

Met Ser Gln Glu Arg Pro Thr Phe Tyr Arg Gln Glu Leu Asn Lys Thr
 1 5 10 15

Ile Trp Glu Val Pro Glu Arg Tyr Gln Asn Leu Ser Pro Val Gly Ser
 20 25 30

Gly Ala Tyr Gly Ser Val Cys Ala Ala Phe Asp Thr Lys Thr Gly Leu
 35 40 45

Arg Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His
 50 55 60

Ala Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His
 65 70 75 80

Glu Asn Val Ile Gly Leu Leu Asp Val Phe Thr Pro Ala Arg Ser Leu
 85 90 95
 Glu Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp
 100 105 110
 Leu Asn Asn Ile Val Lys Cys Gln Lys Leu Thr Asp Asp His Val Gln
 115 120 125
 Phe Leu Ile Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala
 130 135 140
 Asp Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu
 145 150 155 160
 Asp Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg His Thr Asp
 165 170 175
 Asp Glu Met Thr Gly Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu
 180 185 190
 Ile Met Leu Asn Trp Met His Tyr Asn Gln Thr Val Asp Ile Trp Ser
 195 200 205
 Val Gly Cys Ile Met Ala Glu Leu Leu Thr Gly Arg Thr Leu Phe Pro
 210 215 220
 Gly Thr Asp His Ile Asn Gln Leu Gln Gln Ile Met Arg Leu Thr Gly
 225 230 235 240
 Thr Pro Pro Ala Tyr Leu Ile Asn Arg Met Pro Ser His Glu Ala Arg
 245 250 255
 Asn Tyr Ile Gln Ser Leu Thr Gln Met Pro Lys Met Asn Phe Ala Asn
 260 265 270
 Val Phe Ile Gly Ala Asn Pro Leu Ala Val Asp Leu Leu Glu Lys Met
 275 280 285
 Leu Val Leu Asp Ser Asp Lys Arg Ile Thr Ala Ala Gln Ala Leu Ala
 290 295 300
 His Ala Tyr Phe Ala Gln Tyr His Asp Pro Asp Asp Glu Pro Val Ala
 305 310 315 320
 Asp Pro Tyr Asp Gln Ser Phe Glu Ser Arg Asp Leu Leu Ile Asp Glu
 325 330 335
 Trp Lys Ser Leu Thr Tyr Asp Glu Val Ile Ser Phe Val Pro Pro Pro
 340 345 350

Leu Asp Gln Glu Glu Met Glu Ser
 355 360

<210> 595
 <211> 327
 <212> PRT
 <213> Homo sapiens

<400> 595

Met Pro Gly Pro Thr Gln Thr Leu Ser Pro Asn Gly Glu Asn Asn Asn
 1 5 10 15

Asp Ile Ile Gln Asp Asn Asn Gly Thr Ile Ile Pro Phe Arg Lys His
 20 25 30

Thr Val Arg Gly Glu Arg Ser Tyr Ser Trp Gly Met Ala Val Asn Val
 35 40 45

Tyr Ser Thr Ser Ile Thr Gln Glu Thr Met Ser Arg His Asp Ile Ile
 50 55 60

Ala Trp Val Asn Asp Ile Val Ser Leu Asn Tyr Thr Lys Val Glu Gln
 65 70 75 80

Leu Cys Ser Gly Ala Ala Tyr Cys Gln Phe Met Asp Met Leu Phe Pro
 85 90 95

Gly Cys Ile Ser Leu Lys Lys Val Lys Phe Gln Ala Lys Leu Glu His
 100 105 110

Glu Tyr Ile His Asn Phe Lys Leu Leu Gln Ala Ser Phe Lys Arg Met
 115 120 125

Asn Val Asp Lys Val Ile Pro Val Glu Lys Leu Val Lys Gly Arg Phe
 130 135 140

Gln Asp Asn Leu Asp Phe Ile Gln Trp Phe Lys Lys Phe Tyr Asp Ala
 145 150 155 160

Asn Tyr Asp Gly Lys Glu Tyr Asp Pro Val Glu Ala Arg Gln Gly Gln
 165 170 175

Asp Ala Ile Pro Pro Pro Asp Pro Gly Glu Gln Ile Phe Asn Leu Pro
 180 185 190

Lys Lys Ser His His Ala Asn Ser Pro Thr Ala Gly Ala Ala Lys Ser
 195 200 205

Ser Pro Ala Ala Lys Pro Gly Ser Thr Pro Ser Arg Pro Ser Ser Ala
 210 215 220

Lys Arg Ala Ser Ser Ser Gly Ser Ala Ser Lys Ser Asp Lys Asp Leu
225 230 235 240

Glu Thr Gln Val Ile Gln Leu Asn Glu Gln Val His Ser Leu Lys Leu
245 250 255

Ala Leu Glu Gly Val Glu Lys Glu Arg Asp Phe Tyr Phe Gly Lys Leu
260 265 270

Arg Glu Ile Glu Leu Leu Cys Gln Glu His Gly Gln Glu Asn Asp Asp
275 280 285

Leu Val Gln Arg Leu Met Asp Ile Leu Tyr Ala Ser Glu Glu His Glu
290 295 300

Gly His Thr Glu Glu Pro Glu Ala Glu Glu Gln Ala His Glu Gln Gln
305 310 315 320

Pro Pro Gln Gln Glu Glu Tyr
325

<210> 596
<211> 704
<212> PRT
<213> Homo sapiens

<400> 596

Met Glu Ser Lys Pro Ser Arg Ile Pro Arg Arg Ile Ser Val Gln Pro
1 5 10 15

Ser Ser Ser Leu Ser Ala Arg Met Met Ser Gly Ser Arg Gly Ser Ser
20 25 30

Leu Asn Asp Thr Tyr His Ser Arg Asp Ser Ser Phe Arg Leu Asp Ser
35 40 45

Glu Tyr Gln Ser Thr Ser Ala Ser Ala Ser Ala Ser Pro Phe Gln Ser
50 55 60

Ala Trp Tyr Ser Glu Ser Glu Ile Thr Gln Gly Ala Arg Ser Arg Ser
65 70 75 80

Gln Asn Gln Gln Arg Asp His Asp Ser Lys Arg Pro Lys Leu Ser Cys
85 90 95

Thr Asn Cys Thr Thr Ser Ala Gly Arg Asn Val Gly Asn Gly Leu Asn
100 105 110

Thr Leu Ser Asp Ser Ser Trp Arg His Ser Gln Val Pro Arg Ser Ser
115 120 125

Ser Met Val Leu Gly Ser Phe Gly Thr Asp Leu Met Arg Glu Arg Arg
 130 135 140
 Asp Leu Glu Arg Arg Thr Asp Ser Ser Ile Ser Asn Leu Met Asp Tyr
 145 150 155 160
 Ser His Arg Ser Gly Asp Phe Thr Thr Ser Ser Tyr Val Gln Asp Arg
 165 170 175
 Val Pro Ser Tyr Ser Gln Gly Ala Arg Pro Lys Glu Asn Ser Met Ser
 180 185 190
 Thr Leu Gln Leu Asn Thr Ser Ser Thr Asn His Gln Leu Pro Ser Glu
 195 200 205
 His Gln Thr Ile Leu Ser Ser Arg Asp Ser Arg Asn Ser Leu Arg Ser
 210 215 220
 Asn Phe Ser Ser Arg Glu Ser Glu Ser Ser Arg Ser Asn Thr Gln Pro
 225 230 235 240
 Gly Phe Ser Tyr Ser Ser Ser Arg Asp Glu Ala Pro Ile Ile Ser Asn
 245 250 255
 Ser Glu Arg Val Val Ser Ser Gln Arg Pro Phe Gln Glu Ser Ser Asp
 260 265 270
 Asn Glu Gly Arg Arg Thr Thr Arg Arg Leu Leu Ser Arg Ile Ala Ser
 275 280 285
 Ser Met Ser Ser Thr Phe Phe Ser Arg Arg Ser Ser Gln Asp Ser Leu
 290 295 300
 Asn Thr Arg Ser Leu Asn Ser Glu Asn Ser Tyr Val Ser Pro Arg Ile
 305 310 315 320
 Leu Thr Ala Ser Gln Ser Arg Ser Asn Val Pro Ser Ala Ser Glu Val
 325 330 335
 Pro Asp Asn Arg Ala Ser Glu Ala Ser Gln Gly Phe Arg Phe Leu Arg
 340 345 350
 Arg Arg Trp Gly Leu Ser Ser Leu Ser His Asn His Ser Ser Glu Ser
 355 360 365
 Asp Ser Glu Asn Phe Asn Gln Glu Ser Glu Gly Arg Asn Thr Gly Pro
 370 375 380
 Trp Leu Ser Ser Ser Leu Arg Asn Arg Cys Thr Pro Leu Phe Ser Arg
 385 390 395 400

Arg Arg Arg Glu Gly Arg Asp Glu Ser Ser Arg Ile Pro Thr Ser Asp
 405 410 415
 Thr Ser Ser Arg Ser His Ile Phe Arg Arg Glu Ser Asn Glu Val Val
 420 425 430
 His Leu Glu Ala Gln Asn Asp Pro Leu Gly Ala Ala Ala Asn Arg Pro
 435 440 445
 Gln Ala Ser Ala Ala Ser Ser Ser Ala Thr Thr Gly Gly Ser Thr Ser
 450 455 460
 Asp Ser Ala Gln Gly Gly Arg Asn Thr Gly Ile Ser Gly Ile Leu Pro
 465 470 475 480
 Gly Ser Leu Phe Arg Phe Ala Val Pro Pro Ala Leu Gly Ser Asn Leu
 485 490 495
 Thr Asp Asn Val Met Ile Thr Val Asp Ile Ile Pro Ser Gly Trp Asn
 500 505 510
 Ser Ala Asp Gly Lys Ser Asp Lys Thr Lys Ser Ala Pro Ser Arg Asp
 515 520 525
 Pro Glu Arg Leu Gln Lys Ile Lys Glu Ser Leu Leu Leu Glu Asp Ser
 530 535 540
 Glu Glu Glu Glu Gly Asp Leu Cys Arg Ile Cys Gln Met Ala Ala Ala
 545 550 555 560
 Ser Ser Ser Asn Leu Leu Ile Glu Pro Cys Lys Cys Thr Gly Ser Leu
 565 570 575
 Gln Tyr Val His Gln Asp Cys Met Lys Lys Trp Leu Gln Ala Lys Ile
 580 585 590
 Asn Ser Gly Ser Ser Leu Glu Ala Val Thr Thr Cys Glu Leu Cys Lys
 595 600 605
 Glu Lys Leu Glu Leu Asn Leu Glu Asp Phe Asp Ile His Glu Leu His
 610 615 620
 Arg Ala His Ala Asn Glu Gln Ala Glu Tyr Glu Phe Ile Ser Ser Gly
 625 630 635 640
 Leu Tyr Leu Val Val Leu Leu His Leu Cys Glu Gln Ser Phe Ser Asp
 645 650 655
 Met Met Gly Asn Thr Asn Glu Pro Ser Thr Arg Val Arg Phe Ile Asn
 660 665 670

Leu Ala Arg Thr Leu Gln Ala His Met Glu Asp Leu Glu Thr Ser Glu
675 680 685

Asp Asp Ser Glu Glu Asp Gly Asp His Asn Arg Thr Phe Asp Ile Ala
690 695 700

<210> 597
<211> 291
<212> PRT
<213> Homo sapiens
<400> 597

Met Ser Met Pro Leu His Gln Ile Ser Ala Ile Pro Ser Gln Asp Ala
1 5 10 15

Ile Ser Ala Arg Val Tyr Arg Ser Lys Thr Lys Glu Lys Glu Arg Glu
20 25 30

Glu Gln Asn Glu Lys Thr Leu Gly His Phe Met Ser His Ser Ser Asn
35 40 45

Ile Ser Lys Ala Gly Ser Pro Pro Ser Ala Ser Ala Pro Ala Pro Val
50 55 60

Ser Ser Phe Ser Arg Thr Ser Ile Thr Pro Ser Ser Gln Asp Ile Cys
65 70 75 80

Arg Ile Cys His Cys Glu Gly Asp Asp Glu Ser Pro Leu Ile Thr Pro
85 90 95

Cys His Cys Thr Gly Ser Leu His Phe Val His Gln Ala Cys Leu Gln
100 105 110

Gln Trp Ile Lys Ser Ser Asp Thr Arg Cys Cys Glu Leu Cys Lys Tyr
115 120 125

Glu Phe Ile Met Glu Thr Lys Leu Lys Pro Leu Arg Lys Trp Glu Lys
130 135 140

Leu Gln Met Thr Ser Ser Glu Arg Arg Lys Ile Met Cys Ser Val Thr
145 150 155 160

Phe His Val Ile Ala Ile Thr Cys Val Val Trp Ser Leu Tyr Val Leu
165 170 175

Ile Asp Arg Thr Ala Glu Glu Ile Lys Gln Gly Gln Ala Thr Gly Ile
180 185 190

Leu Glu Trp Pro Phe Trp Thr Lys Leu Val Val Val Ala Ile Gly Phe
195 200 205

Thr Gly Gly Leu Leu Phe Met Tyr Val Gln Cys Lys Val Tyr Val Gln
Page 910

210

215

220

Leu Trp Lys Arg Leu Lys Ala Tyr Asn Arg Val Ile Tyr Val Gln Asn
 225 230 235 240

Cys Pro Glu Thr Ser Lys Lys Asn Ile Phe Glu Lys Ser Pro Leu Thr
 245 250 255

Glu Pro Asn Phe Glu Asn Lys His Gly Tyr Gly Ile Cys His Ser Asp
 260 265 270

Thr Asn Ser Ser Cys Cys Thr Glu Pro Glu Asp Thr Gly Ala Glu Ile
 275 280 285

Ile His Val
 290

<210> 598
 <211> 729
 <212> PRT
 <213> Homo sapiens

<400> 598

Met Ser Thr Arg Thr Pro Leu Pro Thr Val Asn Glu Arg Asp Thr Glu
 1 5 10 15

Asn His Thr Ser His Gly Asp Gly Arg Gln Glu Val Thr Ser Arg Thr
 20 25 30

Ser Arg Ser Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser Cys Ala Asp
 35 40 45

Glu Gln Pro His Ile Gly Asn Tyr Arg Leu Leu Lys Thr Ile Gly Lys
 50 55 60

Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr Gly Arg
 65 70 75 80

Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro Thr Ser
 85 90 95

Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Ile Leu Asn His
 100 105 110

Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys Thr Leu
 115 120 125

Tyr Leu Ile Met Glu Tyr Ala Ser Gly Gly Glu Val Phe Asp Tyr Leu
 130 135 140

Val Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg Ser Lys Phe Arg
 145 150 155 160

Gln Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys Arg Ile Val His
 165 170 175
 Arg Asp Leu Lys Ala Glu Asn Leu Leu Asp Ala Asp Met Asn Ile
 180 185 190
 Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly Gly Lys
 195 200 205
 Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe
 210 215 220
 Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Val Trp Ser Leu Gly
 225 230 235 240
 Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly Gln
 245 250 255
 Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr Arg Ile
 260 265 270
 Pro Phe Tyr Met Ser Thr Asp Cys Glu Asn Leu Leu Lys Arg Phe Leu
 275 280 285
 Val Leu Asn Pro Ile Lys Arg Gly Thr Leu Glu Gln Ile Met Lys Asp
 290 295 300
 Arg Trp Ile Asn Ala Gly His Glu Glu Asp Glu Leu Lys Pro Phe Val
 305 310 315 320
 Glu Pro Glu Leu Asp Ile Ser Asp Gln Lys Arg Ile Asp Ile Met Val
 325 330 335
 Gly Met Gly Tyr Ser Gln Glu Glu Ile Gln Glu Ser Leu Ser Lys Met
 340 345 350
 Lys Tyr Asp Glu Ile Thr Ala Thr Tyr Leu Leu Leu Gly Arg Lys Ser
 355 360 365
 Ser Glu Leu Asp Ala Ser Asp Ser Ser Ser Ser Asn Leu Ser Leu
 370 375 380
 Ala Lys Val Arg Pro Ser Ser Asp Leu Asn Asn Ser Thr Gly Gln Ser
 385 390 395 400
 Pro His His Lys Val Gln Arg Ser Val Ser Ser Ser Gln Lys Gln Arg
 405 410 415
 Arg Tyr Ser Asp His Ala Gly Pro Ala Ile Pro Ser Val Val Ala Tyr
 420 425 430

Pro Lys Arg Ser Gln Thr Ser Thr Ala Asp Ser Asp Leu Lys Glu Asp
 435 440 445
 Gly Ile Ser Ser Arg Lys Ser Ser Gly Ser Ala Val Gly Gly Lys Gly
 450 455 460
 Ile Ala Pro Ala Ser Pro Met Leu Gly Asn Ala Ser Asn Pro Asn Lys
 465 470 475 480
 Ala Asp Ile Pro Glu Arg Lys Lys Ser Ser Thr Val Pro Ser Ser Asn
 485 490 495
 Thr Ala Ser Gly Gly Met Thr Arg Arg Asn Thr Tyr Val Cys Ser Glu
 500 505 510
 Arg Thr Thr Ala Asp Arg His Ser Val Ile Gln Asn Gly Lys Glu Asn
 515 520 525
 Ser Thr Ile Pro Asp Gln Arg Thr Pro Val Ala Ser Thr His Ser Ile
 530 535 540
 Ser Ser Ala Ala Thr Pro Asp Arg Ile Arg Phe Pro Arg Gly Thr Ala
 545 550 555 560
 Ser Arg Ser Thr Phe His Gly Gln Pro Arg Glu Arg Arg Thr Ala Thr
 565 570 575
 Tyr Asn Gly Pro Pro Ala Ser Pro Ser Leu Ser His Glu Ala Thr Pro
 580 585 590
 Leu Ser Gln Thr Arg Ser Arg Gly Ser Thr Asn Leu Phe Ser Lys Leu
 595 600 605
 Thr Ser Lys Leu Thr Arg Ser Arg Asn Val Ser Ala Glu Gln Lys Asp
 610 615 620
 Glu Asn Lys Glu Ala Lys Pro Arg Ser Leu Arg Phe Thr Trp Ser Met
 625 630 635 640
 Lys Thr Thr Ser Ser Met Asp Pro Gly Asp Met Met Arg Glu Ile Arg
 645 650 655
 Lys Val Leu Asp Ala Asn Asn Cys Asp Tyr Glu Gln Arg Glu Arg Phe
 660 665 670
 Leu Leu Phe Cys Val His Gly Asp Gly His Ala Glu Asn Leu Val Gln
 675 680 685
 Trp Glu Met Glu Val Cys Lys Leu Pro Arg Leu Ser Leu Asn Gly Val
 690 695 700

Arg Phe Lys Arg Ile Ser Gly Thr Ser Ile Ala Phe Lys Asn Ile Ala
705 710 715 720

Ser Lys Ile Ala Asn Glu Leu Lys Leu
725

<210> 599
<211> 1309
<212> PRT
<213> Homo sapiens

<400> 599

Met Asp Glu Ser Ser Leu Leu Arg Arg Arg Gly Leu Gln Lys Glu Leu
1 5 10 15

Ser Leu Pro Arg Arg Gly Arg Gly Cys Arg Ser Gly Asn Arg Lys Ser
20 25 30

Leu Val Val Gly Thr Pro Ser Pro Thr Leu Ser Arg Pro Leu Ser Pro
35 40 45

Leu Ser Val Pro Thr Ala Gly Ser Ser Pro Leu Asp Ser Pro Arg Asn
50 55 60

Phe Ser Ala Ala Ser Ala Leu Asn Phe Pro Phe Ala Arg Arg Ala Asp
65 70 75 80

Gly Arg Arg Trp Ser Leu Ala Ser Leu Pro Ser Ser Gly Tyr Gly Thr
85 90 95

Asn Thr Pro Ser Ser Thr Leu Ser Ser Ser Ser Ser Arg Glu Arg
100 105 110

Leu His Gln Leu Pro Phe Gln Pro Thr Pro Asp Glu Leu His Phe Leu
115 120 125

Ser Lys His Phe Arg Ser Ser Glu Asn Val Leu Asp Glu Glu Gly Gly
130 135 140

Arg Ser Pro Arg Leu Arg Pro Arg Ser Arg Ser Leu Ser Pro Gly Arg
145 150 155 160

Ala Thr Gly Thr Phe Asp Asn Glu Ile Val Met Met Asn His Val Tyr
165 170 175

Arg Glu Arg Phe Pro Lys Ala Thr Ala Gln Met Glu Gly Arg Leu Gln
180 185 190

Glu Phe Leu Thr Ala Tyr Ala Pro Gly Ala Arg Leu Ala Leu Ala Asp
195 200 205

Gly Val Leu Gly Phe Ile His His Gln Ile Val Glu Leu Ala Arg Asp
 210 215 220
 Cys Leu Ala Lys Ser Gly Glu Asn Leu Val Thr Ser Arg Tyr Phe Leu
 225 230 235 240
 Glu Met Gln Glu Lys Leu Glu Arg Leu Leu Gln Asp Ala His Glu Arg
 245 250 255
 Ser Asp Ser Glu Glu Val Ser Phe Ile Val Gln Leu Val Arg Lys Leu
 260 265 270
 Leu Ile Ile Ile Ser Arg Pro Ala Arg Leu Leu Glu Cys Leu Glu Phe
 275 280 285
 Asp Pro Glu Glu Phe Tyr His Leu Leu Glu Ala Ala Glu Gly His Ala
 290 295 300
 Arg Glu Gly Gln Gly Ile Lys Thr Asp Leu Pro Gln Tyr Ile Ile Gly
 305 310 315 320
 Gln Leu Gly Leu Ala Lys Asp Pro Leu Glu Glu Met Val Pro Leu Ser
 325 330 335
 His Leu Glu Glu Glu Gln Pro Pro Ala Pro Glu Ser Pro Glu Ser Arg
 340 345 350
 Ala Leu Val Gly Gln Ser Arg Arg Lys Pro Cys Glu Ser Asp Phe Glu
 355 360 365
 Thr Ile Lys Leu Ile Ser Asn Gly Ala Tyr Gly Ala Val Tyr Leu Val
 370 375 380
 Arg His Arg Asp Thr Arg Gln Arg Phe Ala Ile Lys Lys Ile Asn Lys
 385 390 395 400
 Gln Asn Leu Ile Leu Arg Asn Gln Ile Gln Gln Val Phe Val Glu Arg
 405 410 415
 Asp Ile Leu Thr Phe Ala Glu Asn Pro Phe Val Val Ser Met Phe Cys
 420 425 430
 Ser Phe Glu Thr Arg Arg His Leu Cys Met Val Met Glu Tyr Val Glu
 435 440 445
 Gly Gly Asp Cys Ala Thr Leu Leu Lys Asn Met Gly Pro Leu Pro Val
 450 455 460
 Asp Met Ala Arg Leu Tyr Phe Ala Glu Thr Val Leu Ala Leu Glu Tyr
 465 470 475 480

Leu His Asn Tyr Gly Ile Val His Arg Asp Leu Lys Pro Asp Asn Leu
 485 490 495

Leu Ile Thr Ser Leu Gly His Ile Lys Leu Thr Asp Phe Gly Leu Ser
 500 505 510

Lys Ile Gly Leu Met Ser Met Ala Thr Asn Leu Tyr Glu Gly His Ile
 515 520 525

Glu Lys Asp Ala Arg Glu Phe Ile Asp Lys Gln Val Cys Gly Thr Pro
 530 535 540

Glu Tyr Ile Ala Pro Glu Val Ile Phe Arg Gln Gly Tyr Gly Lys Pro
 545 550 555 560

Val Asp Trp Trp Ala Met Gly Val Val Leu Tyr Glu Phe Leu Val Gly
 565 570 575

Cys Val Pro Phe Phe Gly Asp Thr Pro Glu Glu Leu Phe Gly Gln Val
 580 585 590

Val Ser Asp Glu Ile Met Trp Pro Glu Gly Asp Glu Ala Leu Pro Ala
 595 600 605

Asp Ala Gln Asp Leu Ile Thr Arg Leu Leu Arg Gln Ser Pro Leu Asp
 610 615 620

Arg Leu Gly Thr Gly Gly Thr His Glu Val Lys Gln His Pro Phe Phe
 625 630 635 640

Leu Ala Leu Asp Trp Ala Gly Leu Leu Arg His Lys Ala Glu Phe Val
 645 650 655

Pro Gln Leu Glu Ala Glu Asp Asp Thr Ser Tyr Phe Asp Thr Arg Ser
 660 665 670

Glu Arg Tyr Arg His Leu Gly Ser Glu Asp Asp Glu Thr Asn Asp Glu
 675 680 685

Glu Ser Ser Thr Glu Ile Pro Gln Phe Ser Ser Cys Ser His Arg Phe
 690 695 700

Ser Lys Val Tyr Ser Ser Ser Glu Phe Leu Ala Val Gln Pro Thr Pro
 705 710 715 720

Thr Phe Ala Glu Arg Ser Phe Ser Glu Asp Arg Glu Glu Gly Trp Glu
 725 730 735

Arg Ser Glu Val Asp Tyr Gly Arg Arg Leu Ser Ala Asp Ile Arg Leu
 740 745 750

Arg Ser Trp Thr Ser Ser Gly Ser Ser Cys Gln Ser Ser Ser Ser Gln
 755 760 765
 Pro Glu Arg Gly Pro Ser Pro Ser Leu Leu Asn Thr Ile Ser Leu Asp
 770 775 780
 Thr Met Pro Lys Phe Ala Phe Ser Ser Glu Asp Glu Gly Val Gly Pro
 785 790 795 800
 Gly Pro Ala Gly Pro Lys Arg Pro Val Phe Ile Leu Gly Glu Pro Asp
 805 810 815
 Pro Pro Pro Ala Ala Thr Pro Val Met Pro Lys Pro Ser Ser Leu Ser
 820 825 830
 Ala Asp Thr Ala Ala Leu Ser His Ala Arg Leu Arg Ser Asn Ser Ile
 835 840 845
 Gly Ala Arg His Ser Thr Pro Arg Pro Leu Asp Ala Gly Arg Gly Arg
 850 855 860
 Arg Leu Gly Gly Pro Arg Asp Pro Ala Pro Glu Lys Ser Arg Ala Ser
 865 870 875 880
 Ser Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Arg Val Pro Lys Ser
 885 890 895
 Ala Ser Val Ser Ala Leu Ser Leu Ile Ile Thr Ala Asp Asp Gly Ser
 900 905 910
 Gly Gly Pro Leu Met Ser Pro Leu Ser Pro Arg Ser Leu Ser Ser Asn
 915 920 925
 Pro Ser Ser Arg Asp Ser Ser Pro Ser Arg Asp Pro Ser Pro Val Cys
 930 935 940
 Gly Ser Leu Arg Pro Pro Ile Val Ile His Ser Ser Gly Lys Lys Tyr
 945 950 955 960
 Gly Phe Ser Leu Arg Ala Ile Arg Val Tyr Met Gly Asp Ser Asp Val
 965 970 975
 Tyr Thr Val His His Val Val Trp Ser Val Glu Asp Gly Ser Pro Ala
 980 985 990
 Gln Glu Ala Gly Leu Arg Ala Gly Asp Leu Ile Thr His Ile Asn Gly
 995 1000 1005
 Glu Ser Val Leu Gly Leu Val His Met Asp Val Val Glu Leu Leu
 1010 1015 1020

Leu	Lys	Ser	Gly	Asn	Lys	Ile	Ser	Leu	Arg	Thr	Thr	Ala	Leu	Glu
	1025					1030					1035			
Asn	Thr	Ser	Ile	Lys	Val	Gly	Pro	Ala	Arg	Lys	Asn	Val	Ala	Lys
	1040					1045					1050			
Gly	Arg	Met	Ala	Arg	Arg	Ser	Lys	Arg	Ser	Arg	Arg	Arg	Glu	Thr
	1055					1060					1065			
Gln	Asp	Arg	Arg	Lys	Ser	Leu	Phe	Lys	Lys	Ile	Ser	Lys	Gln	Thr
	1070					1075					1080			
Ser	Val	Leu	His	Thr	Ser	Arg	Ser	Phe	Ser	Ser	Gly	Leu	His	His
	1085					1090					1095			
Ser	Leu	Ser	Ser	Ser	Glu	Ser	Leu	Pro	Gly	Ser	Pro	Thr	His	Ser
	1100					1105					1110			
Leu	Ser	Pro	Ser	Pro	Thr	Thr	Pro	Cys	Arg	Ser	Pro	Ala	Pro	Asp
	1115					1120					1125			
Val	Pro	Ala	Asp	Thr	Thr	Ala	Ser	Pro	Pro	Ser	Ala	Ser	Pro	Ser
	1130					1135					1140			
Ser	Ser	Ser	Pro	Ala	Ser	Pro	Ala	Ala	Ala	Gly	His	Thr	Arg	Pro
	1145					1150					1155			
Ser	Ser	Leu	His	Gly	Leu	Ala	Ala	Lys	Leu	Gly	Pro	Pro	Arg	Pro
	1160					1165					1170			
Lys	Thr	Gly	Arg	Arg	Lys	Ser	Thr	Ser	Ser	Ile	Pro	Pro	Ser	Pro
	1175					1180					1185			
Leu	Ala	Cys	Pro	Pro	Ile	Ser	Ala	Pro	Pro	Pro	Arg	Ser	Pro	Ser
	1190					1195					1200			
Pro	Leu	Pro	Gly	His	Pro	Pro	Ala	Pro	Ala	Arg	Ser	Pro	Arg	Leu
	1205					1210					1215			
Arg	Arg	Gly	Gln	Ser	Ala	Asp	Lys	Leu	Gly	Thr	Gly	Glu	Arg	Leu
	1220					1225					1230			
Asp	Gly	Glu	Ala	Gly	Arg	Arg	Thr	Arg	Gly	Pro	Glu	Ala	Glu	Leu
	1235					1240					1245			
Val	Val	Met	Arg	Arg	Leu	His	Leu	Ser	Glu	Arg	Arg	Asp	Ser	Phe
	1250					1255					1260			
Lys	Lys	Gln	Glu	Ala	Val	Gln	Glu	Val	Ser	Phe	Asp	Glu	Pro	Gln
	1265					1270					1275			

Glu Glu Ala Thr Gly Leu Pro Thr Ser Val Pro Gln Ile Ala Val
1280 1285 1290

Glu Gly Glu Glu Ala Val Pro Val Ala Leu Gly Pro Thr Gly Arg
1295 1300 1305

Asp

<210> 600
<211> 160
<212> PRT
<213> Homo sapiens

<400> 600

Met Ser Asp Asn Asp Asp Ile Glu Val Glu Ser Asp Glu Glu Gln Pro
1 5 10 15

Arg Phe Gln Ser Ala Ala Asp Lys Arg Ala His His Asn Ala Leu Glu
20 25 30

Arg Lys Arg Arg Asp His Ile Lys Asp Ser Phe His Ser Leu Arg Asp
35 40 45

Ser Val Pro Ser Leu Gln Gly Glu Lys Ala Ser Arg Ala Gln Ile Leu
50 55 60

Asp Lys Ala Thr Glu Tyr Ile Gln Tyr Met Arg Arg Lys Asn His Thr
65 70 75 80

His Gln Gln Asp Ile Asp Asp Leu Lys Arg Gln Asn Ala Leu Leu Glu
85 90 95

Gln Gln Val Arg Ala Leu Glu Lys Ala Arg Ser Ser Ala Gln Leu Gln
100 105 110

Thr Asn Tyr Pro Ser Ser Asp Asn Ser Leu Tyr Thr Asn Ala Lys Gly
115 120 125

Ser Thr Ile Ser Ala Phe Asp Gly Gly Ser Asp Ser Ser Ser Glu Ser
130 135 140

Glu Pro Glu Glu Pro Gln Ser Arg Lys Lys Leu Arg Met Glu Ala Ser
145 150 155 160

<210> 601
<211> 186
<212> PRT
<213> Homo sapiens

<400> 601

Met Ala Ser Gln Lys Arg Pro Ser Gln Arg His Gly Ser Lys Tyr Leu
Page 919

1					5					10					15				
Ala	Thr	Ala	Ser 20	Thr	Met	Asp	His	Ala 25	Arg	His	Gly	Phe	Leu 30	Pro	Arg				
His	Arg	Asp 35	Thr	Gly	Ile	Leu	Asp 40	Ser	Ile	Gly	Arg	Phe 45	Phe	Gly	Gly				
Asp	Arg 50	Gly	Ala	Pro	Lys	Arg 55	Gly	Ser	Gly	Lys	Val 60	Pro	Trp	Leu	Lys				
Pro 65	Gly	Arg	Ser	Pro	Leu 70	Pro	Ser	His	Ala	Arg 75	Ser	Gln	Pro	Gly	Leu 80				
Cys	Asn	Met	Tyr	Lys 85	Asp	Ser	His	His	Pro 90	Ala	Arg	Thr	Ala	His 95	Tyr				
Gly	Ser	Leu	Pro 100	Gln	Lys	Ser	His	Gly 105	Arg	Thr	Gln	Asp	Glu 110	Asn	Pro				
Val	Val	His 115	Phe	Phe	Lys	Asn	Ile 120	Val	Thr	Pro	Arg	Thr 125	Pro	Pro	Pro				
Ser	Gln 130	Gly	Lys	Gly	Ala	Glu 135	Gly	Gln	Arg	Pro	Gly 140	Phe	Gly	Tyr	Gly				
Gly 145	Arg	Ala	Ser	Asp	Tyr 150	Lys	Ser	Ala	His	Lys 155	Gly	Phe	Lys	Gly	Val 160				
Asp	Ala	Gln	Gly	Thr 165	Leu	Ser	Lys	Ile	Phe 170	Lys	Leu	Gly	Gly	Arg 175	Asp				
Ser	Arg	Ser	Gly 180	Ser	Pro	Met	Ala	Arg 185	Arg										

```
<210> 602
<211> 878
<212> PRT
<213> Homo sapiens
```

<400> 602

Met Asp Leu Asp Lys Pro Ser Val Trp Gly Ser Leu Lys Gln Arg Thr
1 5 10 15

Arg Pro Leu Leu Ile Asn Leu Ser Lys Lys Lys Val Lys Lys Asn Pro
20 25 30

Ser Lys Pro Pro Asp Leu Arg Ala Arg His His Leu Asp Arg Arg Leu
35 40 45

Ser Leu Ser Val Pro Asp Leu Leu Glu Ala Glu Ala Leu Ala Pro Glu
50 55 60

Gly Arg Pro Tyr Ser Gly Pro Gln Ser Ser Tyr Thr Ser Val Pro Ser
 65 70 75 80
 Ser Leu Ser Thr Ala Gly Ile Phe Pro Lys Ser Ser Ser Ser Ser Leu
 85 90 95
 Lys Gln Ser Glu Glu Glu Leu Asp Trp Ser Gln Glu Glu Ala Ser His
 100 105 110
 Leu His Val Val Glu Thr Asp Ser Glu Glu Ala Tyr Ala Ser Pro Ala
 115 120 125
 Glu Arg Arg Arg Val Ser Ser Asn Gly Ile Phe Asp Leu Gln Lys Thr
 130 135 140
 Ser Leu Gly Gly Asp Ala Pro Glu Glu Pro Glu Lys Leu Cys Gly Ser
 145 150 155 160
 Ser Asp Leu Asn Ala Ser Met Thr Ser Gln His Phe Glu Glu Gln Ser
 165 170 175
 Val Pro Gly Glu Ala Ser Asp Gly Leu Ser Asn Leu Pro Ser Pro Phe
 180 185 190
 Ala Tyr Leu Leu Thr Ile His Leu Lys Glu Gly Arg Asn Leu Val Val
 195 200 205
 Arg Asp Arg Cys Gly Thr Ser Asp Pro Tyr Val Lys Phe Lys Leu Asn
 210 215 220
 Gly Lys Thr Leu Tyr Lys Ser Lys Val Ile Tyr Lys Asn Leu Asn Pro
 225 230 235 240
 Val Trp Asp Glu Ile Val Val Leu Pro Ile Gln Ser Leu Asp Gln Lys
 245 250 255
 Leu Arg Val Lys Val Tyr Asp Arg Asp Leu Thr Thr Ser Asp Phe Met
 260 265 270
 Gly Ser Ala Phe Val Ile Leu Ser Asp Leu Glu Leu Asn Arg Thr Thr
 275 280 285
 Glu His Ile Leu Lys Leu Glu Asp Pro Asn Ser Leu Glu Asp Asp Met
 290 295 300
 Gly Val Ile Val Leu Asn Leu Asn Leu Val Val Lys Gln Gly Asp Phe
 305 310 315 320
 Lys Arg His Arg Trp Ser Asn Arg Lys Arg Leu Ser Ala Ser Lys Ser
 325 330 335

Ser Leu Ile Arg Asn Leu Arg Leu Ser Glu Ser Leu Lys Lys Asn Gln
 340 345 350
 Leu Trp Asn Gly Ile Ile Ser Ile Thr Leu Leu Glu Gly Lys Asn Val
 355 360 365
 Ser Gly Gly Ser Met Thr Glu Met Phe Val Gln Leu Lys Leu Gly Asp
 370 375 380
 Gln Arg Tyr Lys Ser Lys Thr Leu Cys Lys Ser Ala Asn Pro Gln Trp
 385 390 395 400
 Gln Glu Gln Phe Asp Phe His Tyr Phe Ser Asp Arg Met Gly Ile Leu
 405 410 415
 Asp Ile Glu Val Trp Gly Lys Asp Asn Lys Lys His Glu Glu Arg Leu
 420 425 430
 Gly Thr Cys Lys Val Asp Ile Ser Ala Leu Pro Leu Lys Gln Ala Asn
 435 440 445
 Cys Leu Glu Leu Pro Leu Asp Ser Cys Leu Gly Ala Leu Leu Met Leu
 450 455 460
 Val Thr Leu Thr Pro Cys Ala Gly Val Ser Val Ser Asp Leu Cys Val
 465 470 475 480
 Cys Pro Leu Ala Asp Leu Ser Glu Arg Lys Gln Ile Thr Gln Arg Tyr
 485 490 495
 Cys Leu Gln Asn Ser Leu Lys Asp Val Lys Asp Val Gly Ile Leu Gln
 500 505 510
 Val Lys Val Leu Lys Ala Ala Asp Leu Leu Ala Ala Asp Phe Ser Gly
 515 520 525
 Lys Ser Asp Pro Phe Cys Leu Leu Glu Leu Gly Asn Asp Arg Leu Gln
 530 535 540
 Thr His Thr Val Tyr Lys Asn Leu Asn Pro Glu Trp Asn Lys Val Phe
 545 550 555 560
 Thr Phe Pro Ile Lys Asp Ile His Asp Val Leu Glu Val Thr Val Phe
 565 570 575
 Asp Glu Asp Gly Asp Lys Pro Pro Asp Phe Leu Gly Lys Val Ala Ile
 580 585 590
 Pro Leu Leu Ser Ile Arg Asp Gly Gln Pro Asn Cys Tyr Val Leu Lys
 595 600 605

Asn Lys Asp Leu Glu Gln Ala Phe Lys Gly Val Ile Tyr Leu Glu Met
 610 615 620
 Asp Leu Ile Tyr Asn Pro Val Lys Ala Ser Ile Arg Thr Phe Thr Pro
 625 630 635 640
 Arg Glu Lys Arg Phe Val Glu Asp Ser Arg Lys Leu Ser Lys Lys Ile
 645 650 655
 Leu Ser Arg Asp Val Asp Arg Val Lys Arg Ile Thr Met Ala Ile Trp
 660 665 670
 Asn Thr Met Gln Phe Leu Lys Ser Cys Phe Gln Trp Glu Ser Thr Leu
 675 680 685
 Arg Ser Thr Ile Ala Phe Ala Val Phe Leu Ile Thr Val Trp Asn Phe
 690 695 700
 Glu Leu Tyr Met Ile Pro Leu Ala Leu Leu Leu Ile Phe Val Tyr Asn
 705 710 715 720
 Phe Ile Arg Pro Val Lys Gly Lys Val Ser Ser Ile Gln Asp Ser Gln
 725 730 735
 Glu Ser Thr Asp Ile Asp Asp Glu Glu Asp Glu Asp Asp Lys Glu Ser
 740 745 750
 Glu Lys Lys Gly Leu Ile Glu Arg Ile Tyr Met Val Gln Asp Ile Val
 755 760 765
 Ser Thr Val Gln Asn Val Leu Glu Glu Ile Ala Ser Phe Gly Glu Arg
 770 775 780
 Ile Lys Asn Thr Phe Asn Trp Thr Val Pro Phe Leu Ser Ser Leu Ala
 785 790 795 800
 Cys Leu Ile Leu Ala Ala Ala Thr Ile Ile Leu Tyr Phe Ile Pro Leu
 805 810 815
 Arg Tyr Ile Ile Leu Ile Trp Gly Ile Asn Lys Phe Thr Lys Lys Leu
 820 825 830
 Arg Asn Pro Tyr Ser Ile Asp Asn Asn Glu Leu Leu Asp Phe Leu Ser
 835 840 845
 Arg Val Pro Ser Asp Val Gln Lys Val Gln Tyr Ala Glu Leu Lys Leu
 850 855 860
 Cys Ser Ser His Ser Pro Leu Arg Lys Lys Arg Ser Ala Leu
 865 870 875

<210> 603
 <211> 2174
 <212> PRT
 <213> Homo sapiens

<400> 603

Met Ser Ala Ser Phe Val Pro Asn Gly Ala Ser Leu Glu Asp Cys His
 1 5 10 15

Cys Asn Leu Phe Cys Leu Ala Asp Leu Thr Gly Ile Lys Trp Lys Lys
 20 25 30

Tyr Val Trp Gln Gly Pro Thr Ser Ala Pro Ile Leu Phe Pro Val Thr
 35 40 45

Glu Glu Asp Pro Ile Leu Ser Ser Phe Ser Arg Cys Leu Lys Ala Asp
 50 55 60

Val Leu Gly Val Trp Arg Arg Asp Gln Arg Pro Gly Arg Arg Glu Leu
 65 70 75 80

Trp Ile Phe Trp Trp Gly Glu Asp Pro Ser Phe Ala Asp Leu Ile His
 85 90 95

His Asp Leu Ser Glu Glu Glu Asp Gly Val Trp Glu Asn Gly Leu Ser
 100 105 110

Tyr Glu Cys Arg Thr Leu Leu Phe Lys Ala Val His Asn Leu Leu Glu
 115 120 125

Arg Cys Leu Met Asn Arg Asn Phe Val Arg Ile Gly Lys Trp Phe Val
 130 135 140

Lys Pro Tyr Glu Lys Asp Glu Lys Pro Ile Asn Lys Ser Glu His Leu
 145 150 155 160

Ser Cys Ser Phe Thr Phe Phe Leu His Gly Asp Ser Asn Val Cys Thr
 165 170 175

Ser Val Glu Ile Asn Gln His Gln Pro Val Tyr Leu Leu Ser Glu Glu
 180 185 190

His Ile Thr Leu Ala Gln Gln Ser Asn Ser Pro Phe Gln Val Ile Leu
 195 200 205

Cys Pro Phe Gly Leu Asn Gly Thr Leu Thr Gly Gln Ala Phe Lys Met
 210 215 220

Ser Asp Ser Ala Thr Lys Lys Leu Ile Gly Glu Trp Lys Gln Phe Tyr
 225 230 235 240

Pro Ile Ser Cys Cys₂₄₅ Leu Lys Glu Met Ser₂₅₀ Glu Glu Lys Gln Glu₂₅₅ Asp
 Met Asp Trp Glu₂₆₀ Asp Asp Ser Leu Ala₂₆₅ Ala Val Glu Val Leu₂₇₀ Val Ala
 Gly Val Arg₂₇₅ Met Ile Tyr Pro Ala₂₈₀ Cys Phe Val Leu Val₂₈₅ Pro Gln Ser
 Asp Ile₂₉₀ Pro Thr Pro Ser Pro₂₉₅ Val Gly Ser Thr His₃₀₀ Cys Ser Ser Ser
 Cys₃₀₅ Leu Gly Val His Glu₃₁₀ Val Pro Ala Ser Thr₃₁₅ Arg Asp Pro Ala Met₃₂₀
 Ser Ser Val Thr Leu₃₂₅ Thr Pro Pro Thr Ser₃₃₀ Pro Glu Glu Val Gln₃₃₅ Thr
 Val Asp Pro Gln₃₄₀ Ser Val Gln Lys Trp₃₄₅ Val Lys Phe Ser Ser₃₅₀ Val Ser
 Asp Gly Phe₃₅₅ Asn Ser Asp Ser Thr₃₆₀ Ser His His Gly₃₆₅ Gly Lys Ile Pro
 Arg Lys₃₇₀ Leu Ala Asn His Val₃₇₅ Val Asp Arg Val Trp₃₈₀ Gln Glu Cys Asn
 Met₃₈₅ Asn Arg Ala Gln Asn₃₉₀ Lys Arg Lys Tyr Ser₃₉₅ Ala Ser Ser Gly₄₀₀ Gly
 Leu Cys Glu Glu Ala₄₀₅ Thr Ala Ala Lys Val₄₁₀ Ala Ser Trp Asp Phe₄₁₅ Val
 Glu Ala Thr Gln₄₂₀ Arg Thr Asn Cys Ser₄₂₅ Cys Leu Arg His Lys₄₃₀ Asn Leu
 Lys Ser Arg₄₃₅ Asn Ala Gly Gln Gln₄₄₀ Gly Gln Ala Pro Ser₄₄₅ Leu Gly Gln
 Gln₄₅₀ Gln Gln Ile Leu Pro Lys₄₅₅ His Lys Thr Asn Glu₄₆₀ Lys Gln Glu Lys
 Ser₄₆₅ Glu Lys Pro Gln Lys₄₇₀ Arg Pro Leu Thr Pro₄₇₅ Phe His His Arg Val₄₈₀
 Ser Val Ser Asp Asp₄₈₅ Val Gly Met Asp Ala₄₉₀ Asp Ser Ala Ser Gln₄₉₅ Arg
 Leu Val Ile Ser₅₀₀ Ala Pro Asp Ser Gln₅₀₅ Val Arg Phe Ser Asn₅₁₀ Ile Arg

Thr Asn Asp Val Ala Lys Thr Pro Gln Met His Gly Thr Glu Met Ala
 515 520 525
 Asn Ser Pro Gln Pro Pro Pro Leu Ser Pro His Pro Cys Asp Val Val
 530 535 540
 Asp Glu Gly Val Thr Lys Thr Pro Ser Thr Pro Gln Ser Gln His Phe
 545 550 555 560
 Tyr Gln Met Pro Thr Pro Asp Pro Leu Val Pro Ser Lys Pro Met Glu
 565 570 575
 Asp Arg Ile Asp Ser Leu Ser Gln Ser Phe Pro Pro Gln Tyr Gln Glu
 580 585 590
 Ala Val Glu Pro Thr Val Tyr Val Gly Thr Ala Val Asn Leu Glu Glu
 595 600 605
 Asp Glu Ala Asn Ile Ala Trp Lys Tyr Tyr Lys Phe Pro Lys Lys Lys
 610 615 620
 Asp Val Glu Phe Leu Pro Pro Gln Leu Pro Ser Asp Lys Phe Lys Asp
 625 630 635 640
 Asp Pro Val Gly Pro Phe Gly Gln Glu Ser Val Thr Ser Val Thr Glu
 645 650 655
 Leu Met Val Gln Cys Lys Lys Pro Leu Lys Val Ser Asp Glu Leu Val
 660 665 670
 Gln Gln Tyr Gln Ile Lys Asn Gln Cys Leu Ser Ala Ile Ala Ser Asp
 675 680 685
 Ala Glu Gln Glu Pro Lys Ile Asp Pro Tyr Ala Phe Val Glu Gly Asp
 690 695 700
 Glu Glu Phe Leu Phe Pro Asp Lys Lys Asp Arg Gln Asn Ser Glu Arg
 705 710 715 720
 Glu Ala Gly Lys Lys His Lys Val Glu Asp Gly Thr Ser Ser Val Thr
 725 730 735
 Val Leu Ser His Glu Glu Asp Ala Met Ser Leu Phe Ser Pro Ser Ile
 740 745 750
 Lys Gln Asp Ala Pro Arg Pro Thr Ser His Ala Arg Pro Pro Ser Thr
 755 760 765
 Ser Leu Ile Tyr Asp Ser Asp Leu Ala Val Ser Tyr Thr Asp Leu Asp
 770 775 780

Asn Leu Phe Asn Ser Asp Glu Asp Glu Leu Thr Pro Gly Ser Lys Lys
 785 790 795 800
 Ser Ala Asn Gly Ser Asp Asp Lys Ala Ser Cys Lys Glu Ser Lys Thr
 805 810 815
 Gly Asn Leu Asp Pro Leu Ser Cys Ile Ser Thr Ala Asp Leu His Lys
 820 825 830
 Met Tyr Pro Thr Pro Pro Ser Leu Glu Gln His Ile Met Gly Phe Ser
 835 840 845
 Pro Met Asn Met Asn Asn Lys Glu Tyr Gly Ser Met Asp Thr Thr Pro
 850 855 860
 Gly Gly Thr Val Leu Glu Gly Asn Ser Ser Ser Ile Gly Ala Gln Phe
 865 870 875 880
 Lys Ile Glu Val Asp Glu Gly Phe Cys Ser Pro Lys Pro Ser Glu Ile
 885 890 895
 Lys Asp Phe Ser Tyr Val Tyr Lys Pro Glu Asn Cys Gln Ile Leu Val
 900 905 910
 Gly Cys Ser Met Phe Ala Pro Leu Lys Thr Leu Pro Ser Gln Tyr Leu
 915 920 925
 Pro Pro Ile Lys Leu Pro Glu Glu Cys Ile Tyr Arg Gln Ser Trp Thr
 930 935 940
 Val Gly Lys Leu Glu Leu Leu Ser Ser Gly Pro Ser Met Pro Phe Ile
 945 950 955 960
 Lys Glu Gly Asp Gly Ser Asn Met Asp Gln Glu Tyr Gly Thr Ala Tyr
 965 970 975
 Thr Pro Gln Thr His Thr Ser Phe Gly Met Pro Pro Ser Ser Ala Pro
 980 985 990
 Pro Ser Asn Ser Gly Ala Gly Ile Leu Pro Ser Pro Ser Thr Pro Arg
 995 1000 1005
 Phe Pro Thr Pro Arg Thr Pro Arg Thr Pro Arg Thr Pro Arg Gly
 1010 1015 1020
 Ala Gly Gly Pro Ala Ser Ala Gln Gly Ser Val Lys Tyr Glu Asn
 1025 1030 1035
 Ser Asp Leu Tyr Ser Pro Ala Ser Thr Pro Ser Thr Cys Arg Pro
 1040 1045 1050

Leu	Asn	Ser	Val	Glu	Pro	Ala	Thr	Val	Pro	Ser	Ile	Pro	Glu	Ala
	1055					1060					1065			
His	Ser	Leu	Tyr	Val	Asn	Leu	Ile	Leu	Ser	Glu	Ser	Val	Met	Asn
	1070					1075					1080			
Leu	Phe	Lys	Asp	Cys	Asn	Phe	Asp	Ser	Cys	Cys	Ile	Cys	Val	Cys
	1085					1090					1095			
Asn	Met	Asn	Ile	Lys	Gly	Ala	Asp	Val	Gly	Val	Tyr	Ile	Pro	Asp
	1100					1105					1110			
Pro	Thr	Gln	Glu	Ala	Gln	Tyr	Arg	Cys	Thr	Cys	Gly	Phe	Ser	Ala
	1115					1120					1125			
Val	Met	Asn	Arg	Lys	Phe	Gly	Asn	Asn	Ser	Gly	Leu	Phe	Leu	Glu
	1130					1135					1140			
Asp	Glu	Leu	Asp	Ile	Ile	Gly	Arg	Asn	Thr	Asp	Cys	Gly	Lys	Glu
	1145					1150					1155			
Ala	Glu	Lys	Arg	Phe	Glu	Ala	Leu	Arg	Ala	Thr	Ser	Ala	Glu	His
	1160					1165					1170			
Val	Asn	Gly	Gly	Leu	Lys	Glu	Ser	Glu	Lys	Leu	Ser	Asp	Asp	Leu
	1175					1180					1185			
Ile	Leu	Leu	Leu	Gln	Asp	Gln	Cys	Thr	Asn	Leu	Phe	Ser	Pro	Phe
	1190					1195					1200			
Gly	Ala	Ala	Asp	Gln	Asp	Pro	Phe	Pro	Lys	Ser	Gly	Val	Ile	Ser
	1205					1210					1215			
Asn	Trp	Val	Arg	Val	Glu	Glu	Arg	Asp	Cys	Cys	Asn	Asp	Cys	Tyr
	1220					1225					1230			
Leu	Ala	Leu	Glu	His	Gly	Arg	Gln	Phe	Met	Asp	Asn	Met	Ser	Gly
	1235					1240					1245			
Gly	Lys	Val	Asp	Glu	Ala	Leu	Val	Lys	Ser	Ser	Cys	Leu	His	Pro
	1250					1255					1260			
Trp	Ser	Lys	Arg	Asn	Asp	Val	Ser	Met	Gln	Cys	Ser	Gln	Asp	Ile
	1265					1270					1275			
Leu	Arg	Met	Leu	Leu	Ser	Leu	Gln	Pro	Val	Leu	Gln	Asp	Ala	Ile
	1280					1285					1290			
Gln	Lys	Lys	Arg	Thr	Val	Arg	Pro	Trp	Gly	Val	Gln	Gly	Pro	Leu
	1295					1300					1305			

Thr	Trp	Gln	Gln	Phe	His	Lys	Met	Ala	Gly	Arg	Gly	Ser	Tyr	Gly
	1310					1315					1320			
Thr	Asp	Glu	Ser	Pro	Glu	Pro	Leu	Pro	Ile	Pro	Thr	Phe	Leu	Leu
	1325					1330					1335			
Gly	Tyr	Asp	Tyr	Asp	Tyr	Leu	Val	Leu	Ser	Pro	Phe	Ala	Leu	Pro
	1340					1345					1350			
Tyr	Trp	Glu	Arg	Leu	Met	Leu	Glu	Pro	Tyr	Gly	Ser	Gln	Arg	Asp
	1355					1360					1365			
Ile	Ala	Tyr	Val	Val	Leu	Cys	Pro	Glu	Asn	Glu	Ala	Leu	Leu	Asn
	1370					1375					1380			
Gly	Ala	Lys	Ser	Phe	Phe	Arg	Asp	Leu	Thr	Ala	Ile	Tyr	Glu	Ser
	1385					1390					1395			
Cys	Arg	Leu	Gly	Gln	His	Arg	Pro	Val	Ser	Arg	Leu	Leu	Thr	Asp
	1400					1405					1410			
Gly	Ile	Met	Arg	Val	Gly	Ser	Thr	Ala	Ser	Lys	Lys	Leu	Ser	Glu
	1415					1420					1425			
Lys	Leu	Val	Ala	Glu	Trp	Phe	Ser	Gln	Ala	Ala	Asp	Gly	Asn	Asn
	1430					1435					1440			
Glu	Ala	Phe	Ser	Lys	Leu	Lys	Leu	Tyr	Ala	Gln	Val	Cys	Arg	Tyr
	1445					1450					1455			
Asp	Leu	Gly	Pro	Tyr	Leu	Ala	Ser	Leu	Pro	Leu	Asp	Ser	Ser	Leu
	1460					1465					1470			
Leu	Ser	Gln	Pro	Asn	Leu	Val	Ala	Pro	Thr	Ser	Gln	Ser	Leu	Ile
	1475					1480					1485			
Thr	Pro	Pro	Gln	Met	Thr	Asn	Thr	Gly	Asn	Ala	Asn	Thr	Pro	Ser
	1490					1495					1500			
Ala	Thr	Leu	Ala	Ser	Ala	Ala	Ser	Ser	Thr	Met	Thr	Val	Thr	Ser
	1505					1510					1515			
Gly	Val	Ala	Ile	Ser	Thr	Ser	Val	Ala	Thr	Ala	Asn	Ser	Thr	Leu
	1520					1525					1530			
Thr	Thr	Ala	Ser	Thr	Ser	Ser	Ser	Ser	Ser	Ser	Asn	Leu	Asn	Ser
	1535					1540					1545			
Gly	Val	Ser	Ser	Asn	Lys	Leu	Pro	Ser	Phe	Pro	Pro	Phe	Gly	Ser
	1550					1555					1560			

Met	Asn	Ser	Asn	Ala	Ala	Gly	Ser	Met	Ser	Thr	Gln	Ala	Asn	Thr
	1565					1570					1575			
Val	Gln	Ser	Gly	Gln	Leu	Gly	Gly	Gln	Gln	Thr	Ser	Ala	Leu	Gln
	1580					1585					1590			
Thr	Ala	Gly	Ile	Ser	Gly	Glu	Ser	Ser	Ser	Leu	Pro	Thr	Gln	Pro
	1595					1600					1605			
His	Pro	Asp	Val	Ser	Glu	Ser	Thr	Met	Asp	Arg	Asp	Lys	Val	Gly
	1610					1615					1620			
Ile	Pro	Thr	Asp	Gly	Asp	Ser	His	Ala	Val	Thr	Tyr	Pro	Pro	Ala
	1625					1630					1635			
Ile	Val	Val	Tyr	Ile	Ile	Asp	Pro	Phe	Thr	Tyr	Glu	Asn	Thr	Asp
	1640					1645					1650			
Glu	Ser	Thr	Asn	Ser	Ser	Ser	Val	Trp	Thr	Leu	Gly	Leu	Leu	Arg
	1655					1660					1665			
Cys	Phe	Leu	Glu	Met	Val	Gln	Thr	Leu	Pro	Pro	His	Ile	Lys	Ser
	1670					1675					1680			
Thr	Val	Ser	Val	Gln	Ile	Ile	Pro	Cys	Gln	Tyr	Leu	Leu	Gln	Pro
	1685					1690					1695			
Val	Lys	His	Glu	Asp	Arg	Glu	Ile	Tyr	Pro	Gln	His	Leu	Lys	Ser
	1700					1705					1710			
Leu	Ala	Phe	Ser	Ala	Phe	Thr	Gln	Cys	Arg	Arg	Pro	Leu	Pro	Thr
	1715					1720					1725			
Ser	Thr	Asn	Val	Lys	Thr	Leu	Thr	Gly	Phe	Gly	Pro	Gly	Leu	Ala
	1730					1735					1740			
Met	Glu	Thr	Ala	Leu	Arg	Ser	Pro	Asp	Arg	Pro	Glu	Cys	Ile	Arg
	1745					1750					1755			
Leu	Tyr	Ala	Pro	Pro	Phe	Ile	Leu	Ala	Pro	Val	Lys	Asp	Lys	Gln
	1760					1765					1770			
Thr	Glu	Leu	Gly	Glu	Thr	Phe	Gly	Glu	Ala	Gly	Gln	Lys	Tyr	Asn
	1775					1780					1785			
Val	Leu	Phe	Val	Gly	Tyr	Cys	Leu	Ser	His	Asp	Gln	Arg	Trp	Ile
	1790					1795					1800			
Leu	Ala	Ser	Cys	Thr	Asp	Leu	Tyr	Gly	Glu	Leu	Leu	Glu	Thr	Cys
	1805					1810					1815			

Ile	Ile	Asn	Ile	Asp	Val	Pro	Asn	Arg	Ala	Arg	Arg	Lys	Lys	Ser
	1820					1825					1830			
Ser	Ala	Arg	Lys	Phe	Gly	Leu	Gln	Lys	Leu	Trp	Glu	Trp	Cys	Leu
	1835					1840					1845			
Gly	Leu	Val	Gln	Met	Ser	Ser	Leu	Pro	Trp	Arg	Val	Val	Ile	Gly
	1850					1855					1860			
Arg	Leu	Gly	Arg	Ile	Gly	His	Gly	Glu	Leu	Lys	Asp	Trp	Ser	Cys
	1865					1870					1875			
Leu	Leu	Ser	Arg	Arg	Asn	Leu	Gln	Ser	Leu	Ser	Lys	Arg	Leu	Lys
	1880					1885					1890			
Asp	Met	Cys	Arg	Met	Cys	Gly	Ile	Ser	Ala	Ala	Asp	Ser	Pro	Ser
	1895					1900					1905			
Ile	Leu	Ser	Ala	Cys	Leu	Val	Ala	Met	Glu	Pro	Gln	Gly	Ser	Phe
	1910					1915					1920			
Val	Ile	Met	Pro	Asp	Ser	Val	Ser	Thr	Gly	Ser	Val	Phe	Gly	Arg
	1925					1930					1935			
Ser	Thr	Thr	Leu	Asn	Met	Gln	Thr	Ser	Gln	Leu	Asn	Thr	Pro	Gln
	1940					1945					1950			
Asp	Thr	Ser	Cys	Thr	His	Ile	Leu	Val	Phe	Pro	Thr	Ser	Ala	Ser
	1955					1960					1965			
Val	Gln	Val	Ala	Ser	Ala	Thr	Tyr	Thr	Thr	Glu	Asn	Leu	Asp	Leu
	1970					1975					1980			
Ala	Phe	Asn	Pro	Asn	Asn	Asp	Gly	Ala	Asp	Gly	Met	Gly	Ile	Phe
	1985					1990					1995			
Asp	Leu	Leu	Asp	Thr	Gly	Asp	Asp	Leu	Asp	Pro	Asp	Ile	Ile	Asn
	2000					2005					2010			
Ile	Leu	Pro	Ala	Ser	Pro	Thr	Gly	Ser	Pro	Val	His	Ser	Pro	Gly
	2015					2020					2025			
Ser	His	Tyr	Pro	His	Gly	Gly	Asp	Ala	Gly	Lys	Gly	Gln	Ser	Thr
	2030					2035					2040			
Asp	Arg	Leu	Leu	Ser	Thr	Glu	Pro	His	Glu	Glu	Val	Pro	Asn	Ile
	2045					2050					2055			
Leu	Gln	Gln	Pro	Leu	Ala	Leu	Gly	Tyr	Phe	Val	Ser	Thr	Ala	Lys
	2060					2065					2070			

Ala Gly Pro Leu Pro Asp Trp Phe Trp Ser Ala Cys Pro Gln Ala
2075 2080 2085

Gln Tyr Gln Cys Pro Leu Phe Leu Lys Ala Ser Leu His Leu His
2090 2095 2100

Val Pro Ser Val Gln Ser Asp Glu Leu Leu His Ser Lys His Ser
2105 2110 2115

His Pro Leu Asp Ser Asn Gln Thr Ser Asp Val Leu Arg Phe Val
2120 2125 2130

Leu Glu Gln Tyr Asn Ala Leu Ser Trp Leu Thr Cys Asp Pro Ala
2135 2140 2145

Thr Gln Asp Arg Arg Ser Cys Leu Pro Ile His Phe Val Val Leu
2150 2155 2160

Asn Gln Leu Tyr Asn Phe Ile Met Asn Met Leu
2165 2170

<210> 604
<211> 499
<212> PRT
<213> Homo sapiens

<400> 604

Met Gly Arg Lys Lys Ile Gln Ile Thr Arg Ile Met Asp Glu Arg Asn
1 5 10 15

Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys Ala
20 25 30

Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile Phe
35 40 45

Asn Ser Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys
50 55 60

Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr
65 70 75 80

Asn Ser Asp Ile Val Glu Ala Leu Asn Lys Lys Glu His Arg Gly Cys
85 90 95

Asp Ser Pro Asp Pro Asp Thr Ser Tyr Val Leu Thr Pro His Thr Glu
100 105 110

Glu Lys Tyr Lys Lys Ile Asn Glu Glu Phe Asp Asn Met Met Arg Asn
115 120 125

His Lys Ile Ala Pro Gly Leu Pro Pro Gln Asn Phe Ser Met Ser Val
 130 135 140
 Thr Val Pro Val Thr Ser Pro Asn Ala Leu Ser Tyr Thr Asn Pro Gly
 145 150 155 160
 Ser Ser Leu Val Ser Pro Ser Leu Ala Ala Ser Ser Thr Leu Thr Asp
 165 170 175
 Ser Ser Met Leu Ser Pro Pro Gln Thr Thr Leu His Arg Asn Val Ser
 180 185 190
 Pro Gly Ala Pro Gln Arg Pro Pro Ser Thr Gly Asn Ala Gly Gly Met
 195 200 205
 Leu Ser Thr Thr Asp Leu Thr Val Pro Asn Gly Ala Gly Ser Ser Pro
 210 215 220
 Val Gly Asn Gly Phe Val Asn Ser Arg Ala Ser Pro Asn Leu Ile Gly
 225 230 235 240
 Ala Thr Gly Ala Asn Ser Leu Gly Lys Val Met Pro Thr Lys Ser Pro
 245 250 255
 Pro Pro Pro Gly Gly Gly Asn Leu Gly Met Asn Ser Arg Lys Pro Asp
 260 265 270
 Leu Arg Val Val Ile Pro Pro Ser Ser Lys Gly Met Met Pro Pro Leu
 275 280 285
 Asn Thr Gln Arg Ile Ser Ser Ser Gln Ala Thr Gln Pro Leu Ala Thr
 290 295 300
 Pro Val Val Ser Val Thr Thr Pro Ser Leu Pro Pro Gln Gly Leu Val
 305 310 315 320
 Tyr Ser Ala Met Pro Thr Ala Tyr Asn Thr Asp Tyr Ser Leu Thr Ser
 325 330 335
 Ala Asp Leu Ser Ala Leu Gln Gly Phe Asn Ser Pro Gly Met Leu Ser
 340 345 350
 Leu Gly Gln Val Ser Ala Trp Gln Gln His His Leu Gly Gln Ala Ala
 355 360 365
 Leu Ser Ser Leu Val Ala Gly Gly Gln Leu Ser Gln Gly Ser Asn Leu
 370 375 380
 Ser Ile Asn Thr Asn Gln Asn Ile Ser Ile Lys Ser Glu Pro Ile Ser
 385 390 395 400

Pro Pro Arg Asp Arg Met Thr Pro Ser Gly Phe Gln Gln Gln Gln Gln
 405 410 415

Gln Gln Gln Gln Gln Gln Pro Pro Pro Pro Pro Gln Pro Gln Pro Gln
 420 425 430

Pro Pro Gln Pro Gln Pro Arg Gln Glu Met Gly Arg Ser Pro Val Asp
 435 440 445

Ser Leu Ser Ser Ser Ser Ser Tyr Asp Gly Ser Asp Arg Glu Asp
 450 455 460

Pro Arg Gly Asp Phe His Ser Pro Ile Val Leu Gly Arg Pro Pro Asn
 465 470 475 480

Thr Glu Asp Arg Glu Ser Pro Ser Val Lys Arg Met Arg Met Asp Ala
 485 490 495

Trp Val Thr

<210> 605
 <211> 580
 <212> PRT
 <213> Homo sapiens

<400> 605

Met Ser Asp Thr Trp Ser Ser Ile Gln Ala His Lys Lys Gln Leu Asp
 1 5 10 15

Ser Leu Arg Glu Arg Leu Gln Arg Arg Arg Lys Gln Asp Ser Gly His
 20 25 30

Leu Asp Leu Arg Asn Pro Glu Ala Ala Leu Ser Pro Thr Phe Arg Ser
 35 40 45

Asp Ser Pro Val Pro Thr Ala Pro Thr Ser Gly Gly Pro Lys Pro Ser
 50 55 60

Thr Ala Ser Ala Val Pro Glu Leu Ala Thr Asp Pro Glu Leu Glu Lys
 65 70 75 80

Lys Leu Leu His His Leu Ser Asp Leu Ala Leu Thr Leu Pro Thr Asp
 85 90 95

Ala Val Ser Ile Cys Leu Ala Ile Ser Thr Pro Asp Ala Pro Ala Thr
 100 105 110

Gln Asp Gly Val Glu Ser Leu Leu Gln Lys Phe Ala Ala Gln Glu Leu
 115 120 125

Ile Glu Val Lys Arg Gly Leu Leu Gln Asp Asp Ala His Pro Thr Leu
 Page 934

130

135

140

Val Thr Tyr Ala Asp His Ser Lys Leu Ser Ala Met Met Gly Ala Val
 145 150 155 160

Ala Glu Lys Lys Gly Pro Gly Glu Val Ala Gly Thr Val Thr Gly Gln
 165 170 175

Lys Arg Arg Ala Glu Gln Asp Ser Thr Thr Val Ala Ala Phe Ala Ser
 180 185 190

Ser Leu Val Ser Gly Leu Asn Ser Ser Ala Ser Glu Pro Ala Lys Glu
 195 200 205

Pro Ala Lys Lys Ser Arg Lys His Ala Ala Ser Asp Val Asp Leu Glu
 210 215 220

Ile Glu Ser Leu Leu Asn Gln Gln Ser Thr Lys Glu Gln Gln Ser Lys
 225 230 235 240

Lys Val Ser Gln Glu Ile Leu Glu Leu Leu Asn Thr Thr Thr Ala Lys
 245 250 255

Glu Gln Ser Ile Val Glu Lys Phe Arg Ser Arg Gly Arg Ala Gln Val
 260 265 270

Gln Glu Phe Cys Asp Tyr Gly Thr Lys Glu Glu Cys Met Lys Ala Ser
 275 280 285

Asp Ala Asp Arg Pro Cys Arg Lys Leu His Phe Arg Arg Ile Ile Asn
 290 295 300

Lys His Thr Asp Glu Ser Leu Gly Asp Cys Ser Phe Leu Asn Thr Cys
 305 310 315 320

Phe His Met Asp Thr Cys Lys Tyr Val His Tyr Glu Ile Asp Ala Cys
 325 330 335

Met Asp Ser Glu Ala Pro Gly Ser Lys Asp His Thr Pro Ser Gln Glu
 340 345 350

Leu Ala Leu Thr Gln Ser Val Gly Gly Asp Ser Ser Ala Asp Arg Leu
 355 360 365

Phe Pro Pro Gln Trp Ile Cys Cys Asp Ile Arg Tyr Leu Asp Val Ser
 370 375 380

Ile Leu Gly Lys Phe Ala Val Val Met Ala Asp Pro Pro Trp Asp Ile
 385 390 395 400

His Met Glu Leu Pro Tyr Gly Thr Leu Thr Asp Asp Glu Met Arg Arg
 Page 935

Leu Asn Ile Pro Val Leu Gln Asp Asp Gly Phe Leu Phe Leu Trp Val
420 425 430

Thr Gly Arg Ala Met Glu Leu Gly Arg Glu Cys Leu Asn Leu Trp Gly
435 440 445

Tyr Glu Arg Val Asp Glu Ile Ile Trp Val Lys Thr Asn Gln Leu Gln
450 455 460

Arg Ile Ile Arg Thr Gly Arg Thr Gly His Trp Leu Asn His Gly Lys
465 470 475 480

Glu His Cys Leu Val Gly Val Lys Gly Asn Pro Gln Gly Phe Asn Gln
485 490 495

Gly Leu Asp Cys Asp Val Ile Val Ala Glu Val Arg Ser Thr Ser His
500 505 510

Lys Pro Asp Glu Ile Tyr Gly Met Ile Glu Arg Leu Ser Pro Gly Thr
515 520 525

Arg Lys Ile Glu Leu Phe Gly Arg Pro His Asn Val Gln Pro Asn Trp
530 535 540

Ile Thr Leu Gly Asn Gln Leu Asp Gly Ile His Leu Leu Asp Pro Asp
545 550 555 560

Val Val Ala Arg Phe Lys Gln Arg Tyr Pro Asp Gly Ile Ile Ser Lys
565 570 575

Pro Lys Asn Leu
580

<210> 606
<211> 735
<212> PRT
<213> Homo sapiens

<400> 606

Met Ala Ala Gly Gly Ala Val Ala Ala Ala Pro Glu Cys Arg Leu Leu
1 5 10 15

Pro Tyr Ala Leu His Lys Trp Ser Ser Phe Ser Ser Thr Tyr Leu Pro
20 25 30

Glu Asn Ile Leu Val Asp Lys Pro Asn Asp Gln Ser Ser Arg Trp Ser
35 40 45

Ser Glu Ser Asn Tyr Pro Pro Gln Tyr Leu Ile Leu Lys Leu Glu Arg
50 55 60

Pro Ala Ile Val Gln Asn Ile Thr Phe Gly Lys Tyr Glu Lys Thr His
 65 70 75 80
 Val Cys Asn Leu Lys Lys Phe Lys Val Phe Gly Gly Met Asn Glu Glu
 85 90 95
 Asn Met Thr Glu Leu Leu Ser Ser Gly Leu Lys Asn Asp Tyr Asn Lys
 100 105 110
 Glu Thr Phe Thr Leu Lys His Lys Ile Asp Glu Gln Met Phe Pro Cys
 115 120 125
 Arg Phe Ile Lys Ile Val Pro Leu Leu Ser Trp Gly Pro Ser Phe Asn
 130 135 140
 Phe Ser Ile Trp Tyr Val Glu Leu Ser Gly Ile Asp Asp Pro Asp Ile
 145 150 155 160
 Val Gln Pro Cys Leu Asn Trp Tyr Ser Lys Tyr Arg Glu Gln Glu Ala
 165 170 175
 Ile Arg Leu Cys Leu Lys His Phe Arg Gln His Asn Tyr Thr Glu Ala
 180 185 190
 Phe Glu Ser Leu Gln Lys Lys Thr Lys Ile Ala Leu Glu His Pro Met
 195 200 205
 Leu Thr Asp Ile His Asp Lys Leu Val Leu Lys Gly Asp Phe Asp Ala
 210 215 220
 Cys Glu Glu Leu Ile Glu Lys Ala Val Asn Asp Gly Leu Phe Asn Gln
 225 230 235 240
 Tyr Ile Ser Gln Gln Glu Tyr Lys Pro Arg Trp Ser Gln Ile Ile Pro
 245 250 255
 Lys Ser Thr Lys Gly Asp Gly Glu Asp Asn Arg Pro Gly Met Arg Gly
 260 265 270
 Gly His Gln Met Val Ile Asp Val Gln Thr Glu Thr Val Tyr Leu Phe
 275 280 285
 Gly Gly Trp Asp Gly Thr Gln Asp Leu Ala Asp Phe Trp Ala Tyr Ser
 290 295 300
 Val Lys Glu Asn Gln Trp Thr Cys Ile Ser Arg Asp Thr Glu Lys Glu
 305 310 315 320
 Asn Gly Pro Ser Ala Arg Ser Cys His Lys Met Cys Ile Asp Ile Gln
 325 330 335

Arg Arg Gln Ile Tyr Thr Leu Gly Arg Tyr Leu Asp Ser Ser Val Arg
 340 345 350
 Asn Ser Lys Ser Leu Lys Ser Asp Phe Tyr Arg Tyr Asp Ile Asp Thr
 355 360 365
 Asn Thr Trp Met Leu Leu Ser Glu Asp Thr Ala Ala Asp Gly Gly Pro
 370 375 380
 Lys Leu Val Phe Asp His Gln Met Cys Met Asp Ser Glu Lys His Met
 385 390 395 400
 Ile Tyr Thr Phe Gly Gly Arg Ile Leu Thr Cys Asn Gly Ser Val Asp
 405 410 415
 Asp Ser Arg Ala Ser Glu Pro Gln Phe Ser Gly Leu Phe Ala Phe Asn
 420 425 430
 Cys Gln Cys Gln Thr Trp Lys Leu Leu Arg Glu Asp Ser Cys Asn Ala
 435 440 445
 Gly Pro Glu Asp Ile Gln Ser Arg Ile Gly His Cys Met Leu Phe His
 450 455 460
 Ser Lys Asn Arg Cys Leu Tyr Val Phe Gly Gly Gln Arg Ser Lys Thr
 465 470 475 480
 Tyr Leu Asn Asp Phe Phe Ser Tyr Asp Val Asp Ser Asp His Val Asp
 485 490 495
 Ile Ile Ser Asp Gly Thr Lys Lys Asp Ser Gly Met Val Pro Met Thr
 500 505 510
 Gly Phe Thr Gln Arg Ala Thr Ile Asp Pro Glu Leu Asn Glu Ile His
 515 520 525
 Val Leu Ser Gly Leu Ser Lys Asp Lys Glu Lys Arg Glu Glu Asn Val
 530 535 540
 Arg Asn Ser Phe Trp Ile Tyr Asp Ile Val Arg Asn Ser Trp Ser Cys
 545 550 555 560
 Val Tyr Lys Asn Asp Gln Ala Ala Lys Asp Asn Pro Thr Lys Ser Leu
 565 570 575
 Gln Glu Glu Glu Pro Cys Pro Arg Phe Ala His Gln Leu Val Tyr Asp
 580 585 590
 Glu Leu His Lys Val His Tyr Leu Phe Gly Gly Asn Pro Gly Lys Ser
 595 600 605

Cys Ser Pro Lys Met Arg Leu Asp Asp Phe Trp Ser Leu Lys Leu Cys
610 615 620

Arg Pro Ser Lys Asp Tyr Leu Leu Arg His Cys Lys Tyr Leu Ile Arg
625 630 635 640

Lys His Arg Phe Glu Glu Lys Ala Gln Val Asp Pro Leu Ser Ala Leu
645 650 655

Lys Tyr Leu Gln Asn Asp Leu Tyr Ile Thr Val Asp His Ser Asp Pro
660 665 670

Glu Glu Thr Lys Glu Phe Gln Leu Leu Ala Ser Ala Leu Phe Lys Ser
675 680 685

Gly Ser Asp Phe Thr Ala Leu Gly Phe Ser Asp Val Asp His Thr Tyr
690 695 700

Ala Gln Arg Thr Gln Leu Phe Asp Thr Leu Val Asn Phe Phe Pro Asp
705 710 715 720

Ser Met Thr Pro Pro Lys Gly Asn Leu Val Asp Leu Ile Thr Leu
725 730 735

<210> 607
<211> 482
<212> PRT
<213> Homo sapiens

<400> 607

Met Ala Glu Ala Ala Thr Pro Gly Thr Thr Ala Thr Thr Ser Gly Ala
1 5 10 15

Gly Ala Ala Ala Ala Thr Ala Ala Ala Ala Ser Pro Thr Pro Ile Pro
20 25 30

Thr Val Thr Ala Pro Ser Leu Gly Ala Gly Gly Gly Gly Gly Ser
35 40 45

Asp Gly Ser Gly Gly Gly Trp Thr Lys Gln Val Thr Cys Arg Tyr Phe
50 55 60

Met His Gly Val Cys Lys Glu Gly Asp Asn Cys Arg Tyr Ser His Asp
65 70 75 80

Leu Ser Asp Ser Pro Tyr Ser Val Val Cys Lys Tyr Phe Gln Arg Gly
85 90 95

Tyr Cys Ile Tyr Gly Asp Arg Cys Arg Tyr Glu His Ser Lys Pro Leu
100 105 110

Lys Gln Glu Glu Ala Thr Ala Thr Glu Leu Thr Thr Lys Ser Ser Leu
 115 120 125
 Ala Ala Ser Ser Ser Leu Ser Ser Ile Val Gly Pro Leu Val Glu Met
 130 135 140
 Asn Thr Gly Glu Ala Glu Ser Arg Asn Ser Asn Phe Ala Thr Val Gly
 145 150 155 160
 Ala Gly Ser Glu Asp Trp Val Asn Ala Ile Glu Phe Val Pro Gly Gln
 165 170 175
 Pro Tyr Cys Gly Arg Thr Ala Pro Ser Cys Thr Glu Ala Pro Leu Gln
 180 185 190
 Gly Ser Val Thr Lys Glu Glu Ser Glu Lys Glu Gln Thr Ala Val Glu
 195 200 205
 Thr Lys Lys Gln Leu Cys Pro Tyr Ala Ala Val Gly Glu Cys Arg Tyr
 210 215 220
 Gly Glu Asn Cys Val Tyr Leu His Gly Asp Ser Cys Asp Met Cys Gly
 225 230 235 240
 Leu Gln Val Leu His Pro Met Asp Ala Ala Gln Arg Ser Gln His Ile
 245 250 255
 Lys Ser Cys Ile Glu Ala His Glu Lys Asp Met Glu Leu Ser Phe Ala
 260 265 270
 Val Gln Arg Ser Lys Asp Met Val Cys Gly Ile Cys Met Glu Val Val
 275 280 285
 Tyr Glu Lys Ala Asn Pro Ser Glu Arg Arg Phe Gly Ile Leu Ser Asn
 290 295 300
 Cys Asn His Thr Tyr Cys Leu Lys Cys Ile Arg Lys Trp Arg Ser Ala
 305 310 315 320
 Lys Gln Phe Glu Ser Lys Ile Ile Lys Ser Cys Pro Glu Cys Arg Ile
 325 330 335
 Thr Ser Asn Phe Val Ile Pro Ser Glu Tyr Trp Val Glu Glu Lys Glu
 340 345 350
 Glu Lys Gln Lys Leu Ile Leu Lys Tyr Lys Glu Ala Met Ser Asn Lys
 355 360 365
 Ala Cys Arg Tyr Phe Asp Glu Gly Arg Gly Ser Cys Pro Phe Gly Gly
 370 375 380

Asn Cys Phe Tyr Lys His Ala Tyr Pro Asp Gly Arg Arg Glu Glu Pro
 385 390 395 400

Gln Arg Gln Lys Val Gly Thr Ser Ser Arg Tyr Arg Ala Gln Arg Arg
 405 410 415

Asn His Phe Trp Glu Leu Ile Glu Glu Arg Glu Asn Ser Asn Pro Phe
 420 425 430

Asp Asn Asp Glu Glu Glu Val Val Thr Phe Glu Leu Gly Glu Met Leu
 435 440 445

Leu Met Leu Leu Ala Ala Gly Gly Asp Asp Glu Leu Thr Asp Ser Glu
 450 455 460

Asp Glu Trp Asp Leu Phe His Asp Glu Leu Glu Asp Phe Tyr Asp Leu
 465 470 475 480

Asp Leu

<210> 608
 <211> 562
 <212> PRT
 <213> Homo sapiens

<400> 608

Met Arg Leu Arg Leu Arg Leu Leu Ala Leu Leu Leu Leu Leu Ala
 1 5 10 15

Pro Pro Ala Arg Ala Pro Lys Pro Ser Ala Gln Asp Val Ser Leu Gly
 20 25 30

Val Asp Trp Leu Thr Arg Tyr Gly Tyr Leu Pro Pro Pro His Pro Ala
 35 40 45

Gln Ala Gln Leu Gln Ser Pro Glu Lys Leu Arg Asp Ala Ile Lys Val
 50 55 60

Met Gln Arg Phe Ala Gly Leu Pro Glu Thr Gly Arg Met Asp Pro Gly
 65 70 75 80

Thr Val Ala Thr Met Arg Lys Pro Arg Cys Ser Leu Pro Asp Val Leu
 85 90 95

Gly Val Ala Gly Leu Val Arg Arg Arg Arg Tyr Ala Leu Ser Gly
 100 105 110

Ser Val Trp Lys Lys Arg Thr Leu Thr Trp Arg Val Arg Ser Phe Pro
 115 120 125

Gln Ser Ser Gln Leu Ser Gln Glu Thr Val Arg Val Leu Met Ser Tyr
 130 135 140
 Ala Leu Met Ala Trp Gly Met Glu Ser Gly Leu Thr Phe His Glu Val
 145 150 155 160
 Asp Ser Pro Gln Gly Gln Glu Pro Asp Ile Leu Ile Asp Phe Ala Arg
 165 170 175
 Ala Phe His Gln Asp Ser Tyr Pro Phe Asp Gly Leu Gly Gly Thr Leu
 180 185 190
 Ala His Ala Phe Phe Pro Gly Glu His Pro Ile Ser Gly Asp Thr His
 195 200 205
 Phe Asp Asp Glu Glu Thr Trp Thr Phe Gly Ser Lys Asp Gly Glu Gly
 210 215 220
 Thr Asp Leu Phe Ala Val Ala Val His Glu Phe Gly His Ala Leu Gly
 225 230 235 240
 Leu Gly His Ser Ser Ala Pro Asn Ser Ile Met Arg Pro Phe Tyr Gln
 245 250 255
 Gly Pro Val Gly Asp Pro Asp Lys Tyr Arg Leu Ser Gln Asp Asp Arg
 260 265 270
 Asp Gly Leu Gln Gln Leu Tyr Gly Lys Ala Pro Gln Thr Pro Tyr Asp
 275 280 285
 Lys Pro Thr Arg Lys Pro Leu Ala Pro Pro Pro Gln Pro Pro Ala Ser
 290 295 300
 Pro Thr His Ser Pro Ser Phe Pro Ile Pro Asp Arg Cys Glu Gly Asn
 305 310 315 320
 Phe Asp Ala Ile Ala Asn Ile Arg Gly Glu Thr Phe Phe Phe Lys Gly
 325 330 335
 Pro Trp Phe Trp Arg Leu Gln Pro Ser Gly Gln Leu Val Ser Pro Arg
 340 345 350
 Pro Ala Arg Leu His Arg Phe Trp Glu Gly Leu Pro Ala Gln Val Arg
 355 360 365
 Val Val Gln Ala Ala Tyr Ala Arg His Arg Asp Gly Arg Ile Leu Leu
 370 375 380
 Phe Ser Gly Pro Gln Phe Trp Val Phe Gln Asp Arg Gln Leu Glu Gly
 385 390 395 400

Gly Ala Arg Pro Leu Thr Glu Leu Gly Leu Pro Pro Gly Glu Glu Val
 405 410 415

Asp Ala Val Phe Ser Trp Pro Gln Asn Gly Lys Thr Tyr Leu Val Arg
 420 425 430

Gly Arg Gln Tyr Trp Arg Tyr Asp Glu Ala Ala Ala Arg Pro Asp Pro
 435 440 445

Gly Tyr Pro Arg Asp Leu Ser Leu Trp Glu Gly Ala Pro Pro Ser Pro
 450 455 460

Asp Asp Val Thr Val Ser Asn Ala Gly Asp Thr Tyr Phe Phe Lys Gly
 465 470 475 480

Ala His Tyr Trp Arg Phe Pro Lys Asn Ser Ile Lys Thr Glu Pro Asp
 485 490 495

Ala Pro Gln Pro Met Gly Pro Asn Trp Leu Asp Cys Pro Ala Pro Ser
 500 505 510

Ser Gly Pro Arg Ala Pro Arg Pro Pro Lys Ala Thr Pro Val Ser Glu
 515 520 525

Thr Cys Asp Cys Gln Cys Glu Leu Asn Gln Ala Ala Gly Arg Trp Pro
 530 535 540

Ala Pro Ile Pro Leu Leu Leu Leu Pro Leu Leu Val Gly Gly Val Ala
 545 550 555 560

Ser Arg

<210> 609
 <211> 939
 <212> PRT
 <213> Homo sapiens

<400> 609

Met Ala Ala Gln Pro Pro Arg Gly Ile Arg Leu Ser Ala Leu Cys Pro
 1 5 10 15

Lys Phe Leu His Thr Asn Ser Thr Ser His Thr Trp Pro Phe Ser Ala
 20 25 30

Val Ala Glu Leu Ile Asp Asn Ala Tyr Asp Pro Asp Val Asn Ala Lys
 35 40 45

Gln Ile Trp Ile Asp Lys Thr Val Ile Asn Asp His Ile Cys Leu Thr
 50 55 60

Phe Thr Asp Asn Gly Asn Gly Met Thr Ser Asp Lys Leu His Lys Met
 Page 943

65 70 75 80
 Leu Ser Phe Gly Phe Ser Asp Lys Val Thr Met Asn Gly His Val Pro
 85 90 95
 Val Gly Leu Tyr Gly Asn Gly Phe Lys Ser Gly Ser Met Arg Leu Gly
 100 105 110
 Lys Asp Ala Ile Val Phe Thr Lys Asn Gly Glu Ser Met Ser Val Gly
 115 120 125
 Leu Leu Ser Gln Thr Tyr Leu Glu Val Ile Lys Ala Glu His Val Val
 130 135 140
 Val Pro Ile Val Ala Phe Asn Lys His Arg Gln Met Ile Asn Leu Ala
 145 150 155 160
 Glu Ser Lys Ala Ser Leu Ala Ala Ile Leu Glu His Ser Leu Phe Ser
 165 170 175
 Thr Glu Gln Lys Leu Leu Ala Glu Leu Asp Ala Ile Ile Gly Lys Lys
 180 185 190
 Gly Thr Arg Ile Ile Ile Trp Asn Leu Arg Ser Tyr Lys Asn Ala Thr
 195 200 205
 Glu Phe Asp Phe Glu Lys Asp Lys Tyr Asp Ile Arg Ile Pro Glu Asp
 210 215 220
 Leu Asp Glu Ile Thr Gly Lys Lys Gly Tyr Lys Lys Gln Glu Arg Met
 225 230 235 240
 Asp Gln Ile Ala Pro Glu Ser Asp Tyr Ser Leu Arg Ala Tyr Cys Ser
 245 250 255
 Ile Leu Tyr Leu Lys Pro Arg Met Gln Ile Ile Leu Arg Gly Gln Lys
 260 265 270
 Val Lys Thr Gln Leu Val Ser Lys Ser Leu Ala Tyr Ile Glu Arg Asp
 275 280 285
 Val Tyr Arg Pro Lys Phe Leu Ser Lys Thr Val Arg Ile Thr Phe Gly
 290 295 300
 Phe Asn Cys Arg Asn Lys Asp His Tyr Gly Ile Met Met Tyr His Arg
 305 310 315 320
 Asn Arg Leu Ile Lys Ala Tyr Glu Lys Val Gly Cys Gln Leu Arg Ala
 325 330 335
 Asn Asn Met Gly Val Gly Val Val Gly Ile Ile Glu Cys Asn Phe Leu
 Page 944

340

345

350

Lys Pro Thr His Asn Lys Gln Asp Phe Asp Tyr Thr Asn Glu Tyr Arg
 355 360 365

Leu Thr Ile Thr Ala Leu Gly Glu Lys Leu Asn Asp Tyr Trp Asn Glu
 370 375 380

Met Lys Val Lys Lys Asn Thr Glu Tyr Pro Leu Asn Leu Pro Val Glu
 385 390 395 400

Asp Ile Gln Lys Arg Pro Asp Gln Thr Trp Val Gln Cys Asp Ala Cys
 405 410 415

Leu Lys Trp Arg Lys Leu Pro Asp Gly Met Asp Gln Leu Pro Glu Lys
 420 425 430

Trp Tyr Cys Ser Asn Asn Pro Asp Pro Gln Phe Arg Asn Cys Glu Val
 435 440 445

Pro Glu Glu Pro Glu Asp Glu Asp Leu Val His Pro Thr Tyr Glu Lys
 450 455 460

Thr Tyr Lys Lys Thr Asn Lys Glu Lys Phe Arg Ile Arg Gln Pro Glu
 465 470 475 480

Met Ile Pro Arg Ile Asn Ala Glu Leu Leu Phe Arg Pro Thr Ala Leu
 485 490 495

Ser Thr Pro Ser Phe Ser Ser Pro Lys Glu Ser Val Pro Arg Arg His
 500 505 510

Leu Ser Glu Gly Thr Asn Ser Tyr Ala Thr Arg Leu Leu Asn Asn His
 515 520 525

Gln Val Pro Pro Gln Ser Glu Pro Glu Ser Asn Ser Leu Lys Arg Arg
 530 535 540

Leu Ser Thr Arg Ser Ser Ile Leu Asn Ala Lys Asn Arg Arg Leu Ser
 545 550 555 560

Ser Gln Phe Glu Asn Ser Val Tyr Lys Gly Asp Asp Asp Asp Glu Asp
 565 570 575

Val Ile Ile Leu Glu Glu Asn Ser Thr Pro Lys Pro Ala Val Asp His
 580 585 590

Asp Ile Asp Met Lys Ser Glu Gln Ser His Val Glu Gln Gly Gly Val
 595 600 605

Gln Val Glu Phe Val Gly Asp Ser Glu Pro Cys Gly Gln Thr Gly Ser
 Page 945

610

615

620

Thr Ser Thr Ser Ser Ser Arg Cys Asp Gln Gly Asn Thr Ala Ala Thr
625 630 635 640

Gln Thr Glu Val Pro Ser Leu Val Val Lys Lys Glu Glu Thr Val Glu
645 650 655

Asp Glu Ile Asp Val Arg Asn Asp Ala Val Ile Leu Pro Ser Cys Val
660 665 670

Glu Ala Glu Ala Lys Ile His Glu Thr Gln Glu Thr Thr Asp Lys Ser
675 680 685

Ala Asp Asp Ala Gly Cys Gln Leu Gln Glu Leu Arg Asn Gln Leu Leu
690 695 700

Leu Val Thr Glu Glu Lys Glu Asn Tyr Lys Arg Gln Cys His Met Phe
705 710 715 720

Thr Asp Gln Ile Lys Val Leu Gln Gln Arg Ile Leu Glu Met Asn Asp
725 730 735

Lys Tyr Val Lys Lys Glu Thr Cys His Gln Ser Thr Glu Thr Asp Ala
740 745 750

Val Phe Leu Leu Glu Ser Ile Asn Gly Lys Ser Glu Ser Pro Asp His
755 760 765

Met Val Ser Gln Tyr Gln Gln Ala Leu Glu Glu Ile Glu Arg Leu Lys
770 775 780

Lys Gln Cys Ser Ala Leu Gln His Val Lys Ala Glu Cys Ser Gln Cys
785 790 795 800

Ser Asn Asn Glu Ser Lys Ser Glu Met Asp Glu Met Ala Val Gln Leu
805 810 815

Asp Asp Val Phe Arg Gln Leu Asp Lys Cys Ser Ile Glu Arg Asp Gln
820 825 830

Tyr Lys Ser Glu Val Glu Leu Leu Glu Met Glu Lys Ser Gln Ile Arg
835 840 845

Ser Gln Cys Glu Glu Leu Lys Thr Glu Val Glu Gln Leu Lys Ser Thr
850 855 860

Asn Gln Gln Thr Ala Thr Asp Val Ser Thr Ser Ser Asn Ile Glu Glu
865 870 875 880

Ser Val Asn His Met Asp Gly Glu Ser Leu Lys Leu Arg Ser Leu Arg
Page 946

Val Asn Val Gly Gln Leu Leu Ala Met Ile Val Pro Asp Leu Asp Leu
900 905 910

Gln Gln Val Asn Tyr Asp Val Asp Val Val Asp Glu Ile Leu Gly Gln
915 920 925

Val Val Glu Gln Met Ser Glu Ile Ser Ser Thr
930 935

<210> 610
<211> 518
<212> PRT
<213> Homo sapiens
<400> 610

Met Ala Glu Asn His Ala Gln Asn Lys Ala Lys Leu Ile Ser Glu Thr
1 5 10 15

Arg Arg Arg Phe Glu Ala Glu Tyr Val Thr Asp Lys Ser Asp Lys Tyr
20 25 30

Asp Ala Arg Asp Val Glu Arg Leu Gln Gln Asp Asp Asn Trp Val Glu
35 40 45

Ser Tyr Leu Ser Trp Arg His Asn Ile Val Asp Glu Thr Leu Lys Met
50 55 60

Leu Asp Glu Ser Phe Gln Trp Arg Lys Glu Ile Ser Val Asn Asp Leu
65 70 75 80

Asn Glu Ser Ser Ile Pro Arg Trp Leu Leu Glu Ile Gly Val Ile Tyr
85 90 95

Leu His Gly Tyr Asp Lys Glu Gly Asn Lys Leu Phe Trp Ile Arg Val
100 105 110

Lys Tyr His Val Lys Asp Gln Lys Thr Ile Leu Asp Lys Lys Lys Leu
115 120 125

Ile Ala Phe Trp Leu Glu Arg Tyr Ala Lys Arg Glu Asn Gly Lys Pro
130 135 140

Val Thr Val Met Phe Asp Leu Ser Glu Thr Gly Ile Asn Ser Ile Asp
145 150 155 160

Met Asp Phe Val Arg Phe Ile Ile Asn Cys Phe Lys Val Tyr Tyr Pro
165 170 175

Lys Tyr Leu Ser Lys Ile Val Ile Phe Asp Met Pro Trp Leu Met Asn
180 185 190

Ala Ala Phe Lys Ile Val Lys Thr Trp Leu Gly Pro Glu Ala Val Ser
 195 200 205
 Leu Leu Lys Phe Thr Ser Lys Asn Glu Val Gln Asp Tyr Val Ser Val
 210 215 220
 Glu Tyr Leu Pro Pro His Met Gly Gly Thr Asp Pro Phe Lys Tyr Ser
 225 230 235 240
 Tyr Pro Pro Leu Val Asp Asp Asp Phe Gln Thr Pro Leu Cys Glu Asn
 245 250 255
 Gly Pro Ile Thr Ser Glu Asp Glu Thr Ser Ser Lys Glu Asp Ile Glu
 260 265 270
 Ser Asp Gly Lys Glu Thr Leu Glu Thr Ile Ser Asn Glu Glu Gln Thr
 275 280 285
 Pro Leu Leu Lys Lys Ile Asn Pro Thr Glu Ser Thr Ser Lys Ala Glu
 290 295 300
 Glu Asn Glu Lys Val Asp Ser Lys Val Lys Ala Phe Lys Lys Pro Leu
 305 310 315 320
 Ser Val Phe Lys Gly Pro Leu Leu His Ile Ser Pro Ala Glu Glu Leu
 325 330 335
 Tyr Phe Gly Ser Thr Glu Ser Gly Glu Lys Lys Thr Leu Ile Val Leu
 340 345 350
 Thr Asn Val Thr Lys Asn Ile Val Ala Phe Lys Val Arg Thr Thr Ala
 355 360 365
 Pro Glu Lys Tyr Arg Val Lys Pro Ser Asn Ser Ser Cys Asp Pro Gly
 370 375 380
 Ala Ser Val Asp Ile Val Val Ser Pro His Gly Gly Leu Thr Val Ser
 385 390 395 400
 Ala Gln Asp Arg Phe Leu Ile Met Ala Ala Glu Met Glu Gln Ser Ser
 405 410 415
 Gly Thr Gly Pro Ala Glu Leu Thr Gln Phe Trp Lys Glu Val Pro Arg
 420 425 430
 Asn Lys Val Met Glu His Arg Leu Arg Cys His Thr Val Glu Ser Ser
 435 440 445
 Lys Pro Asn Thr Leu Thr Leu Lys Asp Asn Ala Phe Asn Met Ser Asp
 450 455 460

Lys Thr Ser Glu Asp Ile Cys Leu Gln Leu Ser Arg Leu Leu Glu Ser
465 470 475 480

Asn Arg Lys Leu Glu Asp Gln Val Gln Arg Cys Ile Trp Phe Gln Gln
485 490 495

Leu Leu Leu Ser Leu Thr Met Leu Leu Leu Ala Phe Val Thr Ser Phe
500 505 510

Phe Tyr Leu Leu Tyr Ser
515

<210> 611
<211> 396
<212> PRT
<213> Homo sapiens

<400> 611

Met Ala Met Ile Glu Leu Gly Phe Gly Arg Gln Asn Phe His Pro Leu
1 5 10 15

Lys Arg Lys Ser Ser Leu Leu Leu Lys Leu Ile Ala Val Val Phe Ala
20 25 30

Val Leu Leu Phe Cys Glu Phe Leu Ile Tyr Tyr Leu Ala Ile Phe Gln
35 40 45

Cys Asn Trp Pro Glu Val Lys Thr Thr Ala Ser Asp Gly Glu Gln Thr
50 55 60

Thr Arg Glu Pro Val Leu Lys Ala Met Phe Leu Ala Asp Thr His Leu
65 70 75 80

Leu Gly Glu Phe Leu Gly His Trp Leu Asp Lys Leu Arg Arg Glu Trp
85 90 95

Gln Met Glu Arg Ala Phe Gln Thr Ala Leu Trp Leu Leu Gln Pro Glu
100 105 110

Val Val Phe Ile Leu Gly Asp Ile Phe Asp Glu Gly Lys Trp Ser Thr
115 120 125

Pro Glu Ala Trp Ala Asp Asp Val Glu Arg Phe Gln Lys Met Phe Arg
130 135 140

His Pro Ser His Val Gln Leu Lys Val Val Ala Gly Asn His Asp Ile
145 150 155 160

Gly Phe His Tyr Glu Met Asn Thr Tyr Lys Val Glu Arg Phe Glu Lys
165 170 175

Val Phe Ser Ser Glu Arg Leu Phe Ser Trp Lys Gly Ile Asn Phe Val
 180 185 190

Met Val Asn Ser Val Ala Leu Asn Gly Asp Gly Cys Gly Ile Cys Ser
 195 200 205

Glu Thr Glu Ala Glu Leu Ile Glu Val Ser His Arg Leu Asn Cys Ser
 210 215 220

Arg Glu Ala Arg Gly Ser Ser Arg Cys Gly Pro Gly Pro Leu Leu Pro
 225 230 235 240

Thr Ser Ala Pro Val Leu Leu Gln His Tyr Pro Leu Tyr Arg Arg Ser
 245 250 255

Asp Ala Asn Cys Ser Gly Glu Asp Ala Ala Pro Ala Glu Glu Arg Asp
 260 265 270

Ile Pro Phe Lys Glu Asn Tyr Asp Val Leu Ser Arg Glu Ala Ser Gln
 275 280 285

Lys Leu Leu Trp Trp Leu Gln Pro Arg Leu Val Leu Ser Gly His Thr
 290 295 300

His Ser Ala Cys Glu Val His His Gly Gly Arg Val Pro Glu Leu Ser
 305 310 315 320

Val Pro Ser Phe Ser Trp Arg Asn Arg Asn Asn Pro Ser Phe Ile Met
 325 330 335

Gly Ser Ile Thr Pro Thr Asp Tyr Thr Leu Ser Lys Cys Tyr Leu Pro
 340 345 350

Arg Glu Asp Val Val Leu Ile Ile Tyr Cys Gly Val Val Gly Phe Leu
 355 360 365

Val Val Leu Thr Leu Thr His Phe Gly Leu Leu Ala Ser Pro Phe Leu
 370 375 380

Ser Gly Leu Asn Leu Leu Gly Lys Arg Lys Thr Arg
 385 390 395

<210> 612
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 612

Met Glu Arg Arg Met Gln Leu Val Lys Lys Asp Asn Glu Lys Glu Arg
 1 5 10 15

His Lys Leu Phe Gln Gly Tyr Glu Thr Glu Glu Arg Glu Glu Thr Glu
 20 25 30
 Leu Ser Glu Lys Ile Lys Leu Glu Cys Gln Pro Glu Leu Ser Glu Thr
 35 40 45
 Ser Gln Thr Leu Pro Pro Lys Pro Phe Ser Cys Gly Arg Ser Gly Lys
 50 55 60
 Gly His Lys Arg Lys Ser Pro Phe Gly Ser Thr Glu Arg Lys Thr Pro
 65 70 75 80
 Val Lys Lys Leu Ala Pro Glu Phe Ser Lys Val Lys Thr Lys Thr Pro
 85 90 95
 Lys His Ser Pro Ile Lys Glu Glu Pro Cys Gly Ser Leu Ser Glu Thr
 100 105 110
 Val Cys Lys Arg Glu Leu Arg Ser Gln Glu Thr Pro Glu Lys Pro Arg
 115 120 125
 Ser Ser Val Asp Thr Pro Pro Arg Leu Ser Thr Pro Gln Lys Gly Pro
 130 135 140
 Ser Thr His Pro Lys Glu Lys Ala Phe Ser Ser Glu Ile Glu Asp Leu
 145 150 155 160
 Pro Tyr Leu Ser Thr Thr Glu Met Tyr Leu Cys Arg Trp His Gln Pro
 165 170 175
 Pro Pro Ser Pro Leu Pro Leu Arg Glu Ser Ser Pro Lys Lys Glu Glu
 180 185 190
 Thr Val Ala Arg Cys Leu Met Pro Ser Ser Val Ala Gly Glu Thr Ser
 195 200 205
 Val Leu Ala Val Pro Ser Trp Arg Asp His Ser Val Glu Pro Leu Arg
 210 215 220
 Asp Pro Asn Pro Ser Asp Leu Leu Glu Asn Leu Asp Asp Ser Val Phe
 225 230 235 240
 Ser Lys Arg His Ala Lys Leu Glu Leu Asp Glu Lys Arg Arg Lys Arg
 245 250 255
 Trp Asp Ile Gln Arg Ile Arg Glu Gln Arg Ile Leu Gln Arg Leu Gln
 260 265 270
 Leu Arg Met Tyr Lys Lys Lys Gly Ile Gln Glu Ser Glu Pro Glu Val
 275 280 285

Thr Ser Phe Phe Pro Glu Pro Asp Asp Val Glu Ser Leu Met Ile Thr
 290 295 300

Pro Phe Leu Pro Val Val Ala Phe Gly Arg Pro Leu Pro Lys Leu Thr
 305 310 315 320

Pro Gln Asn Phe Glu Leu Pro Trp Leu Asp Glu Arg Ser Arg Cys Arg
 325 330 335

Leu Glu Ile Gln Lys Lys Gln Thr Pro His Arg Thr Cys Arg Lys
 340 345 350

<210> 613
 <211> 1198
 <212> PRT
 <213> Homo sapiens
 <400> 613

Met Asp Glu Glu Thr Arg His Ser Leu Glu Cys Ile Gln Ala Asn Gln
 1 5 10 15

Ile Phe Pro Arg Lys Gln Leu Ile Arg Glu Asp Glu Asn Leu Gln Val
 20 25 30

Pro Phe Leu Glu Leu His Gly Glu Ser Thr Glu Phe Val Gly Arg Ala
 35 40 45

Glu Asp Ala Ile Ile Ala Leu Ser Asn Tyr Arg Leu His Ile Lys Phe
 50 55 60

Lys Glu Ser Leu Val Asn Val Pro Leu Gln Leu Ile Glu Ser Val Glu
 65 70 75 80

Cys Arg Asp Ile Phe Gln Leu His Leu Thr Cys Lys Asp Cys Lys Val
 85 90 95

Ile Arg Cys Gln Phe Ser Thr Phe Glu Gln Cys Gln Glu Trp Leu Lys
 100 105 110

Arg Leu Asn Asn Ala Ile Arg Pro Pro Ala Lys Ile Glu Asp Leu Phe
 115 120 125

Ser Phe Ala Tyr His Ala Trp Cys Met Glu Val Tyr Ala Ser Glu Lys
 130 135 140

Glu Gln His Gly Asp Leu Cys Arg Pro Gly Glu His Val Thr Ser Arg
 145 150 155 160

Phe Lys Asn Glu Val Glu Arg Met Gly Phe Asp Met Asn Asn Ala Trp
 165 170 175

Arg Ile Ser Asn Ile Asn Glu Lys Tyr Lys Leu Cys Gly Ser Tyr Pro
 Page 952

180

185

190

Gln Glu Leu Ile Val Pro Ala Trp Ile Thr Asp Lys Glu Leu Glu Ser
 195 200 205

Val Ser Ser Phe Arg Ser Trp Lys Arg Ile Pro Ala Val Ile Tyr Arg
 210 215 220

His Gln Ser Asn Gly Ala Val Ile Ala Arg Cys Gly Gln Pro Glu Val
 225 230 235 240

Ser Trp Trp Gly Trp Arg Asn Ala Asp Asp Glu His Leu Val Gln Ser
 245 250 255

Val Ala Lys Ala Cys Ala Ser Asp Ser Arg Ser Ser Gly Ser Lys Leu
 260 265 270

Ser Thr Arg Asn Thr Ser Arg Asp Phe Pro Asn Gly Gly Asp Leu Ser
 275 280 285

Asp Val Glu Phe Asp Ser Ser Leu Ser Asn Ala Ser Gly Ala Glu Ser
 290 295 300

Leu Ala Ile Gln Pro Gln Lys Leu Leu Ile Leu Asp Ala Arg Ser Tyr
 305 310 315 320

Ala Ala Ala Val Ala Asn Arg Ala Lys Gly Gly Gly Cys Glu Cys Pro
 325 330 335

Glu Tyr Tyr Pro Asn Cys Glu Val Val Phe Met Gly Met Ala Asn Ile
 340 345 350

His Ser Ile Arg Arg Ser Phe Gln Ser Leu Arg Leu Leu Cys Thr Gln
 355 360 365

Met Pro Asp Pro Gly Asn Trp Leu Ser Ala Leu Glu Ser Thr Lys Trp
 370 375 380

Leu His His Leu Ser Val Leu Leu Lys Ser Ala Leu Leu Val Val His
 385 390 395 400

Ala Val Asp Gln Asp Gln Arg Pro Val Leu Val His Cys Ser Asp Gly
 405 410 415

Trp Asp Arg Thr Pro Gln Ile Val Ala Leu Ala Lys Leu Leu Leu Asp
 420 425 430

Pro Tyr Tyr Arg Thr Ile Glu Gly Phe Gln Val Leu Val Glu Met Glu
 435 440 445

Trp Leu Asp Phe Gly His Lys Phe Ala Asp Arg Cys Gly His Gly Glu
 Page 953

450

455

460

Asn Ser Asp Asp Leu Asn Glu Arg Cys Pro Val Phe Leu Gln Trp Leu
 465 470 475 480

Asp Cys Val His Gln Leu Gln Arg Gln Phe Pro Cys Ser Phe Glu Phe
 485 490 495

Asn Glu Ala Phe Leu Val Lys Leu Val Gln His Thr Tyr Ser Cys Leu
 500 505 510

Phe Gly Thr Phe Leu Cys Asn Asn Ala Lys Glu Arg Gly Glu Lys His
 515 520 525

Thr Gln Glu Arg Thr Cys Ser Val Trp Ser Leu Leu Arg Ala Gly Asn
 530 535 540

Lys Ala Phe Lys Asn Leu Leu Tyr Ser Ser Gln Ser Glu Ala Val Leu
 545 550 555 560

Tyr Pro Val Cys His Val Arg Asn Leu Met Leu Trp Ser Ala Val Tyr
 565 570 575

Leu Pro Cys Pro Ser Pro Thr Thr Pro Val Asp Asp Ser Cys Ala Pro
 580 585 590

Tyr Pro Ala Pro Gly Thr Ser Pro Asp Asp Pro Pro Leu Ser Arg Leu
 595 600 605

Pro Lys Thr Arg Ser Tyr Asp Asn Leu Thr Thr Ala Cys Asp Asn Thr
 610 615 620

Val Pro Leu Ala Ser Arg Arg Cys Ser Asp Pro Ser Leu Asn Glu Lys
 625 630 635 640

Trp Gln Glu His Arg Arg Ser Leu Glu Leu Ser Ser Leu Ala Gly Pro
 645 650 655

Gly Glu Asp Pro Leu Ser Ala Asp Ser Leu Gly Lys Pro Thr Arg Val
 660 665 670

Pro Gly Gly Ala Glu Leu Ser Val Ala Ala Gly Val Ala Glu Gly Gln
 675 680 685

Met Glu Asn Ile Leu Gln Glu Ala Thr Lys Glu Glu Ser Gly Val Glu
 690 695 700

Glu Pro Ala His Arg Ala Gly Ile Glu Ile Gln Glu Gly Lys Glu Asp
 705 710 715 720

Pro Leu Leu Glu Lys Glu Ser Arg Arg Lys Thr Pro Glu Ala Ser Ala
 Page 954

Ile Gly Leu His Gln Asp Pro Glu Leu Gly Asp Ala Ala Leu Arg Ser
740 745 750

His Leu Asp Met Ser Trp Pro Leu Phe Ser Gln Gly Ile Ser Glu Gln
755 760 765

Gln Ser Gly Leu Ser Val Leu Leu Ser Ser Leu Gln Val Pro Pro Arg
770 775 780

Gly Glu Asp Ser Leu Glu Val Pro Val Glu Gln Phe Arg Ile Glu Glu
785 790 795 800

Ile Ala Glu Gly Arg Glu Glu Ala Val Leu Pro Ile Pro Val Asp Ala
805 810 815

Lys Val Gly Tyr Gly Thr Ser Gln Ser Cys Ser Leu Leu Pro Ser Gln
820 825 830

Val Pro Phe Glu Thr Arg Gly Pro Asn Val Asp Ser Ser Thr Asp Met
835 840 845

Leu Val Glu Asp Lys Val Lys Ser Val Ser Gly Pro Gln Gly His His
850 855 860

Arg Ser Cys Leu Val Asn Ser Gly Lys Asp Arg Leu Pro Gln Thr Met
865 870 875 880

Glu Pro Ser Pro Ser Glu Thr Ser Leu Val Glu Arg Pro Gln Val Gly
885 890 895

Ser Val Val His Arg Thr Ser Leu Gly Ser Thr Leu Ser Leu Thr Arg
900 905 910

Ser Pro Cys Ala Leu Pro Leu Ala Glu Cys Lys Glu Gly Leu Val Cys
915 920 925

Asn Gly Ala Pro Glu Thr Glu Asn Arg Ala Ser Glu Gln Pro Pro Gly
930 935 940

Leu Ser Thr Leu Gln Met Tyr Pro Thr Pro Asn Gly His Cys Ala Asn
945 950 955 960

Gly Glu Ala Gly Arg Ser Lys Asp Ser Leu Ser Arg Gln Leu Ser Ala
965 970 975

Met Ser Cys Ser Ser Ala His Leu His Ser Arg Asn Leu His His Lys
980 985 990

Trp Leu His Ser His Ser Gly Arg Pro Ser Ala Thr Ser Ser Pro Asp
Page 955

995

1000

1005

Gln Pro Ser Arg Ser His Leu Asp Asp Asp Gly Met Ser Val Tyr
 1010 1015 1020

Thr Asp Thr Ile Gln Gln Arg Leu Arg Gln Ile Glu Ser Gly His
 1025 1030 1035

Gln Gln Glu Val Glu Thr Leu Lys Lys Gln Val Gln Glu Leu Lys
 1040 1045 1050

Ser Arg Leu Glu Ser Gln Tyr Leu Thr Ser Ser Leu His Phe Asn
 1055 1060 1065

Gly Asp Phe Gly Asp Glu Val Thr Ser Ile Pro Asp Ser Glu Ser
 1070 1075 1080

Asn Leu Asp Gln Asn Cys Leu Ser Arg Cys Ser Thr Glu Ile Phe
 1085 1090 1095

Ser Glu Ala Ser Trp Glu Gln Val Asp Lys Gln Asp Thr Glu Met
 1100 1105 1110

Thr Arg Trp Leu Pro Asp His Leu Ala Ala His Cys Tyr Ala Cys
 1115 1120 1125

Asp Ser Ala Phe Trp Leu Ala Ser Arg Lys His His Cys Arg Asn
 1130 1135 1140

Cys Gly Asn Val Phe Cys Ser Ser Cys Cys Asn Gln Lys Val Pro
 1145 1150 1155

Val Pro Ser Gln Gln Leu Phe Glu Pro Ser Arg Val Cys Lys Ser
 1160 1165 1170

Cys Tyr Ser Ser Leu His Pro Thr Ser Ser Ser Ile Asp Leu Glu
 1175 1180 1185

Leu Asp Lys Pro Ile Ala Ala Thr Ser Asn
 1190 1195

<210> 614
 <211> 662
 <212> PRT
 <213> Homo sapiens

<400> 614

Met Val Val Ser Glu Val Asp Ile Ala Lys Ala Asp Pro Ala Ala Ala
 1 5 10 15

Ser His Pro Leu Leu Leu Asn Gly Asp Ala Thr Val Ala Gln Lys Asn
 20 25 30

Pro Gly Ser Val Ala Glu Asn Asn Leu Cys Ser Gln Tyr Glu Glu Lys
 35 40 45
 Val Arg Pro Cys Ile Asp Leu Ile Asp Ser Leu Arg Ala Leu Gly Val
 50 55 60
 Glu Gln Asp Leu Ala Leu Pro Ala Ile Ala Val Ile Gly Asp Gln Ser
 65 70 75 80
 Ser Gly Lys Ser Ser Val Leu Glu Ala Leu Ser Gly Val Ala Leu Pro
 85 90 95
 Arg Gly Ser Gly Ile Val Thr Arg Cys Pro Leu Val Leu Lys Leu Lys
 100 105 110
 Lys Leu Val Asn Glu Asp Lys Trp Arg Gly Lys Val Ser Tyr Gln Asp
 115 120 125
 Tyr Glu Ile Glu Ile Ser Asp Ala Ser Glu Val Glu Lys Glu Ile Asn
 130 135 140
 Lys Ala Gln Asn Ala Ile Ala Gly Glu Gly Met Gly Ile Ser His Glu
 145 150 155 160
 Leu Ile Thr Leu Glu Ile Ser Ser Arg Asp Val Pro Asp Leu Thr Leu
 165 170 175
 Ile Asp Leu Pro Gly Ile Thr Arg Val Ala Val Gly Asn Gln Pro Ala
 180 185 190
 Asp Ile Gly Tyr Lys Ile Lys Thr Leu Ile Lys Lys Tyr Ile Gln Arg
 195 200 205
 Gln Glu Thr Ile Ser Leu Val Val Val Pro Ser Asn Val Asp Ile Ala
 210 215 220
 Thr Thr Glu Ala Leu Ser Met Ala Gln Glu Val Asp Pro Glu Gly Asp
 225 230 235 240
 Arg Thr Ile Gly Ile Leu Thr Lys Pro Asp Leu Val Asp Lys Gly Thr
 245 250 255
 Glu Asp Lys Val Val Asp Val Val Arg Asn Leu Val Phe His Leu Lys
 260 265 270
 Lys Gly Tyr Met Ile Val Lys Cys Arg Gly Gln Gln Glu Ile Gln Asp
 275 280 285
 Gln Leu Ser Leu Ser Glu Ala Leu Gln Arg Glu Lys Ile Phe Phe Glu
 290 295 300

Asn His Pro Tyr Phe Arg Asp Leu Leu Glu Glu Gly Lys Ala Thr Val
 305 310 315 320
 Pro Cys Leu Ala Glu Lys Leu Thr Ser Glu Leu Ile Thr His Ile Cys
 325 330 335
 Lys Ser Leu Pro Leu Leu Glu Asn Gln Ile Lys Glu Thr His Gln Arg
 340 345 350
 Ile Thr Glu Glu Leu Gln Lys Tyr Gly Val Asp Ile Pro Glu Asp Glu
 355 360 365
 Asn Glu Lys Met Phe Phe Leu Ile Asp Lys Val Asn Ala Phe Asn Gln
 370 375 380
 Asp Ile Thr Ala Leu Met Gln Gly Glu Glu Thr Val Gly Glu Glu Asp
 385 390 395 400
 Ile Arg Leu Phe Thr Arg Leu Arg His Glu Phe His Lys Trp Ser Thr
 405 410 415
 Ile Ile Glu Asn Asn Phe Gln Glu Gly His Lys Ile Leu Ser Arg Lys
 420 425 430
 Ile Gln Lys Phe Glu Asn Gln Tyr Arg Gly Arg Glu Leu Pro Gly Phe
 435 440 445
 Val Asn Tyr Arg Thr Phe Glu Thr Ile Val Lys Gln Gln Ile Lys Ala
 450 455 460
 Leu Glu Glu Pro Ala Val Asp Met Leu His Thr Val Thr Asp Met Val
 465 470 475 480
 Arg Leu Ala Phe Thr Asp Val Ser Ile Lys Asn Phe Glu Glu Phe Phe
 485 490 495
 Asn Leu His Arg Thr Ala Lys Ser Lys Ile Glu Asp Ile Arg Ala Glu
 500 505 510
 Gln Glu Arg Glu Gly Glu Lys Leu Ile Arg Leu His Phe Gln Met Glu
 515 520 525
 Gln Ile Val Tyr Cys Gln Asp Gln Val Tyr Arg Gly Ala Leu Gln Lys
 530 535 540
 Val Arg Glu Lys Glu Leu Glu Glu Glu Lys Lys Lys Lys Ser Trp Asp
 545 550 555 560
 Phe Gly Ala Phe Gln Ser Ser Ser Ala Thr Asp Ser Ser Met Glu Glu
 565 570 575

Ile Phe Gln His Leu Met Ala Tyr His Gln Glu Ala Ser Lys Arg Ile
580 585 590

Ser Ser His Ile Pro Leu Ile Ile Gln Phe Phe Met Leu Gln Thr Tyr
595 600 605

Gly Gln Gln Leu Gln Lys Ala Met Leu Gln Leu Leu Gln Asp Lys Asp
610 615 620

Thr Tyr Ser Trp Leu Leu Lys Glu Arg Ser Asp Thr Ser Asp Lys Arg
625 630 635 640

Lys Phe Leu Lys Glu Arg Leu Ala Arg Leu Thr Gln Ala Arg Arg Arg
645 650 655

Leu Ala Gln Phe Pro Gly
660

<210> 615
<211> 228
<212> PRT
<213> Homo sapiens

<400> 615

Met Glu Arg Val Lys Met Ile Asn Val Gln Arg Leu Leu Glu Ala Ala
1 5 10 15

Glu Phe Leu Glu Arg Arg Glu Arg Glu Cys Glu His Gly Tyr Ala Ser
20 25 30

Ser Phe Pro Ser Met Pro Ser Pro Arg Leu Gln His Ser Lys Pro Pro
35 40 45

Arg Arg Leu Ser Arg Ala Gln Lys His Ser Ser Gly Ser Ser Asn Thr
50 55 60

Ser Thr Ala Asn Arg Ser Thr His Asn Glu Leu Glu Lys Asn Arg Arg
65 70 75 80

Ala His Leu Arg Leu Cys Leu Glu Arg Leu Lys Val Leu Ile Pro Leu
85 90 95

Gly Pro Asp Cys Thr Arg His Thr Thr Leu Gly Leu Leu Asn Lys Ala
100 105 110

Lys Ala His Ile Lys Lys Leu Glu Glu Ala Glu Arg Lys Ser Gln His
115 120 125

Gln Leu Glu Asn Leu Glu Arg Glu Gln Arg Phe Leu Lys Trp Arg Leu
130 135 140

Glu Gln Leu Gln Gly Pro Gln Glu Met Glu Arg Ile Arg Met Asp Ser
145 150 155 160

Ile Gly Ser Thr Ile Ser Ser Asp Arg Ser Asp Ser Glu Arg Glu Glu
165 170 175

Ile Glu Val Asp Val Glu Ser Thr Glu Phe Ser His Gly Glu Val Asp
180 185 190

Asn Ile Ser Thr Thr Ser Ile Ser Asp Ile Asp Asp His Ser Ser Leu
195 200 205

Pro Ser Ile Gly Ser Asp Glu Gly Tyr Ser Ser Ala Ser Val Lys Leu
210 215 220

Ser Phe Thr Ser
225

<210> 616
<211> 454
<212> PRT
<213> Homo sapiens

<400> 616

Leu Asp Phe Phe Arg Val Val Glu Asn Gln Gln Pro Pro Ala Thr Met
1 5 10 15

Pro Leu Asn Val Ser Phe Thr Asn Arg Asn Tyr Asp Leu Asp Tyr Asp
20 25 30

Ser Val Gln Pro Tyr Phe Tyr Cys Asp Glu Glu Glu Asn Phe Tyr Gln
35 40 45

Gln Gln Gln Gln Ser Glu Leu Gln Pro Pro Ala Pro Ser Glu Asp Ile
50 55 60

Trp Lys Lys Phe Glu Leu Leu Pro Thr Pro Pro Leu Ser Pro Ser Arg
65 70 75 80

Arg Ser Gly Leu Cys Ser Pro Ser Tyr Val Ala Val Thr Pro Phe Ser
85 90 95

Leu Arg Gly Asp Asn Asp Gly Gly Gly Gly Ser Phe Ser Thr Ala Asp
100 105 110

Gln Leu Glu Met Val Thr Glu Leu Leu Gly Gly Asp Met Val Asn Gln
115 120 125

Ser Phe Ile Cys Asp Pro Asp Asp Glu Thr Phe Ile Lys Asn Ile Ile
130 135 140

Ile Gln Asp Cys Met Trp Ser Gly Phe Ser Ala Ala Ala Lys Leu Val
 145 150 155 160
 Ser Glu Lys Leu Ala Ser Tyr Gln Ala Ala Arg Lys Asp Ser Gly Ser
 165 170 175
 Pro Asn Pro Ala Arg Gly His Ser Val Cys Ser Thr Ser Ser Leu Tyr
 180 185 190
 Leu Gln Asp Leu Ser Ala Ala Ala Ser Glu Cys Ile Asp Pro Ser Val
 195 200 205
 Val Phe Pro Tyr Pro Leu Asn Asp Ser Ser Ser Pro Lys Ser Cys Ala
 210 215 220
 Ser Gln Asp Ser Ser Ala Phe Ser Pro Ser Ser Asp Ser Leu Leu Ser
 225 230 235 240
 Ser Thr Glu Ser Ser Pro Gln Gly Ser Pro Glu Pro Leu Val Leu His
 245 250 255
 Glu Glu Thr Pro Pro Thr Thr Ser Ser Asp Ser Glu Glu Glu Gln Glu
 260 265 270
 Asp Glu Glu Glu Ile Asp Val Val Ser Val Glu Lys Arg Gln Ala Pro
 275 280 285
 Gly Lys Arg Ser Glu Ser Gly Ser Pro Ser Ala Gly Gly His Ser Lys
 290 295 300
 Pro Pro His Ser Pro Leu Val Leu Lys Arg Cys His Val Ser Thr His
 305 310 315 320
 Gln His Asn Tyr Ala Ala Pro Pro Ser Thr Arg Lys Asp Tyr Pro Ala
 325 330 335
 Ala Lys Arg Val Lys Leu Asp Ser Val Arg Val Leu Arg Gln Ile Ser
 340 345 350
 Asn Asn Arg Lys Cys Thr Ser Pro Arg Ser Ser Asp Thr Glu Glu Asn
 355 360 365
 Val Lys Arg Arg Thr His Asn Val Leu Glu Arg Gln Arg Arg Asn Glu
 370 375 380
 Leu Lys Arg Ser Phe Phe Ala Leu Arg Asp Gln Ile Pro Glu Leu Glu
 385 390 395 400
 Asn Asn Glu Lys Ala Pro Lys Val Val Ile Leu Lys Lys Ala Thr Ala
 405 410 415

PCTAU2016050927-seql-000001-EN-20161013

Tyr Ile Leu Ser Val Gln Ala Glu Glu Gln¹ Lys Leu Ile Ser Glu Glu
420 425 430

Asp Leu Leu Arg Lys Arg Arg Glu Gln Leu Lys His Lys Leu Glu Gln
435 440 445

Leu Arg Asn Ser Cys Ala
450

```
<210> 617
<211> 896
<212> PRT
<213> Homo sapiens
```

<400> 617

Met Ala Ala Arg Ala Val Leu Asp Glu Phe Thr Ala Pro Ala Glu Lys
1 5 10 15

Ala Glu Leu Leu Glu Gln Ser Arg Gly Arg Ile Glu Gly Leu Phe Gly
20 25 30

Val Ser Leu Ala Val Leu Gly Ala Leu Gly Ala Glu Glu Pro Leu Pro
35 40 45

Ala Arg Ile Trp Leu Gln Leu Cys Gly Ala Gln Glu Ala Val His Ser
50 55 60

Ala Lys Glu Tyr Ile Lys Gly Ile Cys Glu Pro Glu Leu Glu Glu Arg
65 70 75 80

Glu Cys Tyr Pro Lys Asp Met His Cys Ile Phe Val Gly Ala Glu Ser
85 90 95

Leu Phe Leu Lys Ser Leu Ile Gln Asp Thr Cys Ala Asp Leu Cys Ile
100 105 110

Leu Asp Ile Gly Leu Leu Gly Ile Arg Gly Ser Ala Glu Ala Val Val
115 120 125

Met Ala Arg Ser His Ile Gln Gln Phe Val Lys Leu Phe Glu Asn Lys
130 135 140

Glu Asn Leu Pro Ser Ser Gln Lys Glu Ser Glu Val Lys Arg Glu Phe
145 150 155 160

Lys Gln Phe Val Glu Ala His Ala Asp Asn Tyr Thr Met Asp Leu Leu
165 170 175

Ile Leu Pro Thr Ser Leu Lys Lys Glu Leu Leu Thr Leu Thr Gln Gly
180 185 190

Glu Glu Asn Leu Phe Glu Thr Gly Asp Asp Glu Val Ile Glu Met Arg
Page 962

195

200

205

Asp Ser Gln Gln Thr Glu Phe Thr Gln Asn Ala Ala Thr Gly Leu Asn
 210 215 220

Ile Ser Arg Asp Glu Thr Val Leu Gln Glu Ala Arg Asn Lys Ala
 225 230 235 240

Gly Thr Pro Val Ser Glu Leu Thr Lys Gln Met Asp Thr Val Leu Ser
 245 250 255

Ser Ser Pro Asp Val Leu Phe Asp Pro Ile Asn Gly Leu Thr Pro Asp
 260 265 270

Glu Glu Ala Leu Ser Asn Glu Arg Ile Cys Gln Lys Arg Arg Phe Ser
 275 280 285

Asp Ser Glu Glu Arg His Thr Lys Lys Gln Phe Ser Leu Glu Asn Val
 290 295 300

Gln Glu Gly Glu Ile Leu His Asp Ala Lys Thr Leu Ala Gly Asn Val
 305 310 315 320

Ile Ala Asp Leu Ser Asp Ser Ser Ala Asp Ser Glu Asn Leu Ser Pro
 325 330 335

Asp Ile Lys Glu Thr Thr Glu Glu Met Glu Tyr Asn Ile Leu Val Asn
 340 345 350

Phe Phe Lys Thr Met Gly Tyr Ser Gln Glu Ile Val Glu Lys Val Ile
 355 360 365

Lys Val Tyr Gly Pro Ser Thr Glu Pro Leu Leu Leu Glu Glu Ile
 370 375 380

Glu Lys Glu Asn Lys Arg Phe Gln Glu Asp Arg Glu Phe Ser Ala Gly
 385 390 395 400

Thr Val Tyr Pro Glu Thr Asn Lys Thr Lys Asn Lys Gly Val Tyr Ser
 405 410 415

Ser Thr Asn Glu Leu Thr Thr Asp Ser Thr Pro Lys Lys Thr Gln Ala
 420 425 430

His Thr Gln Gln Asn Met Val Glu Lys Phe Ser Gln Leu Pro Phe Lys
 435 440 445

Val Glu Ala Lys Pro Cys Thr Ser Asn Cys Arg Ile Asn Thr Phe Arg
 450 455 460

Thr Val Pro Ile Glu Gln Lys His Glu Val Trp Gly Ser Asn Gln Asn
 Page 963

465 470 475 480

Tyr Ile Cys Asn Thr Asp Pro Glu Thr Asp Gly Leu Ser Pro Ser Val
485 490 495

Ala Ser Pro Ser Pro Lys Glu Val Asn Phe Val Ser Arg Gly Ala Ser
500 505 510

Ser His Gln Pro Arg Val Pro Leu Phe Pro Glu Asn Gly Leu His Gln
515 520 525

Gln Pro Glu Pro Leu Leu Pro Asn Asn Met Lys Ser Ala Cys Glu Lys
530 535 540

Arg Leu Gly Cys Cys Ser Ser Pro His Ser Lys Pro Asn Cys Ser Thr
545 550 555 560

Leu Ser Pro Pro Met Pro Leu Pro Gln Leu Leu Pro Ser Val Thr Asp
565 570 575

Ala Arg Ser Ala Gly Pro Ser Asp His Ile Asp Ser Ser Val Thr Gly
580 585 590

Val Gln Arg Phe Arg Asp Thr Leu Lys Ile Pro Tyr Lys Leu Glu Leu
595 600 605

Lys Asn Glu Pro Gly Arg Thr Asp Leu Lys His Ile Val Ile Asp Gly
610 615 620

Ser Asn Val Ala Ile Thr His Gly Leu Lys Lys Phe Phe Ser Cys Arg
625 630 635 640

Gly Ile Ala Ile Ala Val Glu Tyr Phe Trp Lys Leu Gly Asn Arg Asn
645 650 655

Ile Thr Val Phe Val Pro Gln Trp Arg Thr Arg Arg Asp Pro Asn Val
660 665 670

Thr Glu Gln His Phe Leu Thr Gln Leu Gln Glu Leu Gly Ile Leu Ser
675 680 685

Leu Thr Pro Ala Arg Met Val Phe Gly Glu Arg Ile Ala Ser His Asp
690 695 700

Asp Arg Phe Leu Leu His Leu Ala Asp Lys Thr Gly Gly Ile Ile Val
705 710 715 720

Thr Asn Asp Asn Phe Arg Glu Phe Val Asn Glu Ser Val Ser Trp Arg
725 730 735

Glu Ile Ile Thr Lys Arg Leu Leu Gln Tyr Thr Phe Val Gly Asp Ile
Page 964

740

745

750

Phe Met Val Pro Asp Asp Pro Leu Gly Arg Ser Gly Pro Arg Leu Glu
 755 760 765

Glu Phe Leu Gln Lys Glu Val Cys Leu Arg Asp Met Gln Pro Leu Leu
 770 775 780

Ser Ala Leu Pro Asn Val Gly Met Phe Asp Pro Ser Phe Arg Val Pro
 785 790 795 800

Gly Thr Gln Ala Ala Ser Thr Ser His Gln Pro Pro Thr Arg Ile Gln
 805 810 815

Gly Ala Pro Ser Ser His Trp Leu Pro Gln Gln Pro His Phe Pro Leu
 820 825 830

Leu Pro Ala Leu Pro Ser Leu Gln Gln Asn Leu Pro Met Pro Ala Gln
 835 840 845

Arg Ser Ser Ala Glu Thr Asn Glu Leu Arg Glu Ala Leu Leu Lys Ile
 850 855 860

Phe Pro Asp Ser Glu Gln Arg Leu Lys Ile Asp Gln Ile Leu Val Ala
 865 870 875 880

His Pro Tyr Met Lys Asp Leu Asn Ala Leu Ser Ala Met Val Leu Asp
 885 890 895

<210> 618
 <211> 487
 <212> PRT
 <213> Homo sapiens

<400> 618

Met Ala Ala Ala Leu Pro Arg Thr Leu Gly Glu Leu Gln Leu Tyr Arg
 1 5 10 15

Ile Leu Gln Lys Ala Asn Leu Leu Ser Tyr Phe Asp Ala Phe Ile Gln
 20 25 30

Gln Gly Gly Asp Asp Val Gln Gln Leu Cys Glu Ala Gly Glu Glu Glu
 35 40 45

Phe Leu Glu Ile Met Ala Leu Val Gly Met Ala Ser Lys Pro Leu His
 50 55 60

Val Arg Arg Leu Gln Lys Ala Leu Arg Asp Trp Val Thr Asn Pro Gly
 65 70 75 80

Leu Phe Asn Gln Pro Leu Thr Ser Leu Pro Val Ser Ser Ile Pro Ile
 85 90 95

Tyr Lys Leu Pro Glu Gly Ser Pro Thr Trp Leu Gly Ile Ser Cys Ser
 100 105 110
 Ser Tyr Glu Arg Ser Ser Asn Ala Arg Glu Pro His Leu Lys Ile Pro
 115 120 125
 Lys Cys Ala Ala Thr Thr Cys Val Gln Ser Leu Gly Gln Gly Lys Ser
 130 135 140
 Asp Val Val Gly Ser Leu Ala Leu Gln Ser Val Gly Glu Ser Arg Leu
 145 150 155 160
 Trp Gln Gly His His Ala Thr Glu Ser Glu His Ser Leu Ser Pro Ala
 165 170 175
 Asp Leu Gly Ser Pro Ala Ser Pro Lys Glu Ser Ser Glu Ala Leu Asp
 180 185 190
 Ala Ala Ala Ala Leu Ser Val Ala Glu Cys Val Glu Arg Met Ala Pro
 195 200 205
 Thr Leu Pro Lys Ser Asp Leu Asn Glu Val Lys Glu Leu Leu Lys Thr
 210 215 220
 Asn Lys Lys Leu Ala Lys Met Ile Gly His Ile Phe Glu Met Asn Asp
 225 230 235 240
 Asp Asp Pro His Lys Glu Glu Glu Ile Arg Lys Tyr Ser Ala Ile Tyr
 245 250 255
 Gly Arg Phe Asp Ser Lys Arg Lys Asp Gly Lys His Leu Thr Leu His
 260 265 270
 Glu Leu Thr Val Asn Glu Ala Ala Ala Gln Leu Cys Val Lys Asp Asn
 275 280 285
 Ala Leu Leu Thr Arg Arg Asp Glu Leu Phe Ala Leu Ala Arg Gln Ile
 290 295 300
 Ser Arg Glu Val Thr Tyr Lys Tyr Thr Tyr Arg Thr Thr Lys Ser Lys
 305 310 315 320
 Cys Gly Glu Arg Asp Glu Leu Ser Pro Lys Arg Ile Lys Val Glu Asp
 325 330 335
 Gly Phe Pro Asp Phe Gln Asp Ser Val Gln Thr Leu Phe Gln Gln Ala
 340 345 350
 Arg Ala Lys Ser Glu Glu Leu Ala Ala Leu Ser Ser Gln Gln Pro Glu
 355 360 365

Lys Val Met Ala Lys Gln Met Glu Phe Leu Cys Asn Gln Ala Gly Tyr
370 375 380

Glu Arg Leu Gln His Ala Glu Arg Arg Leu Ser Ala Gly Leu Tyr Arg
385 390 395 400

Gln Ser Ser Glu Glu His Ser Pro Asn Gly Leu Thr Ser Asp Asn Ser
405 410 415

Asp Gly Gln Gly Glu Arg Pro Leu Asn Leu Arg Met Pro Asn Leu Gln
420 425 430

Asn Arg Gln Pro His His Phe Val Val Asp Gly Glu Leu Ser Arg Leu
435 440 445

Tyr Pro Ser Glu Ala Lys Ser His Ser Ser Glu Ser Leu Gly Ile Leu
450 455 460

Lys Asp Tyr Pro His Ser Ala Phe Thr Leu Glu Lys Lys Val Ile Lys
465 470 475 480

Thr Glu Pro Glu Asp Ser Arg
485

<210> 619
<211> 215
<212> PRT
<213> Homo sapiens

<400> 619

Met Pro Gly Glu Ala Thr Glu Thr Val Pro Ala Thr Glu Gln Glu Leu
1 5 10 15

Pro Gln Pro Gln Ala Glu Thr Gly Ser Gly Thr Glu Ser Asp Ser Asp
20 25 30

Glu Ser Val Pro Glu Leu Glu Glu Gln Asp Ser Thr Gln Ala Thr Thr
35 40 45

Gln Gln Ala Gln Leu Ala Ala Ala Glu Ile Asp Glu Glu Pro Val
50 55 60

Ser Lys Ala Lys Gln Ser Arg Ser Glu Lys Lys Ala Arg Lys Ala Met
65 70 75 80

Ser Lys Leu Gly Leu Arg Gln Val Thr Gly Val Thr Arg Val Thr Ile
85 90 95

Arg Lys Ser Lys Asn Ile Leu Phe Val Ile Thr Lys Pro Asp Val Tyr
100 105 110

Lys Ser Pro Ala Ser Asp Thr Tyr Ile Val Phe Gly Glu Ala Lys Ile
 115 120 125

Glu Asp Leu Ser Gln Gln Ala Gln Leu Ala Ala Ala Glu Lys Phe Lys
 130 135 140

Val Gln Gly Glu Ala Val Ser Asn Ile Gln Glu Asn Thr Gln Thr Pro
 145 150 155 160

Thr Val Gln Glu Glu Ser Glu Glu Glu Glu Val Asp Glu Thr Gly Val
 165 170 175

Glu Val Lys Asp Ile Glu Leu Val Met Ser Gln Ala Asn Val Ser Arg
 180 185 190

Ala Lys Ala Val Arg Ala Leu Lys Asn Asn Ser Asn Asp Ile Val Asn
 195 200 205

Ala Ile Met Glu Leu Thr Met
 210 215

<210> 620
 <211> 156
 <212> PRT
 <213> Homo sapiens

<400> 620

Met Ser Gly Gly Leu Leu Lys Ala Leu Arg Ser Asp Ser Tyr Val Glu
 1 5 10 15

Leu Ser Gln Tyr Arg Asp Gln His Phe Arg Gly Asp Asn Glu Glu Gln
 20 25 30

Glu Lys Leu Leu Lys Lys Ser Cys Thr Leu Tyr Val Gly Asn Leu Ser
 35 40 45

Phe Tyr Thr Thr Glu Glu Gln Ile Tyr Glu Leu Phe Ser Lys Ser Gly
 50 55 60

Asp Ile Lys Lys Ile Ile Met Gly Leu Asp Lys Met Lys Lys Thr Ala
 65 70 75 80

Cys Gly Phe Cys Phe Val Glu Tyr Tyr Ser Arg Ala Asp Ala Glu Asn
 85 90 95

Ala Met Arg Tyr Ile Asn Gly Thr Arg Leu Asp Asp Arg Ile Ile Arg
 100 105 110

Thr Asp Trp Asp Ala Gly Phe Lys Glu Gly Arg Gln Tyr Gly Arg Gly
 115 120 125

Arg Ser Gly Gly Gln Val Arg Asp Glu Tyr Arg Gln Asp Tyr Asp Ala
 130 135 140

Gly Arg Gly Gly Tyr Gly Lys Leu Ala Gln Asn Gln
 145 150 155

<210> 621
 <211> 1441
 <212> PRT
 <213> Homo sapiens

<400> 621

Met Ser Gly Leu Gly Asp Ser Ser Ser Asp Pro Ala Asn Pro Asp Ser
 1 5 10 15

His Lys Arg Lys Gly Ser Pro Cys Asp Thr Leu Ala Ser Ser Thr Glu
 20 25 30

Lys Arg Arg Arg Glu Gln Glu Asn Lys Tyr Leu Glu Glu Leu Ala Glu
 35 40 45

Leu Leu Ser Ala Asn Ile Ser Asp Ile Asp Ser Leu Ser Val Lys Pro
 50 55 60

Asp Lys Cys Lys Ile Leu Lys Lys Thr Val Asp Gln Ile Gln Leu Met
 65 70 75 80

Lys Arg Met Glu Gln Glu Lys Ser Thr Thr Asp Asp Asp Val Gln Lys
 85 90 95

Ser Asp Ile Ser Ser Ser Ser Gln Gly Val Ile Glu Lys Glu Ser Leu
 100 105 110

Gly Pro Leu Leu Leu Glu Ala Leu Asp Gly Phe Phe Phe Val Val Asn
 115 120 125

Cys Glu Gly Arg Ile Val Phe Val Ser Glu Asn Val Thr Ser Tyr Leu
 130 135 140

Gly Tyr Asn Gln Glu Glu Leu Met Asn Thr Ser Val Tyr Ser Ile Leu
 145 150 155 160

His Val Gly Asp His Ala Glu Phe Val Lys Asn Leu Leu Pro Lys Ser
 165 170 175

Leu Val Asn Gly Val Pro Trp Pro Gln Glu Ala Thr Arg Arg Asn Ser
 180 185 190

His Thr Phe Asn Cys Arg Met Leu Ile His Pro Pro Asp Glu Pro Gly
 195 200 205

Thr Glu Asn Gln Glu Ala Cys Gln Arg Tyr Glu Val Met Gln Cys Phe
 Page 969

210

215

220

Thr Val Ser Gln Pro Lys Ser Ile Gln Glu Asp Gly Glu Asp Phe Gln
 225 230 235 240

Ser Cys Leu Ile Cys Ile Ala Arg Arg Leu Pro Arg Pro Pro Ala Ile
 245 250 255

Thr Gly Val Glu Ser Phe Met Thr Lys Gln Asp Thr Thr Gly Lys Ile
 260 265 270

Ile Ser Ile Asp Thr Ser Ser Leu Arg Ala Ala Gly Arg Thr Gly Trp
 275 280 285

Glu Asp Leu Val Arg Lys Cys Ile Tyr Ala Phe Phe Gln Pro Gln Gly
 290 295 300

Arg Glu Pro Ser Tyr Ala Arg Gln Leu Phe Gln Glu Val Met Thr Arg
 305 310 315 320

Gly Thr Ala Ser Ser Pro Ser Tyr Arg Phe Ile Leu Asn Asp Gly Thr
 325 330 335

Met Leu Ser Ala His Thr Lys Cys Lys Leu Cys Tyr Pro Gln Ser Pro
 340 345 350

Asp Met Gln Pro Phe Ile Met Gly Ile His Ile Ile Asp Arg Glu His
 355 360 365

Ser Gly Leu Ser Pro Gln Asp Asp Thr Asn Ser Gly Met Ser Ile Pro
 370 375 380

Arg Val Asn Pro Ser Val Asn Pro Ser Ile Ser Pro Ala His Gly Val
 385 390 395 400

Ala Arg Ser Ser Thr Leu Pro Pro Ser Asn Ser Asn Met Val Ser Thr
 405 410 415

Arg Ile Asn Arg Gln Gln Ser Ser Asp Leu His Ser Ser Ser His Ser
 420 425 430

Asn Ser Ser Asn Ser Gln Gly Ser Phe Gly Cys Ser Pro Gly Ser Gln
 435 440 445

Ile Val Ala Asn Val Ala Leu Asn Gln Gly Gln Ala Ser Ser Gln Ser
 450 455 460

Ser Asn Pro Ser Leu Asn Leu Asn Asn Ser Pro Met Glu Gly Thr Gly
 465 470 475 480

Ile Ser Leu Ala Gln Phe Met Ser Pro Arg Arg Gln Val Thr Ser Gly
 Page 970

Leu Ala Thr Arg Pro Arg Met Pro Asn Asn Ser Phe Pro Pro Asn Ile
500 505 510

Ser Thr Leu Ser Ser Pro Val Gly Met Thr Ser Ser Ala Cys Asn Asn
515 520 525

Asn Asn Arg Ser Tyr Ser Asn Ile Pro Val Thr Ser Leu Gln Gly Met
530 535 540

Asn Glu Gly Pro Asn Asn Ser Val Gly Phe Ser Ala Ser Ser Pro Val
545 550 555 560

Leu Arg Gln Met Ser Ser Gln Asn Ser Pro Ser Arg Leu Asn Ile Gln
565 570 575

Pro Ala Lys Ala Glu Ser Lys Asp Asn Lys Glu Ile Ala Ser Ile Leu
580 585 590

Asn Glu Met Ile Gln Ser Asp Asn Ser Ser Ser Asp Gly Lys Pro Leu
595 600 605

Asp Ser Gly Leu Leu His Asn Asn Asp Arg Leu Ser Asp Gly Asp Ser
610 615 620

Lys Tyr Ser Gln Thr Ser His Lys Leu Val Gln Leu Leu Thr Thr Thr
625 630 635 640

Ala Glu Gln Gln Leu Arg His Ala Asp Ile Asp Thr Ser Cys Lys Asp
645 650 655

Val Leu Ser Cys Thr Gly Thr Ser Asn Ser Ala Ser Ala Asn Ser Ser
660 665 670

Gly Gly Ser Cys Pro Ser Ser His Ser Ser Leu Thr Glu Arg His Lys
675 680 685

Ile Leu His Arg Leu Leu Gln Glu Gly Ser Pro Ser Asp Ile Thr Thr
690 695 700

Leu Ser Val Glu Pro Asp Lys Lys Asp Ser Ala Ser Thr Ser Val Ser
705 710 715 720

Val Thr Gly Gln Val Gln Gly Asn Ser Ser Ile Lys Leu Glu Leu Asp
725 730 735

Ala Ser Lys Lys Lys Glu Ser Lys Asp His Gln Leu Leu Arg Tyr Leu
740 745 750

Leu Asp Lys Asp Glu Lys Asp Leu Arg Ser Thr Pro Asn Leu Ser Leu
Page 971

755

760

765

Asp Asp Val Lys Val Lys Val Glu Lys Lys Glu Gln Met Asp Pro Cys
 770 775 780

Asn Thr Asn Pro Thr Pro Met Thr Lys Pro Thr Pro Glu Glu Ile Lys
 785 790 795 800

Leu Glu Ala Gln Ser Gln Phe Thr Ala Asp Leu Asp Gln Phe Asp Gln
 805 810 815

Leu Leu Pro Thr Leu Glu Lys Ala Ala Gln Leu Pro Gly Leu Cys Glu
 820 825 830

Thr Asp Arg Met Asp Gly Ala Val Thr Ser Val Thr Ile Lys Ser Glu
 835 840 845

Ile Leu Pro Ala Ser Leu Gln Ser Ala Thr Ala Arg Pro Thr Ser Arg
 850 855 860

Leu Asn Arg Leu Pro Glu Leu Glu Leu Glu Ala Ile Asp Asn Gln Phe
 865 870 875 880

Gly Gln Pro Gly Thr Gly Asp Gln Ile Pro Trp Thr Asn Asn Thr Val
 885 890 895

Thr Ala Ile Asn Gln Ser Lys Ser Glu Asp Gln Cys Ile Ser Ser Gln
 900 905 910

Leu Asp Glu Leu Leu Cys Pro Pro Thr Thr Val Glu Gly Arg Asn Asp
 915 920 925

Glu Lys Ala Leu Leu Glu Gln Leu Val Ser Phe Leu Ser Gly Lys Asp
 930 935 940

Glu Thr Glu Leu Ala Glu Leu Asp Arg Ala Leu Gly Ile Asp Lys Leu
 945 950 955 960

Val Gln Gly Gly Gly Leu Asp Val Leu Ser Glu Arg Phe Pro Pro Gln
 965 970 975

Gln Ala Thr Pro Pro Leu Ile Met Glu Glu Arg Pro Asn Leu Tyr Ser
 980 985 990

Gln Pro Tyr Ser Ser Pro Ser Pro Thr Ala Asn Leu Pro Ser Pro Phe
 995 1000 1005

Gln Gly Met Val Arg Gln Lys Pro Ser Leu Gly Thr Met Pro Val
 1010 1015 1020

Gln Val Thr Pro Pro Arg Gly Ala Phe Ser Pro Gly Met Gly Met
 Page 972

1025

1030

1035

Gln	Pro	Arg	Gln	Thr	Leu	Asn	Arg	Pro	Pro	Ala	Ala	Pro	Asn	Gln
	1040					1045					1050			
Leu	Arg	Leu	Gln	Leu	Gln	Gln	Arg	Leu	Gln	Gly	Gln	Gln	Gln	Leu
	1055					1060					1065			
Ile	His	Gln	Asn	Arg	Gln	Ala	Ile	Leu	Asn	Gln	Phe	Ala	Ala	Thr
	1070					1075					1080			
Ala	Pro	Val	Gly	Ile	Asn	Met	Arg	Ser	Gly	Met	Gln	Gln	Gln	Ile
	1085					1090					1095			
Thr	Pro	Gln	Pro	Pro	Leu	Asn	Ala	Gln	Met	Leu	Ala	Gln	Arg	Gln
	1100					1105					1110			
Arg	Glu	Leu	Tyr	Ser	Gln	Gln	His	Arg	Gln	Arg	Gln	Leu	Ile	Gln
	1115					1120					1125			
Gln	Gln	Arg	Ala	Met	Leu	Met	Arg	Gln	Gln	Ser	Phe	Gly	Asn	Asn
	1130					1135					1140			
Leu	Pro	Pro	Ser	Ser	Gly	Leu	Pro	Val	Gln	Met	Gly	Asn	Pro	Arg
	1145					1150					1155			
Leu	Pro	Gln	Gly	Ala	Pro	Gln	Gln	Phe	Pro	Tyr	Pro	Pro	Asn	Tyr
	1160					1165					1170			
Gly	Thr	Asn	Pro	Gly	Thr	Pro	Pro	Ala	Ser	Thr	Ser	Pro	Phe	Ser
	1175					1180					1185			
Gln	Leu	Ala	Ala	Asn	Pro	Glu	Ala	Ser	Leu	Ala	Asn	Arg	Asn	Ser
	1190					1195					1200			
Met	Val	Ser	Arg	Gly	Met	Thr	Gly	Asn	Ile	Gly	Gly	Gln	Phe	Gly
	1205					1210					1215			
Thr	Gly	Ile	Asn	Pro	Gln	Met	Gln	Gln	Asn	Val	Phe	Gln	Tyr	Pro
	1220					1225					1230			
Gly	Ala	Gly	Met	Val	Pro	Gln	Gly	Glu	Ala	Asn	Phe	Ala	Pro	Ser
	1235					1240					1245			
Leu	Ser	Pro	Gly	Ser	Ser	Met	Val	Pro	Met	Pro	Ile	Pro	Pro	Pro
	1250					1255					1260			
Gln	Ser	Ser	Leu	Leu	Gln	Gln	Thr	Pro	Pro	Ala	Ser	Gly	Tyr	Gln
	1265					1270					1275			
Ser	Pro	Asp	Met	Lys	Ala	Trp	Gln	Gln	Gly	Ala	Ile	Gly	Asn	Asn

1280

1285

1290

Asn Val Phe Ser Gln Ala Val Gln Asn Gln Pro Thr Pro Ala Gln
 1295 1300 1305

Pro Gly Val Tyr Asn Asn Met Ser Ile Thr Val Ser Met Ala Gly
 1310 1315 1320

Gly Asn Thr Asn Val Gln Asn Met Asn Pro Met Met Ala Gln Met
 1325 1330 1335

Gln Met Ser Ser Leu Gln Met Pro Gly Met Asn Thr Val Cys Pro
 1340 1345 1350

Glu Gln Ile Asn Asp Pro Ala Leu Arg His Thr Gly Leu Tyr Cys
 1355 1360 1365

Asn Gln Leu Ser Ser Thr Asp Leu Leu Lys Thr Glu Ala Asp Gly
 1370 1375 1380

Thr Gln Gln Val Gln Gln Val Gln Val Phe Ala Asp Val Gln Cys
 1385 1390 1395

Thr Val Asn Leu Val Gly Gly Asp Pro Tyr Leu Asn Gln Pro Gly
 1400 1405 1410

Pro Leu Gly Thr Gln Lys Pro Thr Ser Gly Pro Gln Thr Pro Gln
 1415 1420 1425

Ala Gln Gln Lys Ser Leu Leu Gln Gln Leu Leu Thr Glu
 1430 1435 1440

<210> 622
 <211> 614
 <212> PRT
 <213> Homo sapiens

<400> 622

Met Asn Thr Phe Gln Asp Gln Ser Gly Ser Ser Ser Asn Arg Glu Pro
 1 5 10 15

Leu Leu Arg Cys Ser Asp Ala Arg Arg Asp Leu Glu Leu Ala Ile Gly
 20 25 30

Gly Val Leu Arg Ala Glu Gln Gln Ile Lys Asp Asn Leu Arg Glu Val
 35 40 45

Lys Ala Gln Ile His Ser Cys Ile Ser Arg His Leu Glu Cys Leu Arg
 50 55 60

Ser Arg Glu Val Trp Leu Tyr Glu Gln Val Asp Leu Ile Tyr Gln Leu
 65 70 75 80

Lys Glu Glu Thr Leu₈₅ Gln Gln Gln Ala Gln₉₀ Gln Leu Tyr Ser Leu₉₅ Leu
 Gly Gln Phe Asn₁₀₀ Cys Leu Thr His Gln₁₀₅ Leu Glu Cys Thr Gln₁₁₀ Asn Lys
 Asp Leu Ala₁₁₅ Asn Gln Val Ser Val₁₂₀ Cys Leu Glu Arg Leu₁₂₅ Gly Ser Leu
 Thr Leu₁₃₀ Lys Pro Glu Asp Ser₁₃₅ Thr Val Leu Leu Phe₁₄₀ Glu Ala Asp Thr
 Ile₁₄₅ Thr Leu Arg Gln Thr₁₅₀ Ile Thr Thr Phe Gly₁₅₅ Ser Leu Lys Thr Ile₁₆₀
 Gln Ile Pro Glu His₁₆₅ Leu Met Ala His Ala₁₇₀ Ser Ser Ala Asn Ile₁₇₅ Gly
 Pro Phe Leu Glu₁₈₀ Lys Arg Gly Cys Ile₁₈₅ Ser Met Pro Glu Gln₁₉₀ Lys Ser
 Ala Ser Gly₁₉₅ Ile Val Ala Val Pro₂₀₀ Phe Ser Glu Trp Leu₂₀₅ Leu Gly Ser
 Lys Pro₂₁₀ Ala Ser Gly Tyr Gln₂₁₅ Ala Pro Tyr Ile Pro₂₂₀ Ser Thr Asp Pro
 Gln₂₂₅ Asp Trp Leu Thr Gln₂₃₀ Lys Gln Thr Leu Glu₂₃₅ Asn Ser Gln Thr Ser₂₄₀
 Ser Arg Ala Cys Asn₂₄₅ Phe Phe Asn Asn Val₂₅₀ Gly Gly Asn Leu Lys₂₅₅ Gly
 Leu Glu Asn Trp₂₆₀ Leu Leu Lys Ser Glu₂₆₅ Lys Ser Ser Tyr Gln₂₇₀ Lys Cys
 Asn Ser His₂₇₅ Ser Thr Thr Ser Ser₂₈₀ Phe Ser Ile Glu Met₂₈₅ Glu Lys Val
 Gly Asp Gln Glu Leu Pro Asp₂₉₅ Gln Asp Glu Met Asp₃₀₀ Leu Ser Asp Trp
 Leu₃₀₅ Val Thr Pro Gln Glu₃₁₀ Ser His Lys Leu Arg₃₁₅ Lys Pro Glu Asn Gly₃₂₀
 Ser Arg Glu Thr Ser₃₂₅ Glu Lys Phe Lys Leu₃₃₀ Leu Phe Gln Ser Tyr₃₃₅ Asn
 Val Asn Asp Trp₃₄₀ Leu Val Lys Thr Asp₃₄₅ Ser Cys Thr Asn Cys₃₅₀ Gln Gly

Asn Gln Pro Lys Gly Val Glu Ile Glu Asn Leu Gly Asn Leu Lys Cys
 355 360 365
 Leu Asn Asp His Leu Glu Ala Lys Lys Pro Leu Ser Thr Pro Ser Met
 370 375 380
 Val Thr Glu Asp Trp Leu Val Gln Asn His Gln Asp Pro Cys Lys Val
 385 390 395 400
 Glu Glu Val Cys Arg Ala Asn Glu Pro Cys Thr Ser Phe Ala Glu Cys
 405 410 415
 Val Cys Asp Glu Asn Cys Glu Lys Glu Ala Leu Tyr Lys Trp Leu Leu
 420 425 430
 Lys Lys Glu Gly Lys Asp Lys Asn Gly Met Pro Val Glu Pro Lys Pro
 435 440 445
 Glu Pro Glu Lys His Lys Asp Ser Leu Asn Met Trp Leu Cys Pro Arg
 450 455 460
 Lys Glu Val Ile Glu Gln Thr Lys Ala Pro Lys Ala Met Thr Pro Ser
 465 470 475 480
 Arg Ile Ala Asp Ser Phe Gln Val Ile Lys Asn Ser Pro Leu Ser Glu
 485 490 495
 Trp Leu Ile Arg Pro Pro Tyr Lys Glu Gly Ser Pro Lys Glu Val Pro
 500 505 510
 Gly Thr Glu Asp Arg Ala Gly Lys Gln Lys Phe Lys Ser Pro Met Asn
 515 520 525
 Thr Ser Trp Cys Ser Phe Asn Thr Ala Asp Trp Val Leu Pro Gly Lys
 530 535 540
 Lys Met Gly Asn Leu Ser Gln Leu Ser Ser Gly Glu Asp Lys Trp Leu
 545 550 555 560
 Leu Arg Lys Lys Ala Gln Glu Val Leu Leu Asn Ser Pro Leu Gln Glu
 565 570 575
 Glu His Asn Phe Pro Pro Asp His Tyr Gly Leu Pro Ala Val Cys Asp
 580 585 590
 Leu Phe Ala Cys Met Gln Leu Lys Val Asp Lys Glu Lys Trp Leu Tyr
 595 600 605
 Arg Thr Pro Leu Gln Met
 610

<210> 623
 <211> 335
 <212> PRT
 <213> Homo sapiens

<400> 623

Met Glu Asp Ser Gly Lys Thr Phe Ser Ser Glu Glu Glu Glu Ala Asn
 1 5 10 15

Tyr Trp Lys Asp Leu Ala Met Thr Tyr Lys Gln Arg Ala Glu Asn Thr
 20 25 30

Gln Glu Glu Leu Arg Glu Phe Gln Glu Gly Ser Arg Glu Tyr Glu Ala
 35 40 45

Glu Leu Glu Thr Gln Leu Gln Gln Ile Glu Thr Arg Asn Arg Asp Leu
 50 55 60

Leu Ser Glu Asn Asn Arg Leu Arg Met Glu Leu Glu Thr Ile Lys Glu
 65 70 75 80

Lys Phe Glu Val Gln His Ser Glu Gly Tyr Arg Gln Ile Ser Ala Leu
 85 90 95

Glu Asp Asp Leu Ala Gln Thr Lys Ala Ile Lys Asp Gln Leu Gln Lys
 100 105 110

Tyr Ile Arg Glu Leu Glu Gln Ala Asn Asp Asp Leu Glu Arg Ala Lys
 115 120 125

Arg Ala Thr Ile Met Ser Leu Glu Asp Phe Glu Gln Arg Leu Asn Gln
 130 135 140

Ala Ile Glu Arg Asn Ala Phe Leu Glu Ser Glu Leu Asp Glu Lys Glu
 145 150 155 160

Asn Leu Leu Glu Ser Val Gln Arg Leu Lys Asp Glu Ala Arg Asp Leu
 165 170 175

Arg Gln Glu Leu Ala Val Gln Gln Lys Gln Glu Lys Pro Arg Thr Pro
 180 185 190

Met Pro Ser Ser Val Glu Ala Glu Arg Thr Asp Thr Ala Val Gln Ala
 195 200 205

Thr Gly Ser Val Pro Ser Thr Pro Ile Ala His Arg Gly Pro Ser Ser
 210 215 220

Ser Leu Asn Thr Pro Gly Ser Phe Arg Arg Gly Leu Asp Asp Ser Thr
 225 230 235 240

Gly Gly Thr Pro Leu Thr Pro Ala Ala Arg Ile Ser Ala Leu Asn Ile
 245 250 255

Val Gly Asp Leu Leu Arg Lys Val Gly Ala Leu Glu Ser Lys Leu Ala
 260 265 270

Ser Cys Arg Asn Leu Val Tyr Asp Gln Ser Pro Asn Arg Thr Gly Gly
 275 280 285

Pro Ala Ser Gly Arg Ser Ser Lys Asn Arg Asp Gly Gly Glu Arg Arg
 290 295 300

Pro Ser Ser Thr Ser Val Pro Leu Gly Asp Lys Gly Leu Asp Thr Ser
 305 310 315 320

Cys Arg Trp Leu Ser Lys Ser Thr Thr Arg Ser Ser Ser Ser Cys
 325 330 335

<210> 624
 <211> 345
 <212> PRT
 <213> Homo sapiens

<400> 624

Met Asp Gly Glu Asp Ile Pro Asp Phe Ser Ser Leu Lys Glu Glu Thr
 1 5 10 15

Ala Tyr Trp Lys Glu Leu Ser Leu Lys Tyr Lys Gln Ser Phe Gln Glu
 20 25 30

Ala Arg Asp Glu Leu Val Glu Phe Gln Glu Gly Ser Arg Glu Leu Glu
 35 40 45

Ala Glu Leu Glu Ala Gln Leu Val Gln Ala Glu Gln Arg Asn Arg Asp
 50 55 60

Leu Gln Ala Asp Asn Gln Arg Leu Lys Tyr Glu Val Glu Ala Leu Lys
 65 70 75 80

Glu Lys Leu Glu His Gln Tyr Ala Gln Ser Tyr Lys Gln Val Ser Val
 85 90 95

Leu Glu Asp Asp Leu Ser Gln Thr Arg Ala Ile Lys Glu Gln Leu His
 100 105 110

Lys Tyr Val Arg Glu Leu Glu Gln Ala Asn Asp Asp Leu Glu Arg Ala
 115 120 125

Lys Arg Ala Thr Ile Val Ser Leu Glu Asp Phe Glu Gln Arg Leu Asn
 130 135 140

Gln Ala Ile Glu Arg Asn Ala Phe Leu Glu Ser Glu Leu Asp Glu Lys
145 150 155 160

Glu Ser Leu Leu Val Ser Val Gln Arg Leu Lys Asp Glu Ala Arg Asp
165 170 175

Leu Arg Gln Glu Leu Ala Val Arg Glu Arg Gln Gln Glu Val Thr Arg
180 185 190

Lys Ser Ala Pro Ser Ser Pro Thr Leu Asp Cys Glu Lys Met Asp Ser
195 200 205

Ala Val Gln Ala Ser Leu Ser Leu Pro Ala Thr Pro Val Gly Lys Gly
210 215 220

Thr Glu Asn Thr Phe Pro Ser Pro Lys Ala Ile Pro Asn Gly Phe Gly
225 230 235 240

Thr Ser Pro Leu Thr Pro Ser Ala Arg Ile Ser Ala Leu Asn Ile Val
245 250 255

Gly Asp Leu Leu Arg Lys Val Gly Ala Leu Glu Ser Lys Leu Ala Ala
260 265 270

Cys Arg Asn Phe Ala Lys Asp Gln Ala Ser Arg Lys Ser Tyr Ile Ser
275 280 285

Gly Asn Val Asn Cys Gly Val Leu Asn Gly Asn Gly Thr Lys Phe Ser
290 295 300

Arg Ser Gly His Thr Ser Phe Phe Asp Lys Gly Ala Val Asn Gly Phe
305 310 315 320

Asp Pro Ala Pro Pro Pro Pro Gly Leu Gly Ser Ser Arg Pro Ser Ser
325 330 335

Ala Pro Gly Met Leu Pro Leu Ser Val
340 345

<210> 625
<211> 221
<212> PRT
<213> Homo sapiens

<400> 625

Met Ala Leu Ala Leu Ala Ala Leu Ala Ala Val Glu Pro Ala Cys Gly
1 5 10 15

Ser Arg Tyr Gln Gln Leu Gln Asn Glu Glu Glu Ser Gly Glu Pro Glu
20 25 30

Gln Ala Ala Gly Asp Ala Pro Pro Pro Tyr Ser Ser Ile Ser Ala Glu
Page 979

35

40

45

Ser Ala Ala Tyr Phe Asp Tyr Lys Asp Glu Ser Gly Phe Pro Lys Pro
 50 55 60

Pro Ser Tyr Asn Val Ala Thr Thr Leu Pro Ser Tyr Asp Glu Ala Glu
 65 70 75 80

Arg Thr Lys Ala Glu Ala Thr Ile Pro Leu Val Pro Gly Arg Asp Glu
 85 90 95

Asp Phe Val Gly Arg Asp Asp Phe Asp Asp Ala Asp Gln Leu Arg Ile
 100 105 110

Gly Asn Asp Gly Ile Phe Met Leu Thr Phe Phe Met Ala Phe Leu Phe
 115 120 125

Asn Trp Ile Gly Phe Phe Leu Ser Phe Cys Leu Thr Thr Ser Ala Ala
 130 135 140

Gly Arg Tyr Gly Ala Ile Ser Gly Phe Gly Leu Ser Leu Ile Lys Trp
 145 150 155 160

Ile Leu Ile Val Arg Phe Ser Thr Tyr Phe Pro Gly Tyr Phe Asp Gly
 165 170 175

Gln Tyr Trp Leu Trp Trp Val Phe Leu Val Leu Gly Phe Leu Leu Phe
 180 185 190

Leu Arg Gly Phe Ile Asn Tyr Ala Lys Val Arg Lys Met Pro Glu Thr
 195 200 205

Phe Ser Asn Leu Pro Arg Thr Arg Val Leu Phe Ile Tyr
 210 215 220

<210> 626
 <211> 263
 <212> PRT
 <213> Homo sapiens

<400> 626

Met Glu Glu Ser Gly Tyr Glu Ser Val Leu Cys Val Lys Pro Asp Val
 1 5 10 15

His Val Tyr Arg Ile Pro Pro Arg Ala Thr Asn Arg Gly Tyr Arg Ala
 20 25 30

Ala Glu Trp Gln Leu Asp Gln Pro Ser Trp Ser Gly Arg Leu Arg Ile
 35 40 45

Thr Ala Lys Gly Gln Met Ala Tyr Ile Lys Leu Glu Asp Arg Thr Ser
 50 55 60

Gly Glu Leu Phe Ala Gln Ala Pro Val Asp Gln Phe Pro Gly Thr Ala
65 70 75 80

Val Glu Ser Val Thr Asp Ser Ser Arg Tyr Phe Val Ile Arg Ile Glu
85 90 95

Asp Gly Asn Gly Arg Arg Ala Phe Ile Gly Ile Gly Phe Gly Asp Arg
100 105 110

Gly Asp Ala Phe Asp Phe Asn Val Ala Leu Gln Asp His Phe Lys Trp
115 120 125

Val Lys Gln Gln Cys Glu Phe Ala Lys Gln Ala Gln Asn Pro Asp Gln
130 135 140

Gly Pro Lys Leu Asp Leu Gly Phe Lys Glu Gly Gln Thr Ile Lys Leu
145 150 155 160

Asn Ile Ala Asn Met Lys Lys Lys Glu Gly Ala Ala Gly Asn Pro Arg
165 170 175

Val Arg Pro Ala Ser Thr Gly Gly Leu Ser Leu Leu Pro Pro Pro Pro
180 185 190

Gly Gly Lys Thr Ser Thr Leu Ile Pro Pro Pro Gly Glu Gln Leu Ala
195 200 205

Val Gly Gly Ser Leu Val Gln Pro Ala Val Ala Pro Ser Ser Gly Gly
210 215 220

Ala Pro Val Pro Trp Pro Gln Pro Asn Pro Ala Thr Ala Asp Ile Trp
225 230 235 240

Gly Asp Phe Thr Lys Ser Thr Gly Ser Thr Ser Ser Gln Thr Gln Pro
245 250 255

Gly Thr Gly Trp Val Gln Phe
260

<210> 627
<211> 302
<212> PRT
<213> Homo sapiens

<400> 627

Met Asp Glu Gln Ser Gln Gly Met Gln Gly Pro Pro Val Pro Gln Phe
1 5 10 15

Gln Pro Gln Lys Ala Leu Arg Pro Asp Met Gly Tyr Asn Thr Leu Ala
20 25 30

Asn Phe Arg Ile Glu Lys Lys Ile Gly Arg Gly Gln Phe Ser Glu Val
 35 40 45
 Tyr Arg Ala Ala Cys Leu Leu Asp Gly Val Pro Val Ala Leu Lys Lys
 50 55 60
 Val Gln Ile Phe Asp Leu Met Asp Ala Lys Ala Arg Ala Asp Cys Ile
 65 70 75 80
 Lys Glu Ile Asp Leu Leu Lys Gln Leu Asn His Pro Asn Val Ile Lys
 85 90 95
 Tyr Tyr Ala Ser Phe Ile Glu Asp Asn Glu Leu Asn Ile Val Leu Glu
 100 105 110
 Leu Ala Asp Ala Gly Asp Leu Ser Arg Met Ile Lys His Phe Lys Lys
 115 120 125
 Gln Lys Arg Leu Ile Pro Glu Arg Thr Val Trp Lys Tyr Phe Val Gln
 130 135 140
 Leu Cys Ser Ala Leu Glu His Met His Ser Arg Arg Val Met His Arg
 145 150 155 160
 Asp Ile Lys Pro Ala Asn Val Phe Ile Thr Ala Thr Gly Val Val Lys
 165 170 175
 Leu Gly Asp Leu Gly Leu Gly Arg Phe Phe Ser Ser Lys Thr Thr Ala
 180 185 190
 Ala His Ser Leu Val Gly Thr Pro Tyr Tyr Met Ser Pro Glu Arg Ile
 195 200 205
 His Glu Asn Gly Tyr Asn Phe Lys Ser Asp Ile Trp Ser Leu Gly Cys
 210 215 220
 Leu Leu Tyr Glu Met Ala Ala Leu Gln Ser Pro Phe Tyr Gly Asp Lys
 225 230 235 240
 Met Asn Leu Tyr Ser Leu Cys Lys Lys Ile Glu Gln Cys Asp Tyr Pro
 245 250 255
 Pro Leu Pro Ser Asp His Tyr Ser Glu Glu Leu Arg Gln Leu Val Asn
 260 265 270
 Met Cys Ile Asn Pro Asp Pro Glu Lys Arg Pro Asp Val Thr Tyr Val
 275 280 285
 Tyr Asp Val Ala Lys Arg Met His Ala Cys Thr Ala Ser Ser
 290 295 300

<210> 628
 <211> 969
 <212> PRT
 <213> Homo sapiens

<400> 628

Met Ala Glu Asp Asp Pro Tyr Leu Gly Arg Pro Glu Gln Met Phe His
 1 5 10 15

Leu Asp Pro Ser Leu Thr His Thr Ile Phe Asn Pro Glu Val Phe Gln
 20 25 30

Pro Gln Met Ala Leu Pro Thr Ala Asp Gly Pro Tyr Leu Gln Ile Leu
 35 40 45

Glu Gln Pro Lys Gln Arg Gly Phe Arg Phe Arg Tyr Val Cys Glu Gly
 50 55 60

Pro Ser His Gly Gly Leu Pro Gly Ala Ser Ser Glu Lys Asn Lys Lys
 65 70 75 80

Ser Tyr Pro Gln Val Lys Ile Cys Asn Tyr Val Gly Pro Ala Lys Val
 85 90 95

Ile Val Gln Leu Val Thr Asn Gly Lys Asn Ile His Leu His Ala His
 100 105 110

Ser Leu Val Gly Lys His Cys Glu Asp Gly Ile Cys Thr Val Thr Ala
 115 120 125

Gly Pro Lys Asp Met Val Val Gly Phe Ala Asn Leu Gly Ile Leu His
 130 135 140

Val Thr Lys Lys Lys Val Phe Glu Thr Leu Glu Ala Arg Met Thr Glu
 145 150 155 160

Ala Cys Ile Arg Gly Tyr Asn Pro Gly Leu Leu Val His Pro Asp Leu
 165 170 175

Ala Tyr Leu Gln Ala Glu Gly Gly Gly Asp Arg Gln Leu Gly Asp Arg
 180 185 190

Glu Lys Glu Leu Ile Arg Gln Ala Ala Leu Gln Gln Thr Lys Glu Met
 195 200 205

Asp Leu Ser Val Val Arg Leu Met Phe Thr Ala Phe Leu Pro Asp Ser
 210 215 220

Thr Gly Ser Phe Thr Arg Arg Leu Glu Pro Val Val Ser Asp Ala Ile
 225 230 235 240

Tyr Asp Ser Lys Ala Pro Asn Ala Ser Asn Leu Lys Ile Val Arg Met
 245 250 255
 Asp Arg Thr Ala Gly Cys Val Thr Gly Gly Glu Glu Ile Tyr Leu Leu
 260 265 270
 Cys Asp Lys Val Gln Lys Asp Asp Ile Gln Ile Arg Phe Tyr Glu Glu
 275 280 285
 Glu Glu Asn Gly Gly Val Trp Glu Gly Phe Gly Asp Phe Ser Pro Thr
 290 295 300
 Asp Val His Arg Gln Phe Ala Ile Val Phe Lys Thr Pro Lys Tyr Lys
 305 310 315 320
 Asp Ile Asn Ile Thr Lys Pro Ala Ser Val Phe Val Gln Leu Arg Arg
 325 330 335
 Lys Ser Asp Leu Glu Thr Ser Glu Pro Lys Pro Phe Leu Tyr Tyr Pro
 340 345 350
 Glu Ile Lys Asp Lys Glu Glu Val Gln Arg Lys Arg Gln Lys Leu Met
 355 360 365
 Pro Asn Phe Ser Asp Ser Phe Gly Gly Gly Ser Gly Ala Gly Ala Gly
 370 375 380
 Gly Gly Gly Met Phe Gly Ser Gly Gly Gly Gly Gly Thr Gly Ser
 385 390 395 400
 Thr Gly Pro Gly Tyr Ser Phe Pro His Tyr Gly Phe Pro Thr Tyr Gly
 405 410 415
 Gly Ile Thr Phe His Pro Gly Thr Thr Lys Ser Asn Ala Gly Met Lys
 420 425 430
 His Gly Thr Met Asp Thr Glu Ser Lys Lys Asp Pro Glu Gly Cys Asp
 435 440 445
 Lys Ser Asp Asp Lys Asn Thr Val Asn Leu Phe Gly Lys Val Ile Glu
 450 455 460
 Thr Thr Glu Gln Asp Gln Glu Pro Ser Glu Ala Thr Val Gly Asn Gly
 465 470 475 480
 Glu Val Thr Leu Thr Tyr Ala Thr Gly Thr Lys Glu Glu Ser Ala Gly
 485 490 495
 Val Gln Asp Asn Leu Phe Leu Glu Lys Ala Met Gln Leu Ala Lys Arg
 500 505 510

His Ala Asn Ala Leu Phe Asp Tyr Ala Val Thr Gly Asp Val Lys Met
 515 520 525
 Leu Leu Ala Val Gln Arg His Leu Thr Ala Val Gln Asp Glu Asn Gly
 530 535 540
 Asp Ser Val Leu His Leu Ala Ile Ile His Leu His Ser Gln Leu Val
 545 550 555 560
 Arg Asp Leu Leu Glu Val Thr Ser Gly Leu Ile Ser Asp Asp Ile Ile
 565 570 575
 Asn Met Arg Asn Asp Leu Tyr Gln Thr Pro Leu His Leu Ala Val Ile
 580 585 590
 Thr Lys Gln Glu Asp Val Val Glu Asp Leu Leu Arg Ala Gly Ala Asp
 595 600 605
 Leu Ser Leu Leu Asp Arg Leu Gly Asn Ser Val Leu His Leu Ala Ala
 610 615 620
 Lys Glu Gly His Asp Lys Val Leu Ser Ile Leu Leu Lys His Lys Lys
 625 630 635 640
 Ala Ala Leu Leu Leu Asp His Pro Asn Gly Asp Gly Leu Asn Ala Ile
 645 650 655
 His Leu Ala Met Met Ser Asn Ser Leu Pro Cys Leu Leu Leu Leu Val
 660 665 670
 Ala Ala Gly Ala Asp Val Asn Ala Gln Glu Gln Lys Ser Gly Arg Thr
 675 680 685
 Ala Leu His Leu Ala Val Glu His Asp Asn Ile Ser Leu Ala Gly Cys
 690 695 700
 Leu Leu Leu Glu Gly Asp Ala His Val Asp Ser Thr Thr Tyr Asp Gly
 705 710 715 720
 Thr Thr Pro Leu His Ile Ala Ala Gly Arg Gly Ser Thr Arg Leu Ala
 725 730 735
 Ala Leu Leu Lys Ala Ala Gly Ala Asp Pro Leu Val Glu Asn Phe Glu
 740 745 750
 Pro Leu Tyr Asp Leu Asp Asp Ser Trp Glu Asn Ala Gly Glu Asp Glu
 755 760 765
 Gly Val Val Pro Gly Thr Thr Pro Leu Asp Met Ala Thr Ser Trp Gln
 770 775 780

Val Phe Asp Ile Leu Asn Gly Lys Pro Tyr Glu Pro Glu Phe Thr Ser
785 790 795 800

Asp Asp Leu Leu Ala Gln Gly Asp Met Lys Gln Leu Ala Glu Asp Val
805 810 815

Lys Leu Gln Leu Tyr Lys Leu Leu Glu Ile Pro Asp Pro Asp Lys Asn
820 825 830

Trp Ala Thr Leu Ala Gln Lys Leu Gly Leu Gly Ile Leu Asn Asn Ala
835 840 845

Phe Arg Leu Ser Pro Ala Pro Ser Lys Thr Leu Met Asp Asn Tyr Glu
850 855 860

Val Ser Gly Gly Thr Val Arg Glu Leu Val Glu Ala Leu Arg Gln Met
865 870 875 880

Gly Tyr Thr Glu Ala Ile Glu Val Ile Gln Ala Ala Ser Ser Pro Val
885 890 895

Lys Thr Thr Ser Gln Ala His Ser Leu Pro Leu Ser Pro Ala Ser Thr
900 905 910

Arg Gln Gln Ile Asp Glu Leu Arg Asp Ser Asp Ser Val Cys Asp Ser
915 920 925

Gly Val Glu Thr Ser Phe Arg Lys Leu Ser Phe Thr Glu Ser Leu Thr
930 935 940

Ser Gly Ala Ser Leu Leu Thr Leu Asn Lys Met Pro His Asp Tyr Gly
945 950 955 960

Gln Glu Gly Pro Leu Glu Gly Lys Ile
965

<210> 629
<211> 347
<212> PRT
<213> Homo sapiens

<400> 629

Met Glu Gln Tyr Thr Ala Asn Ser Asn Ser Ser Thr Glu Gln Ile Val
1 5 10 15

Val Gln Ala Gly Gln Ile Gln Gln Gln Gln Gly Gly Val Thr Ala
20 25 30

Val Gln Leu Gln Thr Glu Ala Gln Val Ala Ser Ala Ser Gly Gln Gln
35 40 45

Val Gln Thr Leu Gln Val Val Gln Gly Gln Pro Leu Met Val Gln Val
Page 986

50

55

60

Ser Gly Gly Gln Leu Ile Thr Ser Thr Gly Gln Pro Ile Met Val Gln
65 70 75 80

Ala Val Pro Gly Gly Gln Gly Gln Thr Ile Met Gln Val Pro Val Ser
85 90 95

Gly Thr Gln Gly Leu Gln Gln Ile Gln Leu Val Pro Pro Gly Gln Ile
100 105 110

Gln Ile Gln Gly Gly Gln Ala Val Gln Val Gln Gly Gln Gln Gly Gln
115 120 125

Thr Gln Gln Ile Ile Ile Gln Gln Pro Gln Thr Ala Val Thr Ala Gly
130 135 140

Gln Thr Gln Thr Gln Gln Gln Ile Ala Val Gln Gly Gln Gln Val Ala
145 150 155 160

Gln Thr Ala Glu Gly Gln Thr Ile Val Tyr Gln Pro Val Asn Ala Asp
165 170 175

Gly Thr Ile Leu Gln Gln Val Thr Val Pro Val Ser Gly Met Ile Thr
180 185 190

Ile Pro Ala Ala Ser Leu Ala Gly Ala Gln Ile Val Gln Thr Gly Ala
195 200 205

Asn Thr Asn Thr Thr Ser Ser Gly Gln Gly Thr Val Thr Val Thr Leu
210 215 220

Pro Val Ala Gly Asn Val Val Asn Ser Gly Gly Met Val Met Met Val
225 230 235 240

Pro Gly Ala Gly Ser Val Pro Ala Ile Gln Arg Ile Pro Leu Pro Gly
245 250 255

Ala Glu Met Leu Glu Glu Glu Pro Leu Tyr Val Asn Ala Lys Gln Tyr
260 265 270

His Arg Ile Leu Lys Arg Arg Gln Ala Arg Ala Lys Leu Glu Ala Glu
275 280 285

Gly Lys Ile Pro Lys Glu Arg Arg Lys Tyr Leu His Glu Ser Arg His
290 295 300

Arg His Ala Met Ala Arg Lys Arg Gly Glu Gly Gly Arg Phe Phe Ser
305 310 315 320

Pro Lys Glu Lys Asp Ser Pro His Met Gln Asp Pro Asn Gln Ala Asp
Page 987

Glu Glu Ala Met Thr Gln Ile Ile Arg Val Ser
340 345

<210> 630
<211> 1429
<212> PRT
<213> Homo sapiens

<400> 630

Met Ala Gly Gly Ala Trp Gly Arg Leu Ala Cys Tyr Leu Glu Phe Leu
1 5 10 15

Lys Lys Glu Glu Leu Lys Glu Phe Gln Leu Leu Leu Ala Asn Lys Ala
20 25 30

His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr
35 40 45

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln
50 55 60

Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg
65 70 75 80

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe
85 90 95

Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr
100 105 110

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys
115 120 125

Thr Gln Gly Ser Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser
130 135 140

Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser Leu Leu Tyr Gln Ala Leu
145 150 155 160

Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala
165 170 175

Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro
180 185 190

Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu
195 200 205

Asp Glu Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg
210 215 220

Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr
 225 230 235 240
 Pro Pro Gln Ala His Thr Ser Leu Gln Pro His His His Pro Trp Glu
 245 250 255
 Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu
 260 265 270
 Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His
 275 280 285
 Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val
 290 295 300
 Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro
 305 310 315 320
 Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala
 325 330 335
 Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly
 340 345 350
 Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser
 355 360 365
 Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile
 370 375 380
 Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser
 385 390 395 400
 Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly
 405 410 415
 Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln
 420 425 430
 Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile
 435 440 445
 Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln
 450 455 460
 Asn Leu Ile Pro Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly
 465 470 475 480
 Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp
 485 490 495

Glu Arg Gln Ala Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu
 500 505 510
 Leu Trp Ala Leu Cys Leu Val Pro Trp Val Ser Trp Leu Ala Cys Thr
 515 520 525
 Cys Leu Met Gln Gln Met Lys Arg Lys Glu Lys Leu Thr Leu Thr Ser
 530 535 540
 Lys Thr Thr Thr Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln
 545 550 555 560
 Ala Gln Pro Leu Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala
 565 570 575
 Glu Gly Ile Trp Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg
 580 585 590
 Lys His Gly Leu Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly
 595 600 605
 Ile Leu Gln Glu His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu
 610 615 620
 Cys Phe Gln Glu Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu
 625 630 635 640
 Lys Gly Arg Gly Lys His Ser Asn Cys Ile Ile Asp Leu Glu Lys Thr
 645 650 655
 Leu Glu Ala Tyr Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg
 660 665 670
 Phe Leu Leu Gly Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn
 675 680 685
 Ile Phe His Cys Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val
 690 695 700
 Pro Ser Leu Gln Leu Leu Leu Gln Pro His Ser Leu Glu Ser Leu His
 705 710 715 720
 Cys Leu Tyr Glu Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala
 725 730 735
 His Phe Glu Glu Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu
 740 745 750
 Val Cys Thr Phe Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln
 755 760 765

Leu Ile Glu Gly Arg Gln His Arg Ser Thr Trp Ser Pro Thr Met Val
 770 775 780
 Val Leu Phe Arg Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu
 785 790 795 800
 Phe Ser Val Leu Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser
 805 810 815
 Gly Asn Ser Leu Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu
 820 825 830
 Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly
 835 840 845
 Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn
 850 855 860
 Gln Thr Leu Thr Glu Leu Asp Leu Ser Phe Asn Val Leu Thr Asp Ala
 865 870 875 880
 Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu
 885 890 895
 Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln
 900 905 910
 Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp
 915 920 925
 Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu
 930 935 940
 Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln
 945 950 955 960
 Thr Thr Leu Ser Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln
 965 970 975
 Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met
 980 985 990
 Thr Pro Thr Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser
 995 1000 1005
 Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His
 1010 1015 1020
 Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe
 1025 1030 1035

Pro	Ile	Ala	Glu	Ile	Ala	Glu	Glu	Ser	Ser	Pro	Glu	Val	Val	Pro
1040						1045					1050			
Val	Glu	Leu	Leu	Cys	Val	Pro	Ser	Pro	Ala	Ser	Gln	Gly	Asp	Leu
1055						1060					1065			
His	Thr	Lys	Pro	Leu	Gly	Thr	Asp	Asp	Asp	Phe	Trp	Gly	Pro	Thr
1070						1075					1080			
Gly	Pro	Val	Ala	Thr	Glu	Val	Val	Asp	Lys	Glu	Lys	Asn	Leu	Tyr
1085						1090					1095			
Arg	Val	His	Phe	Pro	Val	Ala	Gly	Ser	Tyr	Arg	Trp	Pro	Asn	Thr
1100						1105					1110			
Gly	Leu	Cys	Phe	Val	Met	Arg	Glu	Ala	Val	Thr	Val	Glu	Ile	Glu
1115						1120					1125			
Phe	Cys	Val	Trp	Asp	Gln	Phe	Leu	Gly	Glu	Ile	Asn	Pro	Gln	His
1130						1135					1140			
Ser	Trp	Met	Val	Ala	Gly	Pro	Leu	Leu	Asp	Ile	Lys	Ala	Glu	Pro
1145						1150					1155			
Gly	Ala	Val	Glu	Ala	Val	His	Leu	Pro	His	Phe	Val	Ala	Leu	Gln
1160						1165					1170			
Gly	Gly	His	Val	Asp	Thr	Ser	Leu	Phe	Gln	Met	Ala	His	Phe	Lys
1175						1180					1185			
Glu	Glu	Gly	Met	Leu	Leu	Glu	Lys	Pro	Ala	Arg	Val	Glu	Leu	His
1190						1195					1200			
His	Ile	Val	Leu	Glu	Asn	Pro	Ser	Phe	Ser	Pro	Leu	Gly	Val	Leu
1205						1210					1215			
Leu	Lys	Met	Ile	His	Asn	Ala	Leu	Arg	Phe	Ile	Pro	Val	Thr	Ser
1220						1225					1230			
Val	Val	Leu	Leu	Tyr	His	Arg	Val	His	Pro	Glu	Glu	Val	Thr	Phe
1235						1240					1245			
His	Leu	Tyr	Leu	Ile	Pro	Ser	Asp	Cys	Ser	Ile	Arg	Lys	Glu	Leu
1250						1255					1260			
Glu	Leu	Cys	Tyr	Arg	Ser	Pro	Gly	Glu	Asp	Gln	Leu	Phe	Ser	Glu
1265						1270					1275			
Phe	Tyr	Val	Gly	His	Leu	Gly	Ser	Gly	Ile	Arg	Leu	Gln	Val	Lys
1280						1285					1290			

Asp Lys Lys Asp Glu Thr Leu Val Trp Glu Ala Leu Val Lys Pro
1295 1300 1305

Gly Asp Leu Met Pro Ala Thr Thr Leu Ile Pro Pro Ala Arg Ile
1310 1315 1320

Ala Val Pro Ser Pro Leu Asp Ala Pro Gln Leu Leu His Phe Val
1325 1330 1335

Asp Gln Tyr Arg Glu Gln Leu Ile Ala Arg Val Thr Ser Val Glu
1340 1345 1350

Val Val Leu Asp Lys Leu His Gly Gln Val Leu Ser Gln Glu Gln
1355 1360 1365

Tyr Glu Arg Val Leu Ala Glu Asn Thr Arg Pro Ser Gln Met Arg
1370 1375 1380

Lys Leu Phe Ser Leu Ser Gln Ser Trp Asp Arg Lys Cys Lys Asp
1385 1390 1395

Gly Leu Tyr Gln Ala Leu Lys Glu Thr His Pro His Leu Ile Met
1400 1405 1410

Glu Leu Trp Glu Lys Gly Ser Lys Lys Gly Leu Leu Pro Leu Ser
1415 1420 1425

Ser

<210> 631
<211> 1040
<212> PRT
<213> Homo sapiens

<400> 631

Met Gly Glu Glu Gly Gly Ser Ala Ser His Asp Glu Glu Glu Arg Ala
1 5 10 15

Ser Val Leu Leu Gly His Ser Pro Gly Cys Glu Met Cys Ser Gln Glu
20 25 30

Ala Phe Gln Ala Gln Arg Ser Gln Leu Val Glu Leu Leu Val Ser Gly
35 40 45

Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp Leu Leu Ser Trp Glu
50 55 60

Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His Leu Leu Gly Gln Pro
65 70 75 80

Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr Val Trp Asn Lys Gly
 85 90 95
 Thr Trp Ala Cys Gln Lys Leu Ile Ala Ala Ala Gln Glu Ala Gln Ala
 100 105 110
 Asp Ser Gln Ser Pro Lys Leu His Gly Cys Trp Asp Pro His Ser Leu
 115 120 125
 His Pro Ala Arg Asp Leu Gln Ser His Arg Pro Ala Ile Val Arg Arg
 130 135 140
 Leu His Ser His Val Glu Asn Met Leu Asp Leu Ala Trp Glu Arg Gly
 145 150 155 160
 Phe Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg Leu Pro Ile Phe Thr
 165 170 175
 Pro Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu Ala Thr Val Lys Ala
 180 185 190
 Asn Gly Leu Ala Ala Phe Leu Leu Gln His Val Gln Glu Leu Pro Val
 195 200 205
 Pro Leu Ala Leu Pro Leu Glu Ala Ala Thr Cys Lys Lys Tyr Met Ala
 210 215 220
 Lys Leu Arg Thr Thr Val Ser Ala Gln Ser Arg Phe Leu Ser Thr Tyr
 225 230 235 240
 Asp Gly Ala Glu Thr Leu Cys Leu Glu Asp Ile Tyr Thr Glu Asn Val
 245 250 255
 Leu Glu Val Trp Ala Asp Val Gly Met Ala Gly Pro Pro Gln Lys Ser
 260 265 270
 Pro Ala Thr Leu Gly Leu Glu Glu Leu Phe Ser Thr Pro Gly His Leu
 275 280 285
 Asn Asp Asp Ala Asp Thr Val Leu Val Val Gly Glu Ala Gly Ser Gly
 290 295 300
 Lys Ser Thr Leu Leu Gln Arg Leu His Leu Leu Trp Ala Ala Gly Gln
 305 310 315 320
 Asp Phe Gln Glu Phe Leu Phe Val Phe Pro Phe Ser Cys Arg Gln Leu
 325 330 335
 Gln Cys Met Ala Lys Pro Leu Ser Val Arg Thr Leu Leu Phe Glu His
 340 345 350

Cys Cys Trp Pro Asp Val Gly Gln Glu Asp Ile Phe Gln Leu Leu Leu
 355 360 365
 Asp His Pro Asp Arg Val Leu Leu Thr Phe Asp Gly Phe Asp Glu Phe
 370 375 380
 Lys Phe Arg Phe Thr Asp Arg Glu Arg His Cys Ser Pro Thr Asp Pro
 385 390 395 400
 Thr Ser Val Gln Thr Leu Leu Phe Asn Leu Leu Gln Gly Asn Leu Leu
 405 410 415
 Lys Asn Ala Arg Lys Val Val Thr Ser Arg Pro Ala Ala Val Ser Ala
 420 425 430
 Phe Leu Arg Lys Tyr Ile Arg Thr Glu Phe Asn Leu Lys Gly Phe Ser
 435 440 445
 Glu Gln Gly Ile Glu Leu Tyr Leu Arg Lys Arg His His Glu Pro Gly
 450 455 460
 Val Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser Ala Leu His
 465 470 475 480
 Gly Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser Lys Cys His
 485 490 495
 Gln Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr Thr Thr Asp
 500 505 510
 Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala Thr Pro Pro
 515 520 525
 Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg Gly Arg Leu
 530 535 540
 Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly Leu Gly Met
 545 550 555 560
 Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala Gln Val Ser
 565 570 575
 Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg Ala Lys Gly Val Val
 580 585 590
 Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His Ile Thr Phe Gln Cys
 595 600 605
 Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala Asp Val Pro Pro Ala
 610 615 620

Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro Gly Asn Ser Pro Met
 625 630 635 640
 Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala Ser Glu Gly Lys Asp
 645 650 655
 Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu Pro His Asn Leu Gln
 660 665 670
 Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser Arg Glu His Trp Gly
 675 680 685
 Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala Leu Leu Arg Arg Gln
 690 695 700
 Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu Arg Lys His Phe His
 705 710 715 720
 Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys Ser Val His Ala Met
 725 730 735
 Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu
 740 745 750
 Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn Val Gly His Leu Lys
 755 760 765
 Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys Ala Ala Leu Ala Phe
 770 775 780
 Val Leu Gln His Leu Arg Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn
 785 790 795 800
 Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu Pro Cys Leu Gly Val
 805 810 815
 Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp Arg Gly Ile
 820 825 830
 Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu Gln Leu Gln Lys Leu
 835 840 845
 Ala Leu Phe Asn Asn Lys Leu Thr Asp Gly Cys Ala His Ser Met Ala
 850 855 860
 Lys Leu Leu Ala Cys Arg Gln Asn Phe Leu Ala Leu Arg Leu Gly Asn
 865 870 875 880
 Asn Tyr Ile Thr Ala Ala Gly Ala Gln Val Leu Ala Glu Gly Leu Arg
 885 890 895

Gly Asn Thr Ser Leu Gln Phe Leu Gly Phe Trp Gly Asn Arg Val Gly
 900 905 910

Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu Gly Asp His Gln Ser
 915 920 925

Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile Gly Ser Val Gly Ala
 930 935 940

Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val Met Leu Glu Glu Leu
 945 950 955 960

Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly Val Cys Ser Leu Ala
 965 970 975

Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile Leu Lys Leu Ser Asn
 980 985 990

Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu Leu Gln Ala Leu Glu
 995 1000 1005

Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg Gly Asn Thr Phe
 1010 1015 1020

Ser Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp Thr Arg Leu
 1025 1030 1035

Leu Leu
 1040

<210> 632
 <211> 301
 <212> PRT
 <213> Homo sapiens

<400> 632

Met Thr Arg His Gly Lys Asn Cys Thr Ala Gly Ala Val Tyr Thr Tyr
 1 5 10 15

His Glu Lys Lys Lys Asp Thr Ala Ala Ser Gly Tyr Gly Thr Gln Asn
 20 25 30

Ile Arg Leu Ser Arg Asp Ala Val Lys Asp Phe Asp Cys Cys Cys Leu
 35 40 45

Ser Leu Gln Pro Cys His Asp Pro Val Val Thr Pro Asp Gly Tyr Leu
 50 55 60

Tyr Glu Arg Glu Ala Ile Leu Glu Tyr Ile Leu His Gln Lys Lys Glu
 65 70 75 80

Ile Ala Arg Gln Met Lys Ala Tyr Glu Lys Gln Arg Gly Thr Arg Arg
85 90 95

Glu Glu Gln Lys Glu Leu Gln Arg Ala Ala Ser Gln Asp His Val Arg
100 105 110

Gly Phe Leu Glu Lys Glu Ser Ala Ile Val Ser Arg Pro Leu Asn Pro
115 120 125

Phe Thr Ala Lys Ala Leu Ser Gly Thr Ser Pro Asp Asp Val Gln Pro
130 135 140

Gly Pro Ser Val Gly Pro Pro Ser Lys Asp Lys Asp Lys Val Leu Pro
145 150 155 160

Ser Phe Trp Ile Pro Ser Leu Thr Pro Glu Ala Lys Ala Thr Lys Leu
165 170 175

Glu Lys Pro Ser Arg Thr Val Thr Cys Pro Met Ser Gly Lys Pro Leu
180 185 190

Arg Met Ser Asp Leu Thr Pro Val His Phe Thr Pro Leu Asp Ser Ser
195 200 205

Val Asp Arg Val Gly Leu Ile Thr Arg Ser Glu Arg Tyr Val Cys Ala
210 215 220

Val Thr Arg Asp Ser Leu Ser Asn Ala Thr Pro Cys Ala Val Leu Arg
225 230 235 240

Pro Ser Gly Ala Val Val Thr Leu Glu Cys Val Glu Lys Leu Ile Arg
245 250 255

Lys Asp Met Val Asp Pro Val Thr Gly Asp Lys Leu Thr Asp Arg Asp
260 265 270

Ile Ile Val Leu Gln Arg Gly Gly Thr Gly Phe Ala Gly Ser Gly Val
275 280 285

Lys Leu Gln Ala Glu Lys Ser Arg Pro Val Met Gln Ala
290 295 300

<210> 633
<211> 320
<212> PRT
<213> Homo sapiens

<400> 633

Met Ala Phe Pro Lys Lys Lys Leu Gln Gly Leu Val Ala Ala Thr Ile
1 5 10 15

Thr Pro Met Thr Glu Asn Gly Glu Ile Asn Phe Ser Val Ile Gly Gln
Page 998

20

25

30

Tyr Val Asp Tyr Leu Val Lys Glu Gln Gly Val Lys Asn Ile Phe Val
 35 40 45

Asn Gly Thr Thr Gly Glu Gly Leu Ser Leu Ser Val Ser Glu Arg Arg
 50 55 60

Gln Val Ala Glu Glu Trp Val Thr Lys Gly Lys Asp Lys Leu Asp Gln
 65 70 75 80

Val Ile Ile His Val Gly Ala Leu Ser Leu Lys Glu Ser Gln Glu Leu
 85 90 95

Ala Gln His Ala Ala Glu Ile Gly Ala Asp Gly Ile Ala Val Ile Ala
 100 105 110

Pro Phe Phe Leu Lys Pro Trp Thr Lys Asp Ile Leu Ile Asn Phe Leu
 115 120 125

Lys Glu Val Ala Ala Ala Ala Pro Ala Leu Pro Phe Tyr Tyr Tyr His
 130 135 140

Ile Pro Ala Leu Thr Gly Val Lys Ile Arg Ala Glu Glu Leu Leu Asp
 145 150 155 160

Gly Ile Leu Asp Lys Ile Pro Thr Phe Gln Gly Leu Lys Phe Ser Asp
 165 170 175

Thr Asp Leu Leu Asp Phe Gly Gln Cys Val Asp Gln Asn Arg Gln Gln
 180 185 190

Gln Phe Ala Phe Leu Phe Gly Val Asp Glu Gln Leu Leu Ser Ala Leu
 195 200 205

Val Met Gly Ala Thr Gly Ala Val Gly Ser Thr Tyr Asn Tyr Leu Gly
 210 215 220

Lys Lys Thr Asn Gln Met Leu Glu Ala Phe Glu Gln Lys Asp Phe Ser
 225 230 235 240

Leu Ala Leu Asn Tyr Gln Phe Cys Ile Gln Arg Phe Ile Asn Phe Val
 245 250 255

Val Lys Leu Gly Phe Gly Val Ser Gln Thr Lys Ala Ile Met Thr Leu
 260 265 270

Val Ser Gly Ile Pro Met Gly Pro Pro Arg Leu Pro Leu Gln Lys Ala
 275 280 285

Ser Arg Glu Phe Thr Asp Ser Ala Glu Ala Lys Leu Lys Ser Leu Asp

290

295

300

Phe Leu Ser Phe Thr Asp Leu Lys Asp Gly Asn Leu Glu Ala Gly Ser
 305 310 315 320

<210> 634
 <211> 777
 <212> PRT
 <213> Homo sapiens

<400> 634

Met Asp Ser Lys Glu Ser Leu Thr Pro Gly Arg Glu Glu Asn Pro Ser
 1 5 10 15

Ser Val Leu Ala Gln Glu Arg Gly Asp Val Met Asp Phe Tyr Lys Thr
 20 25 30

Leu Arg Gly Gly Ala Thr Val Lys Val Ser Ala Ser Ser Pro Ser Leu
 35 40 45

Ala Val Ala Ser Gln Ser Asp Ser Lys Gln Arg Arg Leu Leu Val Asp
 50 55 60

Phe Pro Lys Gly Ser Val Ser Asn Ala Gln Gln Pro Asp Leu Ser Lys
 65 70 75 80

Ala Val Ser Leu Ser Met Gly Leu Tyr Met Gly Glu Thr Glu Thr Lys
 85 90 95

Val Met Gly Asn Asp Leu Gly Phe Pro Gln Gln Gly Gln Ile Ser Leu
 100 105 110

Ser Ser Gly Glu Thr Asp Leu Lys Leu Leu Glu Glu Ser Ile Ala Asn
 115 120 125

Leu Asn Arg Ser Thr Ser Val Pro Glu Asn Pro Lys Ser Ser Ala Ser
 130 135 140

Thr Ala Val Ser Ala Ala Pro Thr Glu Lys Glu Phe Pro Lys Thr His
 145 150 155 160

Ser Asp Val Ser Ser Glu Gln Gln His Leu Lys Gly Gln Thr Gly Thr
 165 170 175

Asn Gly Gly Asn Val Lys Leu Tyr Thr Thr Asp Gln Ser Thr Phe Asp
 180 185 190

Ile Leu Gln Asp Leu Glu Phe Ser Ser Gly Ser Pro Gly Lys Glu Thr
 195 200 205

Asn Glu Ser Pro Trp Arg Ser Asp Leu Leu Ile Asp Glu Asn Cys Leu
 210 215 220

Leu Ser Pro Leu Ala Gly Glu Asp Asp Ser Phe Leu Leu Glu Gly Asn
 225 230 235 240
 Ser Asn Glu Asp Cys Lys Pro Leu Ile Leu Pro Asp Thr Lys Pro Lys
 245 250 255
 Ile Lys Asp Asn Gly Asp Leu Val Leu Ser Ser Pro Ser Asn Val Thr
 260 265 270
 Leu Pro Gln Val Lys Thr Glu Lys Glu Asp Phe Ile Glu Leu Cys Thr
 275 280 285
 Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr Val Tyr Cys Gln Ala
 290 295 300
 Ser Phe Pro Gly Ala Asn Ile Ile Gly Asn Lys Met Ser Ala Ile Ser
 305 310 315 320
 Val His Gly Val Ser Thr Ser Gly Gly Gln Met Tyr His Tyr Asp Met
 325 330 335
 Asn Thr Ala Ser Leu Ser Gln Gln Gln Asp Gln Lys Pro Ile Phe Asn
 340 345 350
 Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn Trp Asn Arg Cys Gln
 355 360 365
 Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly Thr Leu Asn Phe Pro
 370 375 380
 Gly Arg Thr Val Phe Ser Asn Gly Tyr Ser Ser Pro Ser Met Arg Pro
 385 390 395 400
 Asp Val Ser Ser Pro Pro Ser Ser Ser Ser Thr Ala Thr Thr Gly Pro
 405 410 415
 Pro Pro Lys Leu Cys Leu Val Cys Ser Asp Glu Ala Ser Gly Cys His
 420 425 430
 Tyr Gly Val Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Lys Arg Ala
 435 440 445
 Val Glu Gly Gln His Asn Tyr Leu Cys Ala Gly Arg Asn Asp Cys Ile
 450 455 460
 Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro Ala Cys Arg Tyr Arg Lys
 465 470 475 480
 Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys Lys Lys
 485 490 495

Ile Lys Gly Ile Gln Gln Ala Thr Thr Gly Val Ser Gln Glu Thr Ser
 500 505 510
 Glu Asn Pro Gly Asn Lys Thr Ile Val Pro Ala Thr Leu Pro Gln Leu
 515 520 525
 Thr Pro Thr Leu Val Ser Leu Leu Glu Val Ile Glu Pro Glu Val Leu
 530 535 540
 Tyr Ala Gly Tyr Asp Ser Ser Val Pro Asp Ser Thr Trp Arg Ile Met
 545 550 555 560
 Thr Thr Leu Asn Met Leu Gly Gly Arg Gln Val Ile Ala Ala Val Lys
 565 570 575
 Trp Ala Lys Ala Ile Pro Gly Phe Arg Asn Leu His Leu Asp Asp Gln
 580 585 590
 Met Thr Leu Leu Gln Tyr Ser Trp Met Phe Leu Met Ala Phe Ala Leu
 595 600 605
 Gly Trp Arg Ser Tyr Arg Gln Ser Ser Ala Asn Leu Leu Cys Phe Ala
 610 615 620
 Pro Asp Leu Ile Ile Asn Glu Gln Arg Met Thr Leu Pro Cys Met Tyr
 625 630 635 640
 Asp Gln Cys Lys His Met Leu Tyr Val Ser Ser Glu Leu His Arg Leu
 645 650 655
 Gln Val Ser Tyr Glu Glu Tyr Leu Cys Met Lys Thr Leu Leu Leu Leu
 660 665 670
 Ser Ser Val Pro Lys Asp Gly Leu Lys Ser Gln Glu Leu Phe Asp Glu
 675 680 685
 Ile Arg Met Thr Tyr Ile Lys Glu Leu Gly Lys Ala Ile Val Lys Arg
 690 695 700
 Glu Gly Asn Ser Ser Gln Asn Trp Gln Arg Phe Tyr Gln Leu Thr Lys
 705 710 715 720
 Leu Leu Asp Ser Met His Glu Val Val Glu Asn Leu Leu Asn Tyr Cys
 725 730 735
 Phe Gln Thr Phe Leu Asp Lys Thr Met Ser Ile Glu Phe Pro Glu Met
 740 745 750
 Leu Ala Glu Ile Ile Thr Asn Gln Ile Pro Lys Tyr Ser Asn Gly Asn
 755 760 765

Ile Lys Lys Leu Leu Phe His Gln Lys
770 775

<210> 635
<211> 287
<212> PRT
<213> Homo sapiens

<400> 635

Met Glu Val Met Glu Gly Pro Leu Asn Leu Ala His Gln Gln Ser Arg
1 5 10 15

Arg Ala Asp Arg Leu Leu Ala Ala Gly Lys Tyr Glu Glu Ala Ile Ser
20 25 30

Cys His Lys Lys Ala Ala Ala Tyr Leu Ser Glu Ala Met Lys Leu Thr
35 40 45

Gln Ser Glu Gln Ala His Leu Ser Leu Glu Leu Gln Arg Asp Ser His
50 55 60

Met Lys Gln Leu Leu Leu Ile Gln Glu Arg Trp Lys Arg Ala Gln Arg
65 70 75 80

Glu Glu Arg Leu Lys Ala Gln Gln Asn Thr Asp Lys Asp Ala Ala Ala
85 90 95

His Leu Gln Thr Ser His Lys Pro Ser Ala Glu Asp Ala Glu Gly Gln
100 105 110

Ser Pro Leu Ser Gln Lys Tyr Ser Pro Ser Thr Glu Lys Cys Leu Pro
115 120 125

Glu Ile Gln Gly Ile Phe Asp Arg Asp Pro Asp Thr Leu Leu Tyr Leu
130 135 140

Leu Gln Gln Lys Ser Glu Pro Ala Glu Pro Cys Ile Gly Ser Lys Ala
145 150 155 160

Pro Lys Asp Asp Lys Thr Ile Ile Glu Glu Gln Ala Thr Lys Ile Ala
165 170 175

Asp Leu Lys Arg His Val Glu Phe Leu Val Ala Glu Asn Glu Arg Leu
180 185 190

Arg Lys Glu Asn Lys Gln Leu Lys Ala Glu Lys Ala Arg Leu Leu Lys
195 200 205

Gly Pro Ile Glu Lys Glu Leu Asp Val Asp Ala Asp Phe Val Glu Thr
210 215 220

Ser Glu Leu Trp Ser Leu Pro Pro His Ala Glu Thr Ala Thr Ala Ser
225 230 235 240

Ser Thr Trp Gln Lys Phe Ala Ala Asn Thr Gly Lys Ala Lys Asp Ile
245 250 255

Pro Ile Pro Asn Leu Pro Pro Leu Asp Phe Pro Ser Pro Glu Leu Pro
260 265 270

Leu Met Glu Leu Ser Glu Asp Ile Leu Lys Gly Phe Met Asn Asn
275 280 285

<210> 636
<211> 340
<212> PRT
<213> Homo sapiens

<400> 636

Met Leu Thr Gln Leu Lys Ala Lys Ser Glu Gly Lys Leu Ala Lys Gln
1 5 10 15

Ile Cys Lys Val Val Leu Asp His Phe Glu Lys Gln Tyr Ser Lys Glu
20 25 30

Leu Gly Asp Ala Trp Asn Thr Val Arg Glu Ile Leu Thr Ser Pro Ser
35 40 45

Cys Trp Gln Tyr Ala Val Leu Leu Asn Arg Phe Asn Tyr Pro Phe Glu
50 55 60

Leu Glu Lys Asp Leu His Leu Lys Gly Tyr His Thr Leu Ser Gln Gly
65 70 75 80

Ser Leu Pro Asn Tyr Pro Lys Ser Val Lys Cys Tyr Leu Ser Arg Thr
85 90 95

Pro Gly Arg Ile Pro Ser Glu Arg His Gln Ile Gly Asn Leu Lys Lys
100 105 110

Tyr Tyr Leu Leu Asn Ala Ala Ser Leu Leu Pro Val Leu Ala Leu Glu
115 120 125

Leu Arg Asp Gly Glu Lys Val Leu Asp Leu Cys Ala Ala Pro Gly Gly
130 135 140

Lys Ser Ile Ala Leu Leu Gln Cys Ala Cys Pro Gly Tyr Leu His Cys
145 150 155 160

Asn Glu Tyr Asp Ser Leu Arg Leu Arg Trp Leu Arg Gln Thr Leu Glu
165 170 175

Ser Phe Ile Pro Gln Pro Leu Ile Asn Val Ile Lys Val Ser Glu Leu
 180 185 190

Asp Gly Arg Lys Met Gly Asp Ala Gln Pro Glu Met Phe Asp Lys Val
 195 200 205

Leu Val Asp Ala Pro Cys Ser Asn Asp Arg Ser Trp Leu Phe Ser Ser
 210 215 220

Asp Ser Gln Lys Ala Ser Cys Arg Ile Ser Gln Arg Arg Asn Leu Pro
 225 230 235 240

Leu Leu Gln Ile Glu Leu Leu Arg Ser Ala Ile Lys Ala Leu Arg Pro
 245 250 255

Gly Gly Ile Leu Val Tyr Ser Thr Cys Thr Leu Ser Lys Ala Glu Asn
 260 265 270

Gln Asp Val Ile Ser Glu Ile Leu Asn Ser His Gly Asn Ile Met Pro
 275 280 285

Met Asp Ile Lys Gly Ile Ala Arg Thr Cys Ser His Asp Phe Thr Phe
 290 295 300

Ala Pro Thr Gly Gln Glu Cys Gly Leu Leu Val Ile Pro Asp Lys Gly
 305 310 315 320

Lys Ala Trp Gly Pro Met Tyr Val Ala Lys Leu Lys Lys Ser Trp Ser
 325 330 335

Thr Gly Lys Trp
 340

<210> 637
 <211> 640
 <212> PRT
 <213> Homo sapiens

<400> 637

Met Asn Lys Leu Arg Gln Ser Phe Arg Arg Lys Lys Asp Val Tyr Val
 1 5 10 15

Pro Glu Ala Ser Arg Pro His Gln Trp Gln Thr Asp Glu Glu Gly Val
 20 25 30

Arg Thr Gly Lys Cys Ser Phe Pro Val Lys Tyr Leu Gly His Val Glu
 35 40 45

Val Asp Glu Ser Arg Gly Met His Ile Cys Glu Asp Ala Val Lys Arg
 50 55 60

Leu Lys Ala Thr Gly Lys Lys Ala Val Lys Ala Val Leu Trp Val Ser

65 70 75 80
 Ala Asp Gly Leu Arg Val Val Asp Glu Lys Thr Lys Asp Leu Ile Val
 85 90 95
 Asp Gln Thr Ile Glu Lys Val Ser Phe Cys Ala Pro Asp Arg Asn Phe
 100 105 110
 Asp Arg Ala Phe Ser Tyr Ile Cys Arg Asp Gly Thr Thr Arg Arg Trp
 115 120 125
 Ile Cys His Cys Phe Met Ala Val Lys Asp Thr Gly Glu Arg Leu Ser
 130 135 140
 His Ala Val Gly Cys Ala Phe Ala Ala Cys Leu Glu Arg Lys Gln Lys
 145 150 155 160
 Arg Glu Lys Glu Cys Gly Val Thr Ala Thr Phe Asp Ala Ser Arg Thr
 165 170 175
 Thr Phe Thr Arg Glu Gly Ser Phe Arg Val Thr Thr Ala Thr Glu Gln
 180 185 190
 Ala Glu Arg Glu Glu Ile Met Lys Gln Met Gln Asp Ala Lys Lys Ala
 195 200 205
 Glu Thr Asp Lys Ile Val Val Gly Ser Ser Val Ala Pro Gly Asn Thr
 210 215 220
 Ala Pro Ser Pro Ser Ser Pro Thr Ser Pro Thr Ser Asp Ala Thr Thr
 225 230 235 240
 Ser Leu Glu Met Asn Asn Pro His Ala Ile Pro Arg Arg His Ala Pro
 245 250 255
 Ile Glu Gln Leu Ala Arg Gln Gly Ser Phe Arg Gly Phe Pro Ala Leu
 260 265 270
 Ser Gln Lys Met Ser Pro Phe Lys Arg Gln Leu Ser Leu Arg Ile Asn
 275 280 285
 Glu Leu Pro Ser Thr Met Gln Arg Lys Thr Asp Phe Pro Ile Lys Asn
 290 295 300
 Ala Val Pro Glu Val Glu Gly Glu Ala Glu Ser Ile Ser Ser Leu Cys
 305 310 315 320
 Ser Gln Ile Thr Asn Ala Phe Ser Thr Pro Glu Asp Pro Phe Ser Ser
 325 330 335
 Ala Pro Met Thr Lys Pro Val Thr Val Val Ala Pro Gln Ser Pro Thr
 Page 1006

340

345

350

Phe Gln Ala Asn Gly Thr Asp Ser Ala Phe His Val Leu Ala Lys Pro
 355 360 365

Ala His Thr Ala Leu Ala Pro Val Ala Met Pro Val Arg Glu Thr Asn
 370 375 380

Pro Trp Ala His Ala Pro Asp Ala Ala Asn Lys Glu Ile Ala Ala Thr
 385 390 395 400

Cys Ser Gly Thr Glu Trp Gly Gln Ser Ser Gly Ala Ala Ser Pro Gly
 405 410 415

Leu Phe Gln Ala Gly His Arg Arg Thr Pro Ser Glu Ala Asp Arg Trp
 420 425 430

Leu Glu Glu Val Ser Lys Ser Val Arg Ala Gln Gln Pro Gln Ala Ser
 435 440 445

Ala Ala Pro Leu Gln Pro Val Leu Gln Pro Pro Pro Pro Thr Ala Ile
 450 455 460

Ser Gln Pro Ala Ser Pro Phe Gln Gly Asn Ala Phe Leu Thr Ser Gln
 465 470 475 480

Pro Val Pro Val Gly Val Val Pro Ala Leu Gln Pro Ala Phe Val Pro
 485 490 495

Ala Gln Ser Tyr Pro Val Ala Asn Gly Met Pro Tyr Pro Ala Pro Asn
 500 505 510

Val Pro Val Val Gly Ile Thr Pro Ser Gln Met Val Ala Asn Val Phe
 515 520 525

Gly Thr Ala Gly His Pro Gln Ala Ala His Pro His Gln Ser Pro Ser
 530 535 540

Leu Val Arg Gln Gln Thr Phe Pro His Tyr Glu Ala Ser Ser Ala Thr
 545 550 555 560

Thr Ser Pro Phe Phe Lys Pro Pro Ala Gln His Leu Asn Gly Ser Ala
 565 570 575

Ala Phe Asn Gly Val Asp Asp Gly Arg Leu Ala Ser Ala Asp Arg His
 580 585 590

Thr Glu Val Pro Thr Gly Thr Cys Pro Val Asp Pro Phe Glu Ala Gln
 595 600 605

Trp Ala Ala Leu Glu Asn Lys Ser Lys Gln Arg Thr Asn Pro Ser Pro
 610 615

610

615

620

Thr Asn Pro Phe Ser Ser Asp Leu Gln Lys Thr Phe Glu Ile Glu Leu
625 630 635 640

<210> 638
<211> 687
<212> PRT
<213> Homo sapiens

<400> 638

Met Gly Asn Gly Glu Ser Gln Leu Ser Ser Val Pro Ala Gln Lys Leu
1 5 10 15

Gly Trp Phe Ile Gln Glu Tyr Leu Lys Pro Tyr Glu Glu Cys Gln Thr
20 25 30

Leu Ile Asp Glu Met Val Asn Thr Ile Cys Asp Val Leu Gln Glu Pro
35 40 45

Glu Gln Phe Pro Leu Val Gln Gly Val Ala Ile Gly Gly Ser Tyr Gly
50 55 60

Arg Lys Thr Val Leu Arg Gly Asn Ser Asp Gly Thr Leu Val Leu Phe
65 70 75 80

Phe Ser Asp Leu Lys Gln Phe Gln Asp Gln Lys Arg Ser Gln Arg Asp
85 90 95

Ile Leu Asp Lys Thr Gly Asp Lys Leu Lys Phe Cys Leu Phe Thr Lys
100 105 110

Trp Leu Lys Asn Asn Phe Glu Ile Gln Lys Ser Leu Asp Gly Phe Thr
115 120 125

Ile Gln Val Phe Thr Lys Asn Gln Arg Ile Ser Phe Glu Val Leu Ala
130 135 140

Ala Phe Asn Ala Leu Ser Leu Asn Asp Asn Pro Ser Pro Trp Ile Tyr
145 150 155 160

Arg Glu Leu Lys Arg Ser Leu Asp Lys Thr Asn Ala Ser Pro Gly Glu
165 170 175

Phe Ala Val Cys Phe Thr Glu Leu Gln Gln Lys Phe Phe Asp Asn Arg
180 185 190

Pro Gly Lys Leu Lys Asp Leu Ile Leu Leu Ile Lys His Trp His Gln
195 200 205

Gln Cys Gln Lys Lys Ile Lys Asp Leu Pro Ser Leu Ser Pro Tyr Ala
210 215 220

Leu Glu Leu Leu Thr Val Tyr Ala Trp Glu Gln Gly Cys Arg Lys Asp
 225 230 235 240
 Asn Phe Asp Ile Ala Glu Gly Val Arg Thr Val Leu Glu Leu Ile Lys
 245 250 255
 Cys Gln Glu Lys Leu Cys Ile Tyr Trp Met Val Asn Tyr Asn Phe Glu
 260 265 270
 Asp Glu Thr Ile Arg Asn Ile Leu Leu His Gln Leu Gln Ser Ala Arg
 275 280 285
 Pro Val Ile Leu Asp Pro Val Asp Pro Thr Asn Asn Val Ser Gly Asp
 290 295 300
 Lys Ile Cys Trp Gln Trp Leu Lys Lys Glu Ala Gln Thr Trp Leu Thr
 305 310 315 320
 Ser Pro Asn Leu Asp Asn Glu Leu Pro Ala Pro Ser Trp Asn Val Leu
 325 330 335
 Pro Ala Pro Leu Phe Thr Thr Pro Gly His Leu Leu Asp Lys Phe Ile
 340 345 350
 Lys Glu Phe Leu Gln Pro Asn Lys Cys Phe Leu Glu Gln Ile Asp Ser
 355 360 365
 Ala Val Asn Ile Ile Arg Thr Phe Leu Lys Glu Asn Cys Phe Arg Gln
 370 375 380
 Ser Thr Ala Lys Ile Gln Ile Val Arg Gly Gly Ser Thr Ala Lys Gly
 385 390 395 400
 Thr Ala Leu Lys Thr Gly Ser Asp Ala Asp Leu Val Val Phe His Asn
 405 410 415
 Ser Leu Lys Ser Tyr Thr Ser Gln Lys Asn Glu Arg His Lys Ile Val
 420 425 430
 Lys Glu Ile His Glu Gln Leu Lys Ala Phe Trp Arg Glu Lys Glu Glu
 435 440 445
 Glu Leu Glu Val Ser Phe Glu Pro Pro Lys Trp Lys Ala Pro Arg Val
 450 455 460
 Leu Ser Phe Ser Leu Lys Ser Lys Val Leu Asn Glu Ser Val Ser Phe
 465 470 475 480
 Asp Val Leu Pro Ala Phe Asn Ala Leu Gly Gln Leu Ser Ser Gly Ser
 485 490 495

Thr Pro Ser Pro Glu Val Tyr Ala Gly Leu Ile Asp Leu Tyr Lys Ser
500 505 510

Ser Asp Leu Pro Gly Gly Glu Phe Ser Thr Cys Phe Thr Val Leu Gln
515 520 525

Arg Asn Phe Ile Arg Ser Arg Pro Thr Lys Leu Lys Asp Leu Ile Arg
530 535 540

Leu Val Lys His Trp Tyr Lys Glu Cys Glu Arg Lys Leu Lys Pro Lys
545 550 555 560

Gly Ser Leu Pro Pro Lys Tyr Ala Leu Glu Leu Leu Thr Ile Tyr Ala
565 570 575

Trp Glu Gln Gly Ser Gly Val Pro Asp Phe Asp Thr Ala Glu Gly Phe
580 585 590

Arg Thr Val Leu Glu Leu Val Thr Gln Tyr Gln Gln Leu Cys Ile Phe
595 600 605

Trp Lys Val Asn Tyr Asn Phe Glu Asp Glu Thr Val Arg Lys Phe Leu
610 615 620

Leu Ser Gln Leu Gln Lys Thr Arg Pro Val Ile Leu Asp Pro Ala Glu
625 630 635 640

Pro Thr Gly Asp Val Gly Gly Gly Asp Arg Trp Cys Trp His Leu Leu
645 650 655

Ala Lys Glu Ala Lys Glu Trp Leu Ser Ser Pro Cys Phe Lys Asp Gly
660 665 670

Thr Gly Asn Pro Ile Pro Pro Trp Lys Val Pro Val Lys Val Ile
675 680 685

<210> 639
<211> 514
<212> PRT
<213> Homo sapiens

<400> 639

Met Ala Leu Met Gln Glu Leu Tyr Ser Thr Pro Ala Ser Arg Leu Asp
1 5 10 15

Ser Phe Val Ala Gln Trp Leu Gln Pro His Arg Glu Trp Lys Glu Glu
20 25 30

Val Leu Asp Ala Val Arg Thr Val Glu Glu Phe Leu Arg Gln Glu His
35 40 45

Phe Gln Gly Lys Arg Gly Leu Asp Gln Asp Val Arg Val Leu Lys Val
 50 55 60
 Val Lys Val Gly Ser Phe Gly Asn Gly Thr Val Leu Arg Ser Thr Arg
 65 70 75 80
 Glu Val Glu Leu Val Ala Phe Leu Ser Cys Phe His Ser Phe Gln Glu
 85 90 95
 Ala Ala Lys His His Lys Asp Val Leu Arg Leu Ile Trp Lys Thr Met
 100 105 110
 Trp Gln Ser Gln Asp Leu Leu Asp Leu Gly Leu Glu Asp Leu Arg Met
 115 120 125
 Glu Gln Arg Val Pro Asp Ala Leu Val Phe Thr Ile Gln Thr Arg Gly
 130 135 140
 Thr Ala Glu Pro Ile Thr Val Thr Ile Val Pro Ala Tyr Arg Ala Leu
 145 150 155 160
 Gly Pro Ser Leu Pro Asn Ser Gln Pro Pro Pro Glu Val Tyr Val Ser
 165 170 175
 Leu Ile Lys Ala Cys Gly Gly Pro Gly Asn Phe Cys Pro Ser Phe Ser
 180 185 190
 Glu Leu Gln Arg Asn Phe Val Lys His Arg Pro Thr Lys Leu Lys Ser
 195 200 205
 Leu Leu Arg Leu Val Lys His Trp Tyr Gln Gln Tyr Val Lys Ala Arg
 210 215 220
 Ser Pro Arg Ala Asn Leu Pro Pro Leu Tyr Ala Leu Glu Leu Leu Thr
 225 230 235 240
 Ile Tyr Ala Trp Glu Met Gly Thr Glu Glu Asp Glu Asn Phe Met Leu
 245 250 255
 Asp Glu Gly Phe Thr Thr Val Met Asp Leu Leu Leu Glu Tyr Glu Val
 260 265 270
 Ile Cys Ile Tyr Trp Thr Lys Tyr Tyr Thr Leu His Asn Ala Ile Ile
 275 280 285
 Glu Asp Cys Val Arg Lys Gln Leu Lys Lys Glu Arg Pro Ile Ile Leu
 290 295 300
 Asp Pro Ala Asp Pro Thr Leu Asn Val Ala Glu Gly Tyr Arg Trp Asp
 305 310 315 320

Ile Val Ala Gln Arg Ala Ser Gln Cys Leu Lys Gln Asp Cys Cys Tyr
 325 330 335

Asp Asn Arg Glu Asn Pro Ile Ser Ser Trp Asn Val Lys Arg Ala Arg
 340 345 350

Asp Ile His Leu Thr Val Glu Gln Arg Gly Tyr Pro Asp Phe Asn Leu
 355 360 365

Ile Val Asn Pro Tyr Glu Pro Ile Arg Lys Val Lys Glu Lys Ile Arg
 370 375 380

Arg Thr Arg Gly Tyr Ser Gly Leu Gln Arg Leu Ser Phe Gln Val Pro
 385 390 395 400

Gly Ser Glu Arg Gln Leu Leu Ser Ser Arg Cys Ser Leu Ala Lys Tyr
 405 410 415

Gly Ile Phe Ser His Thr His Ile Tyr Leu Leu Glu Thr Ile Pro Ser
 420 425 430

Glu Ile Gln Val Phe Val Lys Asn Pro Asp Gly Gly Ser Tyr Ala Tyr
 435 440 445

Ala Ile Asn Pro Asn Ser Phe Ile Leu Gly Leu Lys Gln Gln Ile Glu
 450 455 460

Asp Gln Gln Gly Leu Pro Lys Lys Gln Gln Gln Leu Glu Phe Gln Gly
 465 470 475 480

Gln Val Leu Gln Asp Trp Leu Gly Leu Gly Ile Tyr Gly Ile Gln Asp
 485 490 495

Ser Asp Thr Leu Ile Leu Ser Lys Lys Lys Gly Glu Ala Leu Phe Pro
 500 505 510

Ala Ser

<210> 640
 <211> 451
 <212> PRT
 <213> Homo sapiens

<400> 640

Met Gly Asn Leu Leu Gly Gly Val Ser Phe Arg Glu Pro Thr Thr Val
 1 5 10 15

Glu Asp Cys Asp Ser Thr Trp Gln Thr Asp Ser Glu Pro Glu Pro Glu
 20 25 30

Glu Pro Gly Pro Gly Gly Gly Ser Glu Gly Pro Gly Gln Glu Ser Glu
 35 40 45

Gln Pro Ala Gln Pro Pro Glu Gln Ala Gly Gly Arg Pro Gly Ala Ser
 50 55 60

Pro Ala Pro Asp Glu Asp Ala Glu Ala Ala Gly Ala Glu Gln Gly Gly
 65 70 75 80

Asp Ser Thr Glu Ala Thr Ala Lys Pro Lys Arg Ser Phe Tyr Ala Ala
 85 90 95

Arg Asp Leu Tyr Lys Tyr Arg His Gln Tyr Pro Asn Phe Lys Asp Ile
 100 105 110

Arg Tyr Gln Asn Asp Leu Ser Asn Leu Arg Phe Tyr Lys Asn Lys Ile
 115 120 125

Pro Phe Lys Pro Asp Gly Val Tyr Ile Glu Glu Val Leu Ser Lys Trp
 130 135 140

Lys Gly Asp Tyr Glu Lys Leu Glu His Asn His Thr Tyr Ile Gln Trp
 145 150 155 160

Leu Phe Pro Leu Arg Glu Gln Gly Leu Asn Phe Tyr Ala Lys Glu Leu
 165 170 175

Thr Thr Tyr Glu Ile Glu Glu Phe Lys Lys Thr Lys Glu Ala Ile Arg
 180 185 190

Arg Phe Leu Leu Ala Tyr Lys Met Met Leu Glu Phe Phe Gly Ile Lys
 195 200 205

Leu Thr Asp Lys Thr Gly Asn Val Ala Arg Ala Val Asn Trp Gln Glu
 210 215 220

Arg Phe Gln His Leu Asn Glu Ser Gln His Asn Tyr Leu Arg Ile Thr
 225 230 235 240

Arg Ile Leu Lys Ser Leu Gly Glu Leu Gly Tyr Glu Ser Phe Lys Ser
 245 250 255

Pro Leu Val Lys Phe Ile Leu His Glu Ala Leu Val Glu Asn Thr Ile
 260 265 270

Pro Asn Ile Lys Gln Ser Ala Leu Glu Tyr Phe Val Tyr Thr Ile Arg
 275 280 285

Asp Arg Arg Glu Arg Arg Lys Leu Leu Arg Phe Ala Gln Lys His Tyr
 290 295 300

Thr Pro Ser Glu Asn Phe Ile Trp Gly Pro Pro Arg Lys Glu Gln Ser
305 310 315 320

Glu Gly Ser Lys Ala Gln Lys Met Ser Ser Pro Leu Ala Ser Ser His
325 330 335

Asn Ser Gln Thr Ser Met His Lys Lys Ala Lys Asp Ser Lys Asn Ser
340 345 350

Ser Ser Ala Val His Leu Asn Ser Lys Thr Ala Glu Asp Lys Lys Val
355 360 365

Ala Pro Lys Glu Pro Val Glu Glu Thr Asp Arg Pro Ser Pro Glu Pro
370 375 380

Ser Asn Glu Ala Ala Lys Pro Arg Asn Thr Glu Lys Asp Ser Asn Ala
385 390 395 400

Glu Asn Met Asn Ser Gln Pro Glu Lys Thr Val Thr Thr Pro Thr Glu
405 410 415

Lys Lys Glu Ser Val Ser Pro Glu Asn Asn Glu Glu Gly Gly Asn Asp
420 425 430

Asn Gln Asp Asn Glu Asn Pro Gly Asn Thr Asn Cys His Asp Val Val
435 440 445

Leu Val Gln
450

<210> 641
<211> 747
<212> PRT
<213> Homo sapiens

<400> 641

Met Gln Gly Gly Glu Pro Val Ser Thr Met Lys Val Ser Glu Ser Glu
1 5 10 15

Gly Lys Leu Glu Gly Gln Ala Thr Ala Val Thr Pro Asn Lys Asn Ser
20 25 30

Ser Cys Gly Gly Gly Ile Ser Ser Ser Ser Ser Arg Gly Gly Ser
35 40 45

Ala Lys Gly Trp Gln Tyr Ser Asp His Met Glu Asn Val Tyr Gly Tyr
50 55 60

Leu Met Lys Tyr Thr Asn Leu Val Thr Gly Trp Gln Tyr Arg Phe Phe
65 70 75 80

Val Leu Asn Asn Glu Ala Gly Leu Leu Glu Tyr Phe Val Asn Glu Gln

85

90

95

Ser Arg Asn Gln Lys Pro Arg Gly Thr Leu Gln Leu Ala Gly Ala Val
 100 105 110

Ile Ser Pro Ser Asp Glu Asp Ser His Thr Phe Thr Val Asn Ala Ala
 115 120 125

Ser Gly Glu Gln Tyr Lys Leu Arg Ala Thr Asp Ala Lys Glu Arg Gln
 130 135 140

His Trp Val Ser Arg Leu Gln Ile Cys Thr Gln His His Thr Glu Ala
 145 150 155 160

Ile Gly Lys Asn Asn Pro Pro Leu Lys Ser Arg Ser Phe Ser Leu Ala
 165 170 175

Ser Ser Ser Asn Ser Pro Ile Ser Gln Arg Arg Pro Ser Gln Asn Ala
 180 185 190

Ile Ser Phe Phe Asn Val Gly His Ser Lys Leu Gln Ser Leu Ser Lys
 195 200 205

Arg Thr Asn Leu Pro Pro Asp His Leu Val Glu Val Arg Glu Met Met
 210 215 220

Ser His Ala Glu Gly Gln Gln Arg Asp Leu Ile Arg Arg Ile Glu Cys
 225 230 235 240

Leu Pro Thr Ser Gly His Leu Ser Ser Leu Asp Gln Asp Leu Leu Met
 245 250 255

Leu Lys Ala Thr Ser Met Ala Thr Met Asn Cys Leu Asn Asp Cys Phe
 260 265 270

His Ile Leu Gln Leu Gln His Ala Ser His Gln Lys Gly Ser Leu Pro
 275 280 285

Ser Gly Thr Thr Ile Glu Trp Leu Glu Pro Lys Ile Ser Leu Ser Asn
 290 295 300

His Tyr Lys Asn Gly Ala Asp Gln Pro Phe Ala Thr Asp Gln Ser Lys
 305 310 315 320

Pro Val Ala Val Pro Glu Glu Gln Pro Val Ala Glu Ser Gly Leu Leu
 325 330 335

Ala Arg Glu Pro Glu Glu Ile Asn Ala Asp Asp Glu Ile Glu Asp Thr
 340 345 350

Cys Asp His Lys Glu Asp Asp Leu Gly Ala Val Glu Glu Gln Arg Ser

355

360

365

Val Ile Leu His Leu Leu Ser Gln Leu Lys Leu Gly Met Asp Leu Thr
 370 375 380

Arg Val Val Leu Pro Thr Phe Ile Leu Glu Lys Arg Ser Leu Leu Glu
 385 390 395 400

Met Tyr Ala Asp Phe Met Ser His Pro Asp Leu Phe Ile Ala Ile Thr
 405 410 415

Asn Gly Ala Thr Ala Glu Asp Arg Met Ile Arg Phe Val Glu Tyr Tyr
 420 425 430

Leu Thr Ser Phe His Glu Gly Arg Lys Gly Ala Ile Ala Lys Lys Pro
 435 440 445

Tyr Asn Pro Ile Ile Gly Glu Thr Phe His Cys Ser Trp Lys Met Pro
 450 455 460

Lys Ser Glu Val Ala Ser Ser Val Phe Ser Ser Ser Thr Gln Gly
 465 470 475 480

Val Thr Asn His Ala Pro Leu Ser Gly Glu Ser Leu Thr Gln Val Gly
 485 490 495

Ser Asp Cys Tyr Thr Val Arg Phe Val Ala Glu Gln Val Ser His His
 500 505 510

Pro Pro Val Ser Gly Phe Tyr Ala Glu Cys Thr Glu Arg Lys Met Cys
 515 520 525

Val Asn Ala His Val Trp Thr Lys Ser Lys Phe Leu Gly Met Ser Ile
 530 535 540

Gly Val Thr Met Val Gly Glu Gly Ile Leu Ser Leu Leu Glu His Gly
 545 550 555 560

Glu Glu Tyr Thr Phe Ser Leu Pro Cys Ala Tyr Ala Arg Ser Ile Leu
 565 570 575

Thr Val Pro Trp Val Glu Leu Gly Gly Lys Val Ser Val Asn Cys Ala
 580 585 590

Lys Thr Gly Tyr Ser Ala Ser Ile Thr Phe His Thr Lys Pro Phe Tyr
 595 600 605

Gly Gly Lys Leu His Arg Val Thr Ala Glu Val Lys His Asn Ile Thr
 610 615 620

Asn Thr Val Val Cys Arg Val Gln Gly Glu Trp Asn Ser Val Leu Glu

625 630 635 640

Phe Thr Tyr Ser Asn Gly Glu Thr Lys Tyr Val Asp Leu Thr Lys Leu
645 650 655

Ala Val Thr Lys Lys Arg Val Arg Pro Leu Glu Lys Gln Asp Pro Phe
660 665 670

Glu Ser Arg Arg Leu Trp Lys Asn Val Thr Asp Ser Leu Arg Glu Ser
675 680 685

Glu Ile Asp Lys Ala Thr Glu His Lys His Thr Leu Glu Glu Arg Gln
690 695 700

Arg Thr Glu Glu Arg His Arg Thr Glu Thr Gly Thr Pro Trp Lys Thr
705 710 715 720

Lys Tyr Phe Ile Lys Glu Gly Asp Gly Trp Val Tyr His Lys Pro Leu
725 730 735

Trp Lys Ile Ile Pro Thr Thr Gln Pro Ala Glu
740 745

<210> 642
<211> 468
<212> PRT
<213> Homo sapiens

<400> 642

Met Asn Gly Glu Glu Glu Phe Phe Asp Ala Val Thr Glu Ala Asn Gln
1 5 10 15

Lys Val Thr Gly Met Ile Asp Leu Asp Thr Ser Lys Asn Asn Arg Ile
20 25 30

Gly Lys Thr Gly Glu Arg Pro Ser Gln Glu Asn Gly Ile Gln Lys His
35 40 45

Arg Thr Ser Leu Pro Ala Pro Met Phe Ser Arg Ser Asp Phe Ser Val
50 55 60

Trp Thr Ile Leu Lys Lys Cys Val Gly Leu Glu Leu Ser Lys Ile Thr
65 70 75 80

Met Pro Ile Ala Phe Asn Glu Pro Leu Ser Phe Leu Gln Arg Ile Thr
85 90 95

Glu Tyr Met Glu His Val Tyr Leu Ile His Arg Ala Ser Cys Gln Pro
100 105 110

Gln Pro Leu Glu Arg Met Gln Ser Val Ala Ala Phe Ala Val Ser Ala
115 120 125

Val Ala Ser Gln Trp Glu Arg Thr Gly Lys Pro Phe Asn Pro Leu Leu
 130 135 140
 Gly Glu Thr Tyr Glu Leu Ile Arg Glu Asp Leu Gly Phe Arg Phe Ile
 145 150 155 160
 Ser Glu Gln Val Ser His His Pro Pro Ile Ser Ala Phe His Ser Glu
 165 170 175
 Gly Leu Asn His Asp Phe Leu Phe His Gly Ser Ile Tyr Pro Lys Leu
 180 185 190
 Lys Phe Trp Gly Lys Ser Val Glu Ala Glu Pro Arg Gly Thr Ile Thr
 195 200 205
 Leu Glu Leu Leu Lys His Asn Glu Ala Tyr Thr Trp Thr Asn Pro Thr
 210 215 220
 Cys Cys Val His Asn Val Ile Ile Gly Lys Leu Trp Ile Glu Gln Tyr
 225 230 235 240
 Gly Thr Val Glu Ile Leu Asn His Arg Thr Gly His Lys Cys Val Leu
 245 250 255
 His Phe Lys Pro Cys Gly Leu Phe Gly Lys Glu Leu His Lys Val Glu
 260 265 270
 Gly His Ile Gln Asp Lys Asn Lys Lys Lys Leu Phe Met Ile Tyr Gly
 275 280 285
 Lys Trp Thr Glu Cys Leu Trp Gly Ile Asp Pro Val Ser Tyr Glu Ser
 290 295 300
 Phe Lys Lys Gln Glu Arg Arg Gly Asp His Leu Arg Lys Ala Lys Leu
 305 310 315 320
 Asp Glu Asp Ser Gly Lys Ala Asp Ser Asp Val Ala Asp Asp Val Pro
 325 330 335
 Val Ala Gln Glu Thr Val Gln Val Ile Pro Gly Ser Lys Leu Leu Trp
 340 345 350
 Arg Ile Asn Thr Arg Pro Pro Asn Ser Ala Gln Met Tyr Asn Phe Thr
 355 360 365
 Ser Phe Thr Val Ser Leu Asn Glu Leu Glu Thr Gly Met Glu Lys Thr
 370 375 380
 Leu Pro Pro Thr Asp Cys Arg Leu Arg Pro Asp Ile Arg Gly Met Glu
 385 390 395 400

Asn Gly Asn Met Asp Leu Ala Ser Gln Glu Lys Glu Arg Leu Glu Glu
 405 410 415

Lys Gln Arg Glu Ala Arg Arg Glu Arg Ala Lys Glu Glu Ala Glu Trp
 420 425 430

Gln Thr Arg Trp Phe Tyr Pro Gly Asn Asn Pro Tyr Thr Gly Thr Pro
 435 440 445

Asp Trp Leu Tyr Ala Gly Asp Tyr Phe Glu Arg Asn Phe Ser Asp Cys
 450 455 460

Pro Asp Ile Tyr
 465

<210> 643
 <211> 486
 <212> PRT
 <213> Homo sapiens

<400> 643

Met Ser Val Thr Tyr Asp Asp Ser Val Gly Val Glu Val Ser Ser Asp
 1 5 10 15

Ser Phe Trp Glu Val Gly Asn Tyr Lys Arg Thr Val Lys Arg Ile Asp
 20 25 30

Asp Gly His Arg Leu Cys Ser Asp Leu Met Asn Cys Leu His Glu Arg
 35 40 45

Ala Arg Ile Glu Lys Ala Tyr Ala Gln Gln Leu Thr Glu Trp Ala Arg
 50 55 60

Arg Trp Arg Gln Leu Val Glu Lys Gly Pro Gln Tyr Gly Thr Val Glu
 65 70 75 80

Lys Ala Trp Met Ala Phe Met Ser Glu Ala Glu Arg Val Ser Glu Leu
 85 90 95

His Leu Glu Val Lys Ala Ser Leu Met Asn Asp Asp Phe Glu Lys Ile
 100 105 110

Lys Asn Trp Gln Lys Glu Ala Phe His Lys Gln Met Met Gly Gly Phe
 115 120 125

Lys Glu Thr Lys Glu Ala Glu Asp Gly Phe Arg Lys Ala Gln Lys Pro
 130 135 140

Trp Ala Lys Lys Leu Lys Glu Val Glu Ala Ala Lys Lys Ala His His
 145 150 155 160

Ala Ala Cys Lys Glu Glu Lys Leu Ala Ile Ser Arg Glu Ala Asn Ser
 165 170 175
 Lys Ala Asp Pro Ser Leu Asn Pro Glu Gln Leu Lys Lys Leu Gln Asp
 180 185 190
 Lys Ile Glu Lys Cys Lys Gln Asp Val Leu Lys Thr Lys Glu Lys Tyr
 195 200 205
 Glu Lys Ser Leu Lys Glu Leu Asp Gln Gly Thr Pro Gln Tyr Met Glu
 210 215 220
 Asn Met Glu Gln Val Phe Glu Gln Cys Gln Gln Phe Glu Glu Lys Arg
 225 230 235 240
 Leu Arg Phe Phe Arg Glu Val Leu Leu Glu Val Gln Lys His Leu Asp
 245 250 255
 Leu Ser Asn Val Ala Gly Tyr Lys Ala Ile Tyr His Asp Leu Glu Gln
 260 265 270
 Ser Ile Arg Ala Ala Asp Ala Val Glu Asp Leu Arg Trp Phe Arg Ala
 275 280 285
 Asn His Gly Pro Gly Met Ala Met Asn Trp Pro Gln Phe Glu Glu Trp
 290 295 300
 Ser Ala Asp Leu Asn Arg Thr Leu Ser Arg Arg Glu Lys Lys Lys Ala
 305 310 315 320
 Thr Asp Gly Val Thr Leu Thr Gly Ile Asn Gln Thr Gly Asp Gln Ser
 325 330 335
 Leu Pro Ser Lys Pro Ser Ser Thr Leu Asn Val Pro Ser Asn Pro Ala
 340 345 350
 Gln Ser Ala Gln Ser Gln Ser Ser Tyr Asn Pro Phe Glu Asp Glu Asp
 355 360 365
 Asp Thr Gly Ser Thr Val Ser Glu Lys Asp Asp Thr Lys Ala Lys Asn
 370 375 380
 Val Ser Ser Tyr Glu Lys Thr Gln Ser Tyr Pro Thr Asp Trp Ser Asp
 385 390 395 400
 Asp Glu Ser Asn Asn Pro Phe Ser Ser Thr Asp Ala Asn Gly Asp Ser
 405 410 415
 Asn Pro Phe Asp Asp Asp Ala Thr Ser Gly Thr Glu Val Arg Val Arg
 420 425 430

Ala Leu Tyr Asp Tyr Glu Gly Gln Glu His Asp Glu Leu Ser Phe Lys
 435 440 445

Ala Gly Asp Glu Leu Thr Lys Met Glu Asp Glu Asp Glu Gln Gly Trp
 450 455 460

Cys Lys Gly Arg Leu Asp Asn Gly Gln Val Gly Leu Tyr Pro Ala Asn
 465 470 475 480

Tyr Val Glu Ala Ile Gln
 485

<210> 644
 <211> 410
 <212> PRT
 <213> Homo sapiens

<400> 644

Met Val Leu Ser Gln Arg Gln Arg Asp Glu Leu Asn Arg Ala Ile Ala
 1 5 10 15

Asp Tyr Leu Arg Ser Asn Gly Tyr Glu Glu Ala Tyr Ser Val Phe Lys
 20 25 30

Lys Glu Ala Glu Leu Asp Val Asn Glu Glu Leu Asp Lys Lys Tyr Ala
 35 40 45

Gly Leu Leu Glu Lys Lys Trp Thr Ser Val Ile Arg Leu Gln Lys Lys
 50 55 60

Val Met Glu Leu Glu Ser Lys Leu Asn Glu Ala Lys Glu Glu Phe Thr
 65 70 75 80

Ser Gly Gly Pro Leu Gly Gln Lys Arg Asp Pro Lys Glu Trp Ile Pro
 85 90 95

Arg Pro Pro Glu Lys Tyr Ala Leu Ser Gly His Arg Ser Pro Val Thr
 100 105 110

Arg Val Ile Phe His Pro Val Phe Ser Val Met Val Ser Ala Ser Glu
 115 120 125

Asp Ala Thr Ile Lys Val Trp Asp Tyr Glu Thr Gly Asp Phe Glu Arg
 130 135 140

Thr Leu Lys Gly His Thr Asp Ser Val Gln Asp Ile Ser Phe Asp His
 145 150 155 160

Ser Gly Lys Leu Leu Ala Ser Cys Ser Ala Asp Met Thr Ile Lys Leu
 165 170 175

Trp Asp Phe Gln Gly Phe Glu Cys Ile Arg Thr Met His Gly His Asp
 180 185 190

His Asn Val Ser Ser Val Ala Ile Met Pro Asn Gly Asp His Ile Val
 195 200 205

Ser Ala Ser Arg Asp Lys Thr Ile Lys Met Trp Glu Val Gln Thr Gly
 210 215 220

Tyr Cys Val Lys Thr Phe Thr Gly His Arg Glu Trp Val Arg Met Val
 225 230 235 240

Arg Pro Asn Gln Asp Gly Thr Leu Ile Ala Ser Cys Ser Asn Asp Gln
 245 250 255

Thr Val Arg Val Trp Val Val Ala Thr Lys Glu Cys Lys Ala Glu Leu
 260 265 270

Arg Glu His Glu His Val Val Glu Cys Ile Ser Trp Ala Pro Glu Ser
 275 280 285

Ser Tyr Ser Ser Ile Ser Glu Ala Thr Gly Ser Glu Thr Lys Lys Ser
 290 295 300

Gly Lys Pro Gly Pro Phe Leu Leu Ser Gly Ser Arg Asp Lys Thr Ile
 305 310 315 320

Lys Met Trp Asp Val Ser Thr Gly Met Cys Leu Met Thr Leu Val Gly
 325 330 335

His Asp Asn Trp Val Arg Gly Val Leu Phe His Ser Gly Gly Lys Phe
 340 345 350

Ile Leu Ser Cys Ala Asp Asp Lys Thr Leu Arg Val Trp Asp Tyr Lys
 355 360 365

Asn Lys Arg Cys Met Lys Thr Leu Asn Ala His Glu His Phe Val Thr
 370 375 380

Ser Leu Asp Phe His Lys Thr Ala Pro Tyr Val Val Thr Gly Ser Val
 385 390 395 400

Asp Gln Thr Val Lys Val Trp Glu Cys Arg
 405 410

<210> 645
 <211> 701
 <212> PRT
 <213> Homo sapiens

<400> 645

Met Ala Gln Ala Gly Val Val Gly Glu Val Thr Gln Val Leu Cys Ala
 Page 1022

1	5				10				15						
Ala	Gly	Gly	Ala 20	Leu	Glu	Leu	Pro	Glu 25	Leu	Arg	Arg	Arg	Leu 30	Arg	Met
Gly	Leu	Ser 35	Ala	Asp	Ala	Leu	Glu 40	Arg	Leu	Leu	Arg	Gln 45	Arg	Gly	Arg
Phe	Val 50	Val	Ala	Val	Arg	Ala 55	Gly	Gly	Ala	Ala	Ala 60	Ala	Pro	Glu	Arg
Val 65	Val	Leu	Ala	Ala	Ser 70	Pro	Leu	Arg	Leu	Cys 75	Arg	Ala	His	Gln	Gly 80
Ser	Lys	Pro	Gly	Cys 85	Val	Gly	Leu	Cys	Ala 90	Gln	Leu	His	Leu	Cys 95	Arg
Phe	Met	Val	Tyr 100	Gly	Ala	Cys	Lys	Phe 105	Leu	Arg	Ala	Gly	Lys 110	Asn	Cys
Arg	Asn	Ser 115	His	Ser	Leu	Thr	Thr 120	Glu	His	Asn	Leu	Ser 125	Val	Leu	Arg
Thr	His 130	Gly	Val	Asp	His	Leu 135	Ser	Tyr	Asn	Glu	Leu 140	Cys	Gln	Leu	Leu
Phe 145	Gln	Asn	Asp	Pro	Trp 150	Leu	Leu	Pro	Glu	Ile 155	Cys	Gln	His	Tyr	Asn 160
Lys	Gly	Asp	Gly	Pro 165	His	Gly	Ser	Cys	Ala 170	Phe	Gln	Lys	Gln	Cys 175	Ile
Lys	Leu	His	Ile 180	Cys	Gln	Tyr	Phe	Leu 185	Gln	Gly	Glu	Cys	Lys 190	Phe	Gly
Thr	Ser	Cys 195	Lys	Arg	Ser	His	Asp 200	Phe	Ser	Asn	Ser	Glu 205	Asn	Leu	Glu
Lys	Leu 210	Glu	Lys	Leu	Gly	Met 215	Ser	Ser	Asp	Leu	Val 220	Ser	Arg	Leu	Pro
Thr 225	Ile	Tyr	Arg	Asn	Ala 230	His	Asp	Ile	Lys	Asn 235	Lys	Ser	Ser	Ala	Pro 240
Ser	Arg	Val	Pro	Pro 245	Leu	Phe	Val	Pro	Gln 250	Gly	Thr	Ser	Glu	Arg 255	Lys
Asp	Ser	Ser	Gly 260	Ser	Val	Ser	Pro	Asn 265	Thr	Leu	Ser	Gln	Glu 270	Glu	Gly
Asp	Gln	Ile	Cys	Leu	Tyr	His	Ile	Arg	Lys	Ser	Cys	Ser	Phe	Gln	Asp

275

280

285

Lys Cys His Arg Val His Phe His Leu Pro Tyr Arg Trp Gln Phe Leu
 290 295 300

Asp Arg Gly Lys Trp Glu Asp Leu Asp Asn Met Glu Leu Ile Glu Glu
 305 310 315 320

Ala Tyr Cys Asn Pro Lys Ile Glu Arg Ile Leu Cys Ser Glu Ser Ala
 325 330 335

Ser Thr Phe His Ser His Cys Leu Asn Phe Asn Ala Met Thr Tyr Gly
 340 345 350

Ala Thr Gln Ala Arg Arg Leu Ser Thr Ala Ser Ser Val Thr Lys Pro
 355 360 365

Pro His Phe Ile Leu Thr Thr Asp Trp Ile Trp Tyr Trp Ser Asp Glu
 370 375 380

Phe Gly Ser Trp Gln Glu Tyr Gly Arg Gln Gly Thr Val His Pro Val
 385 390 395 400

Thr Thr Val Ser Ser Ser Asp Val Glu Lys Ala Tyr Leu Ala Tyr Cys
 405 410 415

Thr Pro Gly Ser Asp Gly Gln Ala Ala Thr Leu Lys Phe Gln Ala Gly
 420 425 430

Lys His Asn Tyr Glu Leu Asp Phe Lys Ala Phe Val Gln Lys Asn Leu
 435 440 445

Val Tyr Gly Thr Thr Lys Lys Val Cys Arg Arg Pro Lys Tyr Val Ser
 450 455 460

Pro Gln Asp Val Thr Thr Met Gln Thr Cys Asn Thr Lys Phe Pro Gly
 465 470 475 480

Pro Lys Ser Ile Pro Asp Tyr Trp Asp Ser Ser Ala Leu Pro Asp Pro
 485 490 495

Gly Phe Gln Lys Ile Thr Leu Ser Ser Ser Ser Glu Glu Tyr Gln Lys
 500 505 510

Val Trp Asn Leu Phe Asn Arg Thr Leu Pro Phe Tyr Phe Val Gln Lys
 515 520 525

Ile Glu Arg Val Gln Asn Leu Ala Leu Trp Glu Val Tyr Gln Trp Gln
 530 535 540

Lys Gly Gln Met Gln Lys Gln Asn Gly Gly Lys Ala Val Asp Glu Arg

545 550 555 560

Gln Leu Phe His Gly Thr Ser Ala Ile Phe Val Asp Ala Ile Cys Gln
565 570 575

Gln Asn Phe Asp Trp Arg Val Cys Gly Val His Gly Thr Ser Tyr Gly
580 585 590

Lys Gly Ser Tyr Phe Ala Arg Asp Ala Ala Tyr Ser His His Tyr Ser
595 600 605

Lys Ser Asp Thr Gln Thr His Thr Met Phe Leu Ala Arg Val Leu Val
610 615 620

Gly Glu Phe Val Arg Gly Asn Ala Ser Phe Val Arg Pro Pro Ala Lys
625 630 635 640

Glu Gly Trp Ser Asn Ala Phe Tyr Asp Ser Cys Val Asn Ser Val Ser
645 650 655

Asp Pro Ser Ile Phe Val Ile Phe Glu Lys His Gln Val Tyr Pro Glu
660 665 670

Tyr Val Ile Gln Tyr Thr Thr Ser Ser Lys Pro Ser Val Thr Pro Ser
675 680 685

Ile Leu Leu Ala Leu Gly Ser Leu Phe Ser Ser Arg Gln
690 695 700

<210> 646
<211> 434
<212> PRT
<213> Homo sapiens

<400> 646

Met Asp Asp Gln Ser Arg Met Leu Gln Thr Leu Ala Gly Val Asn Leu
1 5 10 15

Ala Gly His Ser Val Gln Gly Gly Met Ala Leu Pro Pro Pro Pro His
20 25 30

Gly His Glu Gly Ala Asp Gly Asp Gly Arg Lys Gln Asp Ile Gly Asp
35 40 45

Ile Leu His Gln Ile Met Thr Ile Thr Asp Gln Ser Leu Asp Glu Ala
50 55 60

Gln Ala Lys Lys His Ala Leu Asn Cys His Arg Met Lys Pro Ala Leu
65 70 75 80

Phe Ser Val Leu Cys Glu Ile Lys Glu Lys Thr Gly Leu Ser Ile Arg
85 90 95

Gly Ala Gln Glu Glu Asp Pro Pro Asp Pro Gln Leu Met Arg Leu Asp
 100 105 110
 Asn Met Leu Leu Ala Glu Gly Val Ser Gly Pro Glu Lys Gly Gly Gly
 115 120 125
 Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Gly Ser Ser Asp
 130 135 140
 Asn Ser Ile Glu His Ser Asp Tyr Arg Ala Lys Leu Thr Gln Ile Arg
 145 150 155 160
 Gln Ile Tyr His Thr Glu Leu Glu Lys Tyr Glu Gln Ala Cys Asn Glu
 165 170 175
 Phe Thr Thr His Val Met Asn Leu Leu Arg Glu Gln Ser Arg Thr Arg
 180 185 190
 Pro Ile Ser Pro Lys Glu Ile Glu Arg Met Val Gly Ile Ile His Arg
 195 200 205
 Lys Phe Ser Ser Ile Gln Met Gln Leu Lys Gln Ser Thr Cys Glu Ala
 210 215 220
 Val Met Ile Leu Arg Ser Arg Phe Leu Asp Ala Arg Arg Lys Arg Arg
 225 230 235 240
 Asn Phe Ser Lys Gln Ala Thr Glu Ile Leu Asn Glu Tyr Phe Tyr Ser
 245 250 255
 His Leu Ser Asn Pro Tyr Pro Ser Glu Glu Ala Lys Glu Glu Leu Ala
 260 265 270
 Lys Lys Cys Ser Ile Thr Val Ser Gln Val Ser Asn Trp Phe Gly Asn
 275 280 285
 Lys Arg Ile Arg Tyr Lys Lys Asn Ile Gly Lys Phe Gln Glu Glu Ala
 290 295 300
 Asn Leu Tyr Ala Ala Lys Thr Ala Val Thr Ala Ala His Ala Val Ala
 305 310 315 320
 Ala Ala Val Gln Asn Asn Gln Thr Asn Ser Pro Thr Thr Pro Asn Ser
 325 330 335
 Gly Ser Ser Gly Ser Phe Asn Leu Pro Asn Ser Gly Asp Met Phe Met
 340 345 350
 Asn Met Gln Ser Leu Asn Gly Asp Ser Tyr Gln Gly Ser Gln Val Gly
 355 360 365

Ala Asn Val Gln Ser Gln Val Asp Thr Leu Arg His Val Ile Asn Gln
 370 375 380

Thr Gly Gly Tyr Ser Asp Gly Leu Gly Gly Asn Ser Leu Tyr Ser Pro
 385 390 395 400

His Asn Leu Asn Ala Asn Gly Gly Trp Gln Asp Ala Thr Thr Pro Ser
 405 410 415

Ser Val Thr Ser Pro Thr Glu Gly Pro Gly Ser Val His Ser Asp Thr
 420 425 430

Ser Asn

<210> 647
 <211> 366
 <212> PRT
 <213> Homo sapiens

<400> 647

Met Asp Thr Gly Val Ile Glu Gly Gly Leu Asn Val Thr Leu Thr Ile
 1 5 10 15

Arg Leu Leu Met His Gly Lys Glu Val Gly Ser Ile Ile Gly Lys Lys
 20 25 30

Gly Glu Ser Val Lys Lys Met Arg Glu Glu Ser Gly Ala Arg Ile Asn
 35 40 45

Ile Ser Glu Gly Asn Cys Pro Glu Arg Ile Ile Thr Leu Ala Gly Pro
 50 55 60

Thr Asn Ala Ile Phe Lys Ala Phe Ala Met Ile Ile Asp Lys Leu Glu
 65 70 75 80

Glu Asp Ile Ser Ser Ser Met Thr Asn Ser Thr Ala Ala Ser Arg Pro
 85 90 95

Pro Val Thr Leu Arg Leu Val Val Pro Ala Ser Gln Cys Gly Ser Leu
 100 105 110

Ile Gly Lys Gly Gly Cys Lys Ile Lys Glu Ile Arg Glu Ser Thr Gly
 115 120 125

Ala Gln Val Gln Val Ala Gly Asp Met Leu Pro Asn Ser Thr Glu Arg
 130 135 140

Ala Ile Thr Ile Ala Gly Ile Pro Gln Ser Ile Ile Glu Cys Val Lys
 145 150 155 160

Gln Ile Cys Val Val Met Leu Glu Thr Leu Ser Gln Ser Pro Pro Lys
 165 170 175

Gly Val Thr Ile Pro Tyr Arg Pro Lys Pro Ser Ser Ser Pro Val Ile
 180 185 190

Phe Ala Gly Gly Gln Asp Arg Tyr Ser Thr Gly Ser Asp Ser Ala Ser
 195 200 205

Phe Pro His Thr Thr Pro Ser Met Cys Leu Asn Pro Asp Leu Glu Gly
 210 215 220

Pro Pro Leu Glu Ala Tyr Thr Ile Gln Gly Gln Tyr Ala Ile Pro Gln
 225 230 235 240

Pro Asp Leu Thr Lys Leu His Gln Leu Ala Met Gln Gln Ser His Phe
 245 250 255

Pro Met Thr His Gly Asn Thr Gly Phe Ser Gly Ile Glu Ser Ser Ser
 260 265 270

Pro Glu Val Lys Gly Tyr Trp Ala Gly Leu Asp Ala Ser Ala Gln Thr
 275 280 285

Thr Ser His Glu Leu Thr Ile Pro Asn Asp Leu Ile Gly Cys Ile Ile
 290 295 300

Gly Arg Gln Gly Ala Lys Ile Asn Glu Ile Arg Gln Met Ser Gly Ala
 305 310 315 320

Gln Ile Lys Ile Ala Asn Pro Val Glu Gly Ser Thr Asp Arg Gln Val
 325 330 335

Thr Ile Thr Gly Ser Ala Ala Ser Ile Ser Leu Ala Gln Tyr Leu Ile
 340 345 350

Asn Val Arg Leu Ser Ser Glu Thr Gly Gly Met Gly Ser Ser
 355 360 365

<210> 648
 <211> 1555
 <212> PRT
 <213> Homo sapiens

<400> 648

Met Ser Glu Gln Thr Pro Ala Glu Ala Gly Ala Ala Gly Ala Arg Glu
 1 5 10 15

Asp Ala Cys Arg Asp Tyr Gln Ser Ser Leu Glu Asp Leu Thr Phe Asn
 20 25 30

Ser Lys Pro His Ile Asn Met Leu Thr Ile Leu Ala Glu Glu Asn Leu
 35 40 45

Pro Phe Ala Lys Glu Ile Val Ser Leu Ile Glu Ala Gln Thr Ala Lys
 50 55 60

Ala Pro Ser Ser Glu Lys Leu Pro Val Met Tyr Leu Met Asp Ser Ile
 65 70 75 80

Val Lys Asn Val Gly Arg Glu Tyr Leu Thr Ala Phe Thr Lys Asn Leu
 85 90 95

Val Ala Thr Phe Ile Cys Val Phe Glu Lys Val Asp Glu Asn Thr Arg
 100 105 110

Lys Ser Leu Phe Lys Leu Arg Ser Thr Trp Asp Glu Ile Phe Pro Leu
 115 120 125

Lys Lys Leu Tyr Ala Leu Asp Val Arg Val Asn Ser Leu Asp Pro Ala
 130 135 140

Trp Pro Ile Lys Pro Leu Pro Pro Asn Val Asn Thr Ser Ser Ile His
 145 150 155 160

Val Asn Pro Lys Phe Leu Asn Lys Ser Pro Glu Glu Pro Ser Thr Pro
 165 170 175

Gly Thr Val Val Ser Ser Pro Ser Ile Ser Thr Pro Pro Ile Val Pro
 180 185 190

Asp Ile Gln Lys Asn Leu Thr Gln Glu Gln Leu Ile Arg Gln Gln Leu
 195 200 205

Leu Ala Lys Gln Lys Gln Leu Leu Glu Leu Gln Gln Lys Lys Leu Glu
 210 215 220

Leu Glu Leu Glu Gln Ala Lys Ala Gln Leu Ala Val Ser Leu Ser Val
 225 230 235 240

Gln Gln Glu Thr Ser Asn Leu Gly Pro Gly Ser Ala Pro Ser Lys Leu
 245 250 255

His Val Ser Gln Ile Pro Pro Met Ala Val Lys Ala Pro His Gln Val
 260 265 270

Pro Val Gln Ser Glu Lys Ser Arg Pro Gly Pro Ser Leu Gln Ile Gln
 275 280 285

Asp Leu Lys Gly Thr Asn Arg Asp Pro Arg Leu Asn Arg Ile Ser Gln
 290 295 300

His Ser His Gly Lys Asp Gln Ser His Arg Lys Glu Phe Leu Met Asn
 305 310 315 320
 Thr Leu Asn Gln Ser Asp Thr Lys Thr Ser Lys Thr Ile Pro Ser Glu
 325 330 335
 Lys Leu Asn Ser Ser Lys Gln Glu Lys Ser Lys Ser Gly Glu Lys Ile
 340 345 350
 Thr Lys Lys Glu Leu Asp Gln Leu Asp Ser Lys Ser Lys Ser Lys Ser
 355 360 365
 Lys Ser Pro Ser Pro Leu Lys Asn Lys Leu Ser His Thr Lys Asp Leu
 370 375 380
 Lys Asn Gln Glu Ser Glu Ser Met Arg Leu Ser Asp Met Asn Lys Arg
 385 390 395 400
 Asp Pro Arg Leu Lys Lys His Leu Gln Asp Lys Thr Asp Gly Lys Asp
 405 410 415
 Asp Asp Val Lys Glu Lys Arg Lys Thr Ala Glu Lys Lys Asp Lys Asp
 420 425 430
 Glu His Met Lys Ser Ser Glu His Arg Leu Ala Gly Ser Arg Asn Lys
 435 440 445
 Ile Ile Asn Gly Ile Val Gln Lys Gln Asp Thr Ile Thr Glu Glu Ser
 450 455 460
 Glu Lys Gln Gly Thr Lys Pro Gly Arg Ser Ser Thr Arg Lys Arg Ser
 465 470 475 480
 Arg Ser Arg Ser Pro Lys Ser Arg Ser Pro Ile Ile His Ser Pro Lys
 485 490 495
 Arg Arg Asp Arg Arg Ser Pro Lys Arg Arg Gln Arg Ser Met Ser Pro
 500 505 510
 Thr Ser Thr Pro Lys Ala Gly Lys Ile Arg Gln Ser Gly Ala Lys Gln
 515 520 525
 Ser His Met Glu Glu Phe Thr Pro Pro Ser Arg Glu Asp Arg Asn Ala
 530 535 540
 Lys Arg Ser Thr Lys Gln Asp Ile Arg Asp Pro Arg Arg Met Lys Lys
 545 550 555 560
 Thr Glu Glu Glu Arg Pro Gln Glu Thr Thr Asn Gln His Ser Thr Lys
 565 570 575

Ser Gly Thr Glu Pro Lys Glu Asn Val Glu Asn Trp Gln Ser Ser Lys
 580 585 590

Ser Ala Lys Arg Trp Lys Ser Gly Trp Glu Glu Asn Lys Ser Leu Gln
 595 600 605

Gln Val Asp Glu His Ser Lys Pro Pro His Leu Arg His Arg Glu Ser
 610 615 620

Trp Ser Ser Thr Lys Gly Ile Leu Ser Pro Arg Ala Pro Lys Gln Gln
 625 630 635 640

Gln His Arg Leu Ser Val Asp Ala Asn Leu Gln Ile Pro Lys Glu Leu
 645 650 655

Thr Leu Ala Ser Lys Arg Glu Leu Leu Gln Lys Thr Ser Glu Arg Leu
 660 665 670

Ala Ser Gly Glu Ile Thr Gln Asp Asp Phe Leu Val Val Val His Gln
 675 680 685

Ile Arg Gln Leu Phe Gln Tyr Gln Glu Gly Val Arg Glu Glu Gln Arg
 690 695 700

Ser Pro Phe Asn Asp Arg Phe Pro Leu Lys Arg Pro Arg Tyr Glu Asp
 705 710 715 720

Ser Asp Lys Pro Phe Val Asp Ser Pro Ala Ser Arg Phe Ala Gly Leu
 725 730 735

Asp Thr Asn Gln Arg Leu Thr Ala Leu Ala Glu Asp Arg Pro Leu Phe
 740 745 750

Asp Gly Pro Ser Arg Pro Ser Val Ala Arg Asp Gly Pro Thr Lys Met
 755 760 765

Ile Phe Glu Gly Pro Asn Lys Leu Ser Pro Arg Ile Asp Gly Pro Pro
 770 775 780

Thr Pro Ala Ser Leu Arg Phe Asp Gly Ser Pro Gly Gln Met Gly Gly
 785 790 795 800

Gly Gly Pro Leu Arg Phe Glu Gly Pro Gln Gly Gln Leu Gly Gly Gly
 805 810 815

Cys Pro Leu Arg Phe Glu Gly Pro Pro Gly Pro Val Gly Thr Pro Leu
 820 825 830

Arg Phe Glu Gly Pro Ile Gly Gln Ala Gly Gly Gly Gly Phe Arg Phe
 835 840 845

Glu Gly Ser Pro Gly Leu Arg Phe Glu Gly Ser Pro Gly Gly Leu Arg
 850 855 860

Phe Glu Gly Pro Gly Gly Gln Pro Val Gly Gly Leu Arg Phe Glu Gly
 865 870 875 880

His Arg Gly Gln Pro Val Gly Gly Leu Arg Phe Glu Gly Pro His Gly
 885 890 895

Gln Pro Val Gly Gly Leu Arg Phe Asp Asn Pro Arg Gly Gln Pro Val
 900 905 910

Gly Gly Leu Arg Phe Glu Gly Gly His Gly Pro Ser Gly Ala Ala Ile
 915 920 925

Arg Phe Asp Gly Pro His Gly Gln Pro Gly Gly Gly Ile Arg Phe Glu
 930 935 940

Gly Pro Leu Leu Gln Gln Gly Val Gly Met Arg Phe Glu Gly Pro His
 945 950 955 960

Gly Gln Ser Val Ala Gly Leu Arg Phe Glu Gly Gln His Asn Gln Leu
 965 970 975

Gly Gly Asn Leu Arg Phe Glu Gly Pro His Gly Gln Pro Gly Val Gly
 980 985 990

Ile Arg Phe Glu Gly Pro Leu Val Gln Gln Gly Gly Gly Met Arg Phe
 995 1000 1005

Glu Gly Pro Ser Val Pro Gly Gly Gly Leu Arg Ile Glu Gly Pro
 1010 1015 1020

Leu Gly Gln Gly Gly Pro Arg Phe Glu Gly Cys His Ala Leu Arg
 1025 1030 1035

Phe Asp Gly Gln Pro Gly Gln Pro Ser Leu Leu Pro Arg Phe Asp
 1040 1045 1050

Gly Leu His Gly Gln Pro Gly Pro Arg Phe Glu Arg Thr Pro Gly
 1055 1060 1065

Gln Pro Gly Pro Gln Arg Phe Asp Gly Pro Pro Gly Gln Gln Val
 1070 1075 1080

Gln Pro Arg Phe Asp Gly Val Pro Gln Arg Phe Asp Gly Pro Gln
 1085 1090 1095

His Gln Gln Ala Ser Arg Phe Asp Ile Pro Leu Gly Leu Gln Gly
 1100 1105 1110

Thr	Arg	Phe	Asp	Asn	His	Pro	Ser	Gln	Arg	Leu	Glu	Ser	Val	Ser
	1115					1120					1125			
Phe	Asn	Gln	Thr	Gly	Pro	Tyr	Asn	Asp	Pro	Pro	Gly	Asn	Ala	Phe
	1130					1135					1140			
Asn	Ala	Pro	Ser	Gln	Gly	Leu	Gln	Phe	Gln	Arg	His	Glu	Gln	Ile
	1145					1150					1155			
Phe	Asp	Ser	Pro	Gln	Gly	Pro	Asn	Phe	Asn	Gly	Pro	His	Gly	Pro
	1160					1165					1170			
Gly	Asn	Gln	Ser	Phe	Ser	Asn	Pro	Leu	Asn	Arg	Ala	Ser	Gly	His
	1175					1180					1185			
Tyr	Phe	Asp	Glu	Lys	Asn	Leu	Gln	Ser	Ser	Gln	Phe	Gly	Asn	Phe
	1190					1195					1200			
Gly	Asn	Ile	Pro	Ala	Pro	Met	Thr	Val	Gly	Asn	Ile	Gln	Ala	Ser
	1205					1210					1215			
Gln	Gln	Val	Leu	Ser	Gly	Val	Ala	Gln	Pro	Val	Ala	Phe	Gly	Gln
	1220					1225					1230			
Gly	Gln	Gln	Phe	Leu	Pro	Val	His	Pro	Gln	Asn	Pro	Gly	Phe	Val
	1235					1240					1245			
Gln	Asn	Pro	Ser	Gly	Ala	Leu	Pro	Lys	Ala	Tyr	Pro	Asp	Asn	His
	1250					1255					1260			
Leu	Ser	Gln	Val	Asp	Val	Asn	Glu	Leu	Phe	Ser	Lys	Leu	Leu	Lys
	1265					1270					1275			
Thr	Gly	Ile	Leu	Lys	Leu	Ser	Gln	Thr	Asp	Ser	Ala	Thr	Thr	Gln
	1280					1285					1290			
Val	Ser	Glu	Val	Thr	Ala	Gln	Pro	Pro	Pro	Glu	Glu	Glu	Glu	Asp
	1295					1300					1305			
Gln	Asn	Glu	Asp	Gln	Asp	Val	Pro	Asp	Leu	Thr	Asn	Phe	Thr	Val
	1310					1315					1320			
Glu	Glu	Leu	Lys	Gln	Arg	Tyr	Asp	Ser	Val	Ile	Asn	Arg	Leu	Tyr
	1325					1330					1335			
Thr	Gly	Ile	Gln	Cys	Tyr	Ser	Cys	Gly	Met	Arg	Phe	Thr	Thr	Ser
	1340					1345					1350			
Gln	Thr	Asp	Val	Tyr	Ala	Asp	His	Leu	Asp	Trp	His	Tyr	Arg	Gln
	1355					1360					1365			

Asn Arg Thr Glu Lys Asp Val Ser Arg Lys Val Thr His Arg Arg
 1370 1375 1380

Trp Tyr Tyr Ser Leu Thr Asp Trp Ile Glu Phe Glu Glu Ile Ala
 1385 1390 1395

Asp Leu Glu Glu Arg Ala Lys Ser Gln Phe Phe Glu Lys Val His
 1400 1405 1410

Glu Glu Val Val Leu Lys Thr Gln Glu Ala Ala Lys Glu Lys Glu
 1415 1420 1425

Phe Gln Ser Val Pro Ala Gly Pro Ala Gly Ala Val Glu Ser Cys
 1430 1435 1440

Glu Ile Cys Gln Glu Gln Phe Glu Gln Tyr Trp Asp Glu Glu Glu
 1445 1450 1455

Glu Glu Trp His Leu Lys Asn Ala Ile Arg Val Asp Gly Lys Ile
 1460 1465 1470

Tyr His Pro Ser Cys Tyr Glu Asp Tyr Gln Asn Thr Ser Ser Phe
 1475 1480 1485

Asp Cys Thr Pro Ser Pro Ser Lys Thr Pro Val Glu Asn Pro Leu
 1490 1495 1500

Asn Ile Met Leu Asn Ile Val Lys Asn Glu Leu Gln Glu Pro Cys
 1505 1510 1515

Asp Ser Pro Lys Val Lys Glu Glu Arg Ile Asp Thr Pro Pro Ala
 1520 1525 1530

Cys Thr Glu Glu Ser Ile Ala Thr Pro Ser Glu Ile Lys Thr Glu
 1535 1540 1545

Asn Asp Thr Val Glu Ser Val
 1550 1555

<210> 649
 <211> 2341
 <212> PRT
 <213> Homo sapiens

<400> 649

Met Gly Ser Gln Thr Leu Gln Ile Leu Arg Gln Gly Val Trp Ala Ala
 1 5 10 15

Leu Ser Gly Gly Trp Tyr Tyr Asp Pro His Gln Ala Thr Phe Val Asn
 20 25 30

Ala Leu His Leu Tyr Leu Trp Leu Phe Leu Leu Gly Leu Pro Phe Thr

35

40

45

Leu Tyr Met Ala Leu Pro Ser Thr Met Ile Ile Val Ala Val Tyr Cys
 50 55 60

Pro Val Ile Ala Ala Val Phe Ile Val Leu Lys Met Val Asn Tyr Arg
 65 70 75 80

Leu His Arg Ala Leu Asp Ala Gly Glu Val Val Asp Arg Thr Ala Asn
 85 90 95

Glu Phe Thr Asp Gln Arg Thr Lys Ala Glu Gln Gly Asn Cys Ser Thr
 100 105 110

Arg Arg Lys Asp Ser Asn Gly Pro Ser Asp Pro Gly Gly Gly Ile Glu
 115 120 125

Met Ser Glu Phe Ile Arg Glu Ala Thr Pro Pro Val Gly Cys Ser Ser
 130 135 140

Arg Asn Ser Tyr Ala Gly Leu Asp Pro Ser Asn Gln Ile Gly Ser Gly
 145 150 155 160

Ser Ser Arg Leu Gly Thr Ala Ala Thr Ile Lys Gly Asp Thr Asp Thr
 165 170 175

Ala Lys Thr Ser Asp Asp Ile Ser Leu Ser Leu Gly Gln Ser Ser Ser
 180 185 190

Leu Cys Lys Glu Gly Ser Glu Glu Gln Asp Leu Ala Ala Asp Arg Lys
 195 200 205

Leu Phe Arg Leu Val Ser Asn Asp Ser Phe Ile Ser Ile Gln Pro Ser
 210 215 220

Leu Ser Ser Cys Gly Gln Asp Leu Pro Arg Asp Phe Ser Asp Lys Val
 225 230 235 240

Asn Leu Pro Ser His Asn His His His His Val Asp Gln Ser Leu Ser
 245 250 255

Ser Ala Cys Asp Thr Glu Val Ala Ser Leu Val Pro Leu His Ser His
 260 265 270

Ser Tyr Arg Lys Asp His Arg Pro Arg Gly Val Pro Arg Thr Ser Ser
 275 280 285

Ser Ala Val Ala Phe Pro Asp Thr Ser Leu Asn Asp Phe Pro Leu Tyr
 290 295 300

Gln Gln Arg Arg Gly Leu Asp Pro Val Ser Glu Leu Glu Ser Ser Lys

305 310 315 320

Pro Leu Ser Gly Ser Lys Glu Ser Leu Val Glu Asn Ser Gly Leu Ser
325 330 335

Gly Glu Phe Gln Leu Ala Gly Asp Leu Lys Ile Asn Thr Ser Gln Pro
340 345 350

Pro Thr Lys Ser Gly Lys Ser Lys Pro Leu Lys Ala Glu Lys Ser Met
355 360 365

Asp Ser Leu Arg Ser Leu Ser Thr Arg Ser Ser Gly Ser Thr Glu Ser
370 375 380

Tyr Cys Ser Gly Thr Asp Arg Asp Thr Asn Ser Thr Val Ser Ser Tyr
385 390 395 400

Lys Ser Glu Gln Thr Ser Ser Thr His Ile Glu Ser Ile Leu Ser Glu
405 410 415

His Glu Glu Ser Pro Lys Ala Gly Thr Lys Ser Gly Arg Lys Lys Glu
420 425 430

Cys Cys Ala Gly Pro Glu Glu Lys Asn Ser Cys Ala Ser Asp Lys Arg
435 440 445

Thr Ser Ser Glu Lys Ile Ala Met Glu Ala Ser Thr Asn Ser Gly Val
450 455 460

His Glu Ala Lys Asp Pro Thr Pro Ser Asp Glu Met His Asn Gln Arg
465 470 475 480

Gly Leu Ser Thr Ser Ala Ser Glu Glu Ala Asn Lys Asn Pro His Ala
485 490 495

Asn Glu Phe Thr Ser Gln Gly Asp Arg Pro Pro Gly Asn Thr Ala Glu
500 505 510

Asn Lys Glu Glu Lys Ser Asp Lys Ser Ala Val Ser Val Asp Ser Lys
515 520 525

Val Arg Lys Asp Val Gly Gly Lys Gln Lys Glu Gly Asp Val Arg Pro
530 535 540

Lys Ser Ser Ser Val Ile His Arg Thr Ala Ser Ala His Lys Ser Gly
545 550 555 560

Arg Arg Arg Thr Gly Lys Lys Arg Ala Ser Ser Phe Asp Ser Ser Arg
565 570 575

His Arg Asp Tyr Val Cys Phe Arg Gly Val Ser Gly Thr Lys Pro His
Page 1036

580

585

590

Ser Ala Ile Phe Cys His Asp Glu Asp Ser Ser Asp Gln Ser Asp Leu
595 600 605

Ser Arg Ala Ser Ser Val Gln Ser Ala His Gln Phe Ser Ser Asp Ser
610 615 620

Ser Ser Ser Thr Thr Ser His Ser Cys Gln Ser Pro Glu Gly Arg Tyr
625 630 635 640

Ser Ala Leu Lys Thr Lys His Thr His Lys Glu Arg Gly Thr Asp Ser
645 650 655

Glu His Thr His Lys Ala His Leu Val Pro Glu Gly Thr Ser Lys Lys
660 665 670

Arg Ala Thr Arg Arg Thr Ser Ser Thr Asn Ser Ala Lys Thr Arg Ala
675 680 685

Arg Val Leu Ser Leu Asp Ser Gly Thr Val Ala Cys Leu Asn Asp Ser
690 695 700

Asn Arg Leu Met Ala Pro Glu Ser Ile Lys Pro Leu Thr Thr Ser Lys
705 710 715 720

Ser Asp Leu Glu Ala Lys Glu Gly Glu Val Leu Asp Glu Leu Ser Leu
725 730 735

Leu Gly Arg Ala Ser Gln Leu Glu Thr Val Thr Arg Ser Arg Asn Ser
740 745 750

Leu Pro Asn Gln Val Ala Phe Pro Glu Gly Glu Glu Gln Asp Ala Val
755 760 765

Ser Gly Ala Ala Gln Ala Ser Glu Glu Ala Val Ser Phe Arg Arg Glu
770 775 780

Arg Ser Thr Phe Arg Arg Gln Ala Val Arg Arg Arg His Asn Ala Gly
785 790 795 800

Ser Asn Pro Thr Pro Pro Thr Leu Leu Ile Gly Ser Pro Leu Ser Leu
805 810 815

Gln Asp Gly Gln Gln Gly Gln Gln Ser Thr Ala Gln Val Lys Val Gln
820 825 830

Ser Arg Pro Pro Ser Gln Ala Ala Val Leu Ser Ala Ser Ala Ser Leu
835 840 845

Leu Val Arg Asn Gly Ser Val His Leu Glu Ala Ser His Asp Asn Ala

850

855

860

Ser Ala Val Gly Gly Ser Ser Leu His Asp Glu Leu Gly Lys Phe Ser
 865 870 875 880

Ser Thr Leu Tyr Glu Thr Gly Gly Cys Asp Met Ser Leu Val Asn Phe
 885 890 895

Glu Pro Ala Ala Arg Arg Ala Ser Asn Ile Cys Asp Thr Asp Ser His
 900 905 910

Val Ser Ser Ser Thr Ser Val Arg Phe Tyr Pro His Asp Val Leu Ser
 915 920 925

Leu Pro Gln Ile Arg Leu Asn Arg Leu Leu Thr Ile Asp Thr Asp Leu
 930 935 940

Leu Glu Gln Gln Asp Ile Asp Leu Ser Pro Asp Leu Ala Ala Thr Tyr
 945 950 955 960

Gly Pro Thr Glu Glu Ala Ala Gln Lys Val Lys His Tyr Tyr Arg Phe
 965 970 975

Trp Ile Leu Pro Gln Leu Trp Ile Gly Ile Asn Phe Asp Arg Leu Thr
 980 985 990

Leu Leu Ala Leu Phe Asp Arg Asn Arg Glu Ile Leu Glu Asn Val Leu
 995 1000 1005

Ala Val Ile Leu Ala Ile Leu Val Ala Phe Leu Gly Ser Ile Leu
 1010 1015 1020

Leu Ile Gln Gly Phe Phe Arg Asp Ile Trp Val Phe Gln Phe Cys
 1025 1030 1035

Leu Val Ile Ala Ser Cys Gln Tyr Ser Leu Leu Lys Ser Val Gln
 1040 1045 1050

Pro Asp Ser Ser Ser Pro Arg His Gly His Asn Arg Ile Ile Ala
 1055 1060 1065

Tyr Ser Arg Pro Val Tyr Phe Cys Ile Cys Cys Gly Leu Ile Trp
 1070 1075 1080

Leu Leu Asp Tyr Gly Ser Arg Asn Leu Thr Ala Thr Lys Phe Lys
 1085 1090 1095

Leu Tyr Gly Ile Thr Phe Thr Asn Pro Leu Val Phe Ile Ser Ala
 1100 1105 1110

Arg Asp Leu Val Ile Val Phe Thr Leu Cys Phe Pro Ile Val Phe
 Page 1038

1115

1120

1125

Phe Ile Gly Leu Leu Pro Gln Val Asn Thr Phe Val Met Tyr Leu
 1130 1135 1140

Cys Glu Gln Leu Asp Ile His Ile Phe Gly Gly Asn Ala Thr Thr
 1145 1150 1155

Ser Leu Leu Ala Ala Leu Tyr Ser Phe Ile Cys Ser Ile Val Ala
 1160 1165 1170

Val Ala Leu Leu Tyr Gly Leu Cys Tyr Gly Ala Leu Lys Asp Ser
 1175 1180 1185

Trp Asp Gly Gln His Ile Pro Val Leu Phe Ser Ile Phe Cys Gly
 1190 1195 1200

Leu Leu Val Ala Val Ser Tyr His Leu Ser Arg Gln Ser Ser Asp
 1205 1210 1215

Pro Ser Val Leu Phe Ser Leu Val Gln Ser Lys Ile Phe Pro Lys
 1220 1225 1230

Thr Glu Glu Lys Asn Pro Glu Asp Pro Leu Ser Glu Val Lys Asp
 1235 1240 1245

Pro Leu Pro Glu Lys Leu Arg Asn Ser Val Ser Glu Arg Leu Gln
 1250 1255 1260

Ser Asp Leu Val Val Cys Ile Val Ile Gly Val Leu Tyr Phe Ala
 1265 1270 1275

Ile His Val Ser Thr Val Phe Thr Val Leu Gln Pro Ala Leu Lys
 1280 1285 1290

Tyr Val Leu Tyr Thr Leu Val Gly Phe Val Gly Phe Val Thr His
 1295 1300 1305

Tyr Val Leu Pro Gln Val Arg Lys Gln Leu Pro Trp His Cys Phe
 1310 1315 1320

Ser His Pro Leu Leu Lys Thr Leu Glu Tyr Asn Gln Tyr Glu Val
 1325 1330 1335

Arg Asn Ala Ala Thr Met Met Trp Phe Glu Lys Leu His Val Trp
 1340 1345 1350

Leu Leu Phe Val Glu Lys Asn Ile Ile Tyr Pro Leu Ile Val Leu
 1355 1360 1365

Asn Glu Leu Ser Ser Ser Ala Glu Thr Ile Ala Ser Pro Lys Lys

1370

1375

1380

Leu Asn Thr Glu Leu Gly Ala Leu Met Ile Thr Val Ala Gly Leu
 1385 1390 1395

Lys Leu Leu Arg Ser Ser Phe Ser Ser Pro Thr Tyr Gln Tyr Val
 1400 1405 1410

Thr Val Ile Phe Thr Val Leu Phe Phe Lys Phe Asp Tyr Glu Ala
 1415 1420 1425

Phe Ser Glu Thr Met Leu Leu Asp Leu Phe Phe Met Ser Ile Leu
 1430 1435 1440

Phe Asn Lys Leu Trp Glu Leu Leu Tyr Lys Leu Gln Phe Val Tyr
 1445 1450 1455

Thr Tyr Ile Ala Pro Trp Gln Ile Thr Trp Gly Ser Ala Phe His
 1460 1465 1470

Ala Phe Ala Gln Pro Phe Ala Val Pro His Ser Ala Met Leu Phe
 1475 1480 1485

Ile Gln Ala Ala Val Ser Ala Phe Phe Ser Thr Pro Leu Asn Pro
 1490 1495 1500

Phe Leu Gly Ser Ala Ile Phe Ile Thr Ser Tyr Val Arg Pro Val
 1505 1510 1515

Lys Phe Trp Glu Arg Asp Tyr Asn Thr Lys Arg Val Asp His Ser
 1520 1525 1530

Asn Thr Arg Leu Ala Ser Gln Leu Asp Arg Asn Pro Gly Ser Asp
 1535 1540 1545

Asp Asn Asn Leu Asn Ser Ile Phe Tyr Glu His Leu Thr Arg Ser
 1550 1555 1560

Leu Gln His Ser Leu Cys Gly Asp Leu Leu Leu Gly Arg Trp Gly
 1565 1570 1575

Asn Tyr Ser Thr Gly Asp Cys Phe Ile Leu Ala Ser Asp Tyr Leu
 1580 1585 1590

Asn Ala Leu Val His Leu Ile Glu Ile Gly Asn Gly Leu Val Thr
 1595 1600 1605

Phe Gln Leu Arg Gly Leu Glu Phe Arg Gly Thr Tyr Cys Gln Gln
 1610 1615 1620

Arg Glu Val Glu Ala Ile Thr Glu Gly Val Glu Glu Asp Glu Gly

1625

1630

1635

Phe Cys Cys Cys Glu Pro Gly His Ile Pro His Met Leu Ser Phe
 1640 1645 1650

Asn Ala Ala Phe Ser Gln Arg Trp Leu Ala Trp Glu Val Ile Val
 1655 1660 1665

Thr Lys Tyr Ile Leu Glu Gly Tyr Ser Ile Thr Asp Asn Ser Ala
 1670 1675 1680

Ala Ser Met Leu Gln Val Phe Asp Leu Arg Lys Val Leu Thr Thr
 1685 1690 1695

Tyr Tyr Val Lys Gly Ile Ile Tyr Tyr Val Thr Thr Ser Ser Lys
 1700 1705 1710

Leu Glu Glu Trp Leu Ala Asn Glu Thr Met Gln Glu Gly Leu Arg
 1715 1720 1725

Leu Cys Ala Asp Arg Asn Tyr Val Asp Val Asp Pro Thr Phe Asn
 1730 1735 1740

Pro Asn Ile Asp Glu Asp Tyr Asp His Arg Leu Ala Gly Ile Ser
 1745 1750 1755

Arg Glu Ser Phe Cys Val Ile Tyr Leu Asn Trp Ile Glu Tyr Cys
 1760 1765 1770

Ser Ser Arg Arg Ala Lys Pro Val Asp Val Asp Lys Asp Ser Ser
 1775 1780 1785

Leu Val Thr Leu Cys Tyr Gly Leu Cys Val Leu Gly Arg Arg Ala
 1790 1795 1800

Leu Gly Thr Ala Ser His His Met Ser Ser Asn Leu Glu Ser Phe
 1805 1810 1815

Leu Tyr Gly Leu His Ala Leu Phe Lys Gly Asp Phe Arg Ile Ser
 1820 1825 1830

Ser Ile Arg Asp Glu Trp Ile Phe Ala Asp Met Glu Leu Leu Arg
 1835 1840 1845

Lys Val Val Val Pro Gly Ile Arg Met Ser Ile Lys Leu His Gln
 1850 1855 1860

Asp His Phe Thr Ser Pro Asp Glu Tyr Asp Asp Pro Thr Val Leu
 1865 1870 1875

Tyr Glu Ala Ile Val Ser His Glu Lys Asn Leu Val Ile Ala His

1880

1885

1890

Glu	Gly	Asp	Pro	Ala	Trp	Arg	Ser	Ala	Val	Leu	Ala	Asn	Ser	Pro
	1895					1900					1905			
Ser	Leu	Leu	Ala	Leu	Arg	His	Val	Met	Asp	Asp	Gly	Thr	Asn	Glu
	1910					1915					1920			
Tyr	Lys	Ile	Ile	Met	Leu	Asn	Arg	Arg	Tyr	Leu	Ser	Phe	Arg	Val
	1925					1930					1935			
Ile	Lys	Val	Asn	Lys	Glu	Cys	Val	Arg	Gly	Leu	Trp	Ala	Gly	Gln
	1940					1945					1950			
Gln	Gln	Glu	Leu	Val	Phe	Leu	Arg	Asn	Arg	Asn	Pro	Glu	Arg	Gly
	1955					1960					1965			
Ser	Ile	Gln	Asn	Ala	Lys	Gln	Ala	Leu	Arg	Asn	Met	Ile	Asn	Ser
	1970					1975					1980			
Ser	Cys	Asp	Gln	Pro	Ile	Gly	Tyr	Pro	Ile	Phe	Val	Ser	Pro	Leu
	1985					1990					1995			
Thr	Thr	Ser	Tyr	Ser	Asp	Ser	His	Glu	Gln	Leu	Lys	Asp	Ile	Leu
	2000					2005					2010			
Gly	Gly	Pro	Ile	Ser	Leu	Gly	Asn	Ile	Arg	Asn	Phe	Ile	Val	Ser
	2015					2020					2025			
Thr	Trp	His	Arg	Leu	Arg	Lys	Gly	Cys	Gly	Ala	Gly	Cys	Asn	Ser
	2030					2035					2040			
Gly	Gly	Asn	Ile	Glu	Asp	Ser	Asp	Thr	Gly	Gly	Gly	Thr	Ser	Cys
	2045					2050					2055			
Thr	Gly	Asn	Asn	Ala	Thr	Thr	Ala	Asn	Asn	Pro	His	Ser	Asn	Val
	2060					2065					2070			
Thr	Gln	Gly	Ser	Ile	Gly	Asn	Pro	Gly	Gln	Gly	Ser	Gly	Thr	Gly
	2075					2080					2085			
Leu	His	Pro	Pro	Val	Thr	Ser	Tyr	Pro	Pro	Thr	Leu	Gly	Thr	Ser
	2090					2095					2100			
His	Ser	Ser	His	Ser	Val	Gln	Ser	Gly	Leu	Val	Arg	Gln	Ser	Pro
	2105					2110					2115			
Ala	Arg	Ala	Ser	Val	Ala	Ser	Gln	Ser	Ser	Tyr	Cys	Tyr	Ser	Ser
	2120					2125					2130			
Arg	His	Ser	Ser	Leu	Arg	Met	Ser	Thr	Thr	Gly	Phe	Val	Pro	Cys

2135

2140

2145

Arg Arg Ser Ser Thr Ser Gln Ile Ser Leu Arg Asn Leu Pro Ser
 2150 2155 2160

Ser Ile Gln Ser Arg Leu Ser Met Val Asn Gln Met Glu Pro Ser
 2165 2170 2175

Gly Gln Ser Gly Leu Ala Cys Val Gln His Gly Leu Pro Ser Ser
 2180 2185 2190

Ser Ser Ser Ser Gln Ser Ile Pro Ala Cys Lys His His Thr Leu
 2195 2200 2205

Val Gly Phe Leu Ala Thr Glu Gly Gly Gln Ser Ser Ala Thr Asp
 2210 2215 2220

Ala Gln Pro Gly Asn Thr Leu Ser Pro Ala Asn Asn Ser His Ser
 2225 2230 2235

Arg Lys Ala Glu Val Ile Tyr Arg Val Gln Ile Val Asp Pro Ser
 2240 2245 2250

Gln Ile Leu Glu Gly Ile Asn Leu Ser Lys Arg Lys Glu Leu Gln
 2255 2260 2265

Trp Pro Asp Glu Gly Ile Arg Leu Lys Ala Gly Arg Asn Ser Trp
 2270 2275 2280

Lys Asp Trp Ser Pro Gln Glu Gly Met Glu Gly His Val Ile His
 2285 2290 2295

Arg Trp Val Pro Cys Ser Arg Asp Pro Gly Thr Arg Ser His Ile
 2300 2305 2310

Asp Lys Ala Val Leu Leu Val Gln Ile Asp Asp Lys Tyr Val Thr
 2315 2320 2325

Val Ile Glu Thr Gly Val Leu Glu Leu Gly Ala Glu Val
 2330 2335 2340

<210> 650
 <211> 868
 <212> PRT
 <213> Homo sapiens

<400> 650

Met Ala Thr Phe Ile Ser Val Gln Leu Lys Lys Thr Ser Glu Val Asp
 1 5 10 15

Leu Ala Lys Pro Leu Val Lys Phe Ile Gln Gln Thr Tyr Pro Ser Gly
 20 25 30

Gly Glu Glu Gln Ala Gln Tyr Cys Arg Ala Ala Glu Glu Leu Ser Lys
 35 40 45
 Leu Arg Arg Ala Ala Val Gly Arg Pro Leu Asp Lys His Glu Gly Ala
 50 55 60
 Leu Glu Thr Leu Leu Arg Tyr Tyr Asp Gln Ile Cys Ser Ile Glu Pro
 65 70 75 80
 Lys Phe Pro Phe Ser Glu Asn Gln Ile Cys Leu Thr Phe Thr Trp Lys
 85 90 95
 Asp Ala Phe Asp Lys Gly Ser Leu Phe Gly Gly Ser Val Lys Leu Ala
 100 105 110
 Leu Ala Ser Leu Gly Tyr Glu Lys Ser Cys Val Leu Phe Asn Cys Ala
 115 120 125
 Ala Leu Ala Ser Gln Ile Ala Ala Glu Gln Asn Leu Asp Asn Asp Glu
 130 135 140
 Gly Leu Lys Ile Ala Ala Lys His Tyr Gln Phe Ala Ser Gly Ala Phe
 145 150 155 160
 Leu His Ile Lys Glu Thr Val Leu Ser Ala Leu Ser Arg Glu Pro Thr
 165 170 175
 Val Asp Ile Ser Pro Asp Thr Val Gly Thr Leu Ser Leu Ile Met Leu
 180 185 190
 Ala Gln Ala Gln Glu Val Phe Phe Leu Lys Ala Thr Arg Asp Lys Met
 195 200 205
 Lys Asp Ala Ile Ile Ala Lys Leu Ala Asn Gln Ala Ala Asp Tyr Phe
 210 215 220
 Gly Asp Ala Phe Lys Gln Cys Gln Tyr Lys Asp Thr Leu Pro Lys Glu
 225 230 235 240
 Val Phe Pro Val Leu Ala Ala Lys His Cys Ile Met Gln Ala Asn Ala
 245 250 255
 Glu Tyr His Gln Ser Ile Leu Ala Lys Gln Gln Lys Lys Phe Gly Glu
 260 265 270
 Glu Ile Ala Arg Leu Gln His Ala Ala Glu Leu Ile Lys Thr Val Ala
 275 280 285
 Ser Arg Tyr Asp Glu Tyr Val Asn Val Lys Asp Phe Ser Asp Lys Ile
 290 295 300

Asn Arg Ala Leu Ala Ala Ala Lys Lys Asp Asn Asp Phe Ile Tyr His
 305 310 315 320
 Asp Arg Val Pro Asp Leu Lys Asp Leu Asp Pro Ile Gly Lys Ala Thr
 325 330 335
 Leu Val Lys Ser Thr Pro Val Asn Val Pro Ile Ser Gln Lys Phe Thr
 340 345 350
 Asp Leu Phe Glu Lys Met Val Pro Val Ser Val Gln Gln Ser Leu Ala
 355 360 365
 Ala Tyr Asn Gln Arg Lys Ala Asp Leu Val Asn Arg Ser Ile Ala Gln
 370 375 380
 Met Arg Glu Ala Thr Thr Leu Ala Asn Gly Val Leu Ala Ser Leu Asn
 385 390 395 400
 Leu Pro Ala Ala Ile Glu Asp Val Ser Gly Asp Thr Val Pro Gln Ser
 405 410 415
 Ile Leu Thr Lys Ser Arg Ser Val Ile Glu Gln Gly Gly Ile Gln Thr
 420 425 430
 Val Asp Gln Leu Ile Lys Glu Leu Pro Glu Leu Leu Gln Arg Asn Arg
 435 440 445
 Glu Ile Leu Asp Glu Ser Leu Arg Leu Leu Asp Glu Glu Glu Ala Thr
 450 455 460
 Asp Asn Asp Leu Arg Ala Lys Phe Lys Glu Arg Trp Gln Arg Thr Pro
 465 470 475 480
 Ser Asn Glu Leu Tyr Lys Pro Leu Arg Ala Glu Gly Thr Asn Phe Arg
 485 490 495
 Thr Val Leu Asp Lys Ala Val Gln Ala Asp Gly Gln Val Lys Glu Cys
 500 505 510
 Tyr Gln Ser His Arg Asp Thr Ile Val Leu Leu Cys Lys Pro Glu Pro
 515 520 525
 Glu Leu Asn Ala Ala Ile Pro Ser Ala Asn Pro Ala Lys Thr Met Gln
 530 535 540
 Gly Ser Glu Val Val Asn Val Leu Lys Ser Leu Leu Ser Asn Leu Asp
 545 550 555 560
 Glu Val Lys Lys Glu Arg Glu Gly Leu Glu Asn Asp Leu Lys Ser Val
 565 570 575

Asn Phe Asp Met Thr Ser Lys Phe Leu Thr Ala Leu Ala Gln Asp Gly
 580 585 590
 Val Ile Asn Glu Glu Ala Leu Ser Val Thr Glu Leu Asp Arg Val Tyr
 595 600 605
 Gly Gly Leu Thr Thr Lys Val Gln Glu Ser Leu Lys Lys Gln Glu Gly
 610 615 620
 Leu Leu Lys Asn Ile Gln Val Ser His Gln Glu Phe Ser Lys Met Lys
 625 630 635 640
 Gln Ser Asn Asn Glu Ala Asn Leu Arg Glu Glu Val Leu Lys Asn Leu
 645 650 655
 Ala Thr Ala Tyr Asp Asn Phe Val Glu Leu Val Ala Asn Leu Lys Glu
 660 665 670
 Gly Thr Lys Phe Tyr Asn Glu Leu Thr Glu Ile Leu Val Arg Phe Gln
 675 680 685
 Asn Lys Cys Ser Asp Ile Val Phe Ala Arg Lys Thr Glu Arg Asp Glu
 690 695 700
 Leu Leu Lys Asp Leu Gln Gln Ser Ile Ala Arg Glu Pro Ser Ala Pro
 705 710 715 720
 Ser Ile Pro Thr Pro Ala Tyr Gln Ser Ser Pro Ala Gly Gly His Ala
 725 730 735
 Pro Thr Pro Pro Thr Pro Ala Pro Arg Thr Met Pro Pro Thr Lys Pro
 740 745 750
 Gln Pro Pro Ala Arg Pro Pro Pro Val Leu Pro Ala Asn Arg Ala
 755 760 765
 Pro Ser Ala Thr Ala Pro Ser Pro Val Gly Ala Gly Thr Ala Ala Pro
 770 775 780
 Ala Pro Ser Gln Thr Pro Gly Ser Ala Pro Pro Gln Ala Gln Gly
 785 790 795 800
 Pro Pro Tyr Pro Thr Tyr Pro Gly Tyr Pro Gly Tyr Cys Gln Met Pro
 805 810 815
 Met Pro Met Gly Tyr Asn Pro Tyr Ala Tyr Gly Gln Tyr Asn Met Pro
 820 825 830
 Tyr Pro Pro Val Tyr His Gln Ser Pro Gly Gln Ala Pro Tyr Pro Gly
 835 840 845

Pro Gln Gln Pro Ser Tyr Pro Phe Pro Gln Pro Pro Gln Gln Ser Tyr
 850 855 860

Tyr Pro Gln Gln
 865

<210> 651
 <211> 1112
 <212> PRT
 <213> Homo sapiens

<400> 651

Met Arg Arg Asp Glu Arg Asp Ala Lys Ala Met Arg Ser Leu Gln Pro
 1 5 10 15

Pro Asp Gly Ala Gly Ser Pro Pro Glu Ser Leu Arg Asn Gly Tyr Val
 20 25 30

Lys Ser Cys Val Ser Pro Leu Arg Gln Asp Pro Pro Arg Gly Phe Phe
 35 40 45

Phe His Leu Cys Arg Phe Cys Asn Val Glu Leu Arg Pro Pro Pro Ala
 50 55 60

Ser Pro Gln Gln Pro Arg Arg Cys Ser Pro Phe Cys Arg Ala Arg Leu
 65 70 75 80

Ser Leu Gly Ala Leu Ala Ala Phe Val Leu Ala Leu Leu Leu Gly Ala
 85 90 95

Glu Pro Glu Ser Trp Ala Ala Gly Ala Ala Trp Leu Arg Thr Leu Leu
 100 105 110

Ser Val Cys Ser His Ser Leu Ser Pro Leu Phe Ser Ile Ala Cys Ala
 115 120 125

Phe Phe Phe Leu Thr Cys Phe Leu Thr Arg Thr Lys Arg Gly Pro Gly
 130 135 140

Pro Gly Arg Ser Cys Gly Ser Trp Trp Leu Leu Ala Leu Pro Ala Cys
 145 150 155 160

Cys Tyr Leu Gly Asp Phe Leu Val Trp Gln Trp Trp Ser Trp Pro Trp
 165 170 175

Gly Asp Gly Asp Ala Gly Ser Ala Ala Pro His Thr Pro Pro Glu Ala
 180 185 190

Ala Ala Gly Arg Leu Leu Leu Val Leu Ser Cys Val Gly Leu Leu Leu
 195 200 205

Thr Leu Ala His Pro Leu Arg Leu Arg His Cys Val Leu Val Leu Leu
 210 215 220
 Leu Ala Ser Phe Val Trp Trp Val Ser Phe Thr Ser Leu Gly Ser Leu
 225 230 235 240
 Pro Ser Ala Leu Arg Pro Leu Leu Ser Gly Leu Val Gly Gly Ala Gly
 245 250 255
 Cys Leu Leu Ala Leu Gly Leu Asp His Phe Phe Gln Ile Arg Glu Ala
 260 265 270
 Pro Leu His Pro Arg Leu Ser Ser Ala Ala Glu Glu Lys Val Pro Val
 275 280 285
 Ile Arg Pro Arg Arg Arg Ser Ser Cys Val Ser Leu Gly Glu Thr Ala
 290 295 300
 Ala Ser Tyr Tyr Gly Ser Cys Lys Ile Phe Arg Arg Pro Ser Leu Pro
 305 310 315 320
 Cys Ile Ser Arg Glu Gln Met Ile Leu Trp Asp Trp Asp Leu Lys Gln
 325 330 335
 Trp Tyr Lys Pro His Tyr Gln Asn Ser Gly Gly Gly Asn Gly Val Asp
 340 345 350
 Leu Ser Val Leu Asn Glu Ala Arg Asn Met Val Ser Asp Leu Leu Thr
 355 360 365
 Asp Pro Ser Leu Pro Pro Gln Val Ile Ser Ser Leu Arg Ser Ile Ser
 370 375 380
 Ser Leu Met Gly Ala Phe Ser Gly Ser Cys Arg Pro Lys Ile Asn Pro
 385 390 395 400
 Leu Thr Pro Phe Pro Gly Phe Tyr Pro Cys Ser Glu Ile Glu Asp Pro
 405 410 415
 Ala Glu Lys Gly Asp Arg Lys Leu Asn Lys Gly Leu Asn Arg Asn Ser
 420 425 430
 Leu Pro Thr Pro Gln Leu Arg Arg Ser Ser Gly Thr Ser Gly Leu Leu
 435 440 445
 Pro Val Glu Gln Ser Ser Arg Trp Asp Arg Asn Asn Gly Lys Arg Pro
 450 455 460
 His Gln Glu Phe Gly Ile Ser Ser Gln Gly Cys Tyr Leu Asn Gly Pro
 465 470 475 480

Phe Asn Ser Asn Leu Leu Thr Ile Pro Lys Gln Arg Ser Ser Ser Val
 485 490 495
 Ser Leu Thr His His Val Gly Leu Arg Arg Ala Gly Val Leu Ser Ser
 500 505 510
 Leu Ser Pro Val Asn Ser Ser Asn His Gly Pro Val Ser Thr Gly Ser
 515 520 525
 Leu Thr Asn Arg Ser Pro Ile Glu Phe Pro Asp Thr Ala Asp Phe Leu
 530 535 540
 Asn Lys Pro Ser Val Ile Leu Gln Arg Ser Leu Gly Asn Ala Pro Asn
 545 550 555 560
 Thr Pro Asp Phe Tyr Gln Gln Leu Arg Asn Ser Asp Ser Asn Leu Cys
 565 570 575
 Asn Ser Cys Gly His Gln Met Leu Lys Tyr Val Ser Thr Ser Glu Ser
 580 585 590
 Asp Gly Thr Asp Cys Cys Ser Gly Lys Ser Gly Glu Glu Glu Asn Ile
 595 600 605
 Phe Ser Lys Glu Ser Phe Lys Leu Met Glu Thr Gln Gln Glu Glu Glu
 610 615 620
 Thr Glu Lys Lys Asp Ser Arg Lys Leu Phe Gln Glu Gly Asp Lys Trp
 625 630 635 640
 Leu Thr Glu Glu Ala Gln Ser Glu Gln Gln Thr Asn Ile Glu Gln Glu
 645 650 655
 Val Ser Leu Asp Leu Ile Leu Val Glu Glu Tyr Asp Ser Leu Ile Glu
 660 665 670
 Lys Met Ser Asn Trp Asn Phe Pro Ile Phe Glu Leu Val Glu Lys Met
 675 680 685
 Gly Glu Lys Ser Gly Arg Ile Leu Ser Gln Val Met Tyr Thr Leu Phe
 690 695 700
 Gln Asp Thr Gly Leu Leu Glu Ile Phe Lys Ile Pro Thr Gln Gln Phe
 705 710 715 720
 Met Asn Tyr Phe Arg Ala Leu Glu Asn Gly Tyr Arg Asp Ile Pro Tyr
 725 730 735
 His Asn Arg Ile His Ala Thr Asp Val Leu His Ala Val Trp Tyr Leu
 740 745 750

Thr Thr Arg Pro Val Pro Gly Leu Gln Gln Ile His Asn Gly Cys Gly
 755 760 765
 Thr Gly Asn Glu Thr Asp Ser Asp Gly Arg Ile Asn His Gly Arg Ile
 770 775 780
 Ala Tyr Ile Ser Ser Lys Ser Cys Ser Asn Pro Asp Glu Ser Tyr Gly
 785 790 795 800
 Cys Leu Ser Ser Asn Ile Pro Ala Leu Glu Leu Met Ala Leu Tyr Val
 805 810 815
 Ala Ala Ala Met His Asp Tyr Asp His Pro Gly Arg Thr Asn Ala Phe
 820 825 830
 Leu Val Ala Thr Asn Ala Pro Gln Ala Val Leu Tyr Asn Asp Arg Ser
 835 840 845
 Val Leu Glu Asn His His Ala Ala Ser Ala Trp Asn Leu Tyr Leu Ser
 850 855 860
 Arg Pro Glu Tyr Asn Phe Leu Leu His Leu Asp His Val Glu Phe Lys
 865 870 875 880
 Arg Phe Arg Phe Leu Val Ile Glu Ala Ile Leu Ala Thr Asp Leu Lys
 885 890 895
 Lys His Phe Asp Phe Leu Ala Glu Phe Asn Ala Lys Ala Asn Asp Val
 900 905 910
 Asn Ser Asn Gly Ile Glu Trp Ser Asn Glu Asn Asp Arg Leu Leu Val
 915 920 925
 Cys Gln Val Cys Ile Lys Leu Ala Asp Ile Asn Gly Pro Ala Lys Val
 930 935 940
 Arg Asp Leu His Leu Lys Trp Thr Glu Gly Ile Val Asn Glu Phe Tyr
 945 950 955 960
 Glu Gln Gly Asp Glu Glu Ala Asn Leu Gly Leu Pro Ile Ser Pro Phe
 965 970 975
 Met Asp Arg Ser Ser Pro Gln Leu Ala Lys Leu Gln Glu Ser Phe Ile
 980 985 990
 Thr His Ile Val Gly Pro Leu Cys Asn Ser Tyr Asp Ala Ala Gly Leu
 995 1000 1005
 Leu Pro Gly Gln Trp Leu Glu Ala Glu Glu Asp Asn Asp Thr Glu
 1010 1015 1020

Ser Gly Asp Asp Glu Asp Gly Glu Glu Leu Asp Thr Glu Asp Glu
1025 1030 1035

Glu Met Glu Asn Asn Leu Asn Pro Lys Pro Pro Arg Arg Lys Ser
1040 1045 1050

Arg Arg Arg Ile Phe Cys Gln Leu Met His His Leu Thr Glu Asn
1055 1060 1065

His Lys Ile Trp Lys Glu Ile Val Glu Glu Glu Glu Lys Cys Lys
1070 1075 1080

Ala Asp Gly Asn Lys Leu Gln Val Glu Asn Ser Ser Leu Pro Gln
1085 1090 1095

Ala Asp Glu Ile Gln Val Ile Glu Glu Ala Asp Glu Glu Glu
1100 1105 1110

<210> 652
<211> 738
<212> PRT
<213> Homo sapiens

<400> 652

Met Gln Pro Arg Trp Ala Gln Gly Ala Thr Met Trp Leu Gly Val Leu
1 5 10 15

Leu Thr Leu Leu Leu Cys Ser Ser Leu Glu Gly Gln Glu Asn Ser Phe
20 25 30

Thr Ile Asn Ser Val Asp Met Lys Ser Leu Pro Asp Trp Thr Val Gln
35 40 45

Asn Gly Lys Asn Leu Thr Leu Gln Cys Phe Ala Asp Val Ser Thr Thr
50 55 60

Ser His Val Lys Pro Gln His Gln Met Leu Phe Tyr Lys Asp Asp Val
65 70 75 80

Leu Phe Tyr Asn Ile Ser Ser Met Lys Ser Thr Glu Ser Tyr Phe Ile
85 90 95

Pro Glu Val Arg Ile Tyr Asp Ser Gly Thr Tyr Lys Cys Thr Val Ile
100 105 110

Val Asn Asn Lys Glu Lys Thr Thr Ala Glu Tyr Gln Val Leu Val Glu
115 120 125

Gly Val Pro Ser Pro Arg Val Thr Leu Asp Lys Lys Glu Ala Ile Gln
130 135 140

Gly Gly Ile Val Arg Val Asn Cys Ser Val Pro Glu Glu Lys Ala Pro
 145 150 155 160
 Ile His Phe Thr Ile Glu Lys Leu Glu Leu Asn Glu Lys Met Val Lys
 165 170 175
 Leu Lys Arg Glu Lys Asn Ser Arg Asp Gln Asn Phe Val Ile Leu Glu
 180 185 190
 Phe Pro Val Glu Glu Gln Asp Arg Val Leu Ser Phe Arg Cys Gln Ala
 195 200 205
 Arg Ile Ile Ser Gly Ile His Met Gln Thr Ser Glu Ser Thr Lys Ser
 210 215 220
 Glu Leu Val Thr Val Thr Glu Ser Phe Ser Thr Pro Lys Phe His Ile
 225 230 235 240
 Ser Pro Thr Gly Met Ile Met Glu Gly Ala Gln Leu His Ile Lys Cys
 245 250 255
 Thr Ile Gln Val Thr His Leu Ala Gln Glu Phe Pro Glu Ile Ile Ile
 260 265 270
 Gln Lys Asp Lys Ala Ile Val Ala His Asn Arg His Gly Asn Lys Ala
 275 280 285
 Val Tyr Ser Val Met Ala Met Val Glu His Ser Gly Asn Tyr Thr Cys
 290 295 300
 Lys Val Glu Ser Ser Arg Ile Ser Lys Val Ser Ser Ile Val Val Asn
 305 310 315 320
 Ile Thr Glu Leu Phe Ser Lys Pro Glu Leu Glu Ser Ser Phe Thr His
 325 330 335
 Leu Asp Gln Gly Glu Arg Leu Asn Leu Ser Cys Ser Ile Pro Gly Ala
 340 345 350
 Pro Pro Ala Asn Phe Thr Ile Gln Lys Glu Asp Thr Ile Val Ser Gln
 355 360 365
 Thr Gln Asp Phe Thr Lys Ile Ala Ser Lys Ser Asp Ser Gly Thr Tyr
 370 375 380
 Ile Cys Thr Ala Gly Ile Asp Lys Val Val Lys Lys Ser Asn Thr Val
 385 390 395 400
 Gln Ile Val Val Cys Glu Met Leu Ser Gln Pro Arg Ile Ser Tyr Asp
 405 410 415

Ala Gln Phe Glu Val Ile Lys Gly Gln Thr Ile Glu Val Arg Cys Glu
 420 425 430

Ser Ile Ser Gly Thr Leu Pro Ile Ser Tyr Gln Leu Leu Lys Thr Ser
 435 440 445

Lys Val Leu Glu Asn Ser Thr Lys Asn Ser Asn Asp Pro Ala Val Phe
 450 455 460

Lys Asp Asn Pro Thr Glu Asp Val Glu Tyr Gln Cys Val Ala Asp Asn
 465 470 475 480

Cys His Ser His Ala Lys Met Leu Ser Glu Val Leu Arg Val Lys Val
 485 490 495

Ile Ala Pro Val Asp Glu Val Gln Ile Ser Ile Leu Ser Ser Lys Val
 500 505 510

Val Glu Ser Gly Glu Asp Ile Val Leu Gln Cys Ala Val Asn Glu Gly
 515 520 525

Ser Gly Pro Ile Thr Tyr Lys Phe Tyr Arg Glu Lys Glu Gly Lys Pro
 530 535 540

Phe Tyr Gln Met Thr Ser Asn Ala Thr Gln Ala Phe Trp Thr Lys Gln
 545 550 555 560

Lys Ala Ser Lys Glu Gln Glu Gly Glu Tyr Tyr Cys Thr Ala Phe Asn
 565 570 575

Arg Ala Asn His Ala Ser Ser Val Pro Arg Ser Lys Ile Leu Thr Val
 580 585 590

Arg Val Ile Leu Ala Pro Trp Lys Lys Gly Leu Ile Ala Val Val Ile
 595 600 605

Ile Gly Val Ile Ile Ala Leu Leu Ile Ile Ala Ala Lys Cys Tyr Phe
 610 615 620

Leu Arg Lys Ala Lys Ala Lys Gln Met Pro Val Glu Met Ser Arg Pro
 625 630 635 640

Ala Val Pro Leu Leu Asn Ser Asn Asn Glu Lys Met Ser Asp Pro Asn
 645 650 655

Met Glu Ala Asn Ser His Tyr Gly His Asn Asp Asp Val Arg Asn His
 660 665 670

Ala Met Lys Pro Ile Asn Asp Asn Lys Glu Pro Leu Asn Ser Asp Val
 675 680 685

Gln Tyr Thr Glu Val Gln Val Ser Ser Ala Glu Ser His Lys Asp Leu
 690 695 700

Gly Lys Lys Asp Thr Glu Thr Val Tyr Ser Glu Val Arg Lys Ala Val
 705 710 715 720

Pro Asp Ala Val Glu Ser Arg Tyr Ser Arg Thr Glu Gly Ser Leu Asp
 725 730 735

Gly Thr

<210> 653
 <211> 154
 <212> PRT
 <213> Homo sapiens

<400> 653

Met Ala Gln Ser Ile Asn Ile Thr Glu Leu Asn Leu Pro Gln Leu Glu
 1 5 10 15

Met Leu Lys Asn Gln Leu Asp Gln Glu Val Glu Phe Leu Ser Thr Ser
 20 25 30

Ile Ala Gln Leu Lys Val Val Gln Thr Lys Tyr Val Glu Ala Lys Asp
 35 40 45

Cys Leu Asn Val Leu Asn Lys Ser Asn Glu Gly Lys Glu Leu Leu Val
 50 55 60

Pro Leu Thr Ser Ser Met Tyr Val Pro Gly Lys Leu His Asp Val Glu
 65 70 75 80

His Val Leu Ile Asp Val Gly Thr Gly Tyr Tyr Val Glu Lys Thr Ala
 85 90 95

Glu Asp Ala Lys Asp Phe Phe Lys Arg Lys Ile Asp Phe Leu Thr Lys
 100 105 110

Gln Met Glu Lys Ile Gln Pro Ala Leu Gln Glu Lys His Ala Met Lys
 115 120 125

Gln Ala Val Met Glu Met Met Ser Gln Lys Ile Gln Gln Leu Thr Ala
 130 135 140

Leu Gly Ala Ala Gln Ala Thr Ala Lys Ala
 145 150

<210> 654
 <211> 556
 <212> PRT
 <213> Homo sapiens

<400> 654

Met Ala Val Ala Ala Ala Ala Ala Ala Gly Pro Val Phe Trp Arg Arg
 1 5 10 15
 Leu Leu Gly Leu Leu Pro Gly Arg Pro Gly Leu Ala Ala Leu Leu Gly
 20 25 30
 Arg Leu Ser Asp Arg Leu Gly Arg Asn Arg Asp Arg Gln Arg Arg Arg
 35 40 45
 Ser Pro Trp Leu Leu Leu Ala Pro Leu Leu Ser Pro Ala Val Pro Gln
 50 55 60
 Val Thr Ser Pro Pro Cys Cys Leu Cys Pro Glu Gly Val His Arg Phe
 65 70 75 80
 Gln Trp Ile Arg Asn Leu Val Pro Glu Phe Gly Val Ser Ser Ser His
 85 90 95
 Val Arg Val Leu Ser Ser Pro Ala Glu Phe Phe Glu Leu Met Lys Gly
 100 105 110
 Gln Ile Arg Val Ala Lys Arg Arg Val Val Met Ala Ser Leu Tyr Leu
 115 120 125
 Gly Thr Gly Pro Leu Glu Gln Glu Leu Val Asp Cys Leu Glu Ser Thr
 130 135 140
 Leu Glu Lys Ser Leu Gln Ala Lys Phe Pro Ser Asn Leu Lys Val Ser
 145 150 155 160
 Ile Leu Leu Asp Phe Thr Arg Gly Ser Arg Gly Arg Lys Asn Ser Arg
 165 170 175
 Thr Met Leu Leu Pro Leu Leu Arg Arg Phe Pro Glu Gln Val Arg Val
 180 185 190
 Ser Leu Phe His Thr Pro His Leu Arg Gly Leu Leu Arg Leu Leu Ile
 195 200 205
 Pro Glu Arg Phe Asn Glu Thr Ile Gly Leu Gln His Ile Lys Val Tyr
 210 215 220
 Leu Phe Asp Asn Ser Val Ile Leu Ser Gly Ala Asn Leu Ser Asp Ser
 225 230 235 240
 Tyr Phe Thr Asn Arg Gln Asp Arg Tyr Val Phe Leu Gln Asp Cys Ala
 245 250 255
 Glu Ile Ala Asp Phe Phe Thr Glu Leu Val Asp Ala Val Gly Asp Val
 260 265 270

Ser Leu Gln Leu Gln Gly Asp Asp Thr Val Gln Val Val Asp Gly Met
 275 280 285
 Val His Pro Tyr Lys Gly Asp Arg Ala Glu Tyr Cys Lys Ala Ala Asn
 290 295 300
 Lys Arg Val Met Asp Val Ile Asn Ser Ala Arg Thr Arg Gln Gln Met
 305 310 315 320
 Leu His Ala Gln Thr Phe His Ser Asn Ser Leu Leu Thr Gln Glu Asp
 325 330 335
 Ala Ala Ala Ala Gly Asp Arg Arg Pro Ala Pro Asp Thr Trp Ile Tyr
 340 345 350
 Pro Leu Ile Gln Met Lys Pro Phe Glu Ile Gln Ile Asp Glu Ile Val
 355 360 365
 Thr Glu Thr Leu Leu Thr Glu Ala Glu Arg Gly Ala Lys Val Tyr Leu
 370 375 380
 Thr Thr Gly Tyr Phe Asn Leu Thr Gln Ala Tyr Met Asp Leu Val Leu
 385 390 395 400
 Gly Thr Arg Ala Glu Tyr Gln Ile Leu Leu Ala Ser Pro Glu Val Asn
 405 410 415
 Gly Phe Phe Gly Ala Lys Gly Val Ala Gly Ala Ile Pro Ala Ala Tyr
 420 425 430
 Val His Ile Glu Arg Gln Phe Phe Ser Glu Val Cys Ser Leu Gly Gln
 435 440 445
 Gln Glu Arg Val Gln Leu Gln Glu Tyr Trp Arg Arg Gly Trp Thr Phe
 450 455 460
 His Ala Lys Gly Leu Trp Leu Tyr Leu Ala Gly Ser Ser Leu Pro Cys
 465 470 475 480
 Leu Thr Leu Ile Gly Ser Pro Asn Phe Gly Tyr Arg Ser Val His Arg
 485 490 495
 Asp Leu Glu Ala Gln Ile Ala Ile Val Thr Glu Asn Gln Ala Leu Gln
 500 505 510
 Gln Gln Leu His Gln Glu Gln Glu Gln Leu Tyr Leu Arg Ser Gly Val
 515 520 525
 Val Ser Ser Ala Thr Phe Glu Gln Pro Ser Arg Gln Val Lys Leu Trp
 530 535 540

Val Lys Met Val Thr Pro Leu Ile Lys Asn Phe Phe
545 550 555

<210> 655
<211> 323
<212> PRT
<213> Homo sapiens

<400> 655

Met Thr Ser Gly Asn Gly Asn Ser Ala Ser Ser Ile Ala Gly Thr Ala
1 5 10 15

Pro Gln Asn Gly Glu Asn Lys Pro Pro Gln Ala Ile Val Lys Pro Gln
20 25 30

Ile Leu Thr His Val Ile Glu Gly Phe Val Ile Gln Glu Gly Ala Glu
35 40 45

Pro Phe Pro Val Gly Arg Ser Ser Leu Leu Val Gly Asn Leu Lys Lys
50 55 60

Lys Tyr Ala Gln Gly Phe Leu Pro Glu Lys Leu Pro Gln Gln Asp His
65 70 75 80

Thr Thr Thr Thr Asp Ser Glu Met Glu Glu Pro Tyr Leu Gln Glu Ser
85 90 95

Lys Glu Glu Gly Ala Pro Leu Lys Leu Lys Cys Glu Leu Cys Gly Arg
100 105 110

Val Asp Phe Ala Tyr Lys Phe Lys Arg Ser Lys Arg Phe Cys Ser Met
115 120 125

Ala Cys Ala Lys Arg Tyr Asn Val Gly Cys Thr Lys Arg Val Gly Leu
130 135 140

Phe His Ser Asp Arg Ser Lys Leu Gln Lys Ala Gly Ala Ala Thr His
145 150 155 160

Asn Arg Arg Arg Ala Ser Lys Ala Ser Leu Pro Pro Leu Thr Lys Asp
165 170 175

Thr Lys Lys Gln Pro Thr Gly Thr Val Pro Leu Ser Val Thr Ala Ala
180 185 190

Leu Gln Leu Thr His Ser Gln Glu Asp Ser Ser Arg Cys Ser Asp Asn
195 200 205

Ser Ser Tyr Glu Glu Pro Leu Ser Pro Ile Ser Ala Ser Ser Ser Thr
210 215 220

Ser Arg Arg Arg Gln Gly Gln Arg Asp Leu Glu Leu Pro Asp Met His
225 230 235 240

Met Arg Asp Leu Val Gly Met Gly His His Phe Leu Pro Ser Glu Pro
245 250 255

Thr Lys Trp Asn Val Glu Asp Val Tyr Glu Phe Ile Arg Ser Leu Pro
260 265 270

Gly Cys Gln Glu Ile Ala Glu Glu Phe Arg Ala Gln Glu Ile Asp Gly
275 280 285

Gln Ala Leu Leu Leu Leu Lys Glu Asp His Leu Met Ser Ala Met Asn
290 295 300

Ile Lys Leu Gly Pro Ala Leu Lys Ile Tyr Ala Arg Ile Ser Met Leu
305 310 315 320

Lys Asp Ser

<210> 656
<211> 331
<212> PRT
<213> Homo sapiens

<400> 656

Met Ala Gln Ala Ser Pro Pro Arg Pro Glu Arg Val Leu Gly Ala Ser
1 5 10 15

Ser Pro Glu Ala Arg Pro Ala Gln Glu Ala Leu Leu Leu Pro Thr Gly
20 25 30

Val Phe Gln Val Ala Glu Lys Met Glu Lys Arg Thr Cys Ala Leu Cys
35 40 45

Pro Lys Asp Val Glu Tyr Asn Val Leu Tyr Phe Ala Gln Ser Glu Asn
50 55 60

Ile Ala Ala His Glu Asn Cys Leu Leu Tyr Ser Ser Gly Leu Val Glu
65 70 75 80

Cys Glu Asp Gln Asp Pro Leu Asn Pro Asp Arg Ser Phe Asp Val Glu
85 90 95

Ser Val Lys Lys Glu Ile Gln Arg Gly Arg Lys Leu Lys Cys Lys Phe
100 105 110

Cys His Lys Arg Gly Ala Thr Val Gly Cys Asp Leu Lys Asn Cys Asn
115 120 125

Lys Asn Tyr His Phe Phe Cys Ala Lys Lys Asp Asp Ala Val Pro Gln
 130 135 140

Ser Asp Gly Val Arg Gly Ile Tyr Lys Leu Leu Cys Gln Gln His Ala
 145 150 155 160

Gln Phe Pro Ile Ile Ala Gln Ser Ala Lys Phe Ser Gly Val Lys Arg
 165 170 175

Lys Arg Gly Arg Lys Lys Pro Leu Ser Gly Asn His Val Gln Pro Pro
 180 185 190

Glu Thr Met Lys Cys Asn Thr Phe Ile Arg Gln Val Lys Glu Glu His
 195 200 205

Gly Arg His Thr Asp Ala Thr Val Lys Val Pro Phe Leu Lys Lys Cys
 210 215 220

Lys Glu Ala Gly Leu Leu Asn Tyr Leu Leu Glu Glu Ile Leu Asp Lys
 225 230 235 240

Val His Ser Ile Pro Glu Lys Leu Met Asp Glu Thr Thr Ser Glu Ser
 245 250 255

Asp Tyr Glu Glu Ile Gly Ser Ala Leu Phe Asp Cys Arg Leu Phe Glu
 260 265 270

Asp Thr Phe Val Asn Phe Gln Ala Ala Ile Glu Lys Lys Ile His Ala
 275 280 285

Ser Gln Gln Arg Trp Gln Gln Leu Lys Glu Glu Ile Glu Leu Leu Gln
 290 295 300

Asp Leu Lys Gln Thr Leu Cys Ser Phe Gln Glu Asn Arg Asp Leu Met
 305 310 315 320

Ser Ser Ser Thr Ser Ile Ser Ser Leu Ser Tyr
 325 330

<210> 657
 <211> 1096
 <212> PRT
 <213> Homo sapiens

<400> 657

Met Ala Thr Val Pro Val Tyr Cys Val Cys Arg Leu Pro Tyr Asp Val
 1 5 10 15

Thr Arg Phe Met Ile Glu Cys Asp Ala Cys Lys Asp Trp Phe His Gly
 20 25 30

Ser Cys Val Gly Val Glu Glu Glu Glu Ala Pro Asp Ile Asp Ile Tyr

35

40

45

His Cys Pro Asn Cys Glu Lys Thr His Gly Lys Ser Thr Leu Lys Lys
 50 55 60

Lys Arg Thr Trp His Lys His Gly Pro Gly Gln Ala Pro Asp Val Lys
 65 70 75 80

Pro Val Gln Asn Gly Ser Gln Leu Phe Ile Lys Glu Leu Arg Ser Arg
 85 90 95

Thr Phe Pro Ser Ala Glu Asp Val Val Ala Arg Val Pro Gly Ser Gln
 100 105 110

Leu Thr Leu Gly Tyr Met Glu Glu His Gly Phe Thr Glu Pro Ile Leu
 115 120 125

Val Pro Lys Lys Asp Gly Leu Gly Leu Ala Val Pro Ala Pro Thr Phe
 130 135 140

Tyr Val Ser Asp Val Glu Asn Tyr Val Gly Pro Glu Arg Ser Val Asp
 145 150 155 160

Val Thr Asp Val Thr Lys Gln Lys Asp Cys Lys Met Lys Leu Lys Glu
 165 170 175

Phe Val Asp Tyr Tyr Tyr Ser Thr Asn Arg Lys Arg Val Leu Asn Val
 180 185 190

Thr Asn Leu Glu Phe Ser Asp Thr Arg Met Ser Ser Phe Val Glu Pro
 195 200 205

Pro Asp Ile Val Lys Lys Leu Ser Trp Val Glu Asn Tyr Trp Pro Asp
 210 215 220

Asp Ala Leu Leu Ala Lys Pro Lys Val Thr Lys Tyr Cys Leu Ile Cys
 225 230 235 240

Val Lys Asp Ser Tyr Thr Asp Phe His Ile Asp Ser Gly Gly Ala Ser
 245 250 255

Ala Trp Tyr His Val Leu Lys Gly Glu Lys Thr Phe Tyr Leu Ile Arg
 260 265 270

Pro Ala Ser Ala Asn Ile Ser Leu Tyr Glu Arg Trp Arg Ser Ala Ser
 275 280 285

Asn His Ser Glu Met Phe Phe Ala Asp Gln Val Asp Lys Cys Tyr Lys
 290 295 300

Cys Ile Val Lys Gln Gly Gln Thr Leu Phe Ile Pro Ser Gly Trp Ile

305 310 315 320

Tyr Ala Thr Leu Thr Pro Val Asp Cys Leu Ala Phe Ala Gly His Phe
325 330 335

Leu His Ser Leu Ser Val Glu Met Gln Met Arg Ala Tyr Glu Val Glu
340 345 350

Arg Arg Leu Lys Leu Gly Ser Leu Thr Gln Phe Pro Asn Phe Glu Thr
355 360 365

Ala Cys Trp Tyr Met Gly Lys His Leu Leu Glu Ala Phe Lys Gly Ser
370 375 380

His Lys Ser Gly Lys Gln Leu Pro Pro His Leu Val Gln Gly Ala Lys
385 390 395 400

Ile Leu Asn Gly Ala Phe Arg Ser Trp Thr Lys Lys Gln Ala Leu Ala
405 410 415

Glu His Glu Asp Glu Leu Pro Glu His Phe Lys Pro Ser Gln Leu Ile
420 425 430

Lys Asp Leu Ala Lys Glu Ile Arg Leu Ser Glu Asn Ala Ser Lys Ala
435 440 445

Val Arg Pro Glu Val Asn Thr Val Ala Ser Ser Asp Glu Val Cys Asp
450 455 460

Gly Asp Arg Glu Lys Glu Glu Pro Pro Ser Pro Ile Glu Ala Thr Pro
465 470 475 480

Pro Gln Ser Leu Leu Glu Lys Val Ser Lys Lys Lys Thr Pro Lys Thr
485 490 495

Val Lys Met Pro Lys Pro Ser Lys Ile Pro Lys Pro Pro Lys Pro Pro
500 505 510

Lys Pro Pro Arg Pro Pro Lys Thr Leu Lys Leu Lys Asp Gly Gly Lys
515 520 525

Lys Lys Gly Lys Lys Ser Arg Glu Ser Ala Ser Pro Thr Ile Pro Asn
530 535 540

Leu Asp Leu Leu Glu Ala His Thr Lys Glu Ala Leu Thr Lys Met Glu
545 550 555 560

Pro Pro Lys Lys Gly Lys Ala Thr Lys Ser Val Leu Ser Val Pro Asn
565 570 575

Lys Asp Val Val His Met Gln Asn Asp Val Glu Arg Leu Glu Ile Arg

580

585

590

Glu Gln Thr Lys Ser Lys Ser Glu Ala Lys Trp Lys Tyr Lys Asn Ser
595 600 605

Lys Pro Asp Ser Leu Leu Lys Met Glu Glu Glu Gln Lys Leu Glu Lys
610 615 620

Ser Pro Leu Ala Gly Asn Lys Asp Asn Lys Phe Ser Phe Ser Phe Ser
625 630 635 640

Asn Lys Lys Leu Leu Gly Ser Lys Ala Leu Arg Pro Pro Thr Ser Pro
645 650 655

Gly Val Phe Gly Ala Leu Gln Asn Phe Lys Glu Asp Lys Pro Lys Pro
660 665 670

Val Arg Asp Glu Tyr Glu Tyr Val Ser Asp Asp Gly Glu Leu Lys Ile
675 680 685

Asp Glu Phe Pro Ile Arg Arg Lys Lys Asn Ala Pro Lys Arg Asp Leu
690 695 700

Ser Phe Leu Leu Asp Lys Lys Ala Val Leu Pro Thr Pro Val Thr Lys
705 710 715 720

Pro Lys Leu Asp Ser Ala Ala Tyr Lys Ser Asp Asp Ser Ser Asp Glu
725 730 735

Gly Ser Leu His Ile Asp Thr Asp Thr Lys Pro Gly Arg Asn Ala Arg
740 745 750

Val Lys Lys Glu Ser Gly Ser Ser Ala Ala Gly Ile Leu Asp Leu Leu
755 760 765

Gln Ala Ser Glu Glu Val Gly Ala Leu Glu Tyr Asn Pro Ser Ser Gln
770 775 780

Pro Pro Ala Ser Pro Ser Thr Gln Glu Ala Ile Gln Gly Met Leu Ser
785 790 795 800

Met Ala Asn Leu Gln Ala Ser Asp Ser Cys Leu Gln Thr Thr Trp Gly
805 810 815

Ala Gly Gln Ala Lys Gly Ser Ser Leu Ala Ala His Gly Ala Arg Lys
820 825 830

Asn Gly Gly Gly Ser Gly Lys Ser Ala Gly Lys Arg Leu Leu Lys Arg
835 840 845

Ala Ala Lys Asn Ser Val Asp Leu Asp Asp Tyr Glu Glu Glu Gln Asp

850

855

860

His Leu Asp Ala Cys Phe Lys Asp Ser Asp Tyr Val Tyr Pro Ser Leu
 865 870 875 880

Glu Ser Asp Glu Asp Asn Pro Ile Phe Lys Ser Arg Ser Lys Lys Arg
 885 890 895

Lys Gly Ser Asp Asp Ala Pro Tyr Ser Pro Thr Ala Arg Val Gly Pro
 900 905 910

Ser Val Pro Arg Gln Asp Arg Pro Val Arg Glu Gly Thr Arg Val Ala
 915 920 925

Ser Ile Glu Thr Gly Leu Ala Ala Ala Ala Ala Lys Leu Ser Gln Gln
 930 935 940

Glu Glu Gln Lys Ser Lys Lys Lys Lys Ser Ala Lys Arg Lys Leu Thr
 945 950 955 960

Pro Asn Thr Thr Ser Pro Ser Thr Ser Thr Ser Ile Ser Ala Gly Thr
 965 970 975

Thr Ser Thr Ser Thr Thr Pro Ala Ser Thr Thr Pro Ala Ser Thr Thr
 980 985 990

Pro Ala Ser Thr Ser Thr Ala Ser Ser Gln Ala Ser Gln Glu Gly Ser
 995 1000 1005

Ser Pro Glu Pro Pro Pro Glu Ser His Ser Ser Ser Leu Ala Asp
 1010 1015 1020

His Glu Tyr Thr Ala Ala Gly Thr Phe Thr Gly Ala Gln Ala Gly
 1025 1030 1035

Arg Thr Ser Gln Pro Met Ala Pro Gly Val Phe Leu Thr Gln Arg
 1040 1045 1050

Arg Pro Ser Ala Ser Ser Pro Asn Asn Asn Thr Ala Ala Lys Gly
 1055 1060 1065

Lys Arg Thr Lys Lys Gly Met Ala Thr Ala Lys Gln Arg Leu Gly
 1070 1075 1080

Lys Ile Leu Lys Ile His Arg Asn Gly Lys Leu Leu Leu
 1085 1090 1095

<210> 658
 <211> 1012
 <212> PRT
 <213> Homo sapiens

<400> 658

Met Thr Lys His Pro Pro Asn Arg Arg Gly Ile Ser Phe Glu Val Gly
 1 5 10 15
 Ala Gln Leu Glu Ala Arg Asp Arg Leu Lys Asn Trp Tyr Pro Ala His
 20 25 30
 Ile Glu Asp Ile Asp Tyr Glu Glu Gly Lys Val Leu Ile His Phe Lys
 35 40 45
 Arg Trp Asn His Arg Tyr Asp Glu Trp Phe Cys Trp Asp Ser Pro Tyr
 50 55 60
 Leu Arg Pro Leu Glu Lys Ile Gln Leu Arg Lys Glu Gly Leu His Glu
 65 70 75 80
 Glu Asp Gly Ser Ser Glu Phe Gln Ile Asn Glu Gln Val Leu Ala Cys
 85 90 95
 Trp Ser Asp Cys Arg Phe Tyr Pro Ala Lys Val Thr Ala Val Asn Lys
 100 105 110
 Asp Gly Thr Tyr Thr Val Lys Phe Tyr Asp Gly Val Val Gln Thr Val
 115 120 125
 Lys His Ile His Val Lys Ala Phe Ser Lys Asp Gln Asn Ile Val Gly
 130 135 140
 Asn Ala Arg Pro Lys Glu Thr Asp His Lys Ser Leu Ser Ser Ser Pro
 145 150 155 160
 Asp Lys Arg Glu Lys Phe Lys Glu Gln Arg Lys Ala Thr Val Asn Val
 165 170 175
 Lys Lys Asp Lys Glu Asp Lys Pro Leu Lys Thr Glu Lys Arg Pro Lys
 180 185 190
 Gln Pro Asp Lys Glu Gly Lys Leu Ile Cys Ser Glu Lys Gly Lys Val
 195 200 205
 Ser Glu Lys Ser Leu Pro Lys Asn Glu Lys Glu Asp Lys Glu Asn Ile
 210 215 220
 Ser Glu Asn Asp Arg Glu Tyr Ser Gly Asp Ala Gln Val Asp Lys Lys
 225 230 235 240
 Pro Glu Asn Asp Ile Val Lys Ser Pro Gln Glu Asn Leu Arg Glu Pro
 245 250 255
 Lys Arg Lys Arg Gly Arg Pro Pro Ser Ile Ala Pro Thr Ala Val Asp
 260 265 270

Ser Asn Ser Gln Thr Leu Gln Pro Ile Thr Leu Glu Leu Arg Arg Arg
 275 280 285
 Lys Ile Ser Lys Gly Cys Glu Val Pro Leu Lys Arg Pro Arg Leu Asp
 290 295 300
 Lys Asn Ser Ser Gln Glu Lys Ser Lys Asn Tyr Ser Glu Asn Thr Asp
 305 310 315 320
 Lys Asp Leu Ser Arg Arg Arg Ser Ser Arg Leu Ser Thr Asn Gly Thr
 325 330 335
 His Glu Ile Leu Asp Pro Asp Leu Val Val Ser Asp Leu Val Asp Thr
 340 345 350
 Asp Pro Leu Gln Asp Thr Leu Ser Ser Thr Lys Glu Ser Glu Glu Gly
 355 360 365
 Gln Leu Lys Ser Ala Leu Glu Ala Gly Gln Val Ser Ser Ala Leu Thr
 370 375 380
 Cys His Ser Phe Gly Asp Gly Ser Gly Ala Ala Gly Leu Glu Leu Asn
 385 390 395 400
 Cys Pro Ser Met Gly Glu Asn Thr Met Lys Thr Glu Pro Thr Ser Pro
 405 410 415
 Leu Val Glu Leu Gln Glu Ile Ser Thr Val Glu Val Thr Asn Thr Phe
 420 425 430
 Lys Lys Thr Asp Asp Phe Gly Ser Ser Asn Ala Pro Ala Val Asp Leu
 435 440 445
 Asp His Lys Phe Arg Cys Lys Val Val Asp Cys Leu Lys Phe Phe Arg
 450 455 460
 Lys Ala Lys Leu Leu His Tyr His Met Lys Tyr Phe His Gly Met Glu
 465 470 475 480
 Lys Ser Leu Glu Pro Glu Glu Ser Pro Gly Lys Arg His Val Gln Thr
 485 490 495
 Arg Gly Pro Ser Ala Ser Asp Lys Pro Ser Gln Glu Thr Leu Thr Arg
 500 505 510
 Lys Arg Val Ser Ala Ser Ser Pro Thr Thr Lys Asp Lys Glu Lys Asn
 515 520 525
 Lys Glu Lys Lys Phe Lys Glu Phe Val Arg Val Lys Pro Lys Lys Lys
 530 535 540

Lys Lys Lys Lys Lys Lys Thr Lys Pro Glu Cys Pro Cys Ser Glu Glu
 545 550 555 560
 Ile Ser Asp Thr Ser Gln Glu Pro Ser Pro Pro Lys Ala Phe Ala Val
 565 570 575
 Thr Arg Cys Gly Ser Ser His Lys Pro Gly Val His Met Ser Pro Gln
 580 585 590
 Leu His Gly Pro Glu Ser Gly His His Lys Gly Lys Val Lys Ala Leu
 595 600 605
 Glu Glu Asp Asn Leu Ser Glu Ser Ser Ser Glu Ser Phe Leu Trp Ser
 610 615 620
 Asp Asp Glu Tyr Gly Gln Asp Val Asp Val Thr Thr Asn Pro Asp Glu
 625 630 635 640
 Glu Leu Asp Gly Asp Asp Arg Tyr Asp Phe Glu Val Val Arg Cys Ile
 645 650 655
 Cys Glu Val Gln Glu Glu Asn Asp Phe Met Ile Gln Cys Glu Glu Cys
 660 665 670
 Gln Cys Trp Gln His Gly Val Cys Met Gly Leu Leu Glu Glu Asn Val
 675 680 685
 Pro Glu Lys Tyr Thr Cys Tyr Val Cys Gln Asp Pro Pro Gly Gln Arg
 690 695 700
 Pro Gly Phe Lys Tyr Trp Tyr Asp Lys Glu Trp Leu Ser Arg Gly His
 705 710 715 720
 Met His Gly Leu Ala Phe Leu Glu Glu Asn Tyr Ser His Gln Asn Ala
 725 730 735
 Lys Lys Ile Val Ala Thr His Gln Leu Leu Gly Asp Val Gln Arg Val
 740 745 750
 Ile Glu Val Leu His Gly Leu Gln Leu Lys Met Ser Ile Leu Gln Ser
 755 760 765
 Arg Glu His Pro Asp Leu Pro Leu Trp Cys Gln Pro Trp Lys Gln His
 770 775 780
 Ser Gly Glu Gly Arg Ser His Phe Arg Asn Ile Pro Val Thr Asp Thr
 785 790 795 800
 Arg Ser Lys Glu Glu Ala Pro Ser Tyr Arg Thr Leu Asn Gly Ala Val
 805 810 815

Glu Lys Pro Arg Pro Leu Ala Leu Pro Leu Pro Arg Ser Val Glu Glu
 820 825 830

Ser Tyr Ile Thr Ser Glu His Cys Tyr Gln Lys Pro Arg Ala Tyr Tyr
 835 840 845

Pro Ala Val Glu Gln Lys Leu Val Val Glu Thr Arg Gly Ser Ala Leu
 850 855 860

Asp Asp Ala Val Asn Pro Leu His Glu Asn Gly Asp Asp Ser Leu Ser
 865 870 875 880

Pro Arg Leu Gly Trp Pro Leu Asp Gln Asp Arg Ser Lys Gly Asp Ser
 885 890 895

Asp Pro Lys Pro Gly Ser Pro Lys Val Lys Glu Tyr Val Ser Lys Lys
 900 905 910

Ala Leu Pro Glu Glu Ala Pro Ala Arg Lys Leu Leu Asp Arg Gly Gly
 915 920 925

Glu Gly Leu Leu Ser Ser Gln His Gln Trp Gln Phe Asn Leu Leu Thr
 930 935 940

His Val Glu Ser Leu Gln Asp Glu Val Thr His Arg Met Asp Ser Ile
 945 950 955 960

Glu Lys Glu Leu Asp Val Leu Glu Ser Trp Leu Asp Tyr Thr Gly Glu
 965 970 975

Leu Glu Pro Pro Glu Pro Leu Ala Arg Leu Pro Gln Leu Lys His Cys
 980 985 990

Ile Lys Gln Leu Leu Met Asp Leu Gly Lys Val Gln Gln Ile Ala Leu
 995 1000 1005

Cys Cys Ser Thr
 1010

<210> 659
 <211> 1017
 <212> PRT
 <213> Homo sapiens

<400> 659

Met Ser Lys Lys Pro Pro Asn Arg Pro Gly Ile Thr Phe Glu Ile Gly
 1 5 10 15

Ala Arg Leu Glu Ala Leu Asp Tyr Leu Gln Lys Trp Tyr Pro Ser Arg
 20 25 30

Ile Glu Lys Ile Asp Tyr Glu Glu Gly Lys Met Leu Val His Phe Glu
 35 40 45
 Arg Trp Ser His Arg Tyr Asp Glu Trp Ile Tyr Trp Asp Ser Asn Arg
 50 55 60
 Leu Arg Pro Leu Glu Arg Pro Ala Leu Arg Lys Glu Gly Leu Lys Asp
 65 70 75 80
 Glu Glu Asp Phe Phe Asp Phe Lys Ala Gly Glu Glu Val Leu Ala Arg
 85 90 95
 Trp Thr Asp Cys Arg Tyr Tyr Pro Ala Lys Ile Glu Ala Ile Asn Lys
 100 105 110
 Glu Gly Thr Phe Thr Val Gln Phe Tyr Asp Gly Val Ile Arg Cys Leu
 115 120 125
 Lys Arg Met His Ile Lys Ala Met Pro Glu Asp Ala Lys Gly Gln Val
 130 135 140
 Lys Ser Gln His Pro Leu Ser Trp Cys Cys Pro Ile Asp Pro Ala Gly
 145 150 155 160
 Ser Cys Asn Gln Ser Met Gly Ser Glu Asp Trp Ile Ala Leu Val Lys
 165 170 175
 Ala Ala Ala Ala Ala Ala Ala Lys Asn Lys Thr Gly Ser Lys Pro Arg
 180 185 190
 Thr Ser Ala Asn Ser Asn Lys Asp Lys Asp Lys Asp Glu Arg Lys Trp
 195 200 205
 Phe Lys Val Pro Ser Lys Lys Glu Glu Thr Ser Thr Cys Ile Ala Thr
 210 215 220
 Pro Asp Val Glu Lys Lys Glu Asp Leu Pro Thr Ser Ser Glu Thr Phe
 225 230 235 240
 Gly Leu His Val Glu Asn Val Pro Lys Met Val Phe Pro Gln Pro Glu
 245 250 255
 Ser Thr Leu Ser Asn Lys Arg Lys Asn Asn Gln Gly Asn Ser Phe Gln
 260 265 270
 Ala Lys Arg Ala Arg Leu Asn Lys Ile Thr Gly Leu Leu Ala Ser Lys
 275 280 285
 Ala Val Gly Val Asp Gly Ala Glu Lys Lys Glu Asp Tyr Asn Glu Thr
 290 295 300

Ala Pro Met Leu Glu Gln Ala Ile Ser Pro Lys Pro Gln Ser Gln Lys
 305 310 315 320
 Lys Asn Glu Ala Asp Ile Ser Ser Ser Ala Asn Thr Gln Lys Pro Ala
 325 330 335
 Leu Leu Ser Ser Thr Leu Ser Ser Gly Lys Ala Arg Ser Lys Lys Cys
 340 345 350
 Lys His Glu Ser Gly Asp Ser Ser Gly Cys Ile Lys Pro Pro Lys Ser
 355 360 365
 Pro Leu Ser Pro Glu Leu Ile Gln Val Glu Asp Leu Thr Leu Val Ser
 370 375 380
 Gln Leu Ser Ser Ser Val Ile Asn Lys Thr Ser Pro Pro Gln Pro Val
 385 390 395 400
 Asn Pro Pro Arg Pro Phe Lys His Ser Glu Arg Arg Arg Arg Ser Gln
 405 410 415
 Arg Leu Ala Thr Leu Pro Met Pro Asp Asp Ser Val Glu Lys Val Ser
 420 425 430
 Ser Pro Ser Pro Ala Thr Asp Gly Lys Val Phe Ser Ile Ser Ser Gln
 435 440 445
 Asn Gln Gln Glu Ser Ser Val Pro Glu Val Pro Asp Val Ala His Leu
 450 455 460
 Pro Leu Glu Lys Leu Gly Pro Cys Leu Pro Leu Asp Leu Ser Arg Gly
 465 470 475 480
 Ser Glu Val Thr Ala Pro Val Ala Ser Asp Ser Ser Tyr Arg Asn Glu
 485 490 495
 Cys Pro Arg Ala Glu Lys Glu Asp Thr Gln Met Leu Pro Asn Pro Ser
 500 505 510
 Ser Lys Ala Ile Ala Asp Gly Arg Gly Ala Pro Ala Ala Ala Gly Ile
 515 520 525
 Ser Lys Thr Glu Lys Lys Val Lys Leu Glu Asp Lys Ser Ser Thr Ala
 530 535 540
 Phe Gly Lys Arg Lys Glu Lys Asp Lys Glu Arg Arg Glu Lys Arg Asp
 545 550 555 560
 Lys Asp His Tyr Arg Pro Lys Gln Lys Lys Lys Lys Lys Lys Lys
 565 570 575

Lys Ser Lys Gln His Asp Tyr Ser Asp Tyr Glu Asp Ser Ser Leu Glu
 580 585 590
 Phe Leu Glu Arg Cys Ser Ser Pro Leu Thr Arg Ser Ser Gly Ser Ser
 595 600 605
 Leu Ala Ser Arg Ser Met Phe Thr Glu Lys Thr Thr Thr Tyr Gln Tyr
 610 615 620
 Pro Arg Ala Ile Leu Ser Val Asp Leu Ser Gly Glu Asn Leu Ser Asp
 625 630 635 640
 Val Asp Phe Leu Asp Asp Ser Ser Thr Glu Ser Leu Leu Leu Ser Gly
 645 650 655
 Asp Glu Tyr Asn Gln Asp Phe Asp Ser Thr Asn Phe Glu Glu Ser Gln
 660 665 670
 Asp Glu Asp Asp Ala Leu Asn Glu Ile Val Arg Cys Ile Cys Glu Met
 675 680 685
 Asp Glu Glu Asn Gly Phe Met Ile Gln Cys Glu Glu Cys Leu Cys Trp
 690 695 700
 Gln His Ser Val Cys Met Gly Leu Leu Glu Glu Ser Ile Pro Glu Gln
 705 710 715 720
 Tyr Ile Cys Tyr Ile Cys Arg Asp Pro Pro Gly Gln Arg Trp Ser Ala
 725 730 735
 Lys Tyr Arg Tyr Asp Lys Glu Trp Leu Asn Asn Gly Arg Met Cys Gly
 740 745 750
 Leu Ser Phe Phe Lys Glu Asn Tyr Ser His Leu Asn Ala Lys Lys Ile
 755 760 765
 Val Ser Thr His His Leu Leu Ala Asp Val Tyr Gly Val Thr Glu Val
 770 775 780
 Leu His Gly Leu Gln Leu Lys Ile Gly Ile Leu Lys Asn Lys His His
 785 790 795 800
 Pro Asp Leu His Leu Trp Ala Cys Ser Gly Lys Arg Lys Asp Gln Asp
 805 810 815
 Gln Ile Ile Ala Gly Val Glu Lys Lys Ile Ala Gln Asp Thr Val Asn
 820 825 830
 Arg Glu Glu Lys Lys Tyr Val Gln Asn His Lys Glu Pro Pro Arg Leu
 835 840 845

Pro Leu Lys Met Glu Gly Thr Tyr Ile Thr Ser Glu His Ser Tyr Gln
 850 855 860

Lys Pro Gln Ser Phe Gly Gln Asp Cys Lys Ser Leu Ala Asp Pro Gly
 865 870 875 880

Ser Ser Asp Asp Asp Val Ser Ser Leu Glu Glu Glu Gln Glu Phe
 885 890 895

His Met Arg Ser Lys Asn Ser Leu Gln Tyr Ser Ala Lys Glu His Gly
 900 905 910

Met Pro Glu Lys Asn Pro Ala Glu Gly Asn Thr Val Phe Val Tyr Asn
 915 920 925

Asp Lys Lys Gly Thr Glu Asp Pro Gly Asp Ser His Leu Gln Trp Gln
 930 935 940

Leu Asn Leu Leu Thr His Ile Glu Asn Val Gln Asn Glu Val Thr Ser
 945 950 955 960

Arg Met Asp Leu Ile Glu Lys Glu Val Asp Val Leu Glu Ser Trp Leu
 965 970 975

Asp Phe Thr Gly Glu Leu Glu Pro Pro Asp Pro Leu Ala Arg Leu Pro
 980 985 990

Gln Leu Lys Arg His Ile Lys Gln Leu Leu Ile Asp Met Gly Lys Val
 995 1000 1005

Gln Gln Ile Ala Thr Leu Cys Ser Val
 1010 1015

<210> 660
 <211> 2039
 <212> PRT
 <213> Homo sapiens
 <400> 660

Met Asp Ile Val Asp Thr Phe Asn His Leu Ile Pro Thr Glu His Leu
 1 5 10 15

Asp Asp Ala Leu Phe Leu Gly Ser Asn Leu Glu Asn Glu Val Cys Glu
 20 25 30

Asp Phe Ser Ala Ser Gln Asn Val Leu Glu Asp Ser Leu Lys Asn Met
 35 40 45

Leu Ser Asp Lys Asp Pro Met Leu Gly Ser Ala Ser Asn Gln Phe Cys
 50 55 60

Leu Pro Val Leu Asp Ser Asn Asp Pro Asn Phe Gln Met Pro Cys Ser
 65 70 75 80
 Thr Val Val Gly Leu Asp Asp Ile Met Asp Glu Gly Val Val Lys Glu
 85 90 95
 Ser Gly Asn Asp Thr Ile Asp Glu Glu Glu Leu Ile Leu Pro Asn Arg
 100 105 110
 Asn Leu Arg Asp Lys Val Glu Glu Asn Ser Val Arg Ser Pro Arg Lys
 115 120 125
 Ser Pro Arg Leu Met Ala Gln Glu Gln Val Arg Ser Leu Arg Gln Ser
 130 135 140
 Thr Ile Ala Lys Arg Ser Asn Ala Ala Pro Leu Ser Asn Thr Lys Lys
 145 150 155 160
 Ala Ser Gly Lys Thr Val Ser Thr Ala Lys Ala Gly Val Lys Gln Pro
 165 170 175
 Glu Arg Ser Gln Val Lys Glu Glu Val Cys Met Ser Leu Lys Pro Glu
 180 185 190
 Tyr His Lys Glu Asn Arg Arg Cys Ser Arg Asn Ser Gly Gln Ile Glu
 195 200 205
 Val Val Pro Glu Val Ser Val Ser Ser Ser His Ser Ser Val Ser Ser
 210 215 220
 Cys Leu Glu Met Lys Asp Glu Asp Gly Leu Asp Ser Lys His Lys Cys
 225 230 235 240
 Asn Asn Pro Gly Glu Ile Asp Val Pro Ser His Glu Leu Asn Cys Ser
 245 250 255
 Leu Leu Ser Glu Thr Cys Val Thr Ile Gly Glu Lys Lys Asn Glu Ala
 260 265 270
 Leu Met Glu Cys Lys Ala Lys Pro Val Gly Ser Pro Leu Phe Lys Phe
 275 280 285
 Ser Asp Lys Glu Glu His Glu Gln Asn Asp Ser Ile Ser Gly Lys Thr
 290 295 300
 Gly Glu Thr Val Val Glu Glu Met Ile Ala Thr Arg Lys Val Glu Gln
 305 310 315 320
 Asp Ser Lys Glu Thr Val Lys Leu Ser His Glu Asp Asp His Ile Leu
 325 330 335

Glu Asp Ala Gly Ser Ser Asp Ile Ser Ser Asp Ala Ala Cys Thr Asn
 340 345 350
 Pro Asn Lys Thr Glu Asn Ser Leu Val Gly Leu Pro Ser Cys Val Asp
 355 360 365
 Glu Val Thr Glu Cys Asn Leu Glu Leu Lys Asp Thr Met Gly Ile Ala
 370 375 380
 Asp Lys Thr Glu Asn Thr Leu Glu Arg Asn Lys Ile Glu Pro Leu Gly
 385 390 395 400
 Tyr Cys Glu Asp Ala Glu Ser Asn Arg Gln Leu Glu Ser Thr Glu Phe
 405 410 415
 Asn Lys Ser Asn Leu Glu Val Val Asp Thr Ser Thr Phe Gly Pro Glu
 420 425 430
 Ser Asn Ile Leu Glu Asn Ala Ile Cys Asp Val Pro Asp Gln Asn Ser
 435 440 445
 Lys Gln Leu Asn Ala Ile Glu Ser Thr Lys Ile Glu Ser His Glu Thr
 450 455 460
 Ala Asn Leu Gln Asp Asp Arg Asn Ser Gln Ser Ser Ser Val Ser Tyr
 465 470 475 480
 Leu Glu Ser Lys Ser Val Lys Ser Lys His Thr Lys Pro Val Ile His
 485 490 495
 Ser Lys Gln Asn Met Thr Thr Asp Ala Pro Lys Lys Ile Val Ala Ala
 500 505 510
 Lys Tyr Glu Val Ile His Ser Lys Thr Lys Val Asn Val Lys Ser Val
 515 520 525
 Lys Arg Asn Thr Asp Val Pro Glu Ser Gln Gln Asn Phe His Arg Pro
 530 535 540
 Val Lys Val Arg Lys Lys Gln Ile Asp Lys Glu Pro Lys Ile Gln Ser
 545 550 555 560
 Cys Asn Ser Gly Val Lys Ser Val Lys Asn Gln Ala His Ser Val Leu
 565 570 575
 Lys Lys Thr Leu Gln Asp Gln Thr Leu Val Gln Ile Phe Lys Pro Leu
 580 585 590
 Thr His Ser Leu Ser Asp Lys Ser His Ala His Pro Gly Cys Leu Lys
 595 600 605

Glu Pro His His Pro Ala Gln Thr Gly His Val Ser His Ser Ser Gln
 610 615 620
 Lys Gln Cys His Lys Pro Gln Gln Gln Ala Pro Ala Met Lys Thr Asn
 625 630 635
 Ser His Val Lys Glu Glu Leu Glu His Pro Gly Val Glu His Phe Lys
 645 650 655
 Glu Glu Asp Lys Leu Lys Leu Lys Lys Pro Glu Lys Asn Leu Gln Pro
 660 665 670
 Arg Gln Arg Arg Ser Ser Lys Ser Phe Ser Leu Asp Glu Pro Pro Leu
 675 680 685
 Phe Ile Pro Asp Asn Ile Ala Thr Ile Arg Arg Glu Gly Ser Asp His
 690 695 700
 Ser Ser Ser Phe Glu Ser Lys Tyr Met Trp Thr Pro Ser Lys Gln Cys
 705 710 715 720
 Gly Phe Cys Lys Lys Pro His Gly Asn Arg Phe Met Val Gly Cys Gly
 725 730 735
 Arg Cys Asp Asp Trp Phe His Gly Asp Cys Val Gly Leu Ser Leu Ser
 740 745 750
 Gln Ala Gln Gln Met Gly Glu Glu Asp Lys Glu Tyr Val Cys Val Lys
 755 760 765
 Cys Cys Ala Glu Glu Asp Lys Lys Thr Glu Ile Leu Asp Pro Asp Thr
 770 775 780
 Leu Glu Asn Gln Ala Thr Val Glu Phe His Ser Gly Asp Lys Thr Met
 785 790 795 800
 Glu Cys Glu Lys Leu Gly Leu Ser Lys His Thr Thr Asn Asp Arg Thr
 805 810 815
 Lys Tyr Ile Asp Asp Thr Val Lys His Lys Val Lys Ile Leu Lys Arg
 820 825 830
 Glu Ser Gly Glu Gly Arg Asn Ser Ser Asp Cys Arg Asp Asn Glu Ile
 835 840 845
 Lys Lys Trp Gln Leu Ala Pro Leu Arg Lys Met Gly Gln Pro Val Leu
 850 855 860
 Pro Arg Arg Ser Ser Glu Glu Lys Ser Glu Lys Ile Pro Lys Glu Ser
 865 870 875 880

Thr Thr Val Thr Cys Thr Gly Glu Lys Ala Ser Lys Pro Gly Thr His
 885 890 895

Glu Lys Gln Glu Met Lys Lys Lys Lys Val Glu Lys Gly Val Leu Asn
 900 905 910

Val His Pro Ala Ala Ser Ala Ser Lys Pro Ser Ala Asp Gln Ile Arg
 915 920 925

Gln Ser Val Arg His Ser Leu Lys Asp Ile Leu Met Lys Arg Leu Thr
 930 935 940

Asp Ser Asn Leu Lys Val Pro Glu Glu Lys Ala Ala Lys Val Ala Thr
 945 950 955 960

Lys Ile Glu Lys Glu Leu Phe Ser Phe Phe Arg Asp Thr Asp Ala Lys
 965 970 975

Tyr Lys Asn Lys Tyr Arg Ser Leu Met Phe Asn Leu Lys Asp Pro Lys
 980 985 990

Asn Asn Ile Leu Phe Lys Lys Val Leu Lys Gly Glu Val Thr Pro Asp
 995 1000 1005

His Leu Ile Arg Met Ser Pro Glu Glu Leu Ala Ser Lys Glu Leu
 1010 1015 1020

Ala Ala Trp Arg Arg Arg Glu Asn Arg His Thr Ile Glu Met Ile
 1025 1030 1035

Glu Lys Glu Gln Arg Glu Val Glu Arg Arg Pro Ile Thr Lys Ile
 1040 1045 1050

Thr His Lys Gly Glu Ile Glu Ile Glu Ser Asp Ala Pro Met Lys
 1055 1060 1065

Glu Gln Glu Ala Ala Met Glu Ile Gln Glu Pro Ala Ala Asn Lys
 1070 1075 1080

Ser Leu Glu Lys Pro Glu Gly Ser Glu Lys Gln Lys Glu Glu Val
 1085 1090 1095

Asp Ser Met Ser Lys Asp Thr Thr Ser Gln His Arg Gln His Leu
 1100 1105 1110

Phe Asp Leu Asn Cys Lys Ile Cys Ile Gly Arg Met Ala Pro Pro
 1115 1120 1125

Val Asp Asp Leu Ser Pro Lys Lys Val Lys Val Val Val Gly Val
 1130 1135 1140

Ala	Arg	Lys	His	Ser	Asp	Asn	Glu	Ala	Glu	Ser	Ile	Ala	Asp	Ala
	1145					1150					1155			
Leu	Ser	Ser	Thr	Ser	Asn	Ile	Leu	Ala	Ser	Glu	Phe	Phe	Glu	Glu
	1160					1165					1170			
Glu	Lys	Gln	Glu	Ser	Pro	Lys	Ser	Thr	Phe	Ser	Pro	Ala	Pro	Arg
	1175					1180					1185			
Pro	Glu	Met	Pro	Gly	Thr	Val	Glu	Val	Glu	Ser	Thr	Phe	Leu	Ala
	1190					1195					1200			
Arg	Leu	Asn	Phe	Ile	Trp	Lys	Gly	Phe	Ile	Asn	Met	Pro	Ser	Val
	1205					1210					1215			
Ala	Lys	Phe	Val	Thr	Lys	Ala	Tyr	Pro	Val	Ser	Gly	Ser	Pro	Glu
	1220					1225					1230			
Tyr	Leu	Thr	Glu	Asp	Leu	Pro	Asp	Ser	Ile	Gln	Val	Gly	Gly	Arg
	1235					1240					1245			
Ile	Ser	Pro	Gln	Thr	Val	Trp	Asp	Tyr	Val	Glu	Lys	Ile	Lys	Ala
	1250					1255					1260			
Ser	Gly	Thr	Lys	Glu	Ile	Cys	Val	Val	Arg	Phe	Thr	Pro	Val	Thr
	1265					1270					1275			
Glu	Glu	Asp	Gln	Ile	Ser	Tyr	Thr	Leu	Leu	Phe	Ala	Tyr	Phe	Ser
	1280					1285					1290			
Ser	Arg	Lys	Arg	Tyr	Gly	Val	Ala	Ala	Asn	Asn	Met	Lys	Gln	Val
	1295					1300					1305			
Lys	Asp	Met	Tyr	Leu	Ile	Pro	Leu	Gly	Ala	Thr	Asp	Lys	Ile	Pro
	1310					1315					1320			
His	Pro	Leu	Val	Pro	Phe	Asp	Gly	Pro	Gly	Leu	Glu	Leu	His	Arg
	1325					1330					1335			
Pro	Asn	Leu	Leu	Leu	Gly	Leu	Ile	Ile	Arg	Gln	Lys	Leu	Lys	Arg
	1340					1345					1350			
Gln	His	Ser	Ala	Cys	Ala	Ser	Thr	Ser	His	Ile	Ala	Glu	Thr	Pro
	1355					1360					1365			
Glu	Ser	Ala	Pro	Pro	Ile	Ala	Leu	Pro	Pro	Asp	Lys	Lys	Ser	Lys
	1370					1375					1380			
Ile	Glu	Val	Ser	Thr	Glu	Glu	Ala	Pro	Glu	Glu	Glu	Asn	Asp	Phe
	1385					1390					1395			

Phe	Asn	Ser	Phe	Thr	Thr	Val	Leu	His	Lys	Gln	Arg	Asn	Lys	Pro
	1400					1405					1410			
Gln	Gln	Asn	Leu	Gln	Glu	Asp	Leu	Pro	Thr	Ala	Val	Glu	Pro	Leu
	1415					1420					1425			
Met	Glu	Val	Thr	Lys	Gln	Glu	Pro	Pro	Lys	Pro	Leu	Arg	Phe	Leu
	1430					1435					1440			
Pro	Gly	Val	Leu	Ile	Gly	Trp	Glu	Asn	Gln	Pro	Thr	Thr	Leu	Glu
	1445					1450					1455			
Leu	Ala	Asn	Lys	Pro	Leu	Pro	Val	Asp	Asp	Ile	Leu	Gln	Ser	Leu
	1460					1465					1470			
Leu	Gly	Thr	Thr	Gly	Gln	Val	Tyr	Asp	Gln	Ala	Gln	Ser	Val	Met
	1475					1480					1485			
Glu	Gln	Asn	Thr	Val	Lys	Glu	Ile	Pro	Phe	Leu	Asn	Glu	Gln	Thr
	1490					1495					1500			
Asn	Ser	Lys	Ile	Glu	Lys	Thr	Asp	Asn	Val	Glu	Val	Thr	Asp	Gly
	1505					1510					1515			
Glu	Asn	Lys	Glu	Ile	Lys	Val	Lys	Val	Asp	Asn	Ile	Ser	Glu	Ser
	1520					1525					1530			
Thr	Asp	Lys	Ser	Ala	Glu	Ile	Glu	Thr	Ser	Val	Val	Gly	Ser	Ser
	1535					1540					1545			
Ser	Ile	Ser	Ala	Gly	Ser	Leu	Thr	Ser	Leu	Ser	Leu	Arg	Gly	Lys
	1550					1555					1560			
Pro	Pro	Asp	Val	Ser	Thr	Glu	Ala	Phe	Leu	Thr	Asn	Leu	Ser	Ile
	1565					1570					1575			
Gln	Ser	Lys	Gln	Glu	Glu	Thr	Val	Glu	Ser	Lys	Glu	Lys	Thr	Leu
	1580					1585					1590			
Lys	Arg	Gln	Leu	Gln	Glu	Asp	Gln	Glu	Asn	Asn	Leu	Gln	Asp	Asn
	1595					1600					1605			
Gln	Thr	Ser	Asn	Ser	Ser	Pro	Cys	Arg	Ser	Asn	Val	Gly	Lys	Gly
	1610					1615					1620			
Asn	Ile	Asp	Gly	Asn	Val	Ser	Cys	Ser	Glu	Asn	Leu	Val	Ala	Asn
	1625					1630					1635			
Thr	Ala	Arg	Ser	Pro	Gln	Phe	Ile	Asn	Leu	Lys	Arg	Asp	Pro	Arg
	1640					1645					1650			

Gln Ala Ala Gly Arg Ser Gln Pro Val Thr Thr Ser Glu Ser Lys
 1655 1660 1665
 Asp Gly Asp Ser Cys Arg Asn Gly Glu Lys His Met Leu Pro Gly
 1670 1675 1680
 Leu Ser His Asn Lys Glu His Leu Thr Glu Gln Ile Asn Val Glu
 1685 1690 1695
 Glu Lys Leu Cys Ser Ala Glu Lys Asn Ser Cys Val Gln Gln Ser
 1700 1705 1710
 Asp Asn Leu Lys Val Ala Gln Asn Ser Pro Ser Val Glu Asn Ile
 1715 1720 1725
 Gln Thr Ser Gln Ala Glu Gln Ala Lys Pro Leu Gln Glu Asp Ile
 1730 1735 1740
 Leu Met Gln Asn Ile Glu Thr Val His Pro Phe Arg Arg Gly Ser
 1745 1750 1755
 Ala Val Ala Thr Ser His Phe Glu Val Gly Asn Thr Cys Pro Ser
 1760 1765 1770
 Glu Phe Pro Ser Lys Ser Ile Thr Phe Thr Ser Arg Ser Thr Ser
 1775 1780 1785
 Pro Arg Thr Ser Thr Asn Phe Ser Pro Met Arg Pro Gln Gln Pro
 1790 1795 1800
 Asn Leu Gln His Leu Lys Ser Ser Pro Pro Gly Phe Pro Phe Pro
 1805 1810 1815
 Gly Pro Pro Asn Phe Pro Pro Gln Ser Met Phe Gly Phe Pro Pro
 1820 1825 1830
 His Leu Pro Pro Pro Leu Leu Pro Pro Pro Gly Phe Gly Phe Ala
 1835 1840 1845
 Gln Asn Pro Met Val Pro Trp Pro Pro Val Val His Leu Pro Gly
 1850 1855 1860
 Gln Pro Gln Arg Met Met Gly Pro Leu Ser Gln Ala Ser Arg Tyr
 1865 1870 1875
 Ile Gly Pro Gln Asn Phe Tyr Gln Val Lys Asp Ile Arg Arg Pro
 1880 1885 1890
 Glu Arg Arg His Ser Asp Pro Trp Gly Arg Gln Asp Gln Gln Gln
 1895 1900 1905

Leu Asp Arg Pro Phe Asn Arg Gly Lys Gly Asp Arg Gln Arg Phe
 1910 1915 1920

Tyr Ser Asp Ser His His Leu Lys Arg Glu Arg His Glu Lys Glu
 1925 1930 1935

Trp Glu Gln Glu Ser Glu Arg His Arg Arg Arg Asp Arg Ser Gln
 1940 1945 1950

Asp Lys Asp Arg Asp Arg Lys Ser Arg Glu Glu Gly His Lys Asp
 1955 1960 1965

Lys Glu Arg Ala Arg Leu Ser His Gly Asp Arg Gly Thr Asp Gly
 1970 1975 1980

Lys Ala Ser Arg Asp Ser Arg Asn Val Asp Lys Lys Pro Asp Lys
 1985 1990 1995

Pro Lys Ser Glu Asp Tyr Glu Lys Asp Lys Glu Arg Glu Lys Ser
 2000 2005 2010

Lys His Arg Glu Gly Glu Lys Asp Arg Asp Arg Tyr His Lys Asp
 2015 2020 2025

Arg Asp His Thr Asp Arg Thr Lys Ser Lys Arg
 2030 2035

<210> 661
 <211> 651
 <212> PRT
 <213> Homo sapiens

<400> 661

Met Ala Asp Ser Ala Glu Leu Lys Gln Met Val Met Ser Leu Arg Val
 1 5 10 15

Ser Glu Leu Gln Val Leu Leu Gly Tyr Ala Gly Arg Asn Lys His Gly
 20 25 30

Arg Lys His Glu Leu Leu Thr Lys Ala Leu His Leu Leu Lys Ala Gly
 35 40 45

Cys Ser Pro Ala Val Gln Met Lys Ile Lys Glu Leu Tyr Arg Arg Arg
 50 55 60

Phe Pro Gln Lys Ile Met Thr Pro Ala Asp Leu Ser Ile Pro Asn Val
 65 70 75 80

His Ser Ser Pro Met Pro Ala Thr Leu Ser Pro Ser Thr Ile Pro Gln
 85 90 95

Leu Thr Tyr Asp Gly His Pro Ala Ser Ser Pro Leu Leu Pro Val Ser
 Page 1079

100

105

110

Leu Leu Gly Pro Lys His Glu Leu Glu Leu Pro His Leu Thr Ser Ala
 115 120 125

Leu His Pro Val His Pro Asp Ile Lys Leu Gln Lys Leu Pro Phe Tyr
 130 135 140

Asp Leu Leu Asp Glu Leu Ile Lys Pro Thr Ser Leu Ala Ser Asp Asn
 145 150 155 160

Ser Gln Arg Phe Arg Glu Thr Cys Phe Ala Phe Ala Leu Thr Pro Gln
 165 170 175

Gln Val Gln Gln Ile Ser Ser Ser Met Asp Ile Ser Gly Thr Lys Cys
 180 185 190

Asp Phe Thr Val Gln Val Gln Leu Arg Phe Cys Leu Ser Glu Thr Ser
 195 200 205

Cys Pro Gln Glu Asp His Phe Pro Pro Asn Leu Cys Val Lys Val Asn
 210 215 220

Thr Lys Pro Cys Ser Leu Pro Gly Tyr Leu Pro Pro Thr Lys Asn Gly
 225 230 235 240

Val Glu Pro Lys Arg Pro Ser Arg Pro Ile Asn Ile Thr Ser Leu Val
 245 250 255

Arg Leu Ser Thr Thr Val Pro Asn Thr Ile Val Val Ser Trp Thr Ala
 260 265 270

Glu Ile Gly Arg Asn Tyr Ser Met Ala Val Tyr Leu Val Lys Gln Leu
 275 280 285

Ser Ser Thr Val Leu Leu Gln Arg Leu Arg Ala Lys Gly Ile Arg Asn
 290 295 300

Pro Asp His Ser Arg Ala Leu Ile Lys Glu Lys Leu Thr Ala Asp Pro
 305 310 315 320

Asp Ser Glu Ile Ala Thr Thr Ser Leu Arg Val Ser Leu Leu Cys Pro
 325 330 335

Leu Gly Lys Met Arg Leu Thr Ile Pro Cys Arg Ala Leu Thr Cys Ser
 340 345 350

His Leu Gln Cys Phe Asp Ala Thr Leu Tyr Ile Gln Met Asn Glu Lys
 355 360 365

Lys Pro Thr Trp Val Cys Pro Val Cys Asp Lys Lys Ala Pro Tyr Glu

370

375

380

His Leu Ile Ile Asp Gly Leu Phe Met Glu Ile Leu Lys Tyr Cys Thr
 385 390 395 400

Asp Cys Asp Glu Ile Gln Phe Lys Glu Asp Gly Thr Trp Ala Pro Met
 405 410 415

Arg Ser Lys Lys Glu Val Gln Glu Val Ser Ala Ser Tyr Asn Gly Val
 420 425 430

Asp Gly Cys Leu Ser Ser Thr Leu Glu His Gln Val Ala Ser His His
 435 440 445

Gln Ser Ser Asn Lys Asn Lys Lys Val Glu Val Ile Asp Leu Thr Ile
 450 455 460

Asp Ser Ser Ser Asp Glu Glu Glu Glu Glu Pro Ser Ala Lys Arg Thr
 465 470 475 480

Cys Pro Ser Leu Ser Pro Thr Ser Pro Leu Asn Asn Lys Gly Ile Leu
 485 490 495

Ser Leu Pro His Gln Ala Ser Pro Val Ser Arg Thr Pro Ser Leu Pro
 500 505 510

Ala Val Asp Thr Ser Tyr Ile Asn Thr Ser Leu Ile Gln Asp Tyr Arg
 515 520 525

His Pro Phe His Met Thr Pro Met Pro Tyr Asp Leu Gln Gly Leu Asp
 530 535 540

Phe Phe Pro Phe Leu Ser Gly Asp Asn Gln His Tyr Asn Thr Ser Leu
 545 550 555 560

Leu Ala Ala Ala Ala Ala Ala Val Ser Asp Asp Gln Asp Leu Leu His
 565 570 575

Ser Ser Arg Phe Phe Pro Tyr Thr Ser Ser Gln Met Phe Leu Asp Gln
 580 585 590

Leu Ser Ala Gly Gly Ser Thr Ser Leu Pro Thr Thr Asn Gly Ser Ser
 595 600 605

Ser Gly Ser Asn Ser Ser Leu Val Ser Ser Asn Ser Leu Arg Glu Ser
 610 615 620

His Ser His Thr Val Thr Asn Arg Ser Ser Thr Asp Thr Ala Ser Ile
 625 630 635 640

Phe Gly Ile Ile Pro Asp Ile Ile Ser Leu Asp

<210> 662
<211> 263
<212> PRT
<213> Homo sapiens

<400> 662

Met Leu Leu Ala Trp Val Gln Ala Phe Leu Val Ser Asn Met Leu Leu
1 5 10 15

Ala Glu Ala Tyr Gly Ser Gly Gly Cys Phe Trp Asp Asn Gly His Leu
20 25 30

Tyr Arg Glu Asp Gln Thr Ser Pro Ala Pro Gly Leu Arg Cys Leu Asn
35 40 45

Trp Leu Asp Ala Gln Ser Gly Leu Ala Ser Ala Pro Val Ser Gly Ala
50 55 60

Gly Asn His Ser Tyr Cys Arg Asn Pro Asp Glu Asp Pro Arg Gly Pro
65 70 75 80

Trp Cys Tyr Val Ser Gly Glu Ala Gly Val Pro Glu Lys Arg Pro Cys
85 90 95

Glu Asp Leu Arg Cys Pro Glu Thr Thr Ser Gln Ala Leu Pro Ala Phe
100 105 110

Thr Thr Glu Ile Gln Glu Ala Ser Glu Gly Pro Gly Ala Asp Glu Val
115 120 125

Gln Val Phe Ala Pro Ala Asn Ala Leu Pro Ala Arg Ser Glu Ala Ala
130 135 140

Ala Val Gln Pro Val Ile Gly Ile Ser Gln Arg Val Arg Met Asn Ser
145 150 155 160

Lys Glu Lys Lys Asp Leu Gly Thr Leu Gly Tyr Val Leu Gly Ile Thr
165 170 175

Met Met Val Ile Ile Ile Ala Ile Gly Ala Gly Ile Ile Leu Gly Tyr
180 185 190

Ser Tyr Lys Arg Gly Lys Asp Leu Lys Glu Gln His Asp Gln Lys Val
195 200 205

Cys Glu Arg Glu Met Gln Arg Ile Thr Leu Pro Leu Ser Ala Phe Thr
210 215 220

Asn Pro Thr Cys Glu Ile Val Asp Glu Lys Thr Val Val Val His Thr
225 230 235 240

Ser Gln Thr Pro Val Asp Pro Gln Glu Gly Thr Thr Pro Leu Met Gly
245 250 255

Gln Ala Gly Thr Pro Gly Ala
260

<210> 663
<211> 581
<212> PRT
<213> Homo sapiens

<400> 663

Met Ala Val Arg Gln Ala Leu Gly Arg Gly Leu Gln Leu Gly Arg Ala
1 5 10 15

Leu Leu Leu Arg Phe Thr Gly Lys Pro Gly Arg Ala Tyr Gly Leu Gly
20 25 30

Arg Pro Gly Pro Ala Ala Gly Cys Val Arg Gly Glu Arg Pro Gly Trp
35 40 45

Ala Ala Gly Pro Gly Ala Glu Pro Arg Arg Val Gly Leu Gly Leu Pro
50 55 60

Asn Arg Leu Arg Phe Phe Arg Gln Ser Val Ala Gly Leu Ala Ala Arg
65 70 75 80

Leu Gln Arg Gln Phe Val Val Arg Ala Trp Gly Cys Ala Gly Pro Cys
85 90 95

Gly Arg Ala Val Phe Leu Ala Phe Gly Leu Gly Leu Gly Leu Ile Glu
100 105 110

Glu Lys Gln Ala Glu Ser Arg Arg Ala Val Ser Ala Cys Gln Glu Ile
115 120 125

Gln Ala Ile Phe Thr Gln Lys Ser Lys Pro Gly Pro Asp Pro Leu Asp
130 135 140

Thr Arg Arg Leu Gln Gly Phe Arg Leu Glu Glu Tyr Leu Ile Gly Gln
145 150 155 160

Ser Ile Gly Lys Gly Cys Ser Ala Ala Val Tyr Glu Ala Thr Met Pro
165 170 175

Thr Leu Pro Gln Asn Leu Glu Val Thr Lys Ser Thr Gly Leu Leu Pro
180 185 190

Gly Arg Gly Pro Gly Thr Ser Ala Pro Gly Glu Gly Gln Glu Arg Ala
195 200 205

Pro Gly Ala Pro Ala Phe Pro Leu Ala Ile Lys Met Met Trp Asn Ile
 210 215 220
 Ser Ala Gly Ser Ser Ser Glu Ala Ile Leu Asn Thr Met Ser Gln Glu
 225 230 235 240
 Leu Val Pro Ala Ser Arg Val Ala Leu Ala Gly Glu Tyr Gly Ala Val
 245 250 255
 Thr Tyr Arg Lys Ser Lys Arg Gly Pro Lys Gln Leu Ala Pro His Pro
 260 265 270
 Asn Ile Ile Arg Val Leu Arg Ala Phe Thr Ser Ser Val Pro Leu Leu
 275 280 285
 Pro Gly Ala Leu Val Asp Tyr Pro Asp Val Leu Pro Ser Arg Leu His
 290 295 300
 Pro Glu Gly Leu Gly His Gly Arg Thr Leu Phe Leu Val Met Lys Asn
 305 310 315 320
 Tyr Pro Cys Thr Leu Arg Gln Tyr Leu Cys Val Asn Thr Pro Ser Pro
 325 330 335
 Arg Leu Ala Ala Met Met Leu Leu Gln Leu Leu Glu Gly Val Asp His
 340 345 350
 Leu Val Gln Gln Gly Ile Ala His Arg Asp Leu Lys Ser Asp Asn Ile
 355 360 365
 Leu Val Glu Leu Asp Pro Asp Gly Cys Pro Trp Leu Val Ile Ala Asp
 370 375 380
 Phe Gly Cys Cys Leu Ala Asp Glu Ser Ile Gly Leu Gln Leu Pro Phe
 385 390 395 400
 Ser Ser Trp Tyr Val Asp Arg Gly Gly Asn Gly Cys Leu Met Ala Pro
 405 410 415
 Glu Val Ser Thr Ala Arg Pro Gly Pro Arg Ala Val Ile Asp Tyr Ser
 420 425 430
 Lys Ala Asp Ala Trp Ala Val Gly Ala Ile Ala Tyr Glu Ile Phe Gly
 435 440 445
 Leu Val Asn Pro Phe Tyr Gly Gln Gly Lys Ala His Leu Glu Ser Arg
 450 455 460
 Ser Tyr Gln Glu Ala Gln Leu Pro Ala Leu Pro Glu Ser Val Pro Pro
 465 470 475 480

Asp Val Arg Gln Leu Val Arg Ala Leu Leu Gln Arg Glu Ala Ser Lys
 485 490 495

Arg Pro Ser Ala Arg Val Ala Ala Asn Val Leu His Leu Ser Leu Trp
 500 505 510

Gly Glu His Ile Leu Ala Leu Lys Asn Leu Lys Leu Asp Lys Met Val
 515 520 525

Gly Trp Leu Leu Gln Gln Ser Ala Ala Thr Leu Leu Ala Asn Arg Leu
 530 535 540

Thr Glu Lys Cys Cys Val Glu Thr Lys Met Lys Met Leu Phe Leu Ala
 545 550 555 560

Asn Leu Glu Cys Glu Thr Leu Cys Gln Ala Ala Leu Leu Leu Cys Ser
 565 570 575

Trp Arg Ala Ala Leu
 580

<210> 664
 <211> 375
 <212> PRT
 <213> Homo sapiens

<400> 664

Met Met Cys Gln Ser Glu Ala Arg Gln Gly Pro Glu Leu Arg Ala Ala
 1 5 10 15

Lys Trp Leu His Phe Pro Gln Leu Ala Leu Arg Arg Arg Leu Gly Gln
 20 25 30

Leu Ser Cys Met Ser Arg Pro Ala Leu Lys Leu Arg Ser Trp Pro Leu
 35 40 45

Thr Val Leu Tyr Tyr Leu Leu Pro Phe Gly Ala Leu Arg Pro Leu Ser
 50 55 60

Arg Val Gly Trp Arg Pro Val Ser Arg Val Ala Leu Tyr Lys Ser Val
 65 70 75 80

Pro Thr Arg Leu Leu Ser Arg Ala Trp Gly Arg Leu Asn Gln Val Glu
 85 90 95

Leu Pro His Trp Leu Arg Arg Pro Val Tyr Ser Leu Tyr Ile Trp Thr
 100 105 110

Phe Gly Val Asn Met Lys Glu Ala Ala Val Glu Asp Leu His His Tyr
 115 120 125

Arg Asn Leu Ser Glu Phe Phe Arg Arg Lys Leu Lys Pro Gln Ala Arg
 130 135 140

Pro Val Cys Gly Leu His Ser Val Ile Ser Pro Ser Asp Gly Arg Ile
 145 150 155 160

Leu Asn Phe Gly Gln Val Lys Asn Cys Glu Val Glu Gln Val Lys Gly
 165 170 175

Val Thr Tyr Ser Leu Glu Ser Phe Leu Gly Pro Arg Met Cys Thr Glu
 180 185 190

Asp Leu Pro Phe Pro Pro Ala Ala Ser Cys Asp Ser Phe Lys Asn Gln
 195 200 205

Leu Val Thr Arg Glu Gly Asn Glu Leu Tyr His Cys Val Ile Tyr Leu
 210 215 220

Ala Pro Gly Asp Tyr His Cys Phe His Ser Pro Thr Asp Trp Thr Val
 225 230 235 240

Ser His Arg Arg His Phe Pro Gly Ser Leu Met Ser Val Asn Pro Gly
 245 250 255

Met Ala Arg Trp Ile Lys Glu Leu Phe Cys His Asn Glu Arg Val Val
 260 265 270

Leu Thr Gly Asp Trp Lys His Gly Phe Phe Ser Leu Thr Ala Val Gly
 275 280 285

Ala Thr Asn Val Gly Ser Ile Arg Ile Tyr Phe Asp Arg Asp Leu His
 290 295 300

Thr Asn Ser Pro Arg His Ser Lys Gly Ser Tyr Asn Asp Phe Ser Phe
 305 310 315 320

Val Thr His Thr Asn Arg Glu Gly Val Pro Met Arg Lys Gly Glu His
 325 330 335

Leu Gly Glu Phe Asn Leu Gly Ser Thr Ile Val Leu Ile Phe Glu Ala
 340 345 350

Pro Lys Asp Phe Asn Phe Gln Leu Lys Thr Gly Gln Lys Ile Arg Phe
 355 360 365

Gly Glu Ala Leu Gly Ser Leu
 370 375

<210> 665
 <211> 270
 <212> PRT
 <213> Homo sapiens

<400> 665

Met Val Leu Leu Lys Glu Tyr Arg Val Ile Leu Pro Val Ser Val Asp
1 5 10 15

Glu Tyr Gln Val Gly Gln Leu Tyr Ser Val Ala Glu Ala Ser Lys Asn
20 25 30

Glu Thr Gly Gly Gly Glu Gly Val Glu Val Leu Val Asn Glu Pro Tyr
35 40 45

Glu Lys Asp Gly Glu Lys Gly Gln Tyr Thr His Lys Ile Tyr His Leu
50 55 60

Gln Ser Lys Val Pro Thr Phe Val Arg Met Leu Ala Pro Glu Gly Ala
65 70 75 80

Leu Asn Ile His Glu Lys Ala Trp Asn Ala Tyr Pro Tyr Cys Arg Thr
85 90 95

Val Ile Thr Asn Glu Tyr Met Lys Glu Asp Phe Leu Ile Lys Ile Glu
100 105 110

Thr Trp His Lys Pro Asp Leu Gly Thr Gln Glu Asn Val His Lys Leu
115 120 125

Glu Pro Glu Ala Trp Lys His Val Glu Ala Val Tyr Ile Asp Ile Ala
130 135 140

Asp Arg Ser Gln Val Leu Ser Lys Asp Tyr Lys Ala Glu Glu Asp Pro
145 150 155 160

Ala Lys Phe Lys Ser Ile Lys Thr Gly Arg Gly Pro Leu Gly Pro Asn
165 170 175

Trp Lys Gln Glu Leu Val Asn Gln Lys Asp Cys Pro Tyr Met Cys Ala
180 185 190

Tyr Lys Leu Val Thr Val Lys Phe Lys Trp Trp Gly Leu Gln Asn Lys
195 200 205

Val Glu Asn Phe Ile His Lys Gln Glu Arg Arg Leu Phe Thr Asn Phe
210 215 220

His Arg Gln Leu Phe Cys Trp Leu Asp Lys Trp Val Asp Leu Thr Met
225 230 235 240

Asp Asp Ile Arg Arg Met Glu Glu Glu Thr Lys Arg Gln Leu Asp Glu
245 250 255

Met Arg Gln Lys Asp Pro Val Lys Gly Met Thr Ala Asp Asp

260

265

270

<210> 666
 <211> 409
 <212> PRT
 <213> Homo sapiens

<400> 666

Met Met Lys Lys Asn Asn Ser Ala Lys Arg Gly Pro Gln Asp Gly Asn
 1 5 10 15

Gln Gln Pro Ala Pro Pro Glu Lys Val Gly Trp Val Arg Lys Phe Cys
 20 25 30

Gly Lys Gly Ile Phe Arg Glu Ile Trp Lys Asn Arg Tyr Val Val Leu
 35 40 45

Lys Gly Asp Gln Leu Tyr Ile Ser Glu Lys Glu Val Lys Asp Glu Lys
 50 55 60

Asn Ile Gln Glu Val Phe Asp Leu Ser Asp Tyr Glu Lys Cys Glu Glu
 65 70 75 80

Leu Arg Lys Ser Lys Ser Arg Ser Lys Lys Asn His Ser Lys Phe Thr
 85 90 95

Leu Ala His Ser Lys Gln Pro Gly Asn Thr Ala Pro Asn Leu Ile Phe
 100 105 110

Leu Ala Val Ser Pro Glu Glu Lys Glu Ser Trp Ile Asn Ala Leu Asn
 115 120 125

Ser Ala Ile Thr Arg Ala Lys Asn Arg Ile Leu Asp Glu Val Thr Val
 130 135 140

Glu Glu Asp Ser Tyr Leu Ala His Pro Thr Arg Asp Arg Ala Lys Ile
 145 150 155 160

Gln His Ser Arg Arg Pro Pro Thr Arg Gly His Leu Met Ala Val Ala
 165 170 175

Ser Thr Ser Thr Ser Asp Gly Met Leu Thr Leu Asp Leu Ile Gln Glu
 180 185 190

Glu Asp Pro Ser Pro Glu Glu Pro Thr Ser Cys Ala Glu Ser Phe Arg
 195 200 205

Val Asp Leu Asp Lys Ser Val Ala Gln Leu Ala Gly Ser Arg Arg Arg
 210 215 220

Ala Asp Ser Asp Arg Ile Gln Pro Ser Ala Asp Arg Ala Ser Ser Leu
 225 230 235 240

Ser Arg Pro Trp Glu Lys Thr Asp Lys Gly Ala Thr Tyr Thr Pro Gln
245 250 255

Ala Pro Lys Lys Leu Thr Pro Thr Glu Lys Gly Arg Cys Ala Ser Leu
260 265 270

Glu Glu Ile Leu Ser Gln Arg Asp Ala Ala Ser Ala Arg Thr Leu Gln
275 280 285

Leu Arg Ala Glu Glu Pro Pro Thr Pro Ala Leu Pro Asn Pro Gly Gln
290 295 300

Leu Ser Arg Ile Gln Asp Leu Val Ala Arg Lys Leu Glu Glu Thr Gln
305 310 315 320

Glu Leu Leu Ala Glu Val Gln Gly Leu Gly Asp Gly Lys Arg Lys Ala
325 330 335

Lys Asp Pro Pro Arg Ser Pro Pro Asp Ser Glu Ser Glu Gln Leu Leu
340 345 350

Leu Glu Thr Glu Arg Leu Leu Gly Glu Ala Ser Ser Asn Trp Ser Gln
355 360 365

Ala Lys Arg Val Leu Gln Glu Val Arg Glu Leu Arg Asp Leu Tyr Arg
370 375 380

Gln Met Asp Leu Gln Thr Pro Asp Ser His Leu Arg Gln Thr Thr Pro
385 390 395 400

His Ser Gln Tyr Arg Lys Ser Leu Met
405

<210> 667
<211> 490
<212> PRT
<213> Homo sapiens

<400> 667

Met Glu Glu Glu Gly Val Lys Glu Ala Gly Glu Lys Pro Arg Gly Ala
1 5 10 15

Gln Met Val Asp Lys Ala Gly Trp Ile Lys Lys Ser Ser Gly Gly Leu
20 25 30

Leu Gly Phe Trp Lys Asp Arg Tyr Leu Leu Leu Cys Gln Ala Gln Leu
35 40 45

Leu Val Tyr Glu Asn Glu Asp Asp Gln Lys Cys Val Glu Thr Val Glu
50 55 60

Leu Gly Ser Tyr Glu Lys Cys Gln Asp Leu Arg Ala Leu Leu Lys Arg
 65 70 75 80
 Lys His Arg Phe Ile Leu Leu Arg Ser Pro Gly Asn Lys Val Ser Asp
 85 90 95
 Ile Lys Phe Gln Ala Pro Thr Gly Glu Glu Lys Glu Ser Trp Ile Lys
 100 105 110
 Ala Leu Asn Glu Gly Ile Asn Arg Gly Lys Asn Lys Ala Phe Asp Glu
 115 120 125
 Val Lys Val Asp Lys Ser Cys Ala Leu Glu His Val Thr Arg Asp Arg
 130 135 140
 Val Arg Gly Gly Gln Arg Arg Arg Pro Pro Thr Arg Val His Leu Lys
 145 150 155 160
 Glu Val Ala Ser Ala Ala Ser Asp Gly Leu Leu Arg Leu Asp Leu Asp
 165 170 175
 Val Pro Asp Ser Gly Pro Pro Val Phe Ala Pro Ser Asn His Val Ser
 180 185 190
 Glu Ala Gln Pro Arg Glu Thr Pro Arg Pro Leu Met Pro Pro Thr Lys
 195 200 205
 Pro Phe Leu Ala Pro Glu Thr Thr Ser Pro Gly Asp Arg Val Glu Thr
 210 215 220
 Pro Val Gly Glu Arg Ala Pro Thr Pro Val Ser Ala Ser Ser Glu Val
 225 230 235 240
 Ser Pro Glu Ser Gln Glu Asp Ser Glu Thr Pro Ala Glu Glu Asp Ser
 245 250 255
 Gly Ser Glu Gln Pro Pro Asn Ser Val Leu Pro Asp Lys Leu Lys Val
 260 265 270
 Ser Trp Glu Asn Pro Ser Pro Gln Glu Ala Pro Ala Ala Glu Ser Ala
 275 280 285
 Glu Pro Ser Gln Ala Pro Cys Ser Glu Thr Ser Glu Ala Ala Pro Arg
 290 295 300
 Glu Gly Gly Lys Pro Pro Thr Pro Pro Pro Lys Ile Leu Ser Glu Lys
 305 310 315 320
 Leu Lys Ala Ser Met Gly Glu Met Gln Ala Ser Gly Pro Pro Ala Pro
 325 330 335

Gly Thr Val Gln Val Ser Val Asn Gly Met Asp Asp Ser Pro Glu Pro
 340 345 350

Ala Lys Pro Ser Gln Ala Glu Gly Thr Pro Gly Thr Pro Pro Lys Asp
 355 360 365

Ala Thr Thr Ser Thr Ala Leu Pro Pro Trp Asp Leu Pro Pro Gln Phe
 370 375 380

His Pro Arg Cys Ser Ser Leu Gly Asp Leu Leu Gly Glu Gly Pro Arg
 385 390 395 400

His Pro Leu Gln Pro Arg Glu Arg Leu Tyr Arg Ala Gln Leu Glu Val
 405 410 415

Lys Val Ala Ser Glu Gln Thr Glu Lys Leu Leu Asn Lys Val Leu Gly
 420 425 430

Ser Glu Pro Ala Pro Val Ser Ala Glu Thr Leu Leu Ser Gln Ala Val
 435 440 445

Glu Gln Leu Arg Gln Ala Thr Gln Val Leu Gln Glu Met Arg Asp Leu
 450 455 460

Gly Glu Leu Ser Gln Glu Ala Pro Gly Leu Arg Glu Lys Arg Lys Glu
 465 470 475 480

Leu Val Thr Leu Tyr Arg Arg Ser Ala Pro
 485 490

<210> 668
 <211> 1568
 <212> PRT
 <213> Homo sapiens

<400> 668

Met Glu Val Ser Arg Arg Lys Ala Pro Pro Arg Pro Pro Arg Pro Ala
 1 5 10 15

Ala Pro Leu Pro Leu Leu Ala Tyr Leu Leu Ala Leu Ala Ala Pro Gly
 20 25 30

Arg Gly Ala Asp Glu Pro Val Trp Arg Ser Glu Gln Ala Ile Gly Ala
 35 40 45

Ile Ala Ala Ser Gln Glu Asp Gly Val Phe Val Ala Ser Gly Ser Cys
 50 55 60

Leu Asp Gln Leu Asp Tyr Ser Leu Glu His Ser Leu Ser Arg Leu Tyr
 65 70 75 80

Arg Asp Gln Ala Gly Asn Cys Thr Glu Pro Val Ser Leu Ala Pro Pro
85 90 95

Ala Arg Pro Arg Pro Gly Ser Ser Phe Ser Lys Leu Leu Leu Pro Tyr
100 105 110

Arg Glu Gly Ala Ala Gly Leu Gly Gly Leu Leu Leu Thr Gly Trp Thr
115 120 125

Phe Asp Arg Gly Ala Cys Glu Val Arg Pro Leu Gly Asn Leu Ser Arg
130 135 140

Asn Ser Leu Arg Asn Gly Thr Glu Val Val Ser Cys His Pro Gln Gly
145 150 155 160

Ser Thr Ala Gly Val Val Tyr Arg Ala Gly Arg Asn Asn Arg Trp Tyr
165 170 175

Leu Ala Val Ala Ala Thr Tyr Val Leu Pro Glu Pro Glu Thr Ala Ser
180 185 190

Arg Cys Asn Pro Ala Ala Ser Asp His Asp Thr Ala Ile Ala Leu Lys
195 200 205

Asp Thr Glu Gly Arg Ser Leu Ala Thr Gln Glu Leu Gly Arg Leu Lys
210 215 220

Leu Cys Glu Gly Ala Gly Ser Leu His Phe Val Asp Ala Phe Leu Trp
225 230 235 240

Asn Gly Ser Ile Tyr Phe Pro Tyr Tyr Pro Tyr Asn Tyr Thr Ser Gly
245 250 255

Ala Ala Thr Gly Trp Pro Ser Met Ala Arg Ile Ala Gln Ser Thr Glu
260 265 270

Val Leu Phe Gln Gly Gln Ala Ser Leu Asp Cys Gly His Gly His Pro
275 280 285

Asp Gly Arg Arg Leu Leu Leu Ser Ser Ser Leu Val Glu Ala Leu Asp
290 295 300

Val Trp Ala Gly Val Phe Ser Ala Ala Ala Gly Glu Gly Gln Glu Arg
305 310 315 320

Arg Ser Pro Thr Thr Thr Ala Leu Cys Leu Phe Arg Met Ser Glu Ile
325 330 335

Gln Ala Arg Ala Lys Arg Val Ser Trp Asp Phe Lys Thr Ala Glu Ser
340 345 350

His Cys Lys Glu Gly Asp Gln Pro Glu Arg Val Gln Pro Ile Ala Ser
 355 360 365
 Ser Thr Leu Ile His Ser Asp Leu Thr Ser Val Tyr Gly Thr Val Val
 370 375 380
 Met Asn Arg Thr Val Leu Phe Leu Gly Thr Gly Asp Gly Gln Leu Leu
 385 390 395 400
 Lys Val Ile Leu Gly Glu Asn Leu Thr Ser Asn Cys Pro Glu Val Ile
 405 410 415
 Tyr Glu Ile Lys Glu Glu Thr Pro Val Phe Tyr Lys Leu Val Pro Asp
 420 425 430
 Pro Val Lys Asn Ile Tyr Ile Tyr Leu Thr Ala Gly Lys Glu Val Arg
 435 440 445
 Arg Ile Arg Val Ala Asn Cys Asn Lys His Lys Ser Cys Ser Glu Cys
 450 455 460
 Leu Thr Ala Thr Asp Pro His Cys Gly Trp Cys His Ser Leu Gln Arg
 465 470 475 480
 Cys Thr Phe Gln Gly Asp Cys Val His Ser Glu Asn Leu Glu Asn Trp
 485 490 495
 Leu Asp Ile Ser Ser Gly Ala Lys Lys Cys Pro Lys Ile Gln Ile Ile
 500 505 510
 Arg Ser Ser Lys Glu Lys Thr Thr Val Thr Met Val Gly Ser Phe Ser
 515 520 525
 Pro Arg His Ser Lys Cys Met Val Lys Asn Val Asp Ser Ser Arg Glu
 530 535 540
 Leu Cys Gln Asn Lys Ser Gln Pro Asn Arg Thr Cys Thr Cys Ser Ile
 545 550 555 560
 Pro Thr Arg Ala Thr Tyr Lys Asp Val Ser Val Val Asn Val Met Phe
 565 570 575
 Ser Phe Gly Ser Trp Asn Leu Ser Asp Arg Phe Asn Phe Thr Asn Cys
 580 585 590
 Ser Ser Leu Lys Glu Cys Pro Ala Cys Val Glu Thr Gly Cys Ala Trp
 595 600 605
 Cys Lys Ser Ala Arg Arg Cys Ile His Pro Phe Thr Ala Cys Asp Pro
 610 615 620

Ser Asp Tyr Glu Arg Asn Gln Glu Gln Cys Pro Val Ala Val Glu Lys
 625 630 635 640
 Thr Ser Gly Gly Gly Arg Pro Lys Glu Asn Lys Gly Asn Arg Thr Asn
 645 650 655
 Gln Ala Leu Gln Val Phe Tyr Ile Lys Ser Ile Glu Pro Gln Lys Val
 660 665 670
 Ser Thr Leu Gly Lys Ser Asn Val Ile Val Thr Gly Ala Asn Phe Thr
 675 680 685
 Arg Ala Ser Asn Ile Thr Met Ile Leu Lys Gly Thr Ser Thr Cys Asp
 690 695 700
 Lys Asp Val Ile Gln Val Ser His Val Leu Asn Asp Thr His Met Lys
 705 710 715 720
 Phe Ser Leu Pro Ser Ser Arg Lys Glu Met Lys Asp Val Cys Ile Gln
 725 730 735
 Phe Asp Gly Gly Asn Cys Ser Ser Val Gly Ser Leu Ser Tyr Ile Ala
 740 745 750
 Leu Pro His Cys Ser Leu Ile Phe Pro Ala Thr Thr Trp Ile Ser Gly
 755 760 765
 Gly Gln Asn Ile Thr Met Met Gly Arg Asn Phe Asp Val Ile Asp Asn
 770 775 780
 Leu Ile Ile Ser His Glu Leu Lys Gly Asn Ile Asn Val Ser Glu Tyr
 785 790 795 800
 Cys Val Ala Thr Tyr Cys Gly Phe Leu Ala Pro Ser Leu Lys Ser Ser
 805 810 815
 Lys Val Arg Thr Asn Val Thr Val Lys Leu Arg Val Gln Asp Thr Tyr
 820 825 830
 Leu Asp Cys Gly Thr Leu Gln Tyr Arg Glu Asp Pro Arg Phe Thr Gly
 835 840 845
 Tyr Arg Val Glu Ser Glu Val Asp Thr Glu Leu Glu Val Lys Ile Gln
 850 855 860
 Lys Glu Asn Asp Asn Phe Asn Ile Ser Lys Lys Asp Ile Glu Ile Thr
 865 870 875 880
 Leu Phe His Gly Glu Asn Gly Gln Leu Asn Cys Ser Phe Glu Asn Ile
 885 890 895

Thr Arg Asn Gln Asp Leu Thr Thr Ile Leu Cys Lys Ile Lys Gly Ile
 900 905 910

Lys Thr Ala Ser Thr Ile Ala Asn Ser Ser Lys Lys Val Arg Val Lys
 915 920 925

Leu Gly Asn Leu Glu Leu Tyr Val Glu Gln Glu Ser Val Pro Ser Thr
 930 935 940

Trp Tyr Phe Leu Ile Val Leu Pro Val Leu Leu Val Ile Val Ile Phe
 945 950 955 960

Ala Ala Val Gly Val Thr Arg His Lys Ser Lys Glu Leu Ser Arg Lys
 965 970 975

Gln Ser Gln Gln Leu Glu Leu Leu Glu Ser Glu Leu Arg Lys Glu Ile
 980 985 990

Arg Asp Gly Phe Ala Glu Leu Gln Met Asp Lys Leu Asp Val Val Asp
 995 1000 1005

Ser Phe Gly Thr Val Pro Phe Leu Asp Tyr Lys His Phe Ala Leu
 1010 1015 1020

Arg Thr Phe Phe Pro Glu Ser Gly Gly Phe Thr His Ile Phe Thr
 1025 1030 1035

Glu Asp Met His Asn Arg Asp Ala Asn Asp Lys Asn Glu Ser Leu
 1040 1045 1050

Thr Ala Leu Asp Ala Leu Ile Cys Asn Lys Ser Phe Leu Val Thr
 1055 1060 1065

Val Ile His Thr Leu Glu Lys Gln Lys Asn Phe Ser Val Lys Asp
 1070 1075 1080

Arg Cys Leu Phe Ala Ser Phe Leu Thr Ile Ala Leu Gln Thr Lys
 1085 1090 1095

Leu Val Tyr Leu Thr Ser Ile Leu Glu Val Leu Thr Arg Asp Leu
 1100 1105 1110

Met Glu Gln Cys Ser Asn Met Gln Pro Lys Leu Met Leu Arg Arg
 1115 1120 1125

Thr Glu Ser Val Val Glu Lys Leu Leu Thr Asn Trp Met Ser Val
 1130 1135 1140

Cys Leu Ser Gly Phe Leu Arg Glu Thr Val Gly Glu Pro Phe Tyr
 1145 1150 1155

Leu	Leu	Val	Thr	Thr	Leu	Asn	Gln	Lys	Ile	Asn	Lys	Gly	Pro	Val
1160						1165					1170			
Asp	Val	Ile	Thr	Cys	Lys	Ala	Leu	Tyr	Thr	Leu	Asn	Glu	Asp	Trp
1175						1180					1185			
Leu	Leu	Trp	Gln	Val	Pro	Glu	Phe	Ser	Thr	Val	Ala	Leu	Asn	Val
1190						1195					1200			
Val	Phe	Glu	Lys	Ile	Pro	Glu	Asn	Glu	Ser	Ala	Asp	Val	Cys	Arg
1205						1210					1215			
Asn	Ile	Ser	Val	Asn	Val	Leu	Asp	Cys	Asp	Thr	Ile	Gly	Gln	Ala
1220						1225					1230			
Lys	Glu	Lys	Ile	Phe	Gln	Ala	Phe	Leu	Ser	Lys	Asn	Gly	Ser	Pro
1235						1240					1245			
Tyr	Gly	Leu	Gln	Leu	Asn	Glu	Ile	Gly	Leu	Glu	Leu	Gln	Met	Gly
1250						1255					1260			
Thr	Arg	Gln	Lys	Glu	Leu	Leu	Asp	Ile	Asp	Ser	Ser	Ser	Val	Ile
1265						1270					1275			
Leu	Glu	Asp	Gly	Ile	Thr	Lys	Leu	Asn	Thr	Ile	Gly	His	Tyr	Glu
1280						1285					1290			
Ile	Ser	Asn	Gly	Ser	Thr	Ile	Lys	Val	Phe	Lys	Lys	Ile	Ala	Asn
1295						1300					1305			
Phe	Thr	Ser	Asp	Val	Glu	Tyr	Ser	Asp	Asp	His	Cys	His	Leu	Ile
1310						1315					1320			
Leu	Pro	Asp	Ser	Glu	Ala	Phe	Gln	Asp	Val	Gln	Gly	Lys	Arg	His
1325						1330					1335			
Arg	Gly	Lys	His	Lys	Phe	Lys	Val	Lys	Glu	Met	Tyr	Leu	Thr	Lys
1340						1345					1350			
Leu	Leu	Ser	Thr	Lys	Val	Ala	Ile	His	Ser	Val	Leu	Glu	Lys	Leu
1355						1360					1365			
Phe	Arg	Ser	Ile	Trp	Ser	Leu	Pro	Asn	Ser	Arg	Ala	Pro	Phe	Ala
1370						1375					1380			
Ile	Lys	Tyr	Phe	Phe	Asp	Phe	Leu	Asp	Ala	Gln	Ala	Glu	Asn	Lys
1385						1390					1395			
Lys	Ile	Thr	Asp	Pro	Asp	Val	Val	His	Ile	Trp	Lys	Thr	Asn	Ser
1400						1405					1410			

Leu Pro Leu Arg Phe Trp Val Asn Ile Leu Lys Asn Pro Gln Phe
 1415 1420 1425

Val Phe Asp Ile Lys Lys Thr Pro His Ile Asp Gly Cys Leu Ser
 1430 1435 1440

Val Ile Ala Gln Ala Phe Met Asp Ala Phe Ser Leu Thr Glu Gln
 1445 1450 1455

Gln Leu Gly Lys Glu Ala Pro Thr Asn Lys Leu Leu Tyr Ala Lys
 1460 1465 1470

Asp Ile Pro Thr Tyr Lys Glu Glu Val Lys Ser Tyr Tyr Lys Ala
 1475 1480 1485

Ile Arg Asp Leu Pro Pro Leu Ser Ser Ser Glu Met Glu Glu Phe
 1490 1495 1500

Leu Thr Gln Glu Ser Lys Lys His Glu Asn Glu Phe Asn Glu Glu
 1505 1510 1515

Val Ala Leu Thr Glu Ile Tyr Lys Tyr Ile Val Lys Tyr Phe Asp
 1520 1525 1530

Glu Ile Leu Asn Lys Leu Glu Arg Glu Arg Gly Leu Glu Glu Ala
 1535 1540 1545

Gln Lys Gln Leu Leu His Val Lys Val Leu Phe Asp Glu Lys Lys
 1550 1555 1560

Lys Cys Lys Trp Met
 1565

<210> 669
 <211> 335
 <212> PRT
 <213> Homo sapiens

<400> 669

Met Ser Lys Arg Lys Ala Pro Gln Glu Thr Leu Asn Gly Gly Ile Thr
 1 5 10 15

Asp Met Leu Thr Glu Leu Ala Asn Phe Glu Lys Asn Val Ser Gln Ala
 20 25 30

Ile His Lys Tyr Asn Ala Tyr Arg Lys Ala Ala Ser Val Ile Ala Lys
 35 40 45

Tyr Pro His Lys Ile Lys Ser Gly Ala Glu Ala Lys Lys Leu Pro Gly
 50 55 60

Val Gly Thr Lys Ile Ala Glu Lys Ile Asp Glu Phe Leu Ala Thr Gly
 Page 1097

65

70

75

80

Lys Leu Arg Lys Leu Glu Lys Ile Arg Gln Asp Asp Thr Ser Ser Ser
85 90 95

Ile Asn Phe Leu Thr Arg Val Ser Gly Ile Gly Pro Ser Ala Ala Arg
100 105 110

Lys Phe Val Asp Glu Gly Ile Lys Thr Leu Glu Asp Leu Arg Lys Asn
115 120 125

Glu Asp Lys Leu Asn His His Gln Arg Ile Gly Leu Lys Tyr Phe Gly
130 135 140

Asp Phe Glu Lys Arg Ile Pro Arg Glu Glu Met Leu Gln Met Gln Asp
145 150 155 160

Ile Val Leu Asn Glu Val Lys Lys Val Asp Ser Glu Tyr Ile Ala Thr
165 170 175

Val Cys Gly Ser Phe Arg Arg Gly Ala Glu Ser Ser Gly Asp Met Asp
180 185 190

Val Leu Leu Thr His Pro Ser Phe Thr Ser Glu Ser Thr Lys Gln Pro
195 200 205

Lys Leu Leu His Gln Val Val Glu Gln Leu Gln Lys Val His Phe Ile
210 215 220

Thr Asp Thr Leu Ser Lys Gly Glu Thr Lys Phe Met Gly Val Cys Gln
225 230 235 240

Leu Pro Ser Lys Asn Asp Glu Lys Glu Tyr Pro His Arg Arg Ile Asp
245 250 255

Ile Arg Leu Ile Pro Lys Asp Gln Tyr Tyr Cys Gly Val Leu Tyr Phe
260 265 270

Thr Gly Ser Asp Ile Phe Asn Lys Asn Met Arg Ala His Ala Leu Glu
275 280 285

Lys Gly Phe Thr Ile Asn Glu Tyr Thr Ile Arg Pro Leu Gly Val Thr
290 295 300

Gly Val Ala Gly Glu Pro Leu Pro Val Asp Ser Glu Lys Asp Ile Phe
305 310 315 320

Asp Tyr Ile Gln Trp Lys Tyr Arg Glu Pro Lys Asp Arg Ser Glu
325 330 335

<210> 670

<211> 107
 <212> PRT
 <213> Homo sapiens

<400> 670

Met Gly Arg Lys Arg Leu Ile Thr Asp Ser Tyr Pro Val Val Lys Arg
 1 5 10 15

Arg Glu Gly Pro Ala Gly His Ser Lys Gly Glu Leu Ala Pro Glu Leu
 20 25 30

Gly Glu Glu Pro Gln Pro Arg Asp Glu Glu Glu Ala Glu Leu Glu Leu
 35 40 45

Leu Arg Gln Phe Asp Leu Ala Trp Gln Tyr Gly Pro Cys Thr Gly Ile
 50 55 60

Thr Arg Leu Gln Arg Trp Cys Arg Ala Lys Gln Met Gly Leu Glu Pro
 65 70 75 80

Pro Pro Glu Val Trp Gln Val Leu Lys Thr His Pro Gly Asp Pro Arg
 85 90 95

Phe Gln Cys Ser Leu Trp His Leu Tyr Pro Leu
 100 105

<210> 671
 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 671

Met Glu Glu Asp Gln Glu Leu Glu Arg Lys Ile Ser Gly Leu Lys Thr
 1 5 10 15

Ser Met Ala Glu Gly Glu Arg Lys Thr Ala Leu Glu Met Val Gln Ala
 20 25 30

Ala Gly Thr Asp Arg His Cys Val Thr Phe Val Leu His Glu Glu Asp
 35 40 45

His Thr Leu Gly Asn Ser Leu Arg Tyr Met Ile Met Lys Asn Pro Glu
 50 55 60

Val Glu Phe Cys Gly Tyr Thr Thr Thr His Pro Ser Glu Ser Lys Ile
 65 70 75 80

Asn Leu Arg Ile Gln Thr Arg Gly Thr Leu Pro Ala Val Glu Pro Phe
 85 90 95

Gln Arg Gly Leu Asn Glu Leu Met Asn Val Cys Gln His Val Leu Asp
 100 105 110

Lys Phe Glu Ala Ser Ile Lys Asp Tyr Lys Asp Gln Lys Ala Ser Arg
 115 120 125

Asn Glu Ser Thr Phe
 130

<210> 672
 <211> 441
 <212> PRT
 <213> Homo sapiens

<400> 672

Met Glu Gln Pro Gln Glu Glu Ala Pro Glu Val Arg Glu Glu Glu Glu
 1 5 10 15

Lys Glu Glu Val Ala Glu Ala Glu Gly Ala Pro Glu Leu Asn Gly Gly
 20 25 30

Pro Gln His Ala Leu Pro Ser Ser Tyr Thr Asp Leu Ser Arg Ser
 35 40 45

Ser Ser Pro Pro Ser Leu Leu Asp Gln Leu Gln Met Gly Cys Asp Gly
 50 55 60

Ala Ser Cys Gly Ser Leu Asn Met Glu Cys Arg Val Cys Gly Asp Lys
 65 70 75 80

Ala Ser Gly Phe His Tyr Gly Val His Ala Cys Glu Gly Cys Lys Gly
 85 90 95

Phe Phe Arg Arg Thr Ile Arg Met Lys Leu Glu Tyr Glu Lys Cys Glu
 100 105 110

Arg Ser Cys Lys Ile Gln Lys Lys Asn Arg Asn Lys Cys Gln Tyr Cys
 115 120 125

Arg Phe Gln Lys Cys Leu Ala Leu Gly Met Ser His Asn Ala Ile Arg
 130 135 140

Phe Gly Arg Met Pro Glu Ala Glu Lys Arg Lys Leu Val Ala Gly Leu
 145 150 155 160

Thr Ala Asn Glu Gly Ser Gln Tyr Asn Pro Gln Val Ala Asp Leu Lys
 165 170 175

Ala Phe Ser Lys His Ile Tyr Asn Ala Tyr Leu Lys Asn Phe Asn Met
 180 185 190

Thr Lys Lys Lys Ala Arg Ser Ile Leu Thr Gly Lys Ala Ser His Thr
 195 200 205

Ala Pro Phe Val Ile His Asp Ile Glu Thr Leu Trp Gln Ala Glu Lys
 210 215 220

Gly Leu Val Trp Lys Gln Leu Val Asn Gly Leu Pro Pro Tyr Lys Glu
 225 230 235 240

Ile Ser Val His Val Phe Tyr Arg Cys Gln Cys Thr Thr Val Glu Thr
 245 250 255

Val Arg Glu Leu Thr Glu Phe Ala Lys Ser Ile Pro Ser Phe Ser Ser
 260 265 270

Leu Phe Leu Asn Asp Gln Val Thr Leu Leu Lys Tyr Gly Val His Glu
 275 280 285

Ala Ile Phe Ala Met Leu Ala Ser Ile Val Asn Lys Asp Gly Leu Leu
 290 295 300

Val Ala Asn Gly Ser Gly Phe Val Thr Arg Glu Phe Leu Arg Ser Leu
 305 310 315 320

Arg Lys Pro Phe Ser Asp Ile Ile Glu Pro Lys Phe Glu Phe Ala Val
 325 330 335

Lys Phe Asn Ala Leu Glu Leu Asp Asp Ser Asp Leu Ala Leu Phe Ile
 340 345 350

Ala Ala Ile Ile Leu Cys Gly Asp Arg Pro Gly Leu Met Asn Val Pro
 355 360 365

Arg Val Glu Ala Ile Gln Asp Thr Ile Leu Arg Ala Leu Glu Phe His
 370 375 380

Leu Gln Ala Asn His Pro Asp Ala Gln Tyr Leu Phe Pro Lys Leu Leu
 385 390 395 400

Gln Lys Met Ala Asp Leu Arg Gln Leu Val Thr Glu His Ala Gln Met
 405 410 415

Met Gln Arg Ile Lys Lys Thr Glu Thr Glu Thr Ser Leu His Pro Leu
 420 425 430

Leu Gln Glu Ile Tyr Lys Asp Met Tyr
 435 440

<210> 673
 <211> 454
 <212> PRT
 <213> Homo sapiens

<400> 673

Met Ser Ser Gly Ala Pro Gln Lys Ser Ser Pro Met Ala Ser Gly Ala
 Page 1101

1	5							10						15				
Glu	Glu	Thr	Pro 20	Gly	Phe	Leu	Asp	Thr 25	Leu	Leu	Gln	Asp	Phe 30	Pro	Ala			
Leu	Leu	Asn 35	Pro	Glu	Asp	Pro	Leu 40	Pro	Trp	Lys	Ala	Pro 45	Gly	Thr	Val			
Leu	Ser 50	Gln	Glu	Glu	Val	Glu 55	Gly	Glu	Leu	Ala	Glu 60	Leu	Ala	Met	Gly			
Phe 65	Leu	Gly	Ser	Arg	Lys 70	Ala	Pro	Pro	Pro	Leu 75	Ala	Ala	Ala	Leu	Ala 80			
His	Glu	Ala	Val	Ser 85	Gln	Leu	Leu	Gln	Thr 90	Asp	Leu	Ser	Glu	Phe 95	Arg			
Lys	Leu	Pro	Arg 100	Glu	Glu	Glu	Glu	Glu 105	Glu	Glu	Asp	Asp	Asp 110	Glu	Glu			
Glu	Lys	Ala 115	Pro	Val	Thr	Leu	Leu 120	Asp	Ala	Gln	Ser	Leu 125	Ala	Gln	Ser			
Phe	Phe 130	Asn	Arg	Leu	Trp	Glu 135	Val	Ala	Gly	Gln	Trp 140	Gln	Lys	Gln	Val			
Pro 145	Leu	Ala	Ala	Arg	Ala 150	Ser	Gln	Arg	Gln	Trp 155	Leu	Val	Ser	Ile	His 160			
Ala	Ile	Arg	Asn	Thr 165	Arg	Arg	Lys	Met	Glu 170	Asp	Arg	His	Val	Ser 175	Leu			
Pro	Ser	Phe	Asn 180	Gln	Leu	Phe	Gly	Leu 185	Ser	Asp	Pro	Val	Asn 190	Arg	Ala			
Tyr	Phe	Ala 195	Val	Phe	Asp	Gly	His 200	Gly	Gly	Val	Asp	Ala 205	Ala	Arg	Tyr			
Ala	Ala 210	Val	His	Val	His	Thr 215	Asn	Ala	Ala	Arg	Gln 220	Pro	Glu	Leu	Pro			
Thr 225	Asp	Pro	Glu	Gly	Ala 230	Leu	Arg	Glu	Ala	Phe 235	Arg	Arg	Thr	Asp	Gln 240			
Met	Phe	Leu	Arg	Lys 245	Ala	Lys	Arg	Glu	Arg 250	Leu	Gln	Ser	Gly	Thr 255	Thr			
Gly	Val	Cys	Ala 260	Leu	Ile	Ala	Gly	Ala 265	Thr	Leu	His	Val	Ala 270	Trp	Leu			
Gly	Asp	Ser	Gln	Val	Ile	Leu	Val	Gln	Gln	Gly	Gln	Val	Val	Lys	Leu			

275

280

285

Met Glu Pro His Arg Pro Glu Arg Gln Asp Glu Lys Ala Arg Ile Glu
 290 295 300

Ala Leu Gly Gly Phe Val Ser His Met Asp Cys Trp Arg Val Asn Gly
 305 310 315 320

Thr Leu Ala Val Ser Arg Ala Ile Gly Asp Val Phe Gln Lys Pro Tyr
 325 330 335

Val Ser Gly Glu Ala Asp Ala Ala Ser Arg Ala Leu Thr Gly Ser Glu
 340 345 350

Asp Tyr Leu Leu Leu Ala Cys Asp Gly Phe Phe Asp Val Val Pro His
 355 360 365

Gln Glu Val Val Gly Leu Val Gln Ser His Leu Thr Arg Gln Gln Gly
 370 375 380

Ser Gly Leu Arg Val Ala Glu Glu Leu Val Ala Ala Ala Arg Glu Arg
 385 390 395 400

Gly Ser His Asp Asn Ile Thr Val Met Val Val Phe Leu Arg Asp Pro
 405 410 415

Gln Glu Leu Leu Glu Gly Gly Asn Gln Gly Glu Gly Asp Pro Gln Ala
 420 425 430

Glu Gly Arg Arg Gln Asp Leu Pro Ser Ser Leu Pro Glu Pro Glu Thr
 435 440 445

Gln Ala Pro Pro Arg Ser
 450

<210> 674
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 674

Met Ala Glu Ala Gly Ala Gly Leu Ser Glu Thr Val Thr Glu Thr Thr
 1 5 10 15

Val Thr Val Thr Thr Glu Pro Glu Asn Arg Ser Leu Thr Ile Lys Leu
 20 25 30

Arg Lys Arg Lys Pro Glu Lys Lys Val Glu Trp Thr Ser Asp Thr Val
 35 40 45

Asp Asn Glu His Met Gly Arg Arg Ser Ser Lys Cys Cys Cys Ile Tyr
 50 55 60

Glu Lys Pro Arg Ala Phe Gly Glu Ser Ser Thr Glu Ser Asp Glu Glu
65 70 75 80

Glu Glu Glu Gly Cys Gly His Thr His Cys Val Arg Gly His Arg Lys
85 90 95

Gly Arg Arg Arg Ala Thr Leu Gly Pro Thr Pro Thr Thr Pro Pro Gln
100 105 110

Pro Pro Asp Pro Ser Gln Pro Pro Pro Gly Pro Met Gln His
115 120 125

<210> 675
<211> 205
<212> PRT
<213> Homo sapiens

<400> 675

Met Ala Ala Ser Thr Ala Ser His Arg Pro Ile Lys Gly Ile Leu Lys
1 5 10 15

Asn Lys Thr Ser Thr Thr Ser Ser Met Val Ala Ser Ala Glu Gln Pro
20 25 30

Arg Gly Asn Val Asp Glu Glu Leu Ser Lys Lys Ser Gln Lys Trp Asp
35 40 45

Glu Met Asn Ile Leu Ala Thr Tyr His Pro Ala Asp Lys Asp Tyr Gly
50 55 60

Leu Met Lys Ile Asp Glu Pro Ser Thr Pro Tyr His Ser Met Met Gly
65 70 75 80

Asp Asp Glu Asp Ala Cys Ser Asp Thr Glu Ala Thr Glu Ala Met Ala
85 90 95

Pro Asp Ile Leu Ala Arg Lys Leu Ala Ala Ala Glu Gly Leu Glu Pro
100 105 110

Lys Tyr Arg Ile Gln Glu Gln Glu Ser Ser Gly Glu Glu Asp Ser Asp
115 120 125

Leu Ser Pro Glu Glu Arg Glu Lys Lys Arg Gln Phe Glu Met Lys Arg
130 135 140

Lys Leu His Tyr Asn Glu Gly Leu Asn Ile Lys Leu Ala Arg Gln Leu
145 150 155 160

Ile Ser Lys Asp Leu His Asp Asp Asp Glu Asp Glu Glu Met Leu Glu
165 170 175

Thr Ala Asp Gly Glu Ser Met Asn Thr Glu Glu Ser Asn Gln Gly Ser
 180 185 190

Thr Pro Ser Asp Gln Gln Gln Asn Lys Leu Arg Ser Ser
 195 200 205

<210> 676
 <211> 486
 <212> PRT
 <213> Homo sapiens
 <400> 676

Met Ser Ser Ser Ser Pro Pro Ala Gly Ala Ala Ser Ala Ala Ile Ser
 1 5 10 15

Ala Ser Glu Lys Val Asp Gly Phe Thr Arg Lys Ser Val Arg Lys Ala
 20 25 30

Gln Arg Gln Lys Arg Ser Gln Gly Ser Ser Gln Phe Arg Ser Gln Gly
 35 40 45

Ser Gln Ala Glu Leu His Pro Leu Pro Gln Leu Lys Asp Ala Thr Ser
 50 55 60

Asn Glu Gln Gln Glu Leu Phe Cys Gln Lys Leu Gln Gln Cys Cys Ile
 65 70 75 80

Leu Phe Asp Phe Met Asp Ser Val Ser Asp Leu Lys Ser Lys Glu Ile
 85 90 95

Lys Arg Ala Thr Leu Asn Glu Leu Val Glu Tyr Val Ser Thr Asn Arg
 100 105 110

Gly Val Ile Val Glu Ser Ala Tyr Ser Asp Ile Val Lys Met Ile Ser
 115 120 125

Ala Asn Ile Phe Arg Thr Leu Pro Pro Ser Asp Asn Pro Asp Phe Asp
 130 135 140

Pro Glu Glu Asp Glu Pro Thr Leu Glu Ala Ser Trp Pro His Ile Gln
 145 150 155 160

Leu Val Tyr Glu Phe Phe Leu Arg Phe Leu Glu Ser Pro Asp Phe Gln
 165 170 175

Pro Ser Ile Ala Lys Arg Tyr Ile Asp Gln Lys Phe Val Gln Gln Leu
 180 185 190

Leu Glu Leu Phe Asp Ser Glu Asp Pro Arg Glu Arg Asp Phe Leu Lys
 195 200 205

Thr Val Leu His Arg Ile Tyr Gly Lys Phe Leu Gly Leu Arg Ala Phe
 210 215 220
 Ile Arg Lys Gln Ile Asn Asn Ile Phe Leu Arg Phe Ile Tyr Glu Thr
 225 230 235 240
 Glu His Phe Asn Gly Val Ala Glu Leu Leu Glu Ile Leu Gly Ser Ile
 245 250 255
 Ile Asn Gly Phe Ala Leu Pro Leu Lys Ala Glu His Lys Gln Phe Leu
 260 265 270
 Met Lys Val Leu Ile Pro Met His Thr Ala Lys Gly Leu Ala Leu Phe
 275 280 285
 His Ala Gln Leu Ala Tyr Cys Val Val Gln Phe Leu Glu Lys Asp Thr
 290 295 300
 Thr Leu Thr Glu Pro Val Ile Arg Gly Leu Leu Lys Phe Trp Pro Lys
 305 310 315 320
 Thr Cys Ser Gln Lys Glu Val Met Phe Leu Gly Glu Ile Glu Glu Ile
 325 330 335
 Leu Asp Val Ile Glu Pro Thr Gln Phe Lys Lys Ile Glu Glu Pro Leu
 340 345 350
 Phe Lys Gln Ile Ser Lys Cys Val Ser Ser Ser His Phe Gln Val Ala
 355 360 365
 Glu Arg Ala Leu Tyr Phe Trp Asn Asn Glu Tyr Ile Leu Ser Leu Ile
 370 375 380
 Glu Glu Asn Ile Asp Lys Ile Leu Pro Ile Met Phe Ala Ser Leu Tyr
 385 390 395 400
 Lys Ile Ser Lys Glu His Trp Asn Pro Thr Ile Val Ala Leu Val Tyr
 405 410 415
 Asn Val Leu Lys Thr Leu Met Glu Met Asn Gly Lys Leu Phe Asp Asp
 420 425 430
 Leu Thr Ser Ser Tyr Lys Ala Glu Arg Gln Arg Glu Lys Lys Lys Glu
 435 440 445
 Leu Glu Arg Glu Glu Leu Trp Lys Lys Leu Glu Glu Leu Lys Leu Lys
 450 455 460
 Lys Ala Leu Glu Lys Gln Asn Ser Ala Tyr Asn Met His Ser Ile Leu
 465 470 475 480

Ser Asn Thr Ser Ala Glu
485

<210> 677
<211> 170
<212> PRT
<213> Homo sapiens

<400> 677

Met Gly Asn Glu Ala Ser Tyr Pro Leu Glu Met Cys Ser His Phe Asp
1 5 10 15

Ala Asp Glu Ile Lys Arg Leu Gly Lys Arg Phe Lys Lys Leu Asp Leu
20 25 30

Asp Asn Ser Gly Ser Leu Ser Val Glu Glu Phe Met Ser Leu Pro Glu
35 40 45

Leu Gln Gln Asn Pro Leu Val Gln Arg Val Ile Asp Ile Phe Asp Thr
50 55 60

Asp Gly Asn Gly Glu Val Asp Phe Lys Glu Phe Ile Glu Gly Val Ser
65 70 75 80

Gln Phe Ser Val Lys Gly Asp Lys Glu Gln Lys Leu Arg Phe Ala Phe
85 90 95

Arg Ile Tyr Asp Met Asp Lys Asp Gly Tyr Ile Ser Asn Gly Glu Leu
100 105 110

Phe Gln Val Leu Lys Met Met Val Gly Asn Asn Leu Lys Asp Thr Gln
115 120 125

Leu Gln Gln Ile Val Asp Lys Thr Ile Ile Asn Ala Asp Lys Asp Gly
130 135 140

Asp Gly Arg Ile Ser Phe Glu Glu Phe Cys Ala Val Val Gly Gly Leu
145 150 155 160

Asp Ile His Lys Lys Met Val Val Asp Val
165 170

<210> 678
<211> 933
<212> PRT
<213> Homo sapiens

<400> 678

Met Ala Asp Leu Ser Leu Leu Gln Glu Asp Leu Gln Glu Asp Ala Asp
1 5 10 15

Gly Ser Leu Asp Phe Val Ser Gln Asp Glu Met Leu Thr Pro Leu Gly
20 25 30

Arg Leu Asp Lys Tyr Ala Ala Ser Glu Asn Ile Phe Asn Arg Gln Met
 35 40 45
 Val Ala Arg Ser Leu Leu Asp Thr Leu Arg Glu Val Cys Asp Asp Glu
 50 55 60
 Arg Asp Cys Ile Ala Val Leu Glu Arg Ile Ser Arg Leu Ala Asp Asp
 65 70 75 80
 Ser Glu Pro Thr Val Arg Ala Glu Leu Met Glu Gln Val Pro His Ile
 85 90 95
 Ala Leu Phe Cys Gln Glu Asn Arg Pro Ser Ile Pro Tyr Ala Phe Ser
 100 105 110
 Lys Phe Leu Leu Pro Ile Val Val Arg Tyr Leu Ala Asp Gln Asn Asn
 115 120 125
 Gln Val Arg Lys Thr Ser Gln Ala Ala Leu Leu Ala Leu Leu Glu Gln
 130 135 140
 Glu Leu Ile Glu Arg Phe Asp Val Glu Thr Lys Val Cys Pro Val Leu
 145 150 155 160
 Ile Glu Leu Thr Ala Pro Asp Ser Asn Asp Asp Val Lys Thr Glu Ala
 165 170 175
 Val Ala Ile Met Cys Lys Met Ala Pro Met Val Gly Lys Asp Ile Thr
 180 185 190
 Glu Arg Leu Ile Leu Pro Arg Phe Cys Glu Met Cys Cys Asp Cys Arg
 195 200 205
 Met Phe His Val Arg Lys Val Cys Ala Ala Asn Phe Gly Asp Ile Cys
 210 215 220
 Ser Val Val Gly Gln Gln Ala Thr Glu Glu Met Leu Leu Pro Arg Phe
 225 230 235 240
 Phe Gln Leu Cys Ser Asp Asn Val Trp Gly Val Arg Lys Ala Cys Ala
 245 250 255
 Glu Cys Phe Met Ala Val Ser Cys Ala Thr Cys Gln Glu Ile Arg Arg
 260 265 270
 Thr Lys Leu Ser Ala Leu Phe Ile Asn Leu Ile Ser Asp Pro Ser Arg
 275 280 285
 Trp Val Arg Gln Ala Ala Phe Gln Ser Leu Gly Pro Phe Ile Ser Thr
 290 295 300

Phe Ala Asn Pro Ser Ser Ser Gly Gln Tyr Phe Lys Glu Glu Ser Lys
 305 310 315 320
 Ser Ser Glu Glu Met Ser Val Glu Asn Lys Asn Arg Thr Arg Asp Gln
 325 330 335
 Glu Ala Pro Glu Asp Val Gln Val Arg Pro Glu Asp Thr Pro Ser Asp
 340 345 350
 Leu Ser Val Ser Asn Ser Ser Val Ile Leu Glu Asn Thr Met Glu Asp
 355 360 365
 His Ala Ala Glu Ala Ser Gly Lys Pro Leu Gly Glu Ile Ser Val Pro
 370 375 380
 Leu Asp Ser Ser Leu Leu Cys Thr Leu Ser Ser Glu Ser His Gln Glu
 385 390 395 400
 Ala Ala Ser Asn Glu Asn Asp Lys Lys Pro Gly Asn Tyr Lys Ser Met
 405 410 415
 Leu Arg Pro Glu Val Gly Thr Thr Ser Gln Asp Ser Ala Leu Leu Asp
 420 425 430
 Gln Glu Leu Tyr Asn Ser Phe His Phe Trp Arg Thr Pro Leu Pro Glu
 435 440 445
 Ile Asp Leu Asp Ile Glu Leu Glu Gln Asn Ser Gly Gly Lys Pro Ser
 450 455 460
 Pro Glu Gly Pro Glu Glu Glu Ser Glu Gly Pro Val Pro Ser Ser Pro
 465 470 475 480
 Asn Ile Thr Met Ala Thr Arg Lys Glu Leu Glu Glu Met Ile Glu Asn
 485 490 495
 Leu Glu Pro His Ile Asp Asp Pro Asp Val Lys Ala Gln Val Glu Val
 500 505 510
 Leu Ser Ala Ala Leu Arg Ala Ser Ser Leu Asp Ala His Glu Glu Thr
 515 520 525
 Ile Ser Ile Glu Lys Arg Ser Asp Leu Gln Asp Glu Leu Asp Ile Asn
 530 535 540
 Glu Leu Pro Asn Cys Lys Ile Asn Gln Glu Asp Ser Val Pro Leu Ile
 545 550 555 560
 Ser Asp Ala Val Glu Asn Met Asp Ser Thr Leu His Tyr Ile His Ser
 565 570 575

Asp Ser Asp Leu Ser Asn Asn Ser Ser Phe Ser Pro Asp Glu Glu Arg
 580 585 590
 Arg Thr Lys Val Gln Asp Val Val Pro Gln Ala Leu Leu Asp Gln Tyr
 595 600 605
 Leu Ser Met Thr Asp Pro Ser Arg Ala Gln Thr Val Asp Thr Glu Ile
 610 615 620
 Ala Lys His Cys Ala Tyr Ser Leu Pro Gly Val Ala Leu Thr Leu Gly
 625 630 635 640
 Arg Gln Asn Trp His Cys Leu Arg Glu Thr Tyr Glu Thr Leu Ala Ser
 645 650 655
 Asp Met Gln Trp Lys Val Arg Arg Thr Leu Ala Phe Ser Ile His Glu
 660 665 670
 Leu Ala Val Ile Leu Gly Asp Gln Leu Thr Ala Ala Asp Leu Val Pro
 675 680 685
 Ile Phe Asn Gly Phe Leu Lys Asp Leu Asp Glu Val Arg Ile Gly Val
 690 695 700
 Leu Lys His Leu His Asp Phe Leu Lys Leu Leu His Ile Asp Lys Arg
 705 710 715 720
 Arg Glu Tyr Leu Tyr Gln Leu Gln Glu Phe Leu Val Thr Asp Asn Ser
 725 730 735
 Arg Asn Trp Arg Phe Arg Ala Glu Leu Ala Glu Gln Leu Ile Leu Leu
 740 745 750
 Leu Glu Leu Tyr Ser Pro Arg Asp Val Tyr Asp Tyr Leu Arg Pro Ile
 755 760 765
 Ala Leu Asn Leu Cys Ala Asp Lys Val Ser Ser Val Arg Trp Ile Ser
 770 775 780
 Tyr Lys Leu Val Ser Glu Met Val Lys Lys Leu His Ala Ala Thr Pro
 785 790 795 800
 Pro Thr Phe Gly Val Asp Leu Ile Asn Glu Leu Val Glu Asn Phe Gly
 805 810 815
 Arg Cys Pro Lys Trp Ser Gly Arg Gln Ala Phe Val Phe Val Cys Gln
 820 825 830
 Thr Val Ile Glu Asp Asp Cys Leu Pro Met Asp Gln Phe Ala Val His
 835 840 845

Leu Met Pro His Leu Leu Thr Leu Ala Asn Asp Arg Val Pro Asn Val
850 855 860

Arg Val Leu Leu Ala Lys Thr Leu Arg Gln Thr Leu Leu Glu Lys Asp
865 870 875 880

Tyr Phe Leu Ala Ser Ala Ser Cys His Gln Glu Ala Val Glu Gln Thr
885 890 895

Ile Met Ala Leu Gln Met Asp Arg Asp Ser Asp Val Lys Tyr Phe Ala
900 905 910

Ser Ile His Pro Ala Ser Thr Lys Ile Ser Glu Asp Ala Met Ser Thr
915 920 925

Ala Ser Ser Thr Tyr
930

<210> 679
<211> 559
<212> PRT
<213> Homo sapiens

<400> 679

Met Arg Arg Leu Ser Ser Trp Arg Lys Met Ala Thr Ala Glu Lys Gln
1 5 10 15

Lys His Asp Gly Arg Val Lys Ile Gly His Tyr Ile Leu Gly Asp Thr
20 25 30

Leu Gly Val Gly Thr Phe Gly Lys Val Lys Val Gly Lys His Glu Leu
35 40 45

Thr Gly His Lys Val Ala Val Lys Ile Leu Asn Arg Gln Lys Ile Arg
50 55 60

Ser Leu Asp Val Val Gly Lys Ile Arg Arg Glu Ile Gln Asn Leu Lys
65 70 75 80

Leu Phe Arg His Pro His Ile Ile Lys Leu Tyr Gln Val Ile Ser Thr
85 90 95

Pro Ser Asp Ile Phe Met Val Met Glu Tyr Val Ser Gly Gly Glu Leu
100 105 110

Phe Asp Tyr Ile Cys Lys Asn Gly Arg Leu Asp Glu Lys Glu Ser Arg
115 120 125

Arg Leu Phe Gln Gln Ile Leu Ser Gly Val Asp Tyr Cys His Arg His
130 135 140

Met Val Val His Arg Asp Leu Lys Pro Glu Asn Val Leu Leu Asp Ala
 145 150 155 160
 His Met Asn Ala Lys Ile Ala Asp Phe Gly Leu Ser Asn Met Met Ser
 165 170 175
 Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly Ser Pro Asn Tyr Ala Ala
 180 185 190
 Pro Glu Val Ile Ser Gly Arg Leu Tyr Ala Gly Pro Glu Val Asp Ile
 195 200 205
 Trp Ser Ser Gly Val Ile Leu Tyr Ala Leu Leu Cys Gly Thr Leu Pro
 210 215 220
 Phe Asp Asp Asp His Val Pro Thr Leu Phe Lys Lys Ile Cys Asp Gly
 225 230 235 240
 Ile Phe Tyr Thr Pro Gln Tyr Leu Asn Pro Ser Val Ile Ser Leu Leu
 245 250 255
 Lys His Met Leu Gln Val Asp Pro Met Lys Arg Ala Thr Ile Lys Asp
 260 265 270
 Ile Arg Glu His Glu Trp Phe Lys Gln Asp Leu Pro Lys Tyr Leu Phe
 275 280 285
 Pro Glu Asp Pro Ser Tyr Ser Ser Thr Met Ile Asp Asp Glu Ala Leu
 290 295 300
 Lys Glu Val Cys Glu Lys Phe Glu Cys Ser Glu Glu Glu Val Leu Ser
 305 310 315 320
 Cys Leu Tyr Asn Arg Asn His Gln Asp Pro Leu Ala Val Ala Tyr His
 325 330 335
 Leu Ile Ile Asp Asn Arg Arg Ile Met Asn Glu Ala Lys Asp Phe Tyr
 340 345 350
 Leu Ala Thr Ser Pro Pro Asp Ser Phe Leu Asp Asp His His Leu Thr
 355 360 365
 Arg Pro His Pro Glu Arg Val Pro Phe Leu Val Ala Glu Thr Pro Arg
 370 375 380
 Ala Arg His Thr Leu Asp Glu Leu Asn Pro Gln Lys Ser Lys His Gln
 385 390 395 400
 Gly Val Arg Lys Ala Lys Trp His Leu Gly Ile Arg Ser Gln Ser Arg
 405 410 415

Pro Asn Asp Ile Met Ala Glu Val Cys Arg Ala Ile Lys Gln Leu Asp
 420 425 430

Tyr Glu Trp Lys Val Val Asn Pro Tyr Tyr Leu Arg Val Arg Arg Lys
 435 440 445

Asn Pro Val Thr Ser Thr Tyr Ser Lys Met Ser Leu Gln Leu Tyr Gln
 450 455 460

Val Asp Ser Arg Thr Tyr Leu Leu Asp Phe Arg Ser Ile Asp Asp Glu
 465 470 475 480

Ile Thr Glu Ala Lys Ser Gly Thr Ala Thr Pro Gln Arg Ser Gly Ser
 485 490 495

Val Ser Asn Tyr Arg Ser Cys Gln Arg Ser Asp Ser Asp Ala Glu Ala
 500 505 510

Gln Gly Lys Ser Ser Glu Val Ser Leu Thr Ser Ser Val Thr Ser Leu
 515 520 525

Asp Ser Ser Pro Val Asp Leu Thr Pro Arg Pro Gly Ser His Thr Ile
 530 535 540

Glu Phe Phe Glu Met Cys Ala Asn Leu Ile Lys Ile Leu Ala Gln
 545 550 555

<210> 680
 <211> 569
 <212> PRT
 <213> Homo sapiens

<400> 680

Met Gly Ser Ala Val Met Asp Thr Lys Lys Lys Lys Asp Val Ser Ser
 1 5 10 15

Pro Gly Gly Ser Gly Gly Lys Lys Asn Ala Ser Gln Lys Arg Arg Ser
 20 25 30

Leu Arg Val His Ile Pro Asp Leu Ser Ser Phe Ala Met Pro Leu Leu
 35 40 45

Asp Gly Asp Leu Glu Gly Ser Gly Lys His Ser Ser Arg Lys Val Asp
 50 55 60

Ser Pro Phe Gly Pro Gly Ser Pro Ser Lys Gly Phe Phe Ser Arg Gly
 65 70 75 80

Pro Gln Pro Arg Pro Ser Ser Pro Met Ser Ala Pro Val Arg Pro Lys
 85 90 95

Thr Ser Pro Gly Ser Pro Lys Thr Val Phe Pro Phe Ser Tyr Gln Glu
 100 105 110
 Ser Pro Pro Arg Ser Pro Arg Arg Met Ser Phe Ser Gly Ile Phe Arg
 115 120 125
 Ser Ser Ser Lys Glu Ser Ser Pro Asn Ser Asn Pro Ala Thr Ser Pro
 130 135 140
 Gly Gly Ile Arg Phe Phe Ser Arg Ser Arg Lys Thr Ser Gly Leu Ser
 145 150 155 160
 Ser Ser Pro Ser Thr Pro Thr Gln Val Thr Lys Gln His Thr Phe Pro
 165 170 175
 Leu Glu Ser Tyr Lys His Glu Pro Glu Arg Leu Glu Asn Arg Ile Tyr
 180 185 190
 Ala Ser Ser Ser Pro Pro Asp Thr Gly Gln Arg Phe Cys Pro Ser Ser
 195 200 205
 Phe Gln Ser Pro Thr Arg Pro Pro Leu Ala Ser Pro Thr His Tyr Ala
 210 215 220
 Pro Ser Lys Ala Ala Ala Leu Ala Ala Ala Leu Gly Pro Ala Glu Ala
 225 230 235 240
 Gly Met Leu Glu Lys Leu Glu Phe Glu Asp Glu Ala Val Glu Asp Ser
 245 250 255
 Glu Ser Gly Val Tyr Met Arg Phe Met Arg Ser His Lys Cys Tyr Asp
 260 265 270
 Ile Val Pro Thr Ser Ser Lys Leu Val Val Phe Asp Thr Thr Leu Gln
 275 280 285
 Val Lys Lys Ala Phe Phe Ala Leu Val Ala Asn Gly Val Arg Ala Ala
 290 295 300
 Pro Leu Trp Glu Ser Lys Lys Gln Ser Phe Val Gly Met Leu Thr Ile
 305 310 315 320
 Thr Asp Phe Ile Asn Ile Leu His Arg Tyr Tyr Lys Ser Pro Met Val
 325 330 335
 Gln Ile Tyr Glu Leu Glu Glu His Lys Ile Glu Thr Trp Arg Glu Leu
 340 345 350
 Tyr Leu Gln Glu Thr Phe Lys Pro Leu Val Asn Ile Ser Pro Asp Ala
 355 360 365

Ser Leu Phe Asp Ala Val Tyr Ser Leu Ile Lys Asn Lys Ile His Arg
 370 375 380

Leu Pro Val Ile Asp Pro Ile Ser Gly Asn Ala Leu Tyr Ile Leu Thr
 385 390 395 400

His Lys Arg Ile Leu Lys Phe Leu Gln Leu Phe Met Ser Asp Met Pro
 405 410 415

Lys Pro Ala Phe Met Lys Gln Asn Leu Asp Glu Leu Gly Ile Gly Thr
 420 425 430

Tyr His Asn Ile Ala Phe Ile His Pro Asp Thr Pro Ile Ile Lys Ala
 435 440 445

Leu Asn Ile Phe Val Glu Arg Arg Ile Ser Ala Leu Pro Val Val Asp
 450 455 460

Glu Ser Gly Lys Val Val Asp Ile Tyr Ser Lys Phe Asp Val Ile Asn
 465 470 475 480

Leu Ala Ala Glu Lys Thr Tyr Asn Asn Leu Asp Ile Thr Val Thr Gln
 485 490 495

Ala Leu Gln His Arg Ser Gln Tyr Phe Glu Gly Val Val Lys Cys Asn
 500 505 510

Lys Leu Glu Ile Leu Glu Thr Ile Val Asp Arg Ile Val Arg Ala Glu
 515 520 525

Val His Arg Leu Val Val Val Asn Glu Ala Asp Ser Ile Val Gly Ile
 530 535 540

Ile Ser Leu Ser Asp Ile Leu Gln Ala Leu Ile Leu Thr Pro Ala Gly
 545 550 555 560

Ala Lys Gln Lys Glu Thr Glu Thr Glu
 565

<210> 681
 <211> 676
 <212> PRT
 <213> Homo sapiens

<400> 681

Met Ala Pro Phe Leu Arg Ile Ala Phe Asn Ser Tyr Glu Leu Gly Ser
 1 5 10 15

Leu Gln Ala Glu Asp Glu Ala Asn Gln Pro Phe Cys Ala Val Lys Met
 20 25 30

Lys Glu Ala Leu Ser Thr Glu Arg Gly Lys Thr Leu Val Gln Lys Lys
 Page 1115

35

40

45

Pro Thr Met Tyr Pro Glu Trp Lys Ser Thr Phe Asp Ala His Ile Tyr
 50 55 60

Glu Gly Arg Val Ile Gln Ile Val Leu Met Arg Ala Ala Glu Glu Pro
 65 70 75 80

Val Ser Glu Val Thr Val Gly Val Ser Val Leu Ala Glu Arg Cys Lys
 85 90 95

Lys Asn Asn Gly Lys Ala Glu Phe Trp Leu Asp Leu Gln Pro Gln Ala
 100 105 110

Lys Val Leu Met Ser Val Gln Tyr Phe Leu Glu Asp Val Asp Cys Lys
 115 120 125

Gln Ser Met Arg Ser Glu Asp Glu Ala Lys Phe Pro Thr Met Asn Arg
 130 135 140

Arg Gly Ala Ile Lys Gln Ala Lys Ile His Tyr Ile Lys Asn His Glu
 145 150 155 160

Phe Ile Ala Thr Phe Phe Gly Gln Pro Thr Phe Cys Ser Val Cys Lys
 165 170 175

Asp Phe Val Trp Gly Leu Asn Lys Gln Gly Tyr Lys Cys Arg Gln Cys
 180 185 190

Asn Ala Ala Ile His Lys Lys Cys Ile Asp Lys Ile Ile Gly Arg Cys
 195 200 205

Thr Gly Thr Ala Ala Asn Ser Arg Asp Thr Ile Phe Gln Lys Glu Arg
 210 215 220

Phe Asn Ile Asp Met Pro His Arg Phe Lys Val His Asn Tyr Met Ser
 225 230 235 240

Pro Thr Phe Cys Asp His Cys Gly Ser Leu Leu Trp Gly Leu Val Lys
 245 250 255

Gln Gly Leu Lys Cys Glu Asp Cys Gly Met Asn Val His His Lys Cys
 260 265 270

Arg Glu Lys Val Ala Asn Leu Cys Gly Ile Asn Gln Lys Leu Leu Ala
 275 280 285

Glu Ala Leu Asn Gln Val Thr Gln Arg Ala Ser Arg Arg Ser Asp Ser
 290 295 300

Ala Ser Ser Glu Pro Val Gly Ile Tyr Gln Gly Phe Glu Lys Lys Thr
 Page 1116

305 310 315 320

Gly Val Ala Gly Glu Asp Met Gln Asp Asn Ser Gly Thr Tyr Gly Lys
325 330 335

Ile Trp Glu Gly Ser Ser Lys Cys Asn Ile Asn Asn Phe Ile Phe His
340 345 350

Lys Val Leu Gly Lys Gly Ser Phe Gly Lys Val Leu Leu Gly Glu Leu
355 360 365

Lys Gly Arg Gly Glu Tyr Phe Ala Ile Lys Ala Leu Lys Lys Asp Val
370 375 380

Val Leu Ile Asp Asp Asp Val Glu Cys Thr Met Val Glu Lys Arg Val
385 390 395 400

Leu Thr Leu Ala Ala Glu Asn Pro Phe Leu Thr His Leu Ile Cys Thr
405 410 415

Phe Gln Thr Lys Asp His Leu Phe Phe Val Met Glu Phe Leu Asn Gly
420 425 430

Gly Asp Leu Met Tyr His Ile Gln Asp Lys Gly Arg Phe Glu Leu Tyr
435 440 445

Arg Ala Thr Phe Tyr Ala Ala Glu Ile Met Cys Gly Leu Gln Phe Leu
450 455 460

His Ser Lys Gly Ile Ile Tyr Arg Asp Leu Lys Leu Asp Asn Val Leu
465 470 475 480

Leu Asp Arg Asp Gly His Ile Lys Ile Ala Asp Phe Gly Met Cys Lys
485 490 495

Glu Asn Ile Phe Gly Glu Ser Arg Ala Ser Thr Phe Cys Gly Thr Pro
500 505 510

Asp Tyr Ile Ala Pro Glu Ile Leu Gln Gly Leu Lys Tyr Thr Phe Ser
515 520 525

Val Asp Trp Trp Ser Phe Gly Val Leu Leu Tyr Glu Met Leu Ile Gly
530 535 540

Gln Ser Pro Phe His Gly Asp Asp Glu Asp Glu Leu Phe Glu Ser Ile
545 550 555 560

Arg Val Asp Thr Pro His Tyr Pro Arg Trp Ile Thr Lys Glu Ser Lys
565 570 575

Asp Ile Leu Glu Lys Leu Phe Glu Arg Glu Pro Thr Lys Arg Leu Gly

580

585

590

Val Thr Gly Asn Ile Lys Ile His Pro Phe Phe Lys Thr Ile Asn Trp
 595 600 605

Thr Leu Leu Glu Lys Arg Arg Leu Glu Pro Pro Phe Arg Pro Lys Val
 610 615 620

Lys Ser Pro Arg Asp Tyr Ser Asn Phe Asp Gln Glu Phe Leu Asn Glu
 625 630 635 640

Lys Ala Arg Leu Ser Tyr Ser Asp Lys Asn Leu Ile Asp Ser Met Asp
 645 650 655

Gln Ser Ala Phe Ala Gly Phe Ser Phe Val Asn Pro Lys Phe Glu His
 660 665 670

Leu Leu Glu Asp
 675

<210> 682
 <211> 433
 <212> PRT
 <213> Homo sapiens

<400> 682

Met Ala Thr Ser Gly Asp Cys Pro Arg Ser Glu Ser Gln Gly Glu Glu
 1 5 10 15

Pro Ala Glu Cys Ser Glu Ala Gly Leu Leu Gln Glu Gly Val Gln Pro
 20 25 30

Glu Glu Phe Val Ala Ile Ala Asp Tyr Ala Ala Thr Asp Glu Thr Gln
 35 40 45

Leu Ser Phe Leu Arg Gly Glu Lys Ile Leu Ile Leu Arg Gln Thr Thr
 50 55 60

Ala Asp Trp Trp Trp Gly Glu Arg Ala Gly Cys Cys Gly Tyr Ile Pro
 65 70 75 80

Ala Asn His Val Gly Lys His Val Asp Glu Tyr Asp Pro Glu Asp Thr
 85 90 95

Trp Gln Asp Glu Glu Tyr Phe Gly Ser Tyr Gly Thr Leu Lys Leu His
 100 105 110

Leu Glu Met Leu Ala Asp Gln Pro Arg Thr Thr Lys Tyr His Ser Val
 115 120 125

Ile Leu Gln Asn Lys Glu Ser Leu Thr Asp Lys Val Ile Leu Asp Val
 130 135 140

Gly Cys Gly Thr Gly Ile Ile Ser Leu Phe Cys Ala His Tyr Ala Arg
 145 150 155 160
 Pro Arg Ala Val Tyr Ala Val Glu Ala Ser Glu Met Ala Gln His Thr
 165 170 175
 Gly Gln Leu Val Leu Gln Asn Gly Phe Ala Asp Ile Ile Thr Val Tyr
 180 185 190
 Gln Gln Lys Val Glu Asp Val Val Leu Pro Glu Lys Val Asp Val Leu
 195 200 205
 Val Ser Glu Trp Met Gly Thr Cys Leu Leu Phe Glu Phe Met Ile Glu
 210 215 220
 Ser Ile Leu Tyr Ala Arg Asp Ala Trp Leu Lys Glu Asp Gly Val Ile
 225 230 235 240
 Trp Pro Thr Met Ala Ala Leu His Leu Val Pro Cys Ser Ala Asp Lys
 245 250 255
 Asp Tyr Arg Ser Lys Val Leu Phe Trp Asp Asn Ala Tyr Glu Phe Asn
 260 265 270
 Leu Ser Ala Leu Lys Ser Leu Ala Val Lys Glu Phe Phe Ser Lys Pro
 275 280 285
 Lys Tyr Asn His Ile Leu Lys Pro Glu Asp Cys Leu Ser Glu Pro Cys
 290 295 300
 Thr Ile Leu Gln Leu Asp Met Arg Thr Val Gln Ile Ser Asp Leu Glu
 305 310 315 320
 Thr Leu Arg Gly Glu Leu Arg Phe Asp Ile Arg Lys Ala Gly Thr Leu
 325 330 335
 His Gly Phe Thr Ala Trp Phe Ser Val His Phe Gln Ser Leu Gln Glu
 340 345 350
 Gly Gln Pro Pro Gln Val Leu Ser Thr Gly Pro Phe His Pro Thr Thr
 355 360 365
 His Trp Lys Gln Thr Leu Phe Met Met Asp Asp Pro Val Pro Val His
 370 375 380
 Thr Gly Asp Val Val Thr Gly Ser Val Val Leu Gln Arg Asn Pro Val
 385 390 395 400
 Trp Arg Arg His Met Ser Val Ala Leu Ser Trp Ala Val Thr Ser Arg
 405 410 415

Gln Asp Pro Thr Ser Gln Lys Val Gly Glu Lys Val Phe Pro Ile Trp
 420 425 430

Arg

<210> 683
 <211> 453
 <212> PRT
 <213> Homo sapiens

<400> 683

Met Glu Asp Tyr Leu Gln Gly Cys Arg Ala Ala Leu Gln Glu Ser Arg
 1 5 10 15

Pro Leu His Val Val Leu Gly Asn Glu Ala Cys Asp Leu Asp Ser Thr
 20 25 30

Val Ser Ala Leu Ala Leu Ala Phe Tyr Leu Ala Lys Thr Thr Glu Ala
 35 40 45

Glu Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro
 50 55 60

Leu Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu
 65 70 75 80

Ser Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln
 85 90 95

Ala Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys
 100 105 110

Ser Asp Thr Ala Leu Glu Glu Ala Val Ala Glu Val Leu Asp His Arg
 115 120 125

Pro Ile Glu Pro Lys His Cys Pro Pro Cys His Val Ser Val Glu Leu
 130 135 140

Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
 145 150 155 160

Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
 165 170 175

Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
 180 185 190

Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
 195 200 205

Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
 210 215 220
 Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
 225 230 235 240
 Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
 245 250 255
 Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
 260 265 270
 Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
 275 280 285
 Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
 290 295 300
 His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
 305 310 315 320
 Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
 325 330 335
 His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu
 340 345 350
 Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
 355 360 365
 Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
 370 375 380
 Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln
 385 390 395 400
 Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
 405 410 415
 Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
 420 425 430
 Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
 435 440 445
 Ser Leu Ser Lys Lys
 450

<210> 684
 <211> 524
 <212> PRT

<213> Homo sapiens

<400> 684

Met Tyr Ala Leu Phe Leu Leu Ala Ser Leu Leu Gly Ala Ala Leu Ala
1 5 10 15

Gly Pro Val Leu Gly Leu Lys Glu Cys Thr Arg Gly Ser Ala Val Trp
20 25 30

Cys Gln Asn Val Lys Thr Ala Ser Asp Cys Gly Ala Val Lys His Cys
35 40 45

Leu Gln Thr Val Trp Asn Lys Pro Thr Val Lys Ser Leu Pro Cys Asp
50 55 60

Ile Cys Lys Asp Val Val Thr Ala Ala Gly Asp Met Leu Lys Asp Asn
65 70 75 80

Ala Thr Glu Glu Glu Ile Leu Val Tyr Leu Glu Lys Thr Cys Asp Trp
85 90 95

Leu Pro Lys Pro Asn Met Ser Ala Ser Cys Lys Glu Ile Val Asp Ser
100 105 110

Tyr Leu Pro Val Ile Leu Asp Ile Ile Lys Gly Glu Met Ser Arg Pro
115 120 125

Gly Glu Val Cys Ser Ala Leu Asn Leu Cys Glu Ser Leu Gln Lys His
130 135 140

Leu Ala Glu Leu Asn His Gln Lys Gln Leu Glu Ser Asn Lys Ile Pro
145 150 155 160

Glu Leu Asp Met Thr Glu Val Val Ala Pro Phe Met Ala Asn Ile Pro
165 170 175

Leu Leu Leu Tyr Pro Gln Asp Gly Pro Arg Ser Lys Pro Gln Pro Lys
180 185 190

Asp Asn Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val Thr Asp Ile
195 200 205

Gln Thr Ala Val Arg Thr Asn Ser Thr Phe Val Gln Ala Leu Val Glu
210 215 220

His Val Lys Glu Glu Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Ile
225 230 235 240

Cys Lys Asn Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met
245 250 255

Met His Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp
 260 265 270
 Glu Val Lys Glu Met Pro Met Gln Thr Leu Val Pro Ala Lys Val Ala
 275 280 285
 Ser Lys Asn Val Ile Pro Ala Leu Glu Leu Val Glu Pro Ile Lys Lys
 290 295 300
 His Glu Val Pro Ala Lys Ser Asp Val Tyr Cys Glu Val Cys Glu Phe
 305 310 315 320
 Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys
 325 330 335
 Glu Ile Leu Asp Ala Phe Asp Lys Met Cys Ser Lys Leu Pro Lys Ser
 340 345 350
 Leu Ser Glu Glu Cys Gln Glu Val Val Asp Thr Tyr Gly Ser Ser Ile
 355 360 365
 Leu Ser Ile Leu Leu Glu Glu Val Ser Pro Glu Leu Val Cys Ser Met
 370 375 380
 Leu His Leu Cys Ser Gly Thr Arg Leu Pro Ala Leu Thr Val His Val
 385 390 395 400
 Thr Gln Pro Lys Asp Gly Gly Phe Cys Glu Val Cys Lys Lys Leu Val
 405 410 415
 Gly Tyr Leu Asp Arg Asn Leu Glu Lys Asn Ser Thr Lys Gln Glu Ile
 420 425 430
 Leu Ala Ala Leu Glu Lys Gly Cys Ser Phe Leu Pro Asp Pro Tyr Gln
 435 440 445
 Lys Gln Cys Asp Gln Phe Val Ala Glu Tyr Glu Pro Val Leu Ile Glu
 450 455 460
 Ile Leu Val Glu Val Met Asp Pro Ser Phe Val Cys Leu Lys Ile Gly
 465 470 475 480
 Ala Cys Pro Ser Ala His Lys Pro Leu Leu Gly Thr Glu Lys Cys Ile
 485 490 495
 Trp Gly Pro Ser Tyr Trp Cys Gln Asn Thr Glu Thr Ala Ala Gln Cys
 500 505 510
 Asn Ala Val Glu His Cys Lys Arg His Val Trp Asn
 515 520

<210> 685
 <211> 467
 <212> PRT
 <213> Homo sapiens

<400> 685

Met Thr Glu Leu Pro Ala Pro Leu Ser Tyr Phe Gln Asn Ala Gln Met
 1 5 10 15

Ser Glu Asp Asn His Leu Ser Asn Thr Val Arg Ser Gln Asn Asp Asn
 20 25 30

Arg Glu Arg Gln Glu His Asn Asp Arg Arg Ser Leu Gly His Pro Glu
 35 40 45

Pro Leu Ser Asn Gly Arg Pro Gln Gly Asn Ser Arg Gln Val Val Glu
 50 55 60

Gln Asp Glu Glu Glu Asp Glu Glu Leu Thr Leu Lys Tyr Gly Ala Lys
 65 70 75 80

His Val Ile Met Leu Phe Val Pro Val Thr Leu Cys Met Val Val Val
 85 90 95

Val Ala Thr Ile Lys Ser Val Ser Phe Tyr Thr Arg Lys Asp Gly Gln
 100 105 110

Leu Ile Tyr Thr Pro Phe Thr Glu Asp Thr Glu Thr Val Gly Gln Arg
 115 120 125

Ala Leu His Ser Ile Leu Asn Ala Ala Ile Met Ile Ser Val Ile Val
 130 135 140

Val Met Thr Ile Leu Leu Val Val Leu Tyr Lys Tyr Arg Cys Tyr Lys
 145 150 155 160

Val Ile His Ala Trp Leu Ile Ile Ser Ser Leu Leu Leu Leu Phe Phe
 165 170 175

Phe Ser Phe Ile Tyr Leu Gly Glu Val Phe Lys Thr Tyr Asn Val Ala
 180 185 190

Val Asp Tyr Ile Thr Val Ala Leu Leu Ile Trp Asn Phe Gly Val Val
 195 200 205

Gly Met Ile Ser Ile His Trp Lys Gly Pro Leu Arg Leu Gln Gln Ala
 210 215 220

Tyr Leu Ile Met Ile Ser Ala Leu Met Ala Leu Val Phe Ile Lys Tyr
 225 230 235 240

Leu Pro Glu Trp Thr Ala Trp Leu Ile Leu Ala Val Ile Ser Val Tyr

Asp Leu Val Ala Val Leu Cys Pro Lys Gly Pro Leu Arg Met Leu Val
260 265 270

Glu Thr Ala Gln Glu Arg Asn Glu Thr Leu Phe Pro Ala Leu Ile Tyr
275 280 285

Ser Ser Thr Met Val Trp Leu Val Asn Met Ala Glu Gly Asp Pro Glu
290 295 300

Ala Gln Arg Arg Val Ser Lys Asn Ser Lys Tyr Asn Ala Glu Ser Thr
305 310 315 320

Glu Arg Glu Ser Gln Asp Thr Val Ala Glu Asn Asp Asp Gly Gly Phe
325 330 335

Ser Glu Glu Trp Glu Ala Gln Arg Asp Ser His Leu Gly Pro His Arg
340 345 350

Ser Thr Pro Glu Ser Arg Ala Ala Val Gln Glu Leu Ser Ser Ser Ile
355 360 365

Leu Ala Gly Glu Asp Pro Glu Glu Arg Gly Val Lys Leu Gly Leu Gly
370 375 380

Asp Phe Ile Phe Tyr Ser Val Leu Val Gly Lys Ala Ser Ala Thr Ala
385 390 395 400

Ser Gly Asp Trp Asn Thr Thr Ile Ala Cys Phe Val Ala Ile Leu Ile
405 410 415

Gly Leu Cys Leu Thr Leu Leu Leu Leu Ala Ile Phe Lys Lys Ala Leu
420 425 430

Pro Ala Leu Pro Ile Ser Ile Thr Phe Gly Leu Val Phe Tyr Phe Ala
435 440 445

Thr Asp Tyr Leu Val Gln Pro Phe Met Asp Gln Leu Ala Phe His Gln
450 455 460

Phe Tyr Ile
465

<210> 686
<211> 416
<212> PRT
<213> Homo sapiens

<400> 686

Met Met Pro Gln Leu Gln Phe Lys Asp Ala Phe Trp Cys Arg Asp Phe
1 5 10 15

Thr Ala His Thr Gly Tyr Glu Val Leu Leu Gln Arg Leu Leu Asp Gly
 20 25 30
 Arg Lys Met Cys Lys Asp Met Glu Glu Leu Leu Arg Gln Arg Ala Gln
 35 40 45
 Ala Glu Glu Arg Tyr Gly Lys Glu Leu Val Gln Ile Ala Arg Lys Ala
 50 55 60
 Gly Gly Gln Thr Glu Ile Asn Ser Leu Arg Ala Ser Phe Asp Ser Leu
 65 70 75 80
 Lys Gln Gln Met Glu Asn Val Gly Ser Ser His Ile Gln Leu Ala Leu
 85 90 95
 Thr Leu Arg Glu Glu Leu Arg Ser Leu Glu Glu Phe Arg Glu Arg Gln
 100 105 110
 Lys Glu Gln Arg Lys Lys Tyr Glu Ala Val Met Asp Arg Val Gln Lys
 115 120 125
 Ser Lys Leu Ser Leu Tyr Lys Lys Ala Met Glu Ser Lys Lys Thr Tyr
 130 135 140
 Glu Gln Lys Cys Arg Asp Ala Asp Asp Ala Glu Gln Ala Phe Glu Arg
 145 150 155 160
 Ile Ser Ala Asn Gly His Gln Lys Gln Val Glu Lys Ser Gln Asn Lys
 165 170 175
 Ala Arg Gln Cys Lys Asp Ser Ala Thr Glu Ala Glu Arg Val Tyr Arg
 180 185 190
 Gln Ser Ile Ala Gln Leu Glu Lys Val Arg Ala Glu Trp Glu Gln Glu
 195 200 205
 His Arg Thr Thr Cys Glu Ala Phe Gln Leu Gln Glu Phe Asp Arg Leu
 210 215 220
 Thr Ile Leu Arg Asn Ala Leu Trp Val His Ser Asn Gln Leu Ser Met
 225 230 235 240
 Gln Cys Val Lys Asp Asp Glu Leu Tyr Glu Glu Val Arg Leu Thr Leu
 245 250 255
 Glu Gly Cys Ser Ile Asp Ala Asp Ile Asp Ser Phe Ile Gln Ala Lys
 260 265 270
 Ser Thr Gly Thr Glu Pro Pro Ala Pro Val Pro Tyr Gln Asn Tyr Tyr
 275 280 285

Asp Arg Glu Val Thr Pro Leu Thr Ser Ser Pro Gly Ile Gln Pro Ser
290 295 300

Cys Gly Met Ile Lys Arg Phe Ser Gly Leu Leu His Gly Ser Pro Lys
305 310 315 320

Thr Thr Ser Leu Ala Ala Ser Ala Ala Ser Thr Glu Thr Leu Thr Pro
325 330 335

Thr Pro Glu Arg Asn Glu Gly Val Tyr Thr Ala Ile Ala Val Gln Glu
340 345 350

Ile Gln Gly Asn Pro Ala Ser Pro Ala Gln Glu Tyr Arg Ala Leu Tyr
355 360 365

Asp Tyr Thr Ala Gln Asn Pro Asp Glu Leu Asp Leu Ser Ala Gly Asp
370 375 380

Ile Leu Glu Val Ile Leu Glu Gly Glu Asp Gly Trp Trp Thr Val Glu
385 390 395 400

Arg Asn Gly Gln Arg Gly Phe Val Pro Gly Ser Tyr Leu Glu Lys Leu
405 410 415

<210> 687
<211> 342
<212> PRT
<213> Homo sapiens

<400> 687

Met Glu Pro His Asp Ser Ser His Met Asp Ser Glu Phe Arg Tyr Thr
1 5 10 15

Leu Phe Pro Ile Val Tyr Ser Ile Ile Phe Val Leu Gly Val Ile Ala
20 25 30

Asn Gly Tyr Val Leu Trp Val Phe Ala Arg Leu Tyr Pro Cys Lys Lys
35 40 45

Phe Asn Glu Ile Lys Ile Phe Met Val Asn Leu Thr Met Ala Asp Met
50 55 60

Leu Phe Leu Ile Thr Leu Pro Leu Trp Ile Val Tyr Tyr Gln Asn Gln
65 70 75 80

Gly Asn Trp Ile Leu Pro Lys Phe Leu Cys Asn Val Ala Gly Cys Leu
85 90 95

Phe Phe Ile Asn Thr Tyr Cys Ser Val Ala Phe Leu Gly Val Ile Thr
100 105 110

Tyr Asn Arg Phe Gln Ala Val Thr Arg Pro Ile Lys Thr Ala Gln Ala
 115 120 125

Asn Thr Arg Lys Arg Gly Ile Ser Leu Ser Leu Val Ile Trp Val Ala
 130 135 140

Ile Val Gly Ala Ala Ser Tyr Phe Leu Ile Leu Asp Ser Thr Asn Thr
 145 150 155 160

Val Pro Asp Ser Ala Gly Ser Gly Asn Val Thr Arg Cys Phe Glu His
 165 170 175

Tyr Glu Lys Gly Ser Val Pro Val Leu Ile Ile His Ile Phe Ile Val
 180 185 190

Phe Ser Phe Phe Leu Val Phe Leu Ile Ile Leu Phe Cys Asn Leu Val
 195 200 205

Ile Ile Arg Thr Leu Leu Met Gln Pro Val Gln Gln Gln Arg Asn Ala
 210 215 220

Glu Val Lys Arg Arg Ala Leu Trp Met Val Cys Thr Val Leu Ala Val
 225 230 235 240

Phe Ile Ile Cys Phe Val Pro His His Val Val Gln Leu Pro Trp Thr
 245 250 255

Leu Ala Glu Leu Gly Phe Gln Asp Ser Lys Phe His Gln Ala Ile Asn
 260 265 270

Asp Ala His Gln Val Thr Leu Cys Leu Leu Ser Thr Asn Cys Val Leu
 275 280 285

Asp Pro Val Ile Tyr Cys Phe Leu Thr Lys Lys Phe Arg Lys His Leu
 290 295 300

Thr Glu Lys Phe Tyr Ser Met Arg Ser Ser Arg Lys Cys Ser Arg Ala
 305 310 315 320

Thr Thr Asp Thr Val Thr Glu Val Val Val Pro Phe Asn Gln Ile Pro
 325 330 335

Gly Asn Ser Leu Lys Asn
 340

<210> 688
 <211> 403
 <212> PRT
 <213> Homo sapiens
 <400> 688

Met Thr Ala Ile Ile Lys Glu Ile Val Ser Arg Asn Lys Arg Arg Tyr
 1 5 10 15
 Gln Glu Asp Gly Phe Asp Leu Asp Leu Thr Tyr Ile Tyr Pro Asn Ile
 20 25 30
 Ile Ala Met Gly Phe Pro Ala Glu Arg Leu Glu Gly Val Tyr Arg Asn
 35 40 45
 Asn Ile Asp Asp Val Val Arg Phe Leu Asp Ser Lys His Lys Asn His
 50 55 60
 Tyr Lys Ile Tyr Asn Leu Cys Ala Glu Arg His Tyr Asp Thr Ala Lys
 65 70 75 80
 Phe Asn Cys Arg Val Ala Gln Tyr Pro Phe Glu Asp His Asn Pro Pro
 85 90 95
 Gln Leu Glu Leu Ile Lys Pro Phe Cys Glu Asp Leu Asp Gln Trp Leu
 100 105 110
 Ser Glu Asp Asp Asn His Val Ala Ala Ile His Cys Lys Ala Gly Lys
 115 120 125
 Gly Arg Thr Gly Val Met Ile Cys Ala Tyr Leu Leu His Arg Gly Lys
 130 135 140
 Phe Leu Lys Ala Gln Glu Ala Leu Asp Phe Tyr Gly Glu Val Arg Thr
 145 150 155 160
 Arg Asp Lys Lys Gly Val Thr Ile Pro Ser Gln Arg Arg Tyr Val Tyr
 165 170 175
 Tyr Tyr Ser Tyr Leu Leu Lys Asn His Leu Asp Tyr Arg Pro Val Ala
 180 185 190
 Leu Leu Phe His Lys Met Met Phe Glu Thr Ile Pro Met Phe Ser Gly
 195 200 205
 Gly Thr Cys Asn Pro Gln Phe Val Val Cys Gln Leu Lys Val Lys Ile
 210 215 220
 Tyr Ser Ser Asn Ser Gly Pro Thr Arg Arg Glu Asp Lys Phe Met Tyr
 225 230 235 240
 Phe Glu Phe Pro Gln Pro Leu Pro Val Cys Gly Asp Ile Lys Val Glu
 245 250 255
 Phe Phe His Lys Gln Asn Lys Met Leu Lys Lys Asp Lys Met Phe His
 260 265 270

Phe Trp Val Asn Thr Phe Phe Ile Pro Gly Pro Glu Glu Thr Ser Glu
 275 280 285

Lys Val Glu Asn Gly Ser Leu Cys Asp Gln Glu Ile Asp Ser Ile Cys
 290 295 300

Ser Ile Glu Arg Ala Asp Asn Asp Lys Glu Tyr Leu Val Leu Thr Leu
 305 310 315 320

Thr Lys Asn Asp Leu Asp Lys Ala Asn Lys Asp Lys Ala Asn Arg Tyr
 325 330 335

Phe Ser Pro Asn Phe Lys Val Lys Leu Tyr Phe Thr Lys Thr Val Glu
 340 345 350

Glu Pro Ser Asn Pro Glu Ala Ser Ser Ser Thr Ser Val Thr Pro Asp
 355 360 365

Val Ser Asp Asn Glu Pro Asp His Tyr Arg Tyr Ser Asp Thr Thr Asp
 370 375 380

Ser Asp Pro Glu Asn Glu Pro Phe Asp Glu Asp Gln His Thr Gln Ile
 385 390 395 400

Thr Lys Val

<210> 689
 <211> 488
 <212> PRT
 <213> Homo sapiens

<400> 689

Met Ser Thr Pro Gly Val Asn Ser Ser Ala Ser Leu Ser Pro Asp Arg
 1 5 10 15

Leu Asn Ser Pro Val Thr Ile Pro Ala Val Met Phe Ile Phe Gly Val
 20 25 30

Val Gly Asn Leu Val Ala Ile Val Val Leu Cys Lys Ser Arg Lys Glu
 35 40 45

Gln Lys Glu Thr Thr Phe Tyr Thr Leu Val Cys Gly Leu Ala Val Thr
 50 55 60

Asp Leu Leu Gly Thr Leu Leu Val Ser Pro Val Thr Ile Ala Thr Tyr
 65 70 75 80

Met Lys Gly Gln Trp Pro Gly Gly Gln Pro Leu Cys Glu Tyr Ser Thr
 85 90 95

Phe Ile Leu Leu Phe Phe Ser Leu Ser Gly Leu Ser Ile Ile Cys Ala

100

105

110

Met Ser Val Glu Arg Tyr Leu Ala Ile Asn His Ala Tyr Phe Tyr Ser
 115 120 125

His Tyr Val Asp Lys Arg Leu Ala Gly Leu Thr Leu Phe Ala Val Tyr
 130 135 140

Ala Ser Asn Val Leu Phe Cys Ala Leu Pro Asn Met Gly Leu Gly Ser
 145 150 155 160

Ser Arg Leu Gln Tyr Pro Asp Thr Trp Cys Phe Ile Asp Trp Thr Thr
 165 170 175

Asn Val Thr Ala His Ala Ala Tyr Ser Tyr Met Tyr Ala Gly Phe Ser
 180 185 190

Ser Phe Leu Ile Leu Ala Thr Val Leu Cys Asn Val Leu Val Cys Gly
 195 200 205

Ala Leu Leu Arg Met His Arg Gln Phe Met Arg Arg Thr Ser Leu Gly
 210 215 220

Thr Glu Gln His His Ala Ala Ala Ala Ala Ser Val Ala Ser Arg Gly
 225 230 235 240

His Pro Ala Ala Ser Pro Ala Leu Pro Arg Leu Ser Asp Phe Arg Arg
 245 250 255

Arg Arg Ser Phe Arg Arg Ile Ala Gly Ala Glu Ile Gln Met Val Ile
 260 265 270

Leu Leu Ile Ala Thr Ser Leu Val Val Leu Ile Cys Ser Ile Pro Leu
 275 280 285

Val Val Arg Val Phe Val Asn Gln Leu Tyr Gln Pro Ser Leu Glu Arg
 290 295 300

Glu Val Ser Lys Asn Pro Asp Leu Gln Ala Ile Arg Ile Ala Ser Val
 305 310 315 320

Asn Pro Ile Leu Asp Pro Trp Ile Tyr Ile Leu Leu Arg Lys Thr Val
 325 330 335

Leu Ser Lys Ala Ile Glu Lys Ile Lys Cys Leu Phe Cys Arg Ile Gly
 340 345 350

Gly Ser Arg Arg Glu Arg Ser Gly Gln His Cys Ser Asp Ser Gln Arg
 355 360 365

Thr Ser Ser Ala Met Ser Gly His Ser Arg Ser Phe Ile Ser Arg Glu

370

375

380

Leu Lys Glu Ile Ser Ser Thr Ser Gln Thr Leu Leu Pro Asp Leu Ser
 385 390 395 400

Leu Pro Asp Leu Ser Glu Asn Gly Leu Gly Gly Arg Asn Leu Leu Pro
 405 410 415

Gly Val Pro Gly Met Gly Leu Ala Gln Glu Asp Thr Thr Ser Leu Arg
 420 425 430

Thr Leu Arg Ile Ser Glu Thr Ser Asp Ser Ser Gln Gly Gln Asp Ser
 435 440 445

Glu Ser Val Leu Leu Val Asp Glu Ala Gly Gly Ser Gly Arg Ala Gly
 450 455 460

Pro Ala Pro Lys Gly Ser Ser Leu Gln Val Thr Phe Pro Ser Glu Thr
 465 470 475 480

Leu Asn Leu Ser Glu Lys Cys Ile
 485

<210> 690
 <211> 595
 <212> PRT
 <213> Homo sapiens

<400> 690

Met Val Arg Trp Phe His Arg Asp Leu Ser Gly Leu Asp Ala Glu Thr
 1 5 10 15

Leu Leu Lys Gly Arg Gly Val His Gly Ser Phe Leu Ala Arg Pro Ser
 20 25 30

Arg Lys Asn Gln Gly Asp Phe Ser Leu Ser Val Arg Val Gly Asp Gln
 35 40 45

Val Thr His Ile Arg Ile Gln Asn Ser Gly Asp Phe Tyr Asp Leu Tyr
 50 55 60

Gly Gly Glu Lys Phe Ala Thr Leu Thr Glu Leu Val Glu Tyr Tyr Thr
 65 70 75 80

Gln Gln Gln Gly Val Leu Gln Asp Arg Asp Gly Thr Ile Ile His Leu
 85 90 95

Lys Tyr Pro Leu Asn Cys Ser Asp Pro Thr Ser Glu Arg Trp Tyr His
 100 105 110

Gly His Met Ser Gly Gly Gln Ala Glu Thr Leu Leu Gln Ala Lys Gly
 115 120 125

Glu Pro Trp Thr Phe Leu Val Arg Glu Ser Leu Ser Gln Pro Gly Asp
 130 135 140
 Phe Val Leu Ser Val Leu Ser Asp Gln Pro Lys Ala Gly Pro Gly Ser
 145 150 155 160
 Pro Leu Arg Val Thr His Ile Lys Val Met Cys Glu Gly Gly Arg Tyr
 165 170 175
 Thr Val Gly Gly Leu Glu Thr Phe Asp Ser Leu Thr Asp Leu Val Glu
 180 185 190
 His Phe Lys Lys Thr Gly Ile Glu Glu Ala Ser Gly Ala Phe Val Tyr
 195 200 205
 Leu Arg Gln Pro Tyr Tyr Ala Thr Arg Val Asn Ala Ala Asp Ile Glu
 210 215 220
 Asn Arg Val Leu Glu Leu Asn Lys Lys Gln Glu Ser Glu Asp Thr Ala
 225 230 235 240
 Lys Ala Gly Phe Trp Glu Glu Phe Glu Ser Leu Gln Lys Gln Glu Val
 245 250 255
 Lys Asn Leu His Gln Arg Leu Glu Gly Gln Arg Pro Glu Asn Lys Gly
 260 265 270
 Lys Asn Arg Tyr Lys Asn Ile Leu Pro Phe Asp His Ser Arg Val Ile
 275 280 285
 Leu Gln Gly Arg Asp Ser Asn Ile Pro Gly Ser Asp Tyr Ile Asn Ala
 290 295 300
 Asn Tyr Ile Lys Asn Gln Leu Leu Gly Pro Asp Glu Asn Ala Lys Thr
 305 310 315 320
 Tyr Ile Ala Ser Gln Gly Cys Leu Glu Ala Thr Val Asn Asp Phe Trp
 325 330 335
 Gln Met Ala Trp Gln Glu Asn Ser Arg Val Ile Val Met Thr Thr Arg
 340 345 350
 Glu Val Glu Lys Gly Arg Asn Lys Cys Val Pro Tyr Trp Pro Glu Val
 355 360 365
 Gly Met Gln Arg Ala Tyr Gly Pro Tyr Ser Val Thr Asn Cys Gly Glu
 370 375 380
 His Asp Thr Thr Glu Tyr Lys Leu Arg Thr Leu Gln Val Ser Pro Leu
 385 390 395 400

Asp Asn Gly Asp Leu Ile Arg Glu Ile Trp His Tyr Gln Tyr Leu Ser
 405 410 415

Trp Pro Asp His Gly Val Pro Ser Glu Pro Gly Gly Val Leu Ser Phe
 420 425 430

Leu Asp Gln Ile Asn Gln Arg Gln Glu Ser Leu Pro His Ala Gly Pro
 435 440 445

Ile Ile Val His Cys Ser Ala Gly Ile Gly Arg Thr Gly Thr Ile Ile
 450 455 460

Val Ile Asp Met Leu Met Glu Asn Ile Ser Thr Lys Gly Leu Asp Cys
 465 470 475 480

Asp Ile Asp Ile Gln Lys Thr Ile Gln Met Val Arg Ala Gln Arg Ser
 485 490 495

Gly Met Val Gln Thr Glu Ala Gln Tyr Lys Phe Ile Tyr Val Ala Ile
 500 505 510

Ala Gln Phe Ile Glu Thr Thr Lys Lys Lys Leu Glu Val Leu Gln Ser
 515 520 525

Gln Lys Gly Gln Glu Ser Glu Tyr Gly Asn Ile Thr Tyr Pro Pro Ala
 530 535 540

Met Lys Asn Ala His Ala Lys Ala Ser Arg Thr Ser Ser Lys His Lys
 545 550 555 560

Glu Asp Val Tyr Glu Asn Leu His Thr Lys Asn Lys Arg Glu Glu Lys
 565 570 575

Val Lys Lys Gln Arg Ser Ala Asp Lys Glu Lys Ser Lys Gly Ser Leu
 580 585 590

Lys Arg Lys
 595

<210> 691
 <211> 700
 <212> PRT
 <213> Homo sapiens

<400> 691

Met Glu Pro Leu Cys Pro Leu Leu Leu Val Gly Phe Ser Leu Pro Leu
 1 5 10 15

Ala Arg Ala Leu Arg Gly Asn Glu Thr Thr Ala Asp Ser Asn Glu Thr
 20 25 30

Thr Thr Thr Ser Gly Pro Pro Asp Pro Gly Ala Ser Gln Pro Leu Leu
 35 40 45
 Ala Trp Leu Leu Leu Pro Leu Leu Leu Leu Leu Val Leu Leu Leu
 50 55 60
 Ala Ala Tyr Phe Phe Arg Phe Arg Lys Gln Arg Lys Ala Val Val Ser
 65 70 75 80
 Thr Ser Asp Lys Lys Met Pro Asn Gly Ile Leu Glu Glu Gln Glu Gln
 85 90 95
 Gln Arg Val Met Leu Leu Ser Arg Ser Pro Ser Gly Pro Lys Lys Tyr
 100 105 110
 Phe Pro Ile Pro Val Glu His Leu Glu Glu Glu Ile Arg Ile Arg Ser
 115 120 125
 Ala Asp Asp Cys Lys Gln Phe Arg Glu Glu Phe Asn Ser Leu Pro Ser
 130 135 140
 Gly His Ile Gln Gly Thr Phe Glu Leu Ala Asn Lys Glu Glu Asn Arg
 145 150 155 160
 Glu Lys Asn Arg Tyr Pro Asn Ile Leu Pro Asn Asp His Ser Arg Val
 165 170 175
 Ile Leu Ser Gln Leu Asp Gly Ile Pro Cys Ser Asp Tyr Ile Asn Ala
 180 185 190
 Ser Tyr Ile Asp Gly Tyr Lys Glu Lys Asn Lys Phe Ile Ala Ala Gln
 195 200 205
 Gly Pro Lys Gln Glu Thr Val Asn Asp Phe Trp Arg Met Val Trp Glu
 210 215 220
 Gln Lys Ser Ala Thr Ile Val Met Leu Thr Asn Leu Lys Glu Arg Lys
 225 230 235 240
 Glu Glu Lys Cys His Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr
 245 250 255
 Gly Asn Ile Arg Val Cys Val Glu Asp Cys Val Val Leu Val Asp Tyr
 260 265 270
 Thr Ile Arg Lys Phe Cys Ile Gln Pro Gln Leu Pro Asp Gly Cys Lys
 275 280 285
 Ala Pro Arg Leu Val Ser Gln Leu His Phe Thr Ser Trp Pro Asp Phe
 290 295 300

Gly Val Pro Phe Thr Pro Ile Gly Met Leu Lys Phe Leu Lys Lys Val
 305 310 315 320
 Lys Thr Leu Asn Pro Val His Ala Gly Pro Ile Val Val His Cys Ser
 325 330 335
 Ala Gly Val Gly Arg Thr Gly Thr Phe Ile Val Ile Asp Ala Met Met
 340 345 350
 Ala Met Met His Ala Glu Gln Lys Val Asp Val Phe Glu Phe Val Ser
 355 360 365
 Arg Ile Arg Asn Gln Arg Pro Gln Met Val Gln Thr Asp Met Gln Tyr
 370 375 380
 Thr Phe Ile Tyr Gln Ala Leu Leu Glu Tyr Tyr Leu Tyr Gly Asp Thr
 385 390 395 400
 Glu Leu Asp Val Ser Ser Leu Glu Lys His Leu Gln Thr Met His Gly
 405 410 415
 Thr Thr Thr His Phe Asp Lys Ile Gly Leu Glu Glu Glu Phe Arg Lys
 420 425 430
 Leu Thr Asn Val Arg Ile Met Lys Glu Asn Met Arg Thr Gly Asn Leu
 435 440 445
 Pro Ala Asn Met Lys Lys Ala Arg Val Ile Gln Ile Ile Pro Tyr Asp
 450 455 460
 Phe Asn Arg Val Ile Leu Ser Met Lys Arg Gly Gln Glu Tyr Thr Asp
 465 470 475 480
 Tyr Ile Asn Ala Ser Phe Ile Asp Gly Tyr Arg Gln Lys Asp Tyr Phe
 485 490 495
 Ile Ala Thr Gln Gly Pro Leu Ala His Thr Val Glu Asp Phe Trp Arg
 500 505 510
 Met Ile Trp Glu Trp Lys Ser His Thr Ile Val Met Leu Thr Glu Val
 515 520 525
 Gln Glu Arg Glu Gln Asp Lys Cys Tyr Gln Tyr Trp Pro Thr Glu Gly
 530 535 540
 Ser Val Thr His Gly Glu Ile Thr Ile Glu Ile Lys Asn Asp Thr Leu
 545 550 555 560
 Ser Glu Ala Ile Ser Ile Arg Asp Phe Leu Val Thr Leu Asn Gln Pro
 565 570 575

Gln Ala Arg Gln Glu Glu Gln Val Arg Val Val Arg Gln Phe His Phe
580 585 590

His Gly Trp Pro Glu Ile Gly Ile Pro Ala Glu Gly Lys Gly Met Ile
595 600 605

Asp Leu Ile Ala Ala Val Gln Lys Gln Gln Gln Gln Thr Gly Asn His
610 615 620

Pro Ile Thr Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Thr Phe
625 630 635 640

Ile Ala Leu Ser Asn Ile Leu Glu Arg Val Lys Ala Glu Gly Leu Leu
645 650 655

Asp Val Phe Gln Ala Val Lys Ser Leu Arg Leu Gln Arg Pro His Met
660 665 670

Val Gln Thr Leu Glu Gln Tyr Glu Phe Cys Tyr Lys Val Val Gln Asp
675 680 685

Phe Ile Asp Ile Phe Ser Asp Tyr Ala Asn Phe Lys
690 695 700

<210> 692
<211> 1064
<212> PRT
<213> Homo sapiens

<400> 692

Met Asn His Asp Phe Gln Ala Leu Ala Leu Glu Ser Arg Gly Met Gly
1 5 10 15

Glu Leu Leu Pro Thr Lys Lys Phe Trp Glu Pro Asp Asp Ser Thr Lys
20 25 30

Asp Gly Gln Lys Gly Ile Phe Leu Gly Asp Asp Glu Trp Arg Glu Thr
35 40 45

Ala Trp Gly Ala Ser His His Ser Met Ser Gln Pro Ile Met Val Gln
50 55 60

Arg Arg Ser Gly Gln Gly Phe His Gly Asn Ser Glu Val Asn Ala Ile
65 70 75 80

Leu Ser Pro Arg Ser Glu Ser Gly Gly Leu Gly Val Ser Met Val Glu
85 90 95

Tyr Val Leu Ser Ser Ser Pro Ala Asp Lys Leu Asp Ser Arg Phe Arg
100 105 110

Lys Gly Asn Phe Gly Thr Arg Asp Ala Glu Thr Asp Gly Pro Glu Lys
 115 120 125
 Gly Asp Gln Lys Gly Lys Ala Ser Pro Phe Glu Glu Asp Gln Asn Arg
 130 135 140
 Asp Leu Lys Gln Gly Asp Asp Asp Asp Ser Lys Ile Asn Gly Arg Gly
 145 150 155 160
 Leu Pro Asn Gly Met Asp Ala Asp Cys Lys Asp Phe Asn Arg Thr Pro
 165 170 175
 Gly Ser Arg Gln Ala Ser Pro Thr Glu Val Val Glu Arg Leu Gly Pro
 180 185 190
 Asn Thr Asn Pro Ser Glu Gly Leu Gly Pro Leu Pro Asn Pro Thr Ala
 195 200 205
 Asn Lys Pro Leu Val Glu Glu Phe Ser Asn Pro Glu Thr Gln Asn Leu
 210 215 220
 Asp Ala Met Glu Gln Val Gly Leu Glu Ser Leu Gln Phe Asp Tyr Pro
 225 230 235 240
 Gly Asn Gln Val Pro Met Asp Ser Ser Gly Ala Thr Val Gly Leu Phe
 245 250 255
 Asp Tyr Asn Ser Gln Gln Gln Leu Phe Gln Arg Thr Asn Ala Leu Thr
 260 265 270
 Val Gln Gln Leu Thr Ala Ala Gln Gln Gln Gln Tyr Ala Leu Ala Ala
 275 280 285
 Ala Gln Gln Pro His Ile Ala Gly Val Phe Ser Ala Gly Leu Ala Pro
 290 295 300
 Ala Ala Phe Val Pro Asn Pro Tyr Ile Ile Ser Ala Ala Pro Pro Gly
 305 310 315 320
 Thr Asp Pro Tyr Thr Ala Ala Gly Leu Ala Ala Ala Ala Thr Leu Ala
 325 330 335
 Gly Pro Ala Val Val Pro Pro Gln Tyr Tyr Gly Val Pro Trp Gly Val
 340 345 350
 Tyr Pro Ala Asn Leu Phe Gln Gln Gln Ala Ala Ala Ala Asn Asn
 355 360 365
 Thr Ala Ser Gln Gln Ala Ala Ser Gln Ala Gln Pro Gly Gln Gln Gln
 370 375 380

Val Leu Arg Ala Gly Ala Gly Gln Arg Pro Leu Thr Pro Asn Gln Gly
 385 390 395 400
 Gln Gln Gly Gln Gln Ala Glu Ser Leu Ala Ala Ala Ala Ala Ala Asn
 405 410 415
 Pro Thr Leu Ala Phe Gly Gln Gly Leu Ala Thr Gly Met Pro Gly Tyr
 420 425 430
 Gln Val Leu Ala Pro Thr Ala Tyr Tyr Asp Gln Thr Gly Ala Leu Val
 435 440 445
 Val Gly Pro Gly Ala Arg Thr Gly Leu Gly Ala Pro Val Arg Leu Met
 450 455 460
 Ala Pro Thr Pro Val Leu Ile Ser Ser Ala Ala Ala Gln Ala Ala Ala
 465 470 475 480
 Ala Ala Ala Ala Gly Gly Thr Ala Ser Ser Leu Thr Gly Ser Thr Asn
 485 490 495
 Gly Leu Phe Arg Pro Ile Gly Thr Gln Pro Pro Gln Gln Gln Gln Gln
 500 505 510
 Gln Pro Ser Thr Asn Leu Gln Ser Asn Ser Phe Tyr Gly Ser Ser Ser
 515 520 525
 Leu Thr Asn Ser Ser Gln Ser Ser Ser Leu Phe Ser His Gly Pro Gly
 530 535 540
 Gln Pro Gly Ser Thr Ser Leu Gly Phe Gly Ser Gly Asn Ser Leu Gly
 545 550 555 560
 Ala Ala Ile Gly Ser Ala Leu Ser Gly Phe Gly Ser Ser Val Gly Ser
 565 570 575
 Ser Ala Ser Ser Ser Ala Thr Arg Arg Glu Ser Leu Ser Thr Ser Ser
 580 585 590
 Asp Leu Tyr Lys Arg Ser Ser Ser Ser Leu Ala Pro Ile Gly Gln Pro
 595 600 605
 Phe Tyr Asn Ser Leu Gly Phe Ser Ser Ser Pro Ser Pro Ile Gly Met
 610 615 620
 Pro Leu Pro Ser Gln Thr Pro Gly His Ser Leu Thr Pro Pro Pro Ser
 625 630 635 640
 Leu Ser Ser His Gly Ser Ser Ser Ser Leu His Leu Gly Gly Leu Thr
 645 650 655

Asn Gly Ser Gly Arg Tyr Ile Ser Ala Ala Pro Gly Ala Glu Ala Lys
 660 665 670

Tyr Arg Ser Ala Ser Ser Thr Ser Ser Leu Phe Ser Ser Ser Ser Gln
 675 680 685

Leu Phe Pro Pro Ser Arg Leu Arg Tyr Asn Arg Ser Asp Ile Met Pro
 690 695 700

Ser Gly Arg Ser Arg Leu Leu Glu Asp Phe Arg Asn Asn Arg Phe Pro
 705 710 715 720

Asn Leu Gln Leu Arg Asp Leu Ile Gly His Ile Val Glu Phe Ser Gln
 725 730 735

Asp Gln His Gly Ser Arg Phe Ile Gln Gln Lys Leu Glu Arg Ala Thr
 740 745 750

Pro Ala Glu Arg Gln Met Val Phe Asn Glu Ile Leu Gln Ala Ala Tyr
 755 760 765

Gln Leu Met Thr Asp Val Phe Gly Asn Tyr Val Ile Gln Lys Phe Phe
 770 775 780

Glu Phe Gly Ser Leu Asp Gln Lys Leu Ala Leu Ala Thr Arg Ile Arg
 785 790 795 800

Gly His Val Leu Pro Leu Ala Leu Gln Met Tyr Gly Cys Arg Val Ile
 805 810 815

Gln Lys Ala Leu Glu Ser Ile Ser Ser Asp Gln Gln Ser Glu Met Val
 820 825 830

Lys Glu Leu Asp Gly His Val Leu Lys Cys Val Lys Asp Gln Asn Gly
 835 840 845

Asn His Val Val Gln Lys Cys Ile Glu Cys Val Gln Pro Gln Ser Leu
 850 855 860

Gln Phe Ile Ile Asp Ala Phe Lys Gly Gln Val Phe Val Leu Ser Thr
 865 870 875 880

His Pro Tyr Gly Cys Arg Val Ile Gln Arg Ile Leu Glu His Cys Thr
 885 890 895

Ala Glu Gln Thr Leu Pro Ile Leu Glu Glu Leu His Gln His Thr Glu
 900 905 910

Gln Leu Val Gln Asp Gln Tyr Gly Asn Tyr Val Ile Gln His Val Leu
 915 920 925

Glu His Gly Arg Pro Glu Asp Lys Ser Lys Ile Val Ser Glu Ile Arg
 930 935 940

Gly Lys Val Leu Ala Leu Ser Gln His Lys Phe Ala Ser Asn Val Val
 945 950 955 960

Glu Lys Cys Val Thr His Ala Ser Arg Ala Glu Arg Ala Leu Leu Ile
 965 970 975

Asp Glu Val Cys Cys Gln Asn Asp Gly Pro His Ser Ala Leu Tyr Thr
 980 985 990

Met Met Lys Asp Gln Tyr Ala Asn Tyr Val Val Gln Lys Met Ile Asp
 995 1000 1005

Met Ala Glu Pro Ala Gln Arg Lys Ile Ile Met His Lys Ile Arg
 1010 1015 1020

Pro His Ile Thr Thr Leu Arg Lys Tyr Thr Tyr Gly Lys His Ile
 1025 1030 1035

Leu Ala Lys Leu Glu Lys Tyr Tyr Leu Lys Asn Ser Pro Asp Leu
 1040 1045 1050

Gly Pro Ile Gly Gly Pro Pro Asn Gly Met Leu
 1055 1060

<210> 693
 <211> 976
 <212> PRT
 <213> Homo sapiens

<400> 693

Met Ser Asn Ser Asn Thr Thr Gln Glu Thr Leu Glu Ile Met Lys Glu
 1 5 10 15

Ser Glu Lys Lys Leu Val Glu Glu Ser Val Asn Lys Asn Lys Phe Ile
 20 25 30

Ser Lys Thr Pro Ser Lys Glu Glu Ile Glu Lys Glu Cys Glu Asp Thr
 35 40 45

Ser Leu Arg Gln Glu Thr Gln Arg Arg Thr Ser Asn His Gly His Ala
 50 55 60

Arg Lys Arg Ala Lys Ser Asn Ser Lys Leu Lys Leu Val Arg Ser Leu
 65 70 75 80

Ala Val Cys Glu Glu Ser Ser Thr Pro Phe Ala Asp Gly Pro Leu Glu
 85 90 95

Thr Gln Asp Ile Ile Gln Leu His Ile Ser Cys Pro Ser Asp Lys Glu

100

105

110

Glu Glu Lys Ser Thr Lys Asp Val Ser Glu Lys Glu Asp Lys Asp Lys
 115 120 125

Asn Lys Glu Lys Ile Pro Arg Lys Met Leu Ser Arg Asp Ser Ser Gln
 130 135 140

Glu Tyr Thr Asp Ser Thr Gly Ile Asp Leu His Glu Phe Leu Val Asn
 145 150 155 160

Thr Leu Lys Lys Asn Pro Arg Asp Arg Met Met Leu Leu Lys Leu Glu
 165 170 175

Gln Glu Ile Leu Glu Phe Ile Asn Asp Asn Asn Asn Gln Phe Lys Lys
 180 185 190

Phe Pro Gln Met Thr Ser Tyr His Arg Met Leu Leu His Arg Val Ala
 195 200 205

Ala Tyr Phe Gly Met Asp His Asn Val Asp Gln Thr Gly Lys Ala Val
 210 215 220

Ile Ile Asn Lys Thr Ser Asn Thr Arg Ile Pro Glu Gln Arg Phe Ser
 225 230 235 240

Glu His Ile Lys Asp Glu Lys Asn Thr Glu Phe Gln Gln Arg Phe Ile
 245 250 255

Leu Lys Arg Asp Asp Ala Ser Met Asp Arg Asp Asp Asn Gln Thr Gly
 260 265 270

Gln Asn Gly Tyr Leu Asn Asp Ile Arg Leu Ser Lys Glu Ala Phe Ser
 275 280 285

Ser Ser Ser His Lys Arg Arg Gln Ile Phe Arg Gly Asn Arg Glu Gly
 290 295 300

Leu Ser Arg Thr Ser Ser Ser Arg Gln Ser Ser Thr Asp Ser Glu Leu
 305 310 315 320

Lys Ser Leu Glu Pro Arg Pro Trp Ser Ser Thr Asp Ser Asp Gly Ser
 325 330 335

Val Arg Ser Met Arg Pro Pro Val Thr Lys Ala Ser Ser Phe Ser Gly
 340 345 350

Ile Ser Ile Leu Thr Arg Gly Asp Ser Ile Gly Ser Ser Lys Gly Gly
 355 360 365

Ser Ala Gly Arg Ile Ser Arg Pro Gly Met Ala Leu Gly Ala Pro Glu

370

375

380

Val Cys Asn Gln Val Thr Ser Ser Gln Ser Val Arg Gly Leu Leu Pro
 385 390 395 400

Cys Thr Ala Gln Gln Gln Gln Gln Gln Gln Gln Leu Pro Ala
 405 410 415

Leu Pro Pro Thr Pro Gln Gln Gln Pro Pro Leu Asn Asn His Met Ile
 420 425 430

Ser Gln Ala Asp Asp Leu Ser Asn Pro Phe Gly Gln Met Ser Leu Ser
 435 440 445

Arg Gln Gly Ser Thr Glu Ala Ala Asp Pro Ser Ala Ala Leu Phe Gln
 450 455 460

Thr Pro Leu Ile Ser Gln His Pro Gln Gln Thr Ser Phe Ile Met Ala
 465 470 475 480

Ser Thr Gly Gln Pro Leu Pro Thr Ser Asn Tyr Ser Thr Ser Ser His
 485 490 495

Ala Pro Pro Thr Gln Gln Val Leu Pro Pro Gln Gly Tyr Met Gln Pro
 500 505 510

Pro Gln Gln Ile Gln Val Ser Tyr Tyr Pro Pro Gly Gln Tyr Pro Asn
 515 520 525

Ser Asn Gln Gln Tyr Arg Pro Leu Ser His Pro Val Ala Tyr Ser Pro
 530 535 540

Gln Arg Gly Gln Gln Leu Pro Gln Pro Ser Gln Gln Pro Gly Leu Gln
 545 550 555 560

Pro Met Met Pro Asn Gln Gln Gln Ala Ala Tyr Gln Gly Met Ile Gly
 565 570 575

Val Gln Gln Pro Gln Asn Gln Gly Leu Leu Ser Ser Gln Arg Ser Ser
 580 585 590

Met Gly Gly Gln Met Gln Gly Leu Val Val Gln Tyr Thr Pro Leu Pro
 595 600 605

Ser Tyr Gln Val Pro Val Gly Ser Asp Ser Gln Asn Val Val Gln Pro
 610 615 620

Pro Phe Gln Gln Pro Met Leu Val Pro Val Ser Gln Ser Val Gln Gly
 625 630 635 640

Gly Leu Pro Ala Ala Gly Val Pro Val Tyr Tyr Ser Met Ile Pro Pro
 Page 1143

Ala Gln Gln Asn Gly Thr Ser Pro Ser Val Gly Phe Leu Gln Pro Pro
660 665 670

Gly Ser Glu Gln Tyr Gln Met Pro Gln Ser Pro Ser Pro Cys Ser Pro
675 680 685

Pro Gln Met Pro Gln Gln Tyr Ser Gly Val Ser Pro Ser Gly Pro Gly
690 695 700

Val Val Val Met Gln Leu Asn Val Pro Asn Gly Pro Gln Pro Pro Gln
705 710 715 720

Asn Pro Ser Met Val Gln Trp Ser His Cys Lys Tyr Tyr Ser Met Asp
725 730 735

Gln Arg Gly Gln Lys Pro Gly Asp Leu Tyr Ser Pro Asp Ser Ser Pro
740 745 750

Gln Ala Asn Thr Gln Met Ser Ser Ser Pro Val Thr Ser Pro Thr Gln
755 760 765

Ser Pro Ala Pro Ser Pro Val Thr Ser Leu Ser Ser Val Cys Thr Gly
770 775 780

Leu Ser Pro Leu Pro Val Leu Thr Gln Phe Pro Arg Pro Gly Gly Pro
785 790 795 800

Ala Gln Gly Asp Gly Arg Tyr Ser Leu Leu Gly Gln Pro Leu Gln Tyr
805 810 815

Asn Leu Ser Ile Cys Pro Pro Leu Leu His Gly Gln Ser Thr Tyr Thr
820 825 830

Val His Gln Gly Gln Ser Gly Leu Lys His Gly Asn Arg Gly Lys Arg
835 840 845

Gln Ala Leu Lys Ser Ala Ser Thr Asp Leu Gly Thr Ala Asp Val Val
850 855 860

Leu Gly Arg Val Leu Glu Val Thr Asp Leu Pro Glu Gly Ile Thr Arg
865 870 875 880

Thr Glu Ala Asp Lys Leu Phe Thr Gln Leu Ala Met Ser Gly Ala Lys
885 890 895

Ile Gln Trp Leu Lys Asp Ala Gln Gly Leu Pro Gly Gly Gly Gly Gly
900 905 910

Asp Asn Ser Gly Thr Ala Glu Asn Gly Arg His Ser Asp Leu Ala Ala

915

920

925

Leu Tyr Thr Ile Val Ala Val Phe Pro Ser Pro Leu Ala Ala Gln Asn
 930 935 940

Ala Ser Leu Arg Leu Asn Asn Ser Val Ser Arg Phe Lys Leu Arg Met
 945 950 955 960

Ala Lys Lys Asn Tyr Asp Leu Arg Ile Leu Glu Arg Ala Ser Ser Gln
 965 970 975

<210> 694
 <211> 649
 <212> PRT
 <213> Homo sapiens

<400> 694

Met Ser Leu Met Val Ser Ala Gly Arg Gly Leu Gly Ala Val Trp Ser
 1 5 10 15

Pro Thr His Val Gln Val Thr Val Leu Gln Ala Arg Gly Leu Arg Ala
 20 25 30

Lys Gly Pro Gly Gly Thr Ser Asp Ala Tyr Ala Val Ile Gln Val Gly
 35 40 45

Lys Glu Lys Tyr Ala Thr Ser Val Ser Glu Arg Ser Leu Gly Ala Pro
 50 55 60

Val Trp Arg Glu Glu Ala Thr Phe Glu Leu Pro Ser Leu Leu Ser Ser
 65 70 75 80

Gly Pro Ala Ala Ala Ala Thr Leu Gln Leu Thr Val Leu His Arg Ala
 85 90 95

Leu Leu Gly Leu Asp Lys Phe Leu Gly Arg Ala Glu Val Asp Leu Arg
 100 105 110

Asp Leu His Arg Asp Gln Gly Arg Arg Lys Thr Gln Trp Tyr Lys Leu
 115 120 125

Lys Ser Lys Pro Gly Lys Lys Asp Lys Glu Arg Gly Glu Ile Glu Val
 130 135 140

Asp Ile Gln Phe Met Arg Asn Asn Met Thr Ala Ser Met Phe Asp Leu
 145 150 155 160

Ser Met Lys Asp Lys Ser Arg Asn Pro Phe Gly Lys Leu Lys Asp Lys
 165 170 175

Ile Lys Gly Lys Asn Lys Asp Ser Gly Ser Asp Thr Ala Ser Ala Ile
 180 185 190

Ile Pro Ser Thr Thr Pro Ser Val Asp Ser Asp Asp Glu Ser Val Val
 195 200 205
 Lys Asp Lys Lys Lys Lys Ser Lys Ile Lys Thr Leu Leu Ser Lys Ser
 210 215 220
 Asn Leu Gln Lys Thr Pro Leu Ser Gln Ser Met Ser Val Leu Pro Thr
 225 230 235 240
 Ser Lys Pro Glu Lys Val Leu Leu Arg Pro Gly Asp Phe Gln Ser Gln
 245 250 255
 Trp Asp Glu Asp Asp Asn Glu Asp Glu Ser Ser Ser Ala Ser Asp Val
 260 265 270
 Met Ser His Lys Arg Thr Ala Ser Thr Asp Leu Lys Gln Leu Asn Gln
 275 280 285
 Val Asn Phe Thr Leu Pro Lys Lys Glu Gly Leu Ser Phe Leu Gly Gly
 290 295 300
 Leu Arg Ser Lys Asn Asp Val Leu Ser Arg Ser Asn Val Cys Ile Asn
 305 310 315 320
 Gly Asn His Val Tyr Leu Glu Gln Pro Glu Ala Lys Gly Glu Ile Lys
 325 330 335
 Asp Ser Ser Pro Ser Ser Ser Pro Ser Pro Lys Gly Phe Arg Lys Lys
 340 345 350
 His Leu Phe Ser Ser Thr Glu Asn Leu Ala Ala Gly Ser Trp Lys Glu
 355 360 365
 Pro Ala Glu Gly Gly Gly Leu Ser Ser Asp Arg Gln Leu Ser Glu Ser
 370 375 380
 Ser Thr Lys Asp Ser Leu Lys Ser Met Thr Leu Pro Ser Tyr Arg Pro
 385 390 395 400
 Ala Pro Leu Val Ser Gly Asp Leu Arg Glu Asn Met Ala Pro Ala Asn
 405 410 415
 Ser Glu Ala Thr Lys Glu Ala Lys Glu Ser Lys Lys Pro Glu Ser Arg
 420 425 430
 Arg Ser Ser Leu Leu Ser Leu Met Thr Gly Lys Lys Asp Val Ala Lys
 435 440 445
 Gly Ser Glu Gly Glu Asn Pro Leu Thr Val Pro Gly Arg Glu Lys Glu
 450 455 460

Gly Met Leu Met Gly Val Lys Pro Gly Glu Asp Ala Ser Gly Pro Ala
465 470 475 480

Glu Asp Leu Val Arg Arg Ser Glu Lys Asp Thr Ala Ala Val Val Ser
485 490 495

Arg Gln Gly Ser Ser Leu Asn Leu Phe Glu Asp Val Gln Ile Thr Glu
500 505 510

Pro Glu Ala Glu Pro Glu Ser Lys Ser Glu Pro Arg Pro Pro Ile Ser
515 520 525

Ser Pro Arg Ala Pro Gln Thr Arg Ala Val Lys Pro Arg Leu His Pro
530 535 540

Val Lys Pro Met Asn Ala Met Ala Thr Lys Val Ala Asn Cys Ser Leu
545 550 555 560

Gly Thr Ala Thr Ile Ile Ser Glu Asn Leu Asn Asn Glu Val Met Met
565 570 575

Lys Lys Tyr Ser Pro Ser Asp Pro Ala Phe Ala Tyr Ala Gln Leu Thr
580 585 590

His Asp Glu Leu Ile Gln Leu Val Leu Lys Gln Lys Glu Thr Ile Ser
595 600 605

Lys Lys Glu Phe Gln Val Arg Glu Leu Glu Asp Tyr Ile Asp Asn Leu
610 615 620

Leu Val Arg Val Met Glu Glu Thr Pro Asn Ile Leu Arg Ile Pro Thr
625 630 635 640

Gln Val Gly Lys Lys Ala Gly Lys Met
645

<210> 695
<211> 215
<212> PRT
<213> Homo sapiens

<400> 695

Met Ala Thr Ala Pro Tyr Asn Tyr Ser Tyr Ile Phe Lys Tyr Ile Ile
1 5 10 15

Ile Gly Asp Met Gly Val Gly Lys Ser Cys Leu Leu His Gln Phe Thr
20 25 30

Glu Lys Lys Phe Met Ala Asp Cys Pro His Thr Ile Gly Val Glu Phe
35 40 45

Gly Thr Arg Ile Ile Glu Val Ser Gly Gln Lys Ile Lys Leu Gln Ile
 50 55 60

Trp Asp Thr Ala Gly Gln Glu Arg Phe Arg Ala Val Thr Arg Ser Tyr
 65 70 75 80

Tyr Arg Gly Ala Ala Gly Ala Leu Met Val Tyr Asp Ile Thr Arg Arg
 85 90 95

Ser Thr Tyr Asn His Leu Ser Ser Trp Leu Thr Asp Ala Arg Asn Leu
 100 105 110

Thr Asn Pro Asn Thr Val Ile Ile Leu Ile Gly Asn Lys Ala Asp Leu
 115 120 125

Glu Ala Gln Arg Asp Val Thr Tyr Glu Glu Ala Lys Gln Phe Ala Glu
 130 135 140

Glu Asn Gly Leu Leu Phe Leu Glu Ala Ser Ala Lys Thr Gly Glu Asn
 145 150 155 160

Val Glu Asp Ala Phe Leu Glu Ala Ala Lys Lys Ile Tyr Gln Asn Ile
 165 170 175

Gln Asp Gly Ser Leu Asp Leu Asn Ala Ala Glu Ser Gly Val Gln His
 180 185 190

Lys Pro Ser Ala Pro Gln Gly Gly Arg Leu Thr Ser Glu Pro Gln Pro
 195 200 205

Gln Arg Glu Gly Cys Gly Cys
 210 215

<210> 696
 <211> 195
 <212> PRT
 <213> Homo sapiens

<400> 696

Met Met Ala Ile Arg Glu Leu Lys Val Cys Leu Leu Gly Asp Thr Gly
 1 5 10 15

Val Gly Lys Ser Ser Ile Val Cys Arg Phe Val Gln Asp His Phe Asp
 20 25 30

His Asn Ile Ser Pro Thr Ile Gly Ala Ser Phe Met Thr Lys Thr Val
 35 40 45

Pro Cys Gly Asn Glu Leu His Lys Phe Leu Ile Trp Asp Thr Ala Gly
 50 55 60

Gln Glu Arg Phe His Ser Leu Ala Pro Met Tyr Tyr Arg Gly Ser Ala
65 70 75 80

Ala Ala Val Ile Val Tyr Asp Ile Thr Lys Gln Asp Ser Phe Tyr Thr
85 90 95

Leu Lys Lys Trp Val Lys Glu Leu Lys Glu His Gly Pro Glu Asn Ile
100 105 110

Val Met Ala Ile Ala Gly Asn Lys Cys Asp Leu Ser Asp Ile Arg Glu
115 120 125

Val Pro Leu Lys Asp Ala Lys Glu Tyr Ala Glu Ser Ile Gly Ala Ile
130 135 140

Val Val Glu Thr Ser Ala Lys Asn Ala Ile Asn Ile Glu Glu Leu Phe
145 150 155 160

Gln Gly Ile Ser Arg Gln Ile Pro Pro Leu Asp Pro His Glu Asn Gly
165 170 175

Asn Asn Gly Thr Ile Lys Val Glu Lys Pro Thr Met Gln Ala Ser Arg
180 185 190

Arg Cys Cys
195

<210> 697
<211> 213
<212> PRT
<213> Homo sapiens

<400> 697

Met Ala Glu Thr Tyr Asp Phe Leu Phe Lys Phe Leu Val Ile Gly Ser
1 5 10 15

Ala Gly Thr Gly Lys Ser Cys Leu Leu His Gln Phe Ile Glu Asn Lys
20 25 30

Phe Lys Gln Asp Ser Asn His Thr Ile Gly Val Glu Phe Gly Ser Arg
35 40 45

Val Val Asn Val Gly Gly Lys Thr Val Lys Leu Gln Ile Trp Asp Thr
50 55 60

Ala Gly Gln Glu Arg Phe Arg Ser Val Thr Arg Ser Tyr Tyr Arg Gly
65 70 75 80

Ala Ala Gly Ala Leu Leu Val Tyr Asp Ile Thr Ser Arg Glu Thr Tyr
85 90 95

Asn Ser Leu Ala Ala Trp Leu Thr Asp Ala Arg Thr Leu Ala Ser Pro

100

105

110

Asn Ile Val Val Ile Leu Cys Gly Asn Lys Lys Asp Leu Asp Pro Glu
 115 120 125

Arg Glu Val Thr Phe Leu Glu Ala Ser Arg Phe Ala Gln Glu Asn Glu
 130 135 140

Leu Met Phe Leu Glu Thr Ser Ala Leu Thr Gly Glu Asn Val Glu Glu
 145 150 155 160

Ala Phe Leu Lys Cys Ala Arg Thr Ile Leu Asn Lys Ile Asp Ser Gly
 165 170 175

Glu Leu Asp Pro Glu Arg Met Gly Ser Gly Ile Gln Tyr Gly Asp Ala
 180 185 190

Ser Leu Arg Gln Leu Arg Gln Pro Arg Ser Ala Gln Ala Val Ala Pro
 195 200 205

Gln Pro Cys Gly Cys
 210

<210> 698
 <211> 207
 <212> PRT
 <213> Homo sapiens

<400> 698

Met Thr Ser Arg Lys Lys Val Leu Leu Lys Val Ile Ile Leu Gly Asp
 1 5 10 15

Ser Gly Val Gly Lys Thr Ser Leu Met Asn Gln Tyr Val Asn Lys Lys
 20 25 30

Phe Ser Asn Gln Tyr Lys Ala Thr Ile Gly Ala Asp Phe Leu Thr Lys
 35 40 45

Glu Val Met Val Asp Asp Arg Leu Val Thr Met Gln Ile Trp Asp Thr
 50 55 60

Ala Gly Gln Glu Arg Phe Gln Ser Leu Gly Val Ala Phe Tyr Arg Gly
 65 70 75 80

Ala Asp Cys Cys Val Leu Val Phe Asp Val Thr Ala Pro Asn Thr Phe
 85 90 95

Lys Thr Leu Asp Ser Trp Arg Asp Glu Phe Leu Ile Gln Ala Ser Pro
 100 105 110

Arg Asp Pro Glu Asn Phe Pro Phe Val Val Leu Gly Asn Lys Ile Asp
 115 120 125

Leu Glu Asn Arg Gln Val Ala Thr Lys Arg Ala Gln Ala Trp Cys Tyr
 130 135 140

Ser Lys Asn Asn Ile Pro Tyr Phe Glu Thr Ser Ala Lys Glu Ala Ile
 145 150 155 160

Asn Val Glu Gln Ala Phe Gln Thr Ile Ala Arg Asn Ala Leu Lys Gln
 165 170 175

Glu Thr Glu Val Glu Leu Tyr Asn Glu Phe Pro Glu Pro Ile Lys Leu
 180 185 190

Asp Lys Asn Asp Arg Ala Lys Ala Ser Ala Glu Ser Cys Ser Cys
 195 200 205

<210> 699
 <211> 648
 <212> PRT
 <213> Homo sapiens

<400> 699

Met Glu His Ile Gln Gly Ala Trp Lys Thr Ile Ser Asn Gly Phe Gly
 1 5 10 15

Phe Lys Asp Ala Val Phe Asp Gly Ser Ser Cys Ile Ser Pro Thr Ile
 20 25 30

Val Gln Gln Phe Gly Tyr Gln Arg Arg Ala Ser Asp Asp Gly Lys Leu
 35 40 45

Thr Asp Pro Ser Lys Thr Ser Asn Thr Ile Arg Val Phe Leu Pro Asn
 50 55 60

Lys Gln Arg Thr Val Val Asn Val Arg Asn Gly Met Ser Leu His Asp
 65 70 75 80

Cys Leu Met Lys Ala Leu Lys Val Arg Gly Leu Gln Pro Glu Cys Cys
 85 90 95

Ala Val Phe Arg Leu Leu His Glu His Lys Gly Lys Lys Ala Arg Leu
 100 105 110

Asp Trp Asn Thr Asp Ala Ala Ser Leu Ile Gly Glu Glu Leu Gln Val
 115 120 125

Asp Phe Leu Asp His Val Pro Leu Thr Thr His Asn Phe Ala Arg Lys
 130 135 140

Thr Phe Leu Lys Leu Ala Phe Cys Asp Ile Cys Gln Lys Phe Leu Leu
 145 150 155 160

Asn Gly Phe Arg Cys Gln Thr Cys Gly Tyr Lys Phe His Glu His Cys
 165 170 175
 Ser Thr Lys Val Pro Thr Met Cys Val Asp Trp Ser Asn Ile Arg Gln
 180 185 190
 Leu Leu Leu Phe Pro Asn Ser Thr Ile Gly Asp Ser Gly Val Pro Ala
 195 200 205
 Leu Pro Ser Leu Thr Met Arg Arg Met Arg Glu Ser Val Ser Arg Met
 210 215 220
 Pro Val Ser Ser Gln His Arg Tyr Ser Thr Pro His Ala Phe Thr Phe
 225 230 235 240
 Asn Thr Ser Ser Pro Ser Ser Glu Gly Ser Leu Ser Gln Arg Gln Arg
 245 250 255
 Ser Thr Ser Thr Pro Asn Val His Met Val Ser Thr Thr Leu Pro Val
 260 265 270
 Asp Ser Arg Met Ile Glu Asp Ala Ile Arg Ser His Ser Glu Ser Ala
 275 280 285
 Ser Pro Ser Ala Leu Ser Ser Ser Pro Asn Asn Leu Ser Pro Thr Gly
 290 295 300
 Trp Ser Gln Pro Lys Thr Pro Val Pro Ala Gln Arg Glu Arg Ala Pro
 305 310 315 320
 Val Ser Gly Thr Gln Glu Lys Asn Lys Ile Arg Pro Arg Gly Gln Arg
 325 330 335
 Asp Ser Ser Tyr Tyr Trp Glu Ile Glu Ala Ser Glu Val Met Leu Ser
 340 345 350
 Thr Arg Ile Gly Ser Gly Ser Phe Gly Thr Val Tyr Lys Gly Lys Trp
 355 360 365
 His Gly Asp Val Ala Val Lys Ile Leu Lys Val Val Asp Pro Thr Pro
 370 375 380
 Glu Gln Phe Gln Ala Phe Arg Asn Glu Val Ala Val Leu Arg Lys Thr
 385 390 395 400
 Arg His Val Asn Ile Leu Leu Phe Met Gly Tyr Met Thr Lys Asp Asn
 405 410 415
 Leu Ala Ile Val Thr Gln Trp Cys Glu Gly Ser Ser Leu Tyr Lys His
 420 425 430

Leu His Val Gln Glu Thr Lys Phe Gln Met Phe Gln Leu Ile Asp Ile
 435 440 445

Ala Arg Gln Thr Ala Gln Gly Met Asp Tyr Leu His Ala Lys Asn Ile
 450 455 460

Ile His Arg Asp Met Lys Ser Asn Asn Ile Phe Leu His Glu Gly Leu
 465 470 475 480

Thr Val Lys Ile Gly Asp Phe Gly Leu Ala Thr Val Lys Ser Arg Trp
 485 490 495

Ser Gly Ser Gln Gln Val Glu Gln Pro Thr Gly Ser Val Leu Trp Met
 500 505 510

Ala Pro Glu Val Ile Arg Met Gln Asp Asn Asn Pro Phe Ser Phe Gln
 515 520 525

Ser Asp Val Tyr Ser Tyr Gly Ile Val Leu Tyr Glu Leu Met Thr Gly
 530 535 540

Glu Leu Pro Tyr Ser His Ile Asn Asn Arg Asp Gln Ile Ile Phe Met
 545 550 555 560

Val Gly Arg Gly Tyr Ala Ser Pro Asp Leu Ser Lys Leu Tyr Lys Asn
 565 570 575

Cys Pro Lys Ala Met Lys Arg Leu Val Ala Asp Cys Val Lys Lys Val
 580 585 590

Lys Glu Glu Arg Pro Leu Phe Pro Gln Ile Leu Ser Ser Ile Glu Leu
 595 600 605

Leu Gln His Ser Leu Pro Lys Ile Asn Arg Ser Ala Ser Glu Pro Ser
 610 615 620

Leu His Arg Ala Ala His Thr Glu Asp Ile Asn Ala Cys Thr Leu Thr
 625 630 635 640

Thr Ser Pro Arg Leu Pro Val Phe
 645

<210> 700
 <211> 206
 <212> PRT
 <213> Homo sapiens

<400> 700

Met Ala Ala Asn Lys Ser Lys Gly Gln Ser Ser Leu Ala Leu His Lys
 1 5 10 15

Val Ile Met Val Gly Ser Gly Gly Val Gly Lys Ser Ala Leu Thr Leu
 20 25 30

Gln Phe Met Tyr Asp Glu Phe Val Glu Asp Tyr Glu Pro Thr Lys Ala
 35 40 45

Asp Ser Tyr Arg Lys Lys Val Val Leu Asp Gly Glu Glu Val Gln Ile
 50 55 60

Asp Ile Leu Asp Thr Ala Gly Gln Glu Asp Tyr Ala Ala Ile Arg Asp
 65 70 75 80

Asn Tyr Phe Arg Ser Gly Glu Gly Phe Leu Leu Val Phe Ser Ile Thr
 85 90 95

Glu His Glu Ser Phe Thr Ala Thr Ala Glu Phe Arg Glu Gln Ile Leu
 100 105 110

Arg Val Lys Ala Glu Glu Asp Lys Ile Pro Leu Leu Val Val Gly Asn
 115 120 125

Lys Ser Asp Leu Glu Glu Arg Arg Gln Val Pro Val Glu Glu Ala Arg
 130 135 140

Ser Lys Ala Glu Glu Trp Gly Val Gln Tyr Val Glu Thr Ser Ala Lys
 145 150 155 160

Thr Arg Ala Asn Val Asp Lys Val Phe Phe Asp Leu Met Arg Glu Ile
 165 170 175

Arg Thr Lys Lys Met Ser Glu Asn Lys Asp Lys Asn Gly Lys Lys Ser
 180 185 190

Ser Lys Asn Lys Lys Ser Phe Lys Glu Arg Cys Cys Leu Leu
 195 200 205

<210> 701
 <211> 462
 <212> PRT
 <213> Homo sapiens

<400> 701

Met Ala Ser Asn Ser Ser Ser Cys Pro Thr Pro Gly Gly Gly His Leu
 1 5 10 15

Asn Gly Tyr Pro Val Pro Pro Tyr Ala Phe Phe Phe Pro Pro Met Leu
 20 25 30

Gly Gly Leu Ser Pro Pro Gly Ala Leu Thr Thr Leu Gln His Gln Leu
 35 40 45

Pro Val Ser Gly Tyr Ser Thr Pro Ser Pro Ala Thr Ile Glu Thr Gln

50

55

60

Ser Ser Ser Ser Glu Glu Ile Val Pro Ser Pro Pro Ser Pro Pro Pro
65 70 75 80

Leu Pro Arg Ile Tyr Lys Pro Cys Phe Val Cys Gln Asp Lys Ser Ser
85 90 95

Gly Tyr His Tyr Gly Val Ser Ala Cys Glu Gly Cys Lys Gly Phe Phe
100 105 110

Arg Arg Ser Ile Gln Lys Asn Met Val Tyr Thr Cys His Arg Asp Lys
115 120 125

Asn Cys Ile Ile Asn Lys Val Thr Arg Asn Arg Cys Gln Tyr Cys Arg
130 135 140

Leu Gln Lys Cys Phe Glu Val Gly Met Ser Lys Glu Ser Val Arg Asn
145 150 155 160

Asp Arg Asn Lys Lys Lys Lys Glu Val Pro Lys Pro Glu Cys Ser Glu
165 170 175

Ser Tyr Thr Leu Thr Pro Glu Val Gly Glu Leu Ile Glu Lys Val Arg
180 185 190

Lys Ala His Gln Glu Thr Phe Pro Ala Leu Cys Gln Leu Gly Lys Tyr
195 200 205

Thr Thr Asn Asn Ser Ser Glu Gln Arg Val Ser Leu Asp Ile Asp Leu
210 215 220

Trp Asp Lys Phe Ser Glu Leu Ser Thr Lys Cys Ile Ile Lys Thr Val
225 230 235 240

Glu Phe Ala Lys Gln Leu Pro Gly Phe Thr Thr Leu Thr Ile Ala Asp
245 250 255

Gln Ile Thr Leu Leu Lys Ala Ala Cys Leu Asp Ile Leu Ile Leu Arg
260 265 270

Ile Cys Thr Arg Tyr Thr Pro Glu Gln Asp Thr Met Thr Phe Ser Asp
275 280 285

Gly Leu Thr Leu Asn Arg Thr Gln Met His Asn Ala Gly Phe Gly Pro
290 295 300

Leu Thr Asp Leu Val Phe Ala Phe Ala Asn Gln Leu Leu Pro Leu Glu
305 310 315 320

Met Asp Asp Ala Glu Thr Gly Leu Leu Ser Ala Ile Cys Leu Ile Cys

Gly Asp Arg Gln Asp Leu Glu Gln Pro Asp Arg Val Asp Met Leu Gln
340 345 350

Glu Pro Leu Leu Glu Ala Leu Lys Val Tyr Val Arg Lys Arg Arg Pro
355 360 365

Ser Arg Pro His Met Phe Pro Lys Met Leu Met Lys Ile Thr Asp Leu
370 375 380

Arg Ser Ile Ser Ala Lys Gly Ala Glu Arg Val Ile Thr Leu Lys Met
385 390 395 400

Glu Ile Pro Gly Ser Met Pro Pro Leu Ile Gln Glu Met Leu Glu Asn
405 410 415

Ser Glu Gly Leu Asp Thr Leu Ser Gly Gln Pro Gly Gly Gly Gly Arg
420 425 430

Asp Gly Gly Gly Leu Ala Pro Pro Pro Gly Ser Cys Ser Pro Ser Leu
435 440 445

Ser Pro Ser Ser Asn Arg Ser Ser Pro Ala Thr His Ser Pro
450 455 460

<210> 702
<211> 326
<212> PRT
<213> Homo sapiens

<400> 702

Met Asp Tyr Ser His Gln Thr Ser Leu Val Pro Cys Gly Gln Asp Lys
1 5 10 15

Tyr Ile Ser Lys Asn Glu Leu Leu Leu His Leu Lys Thr Tyr Asn Leu
20 25 30

Tyr Tyr Glu Gly Gln Asn Leu Gln Leu Arg His Arg Glu Glu Glu Asp
35 40 45

Glu Phe Ile Val Glu Gly Leu Leu Asn Ile Ser Trp Gly Leu Arg Arg
50 55 60

Pro Ile Arg Leu Gln Met Gln Asp Asp Asn Glu Arg Ile Arg Pro Pro
65 70 75 80

Pro Ser Ser Ser Ser Trp His Ser Gly Cys Asn Leu Gly Ala Gln Gly
85 90 95

Thr Thr Leu Lys Pro Leu Thr Val Pro Lys Val Gln Ile Ser Glu Val
100 105 110

Asp Ala Pro Pro Glu Gly Asp Gln Met Pro Ser Ser Thr Asp Ser Arg
 115 120 125

Gly Leu Lys Pro Leu Gln Glu Asp Thr Pro Gln Leu Met Arg Thr Arg
 130 135 140

Ser Asp Val Gly Val Arg Arg Arg Gly Asn Val Arg Thr Pro Ser Asp
 145 150 155 160

Gln Arg Arg Ile Arg Arg His Arg Phe Ser Ile Asn Gly His Phe Tyr
 165 170 175

Asn His Lys Thr Ser Val Phe Thr Pro Ala Tyr Gly Ser Val Thr Asn
 180 185 190

Val Arg Ile Asn Ser Thr Met Thr Thr Pro Gln Val Leu Lys Leu Leu
 195 200 205

Leu Asn Lys Phe Lys Ile Glu Asn Ser Ala Glu Glu Phe Ala Leu Tyr
 210 215 220

Val Val His Thr Ser Gly Glu Lys Gln Lys Leu Lys Ala Thr Asp Tyr
 225 230 235 240

Pro Leu Ile Ala Arg Ile Leu Gln Gly Pro Cys Glu Gln Ile Ser Lys
 245 250 255

Val Phe Leu Met Glu Lys Asp Gln Val Glu Glu Val Thr Tyr Asp Val
 260 265 270

Ala Gln Tyr Ile Lys Phe Glu Met Pro Val Leu Lys Ser Phe Ile Gln
 275 280 285

Lys Leu Gln Glu Glu Glu Asp Arg Glu Val Lys Lys Leu Met Arg Lys
 290 295 300

Tyr Thr Val Leu Arg Leu Met Ile Arg Gln Arg Leu Glu Glu Ile Ala
 305 310 315 320

Glu Thr Pro Ala Thr Ile
 325

<210> 703
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 703

Met Ala Ser Asp Asp Phe Asp Ile Val Ile Glu Ala Met Leu Glu Ala
 1 5 10 15

Pro Tyr Lys Lys₂₀ Glu Glu Asp Glu₂₅ Gln Gln Arg Lys Glu₃₀ Val Lys Lys
 Asp Tyr Pro₃₅ Ser Asn Thr Thr Ser₄₀ Ser Thr Ser Asn Ser₄₅ Gly Asn Glu
 Thr Ser₅₀ Gly Ser Ser Thr Ile₅₅ Gly Glu Thr Ser Asn₆₀ Arg Ser Arg Asp
 Arg Asp Arg Tyr Arg Arg₇₀ Arg Asn Ser Arg Ser₇₅ Arg Ser Pro Gly Arg₈₀
 Gln Cys Arg His Arg₈₅ Ser Arg Ser Trp Asp₉₀ Arg Arg His Gly Ser₉₅ Glu
 Ser Arg Ser Arg₁₀₀ Asp His Arg Arg Glu₁₀₅ Asp Arg Val His Tyr Arg Ser
 Pro Pro Leu₁₁₅ Ala Thr Gly Tyr Arg₁₂₀ Tyr Gly His Ser Lys₁₂₅ Ser Pro His
 Phe Arg₁₃₀ Glu Lys Ser Pro Val₁₃₅ Arg Glu Pro Val Asp₁₄₀ Asn Leu Ser Pro
 Glu Glu Arg Asp Ala Arg₁₅₀ Thr Val Phe Cys Met₁₅₅ Gln Leu Ala Ala Arg₁₆₀
 Ile Arg Pro Arg Asp₁₆₅ Leu Glu Asp Phe Phe₁₇₀ Ser Ala Val Gly Lys₁₇₅ Val
 Arg Asp Val Arg₁₈₀ Ile Ile Ser Asp Arg₁₈₅ Asn Ser Arg Arg Ser₁₉₀ Lys Gly
 Ile Ala Tyr₁₉₅ Val Glu Phe Cys Glu₂₀₀ Ile Gln Ser Val Pro₂₀₅ Leu Ala Ile
 Gly Leu₂₁₀ Thr Gly Gln Arg Leu₂₁₅ Leu Gly Val Pro Ile₂₂₀ Ile Val Gln Ala
 Ser₂₂₅ Gln Ala Glu Lys Asn₂₃₀ Arg Leu Ala Ala Met₂₃₅ Ala Asn Asn Leu Gln₂₄₀
 Lys Gly Asn Gly Gly₂₄₅ Pro Met Arg Leu Tyr₂₅₀ Val Gly Ser Leu His₂₅₅ Phe
 Asn Ile Thr Glu₂₆₀ Asp Met Leu Arg Gly₂₆₅ Ile Phe Glu Pro Phe₂₇₀ Gly Lys
 Ile Asp Asn₂₇₅ Ile Val Leu Met Lys₂₈₀ Asp Ser Asp Thr Gly₂₈₅ Arg Ser Lys

Gly Tyr Gly Phe Ile Thr Phe Ser Asp Ser Glu Cys Ala Arg Arg Ala
 290 295 300

Leu Glu Gln Leu Asn Gly Phe Glu Leu Ala Gly Arg Pro Met Arg Val
 305 310 315 320

Gly His Val Thr Glu Arg Leu Asp Gly Gly Thr Asp Ile Thr Phe Pro
 325 330 335

Asp Gly Asp Gln Glu Leu Asp Leu Gly Ser Ala Gly Gly Arg Phe Gln
 340 345 350

Leu Met Ala Lys Leu Ala Glu Gly Ala Gly Ile Gln Leu Pro Ser Thr
 355 360 365

Ala Ala Ala Ala Ala Ala Ala Ala Ala Gln Ala Ala Ala Leu Gln Leu
 370 375 380

Asn Gly Ala Val Pro Leu Gly Ala Leu Asn Pro Ala Ala Leu Thr Ala
 385 390 395 400

Leu Ser Pro Ala Leu Asn Leu Ala Ser Gln Cys Phe Gln Leu Ser Ser
 405 410 415

Leu Phe Thr Pro Gln Thr Met
 420

<210> 704
 <211> 406
 <212> PRT
 <213> Homo sapiens

<400> 704

Met Gly Lys Val Trp Lys Gln Gln Met Tyr Pro Gln Tyr Ala Thr Tyr
 1 5 10 15

Tyr Tyr Pro Gln Tyr Leu Gln Ala Lys Gln Ser Leu Val Pro Ala His
 20 25 30

Pro Met Ala Pro Pro Ser Pro Ser Thr Thr Ser Ser Asn Asn Asn Ser
 35 40 45

Ser Ser Ser Ser Asn Ser Gly Trp Asp Gln Leu Ser Lys Thr Asn Leu
 50 55 60

Tyr Ile Arg Gly Leu Pro Pro His Thr Thr Asp Gln Asp Leu Val Lys
 65 70 75 80

Leu Cys Gln Pro Tyr Gly Lys Ile Val Ser Thr Lys Ala Ile Leu Asp
 85 90 95

Lys Thr Thr Asn Lys Cys Lys Gly Tyr Gly Phe Val Asp Phe Asp Ser
 100 105 110
 Pro Ala Ala Ala Gln Lys Ala Val Ser Ala Leu Lys Ala Ser Gly Val
 115 120 125
 Gln Ala Gln Met Ala Lys Gln Gln Glu Gln Asp Pro Thr Asn Leu Tyr
 130 135 140
 Ile Ser Asn Leu Pro Leu Ser Met Asp Glu Gln Glu Leu Glu Asn Met
 145 150 155 160
 Leu Lys Pro Phe Gly Gln Val Ile Ser Thr Arg Ile Leu Arg Asp Ser
 165 170 175
 Ser Gly Thr Ser Arg Gly Val Gly Phe Ala Arg Met Glu Ser Thr Glu
 180 185 190
 Lys Cys Glu Ala Val Ile Gly His Phe Asn Gly Lys Phe Ile Lys Thr
 195 200 205
 Pro Pro Gly Val Ser Ala Pro Thr Glu Pro Leu Leu Cys Lys Phe Ala
 210 215 220
 Asp Gly Gly Gln Lys Lys Arg Gln Asn Pro Asn Lys Tyr Ile Pro Asn
 225 230 235 240
 Gly Arg Pro Trp His Arg Glu Gly Glu Val Arg Leu Ala Gly Met Thr
 245 250 255
 Leu Thr Tyr Asp Pro Thr Thr Ala Ala Ile Gln Asn Gly Phe Tyr Pro
 260 265 270
 Ser Pro Tyr Ser Ile Ala Thr Asn Arg Met Ile Thr Gln Thr Ser Ile
 275 280 285
 Thr Pro Tyr Ile Ala Ser Pro Val Ser Ala Tyr Gln Val Gln Ser Pro
 290 295 300
 Ser Trp Met Gln Pro Gln Pro Tyr Ile Leu Gln His Pro Gly Ala Val
 305 310 315 320
 Leu Thr Pro Ser Met Glu His Thr Met Ser Leu Gln Pro Ala Ser Met
 325 330 335
 Ile Ser Pro Leu Ala Gln Gln Met Ser His Leu Ser Leu Gly Ser Thr
 340 345 350
 Gly Thr Tyr Met Pro Ala Thr Ser Ala Met Gln Gly Ala Tyr Leu Pro
 355 360 365

Gln Tyr Ala His Met Gln Thr Thr Ala Val Pro Val Glu Glu Ala Ser
 370 375 380

Gly Gln Gln Gln Val Ala Val Glu Thr Ser Asn Asp His Ser Pro Tyr
 385 390 395 400

Thr Phe Gln Pro Asn Lys
 405

<210> 705
 <211> 1064
 <212> PRT
 <213> Homo sapiens

<400> 705

Met Pro Val Gln Ala Ala Gln Trp Thr Glu Phe Leu Ser Cys Pro Ile
 1 5 10 15

Cys Tyr Asn Glu Phe Asp Glu Asn Val His Lys Pro Ile Ser Leu Gly
 20 25 30

Cys Ser His Thr Val Cys Lys Thr Cys Leu Asn Lys Leu His Arg Lys
 35 40 45

Ala Cys Pro Phe Asp Gln Thr Ala Ile Asn Thr Asp Ile Asp Val Leu
 50 55 60

Pro Val Asn Phe Ala Leu Leu Gln Leu Val Gly Ala Gln Val Pro Asp
 65 70 75 80

His Gln Ser Ile Lys Leu Ser Asn Leu Gly Glu Asn Lys His Tyr Glu
 85 90 95

Val Ala Lys Lys Cys Val Glu Asp Leu Ala Leu Tyr Leu Lys Pro Leu
 100 105 110

Ser Gly Gly Lys Gly Val Ala Ser Leu Asn Gln Ser Ala Leu Ser Arg
 115 120 125

Pro Met Gln Arg Lys Leu Val Thr Leu Val Asn Cys Gln Leu Val Glu
 130 135 140

Glu Glu Gly Arg Val Arg Ala Met Arg Ala Ala Arg Ser Leu Gly Glu
 145 150 155 160

Arg Thr Val Thr Glu Leu Ile Leu Gln His Gln Asn Pro Gln Gln Leu
 165 170 175

Ser Ala Asn Leu Trp Ala Ala Val Arg Ala Arg Gly Cys Gln Phe Leu
 180 185 190

Gly Pro Ala Met Gln Glu Glu Ala Leu Lys Leu Val Leu Leu Ala Leu
 Page 1161

195

200

205

Glu Asp Gly Ser Ala Leu Ser Arg Lys Val Leu Val Leu Phe Val Val
 210 215 220

Gln Arg Leu Glu Pro Arg Phe Pro Gln Ala Ser Lys Thr Ser Ile Gly
 225 230 235 240

His Val Val Gln Leu Leu Tyr Arg Ala Ser Cys Phe Lys Val Thr Lys
 245 250 255

Arg Asp Glu Asp Ser Ser Leu Met Gln Leu Lys Glu Glu Phe Arg Ser
 260 265 270

Tyr Glu Ala Leu Arg Arg Glu His Asp Ala Gln Ile Val His Ile Ala
 275 280 285

Met Glu Ala Gly Leu Arg Ile Ser Pro Glu Gln Trp Ser Ser Leu Leu
 290 295 300

Tyr Gly Asp Leu Ala His Lys Ser His Met Gln Ser Ile Ile Asp Lys
 305 310 315 320

Leu Gln Ser Pro Glu Ser Phe Ala Lys Ser Val Gln Glu Leu Thr Ile
 325 330 335

Val Leu Gln Arg Thr Gly Asp Pro Ala Asn Leu Asn Arg Leu Arg Pro
 340 345 350

His Leu Glu Leu Leu Ala Asn Ile Asp Pro Asn Pro Asp Ala Val Ser
 355 360 365

Pro Thr Trp Glu Gln Leu Glu Asn Ala Met Val Ala Val Lys Thr Val
 370 375 380

Val His Gly Leu Val Asp Phe Ile Gln Asn Tyr Ser Arg Lys Gly His
 385 390 395 400

Glu Thr Pro Gln Pro Gln Pro Asn Ser Lys Tyr Lys Thr Ser Met Cys
 405 410 415

Arg Asp Leu Arg Gln Gln Gly Gly Cys Pro Arg Gly Thr Asn Cys Thr
 420 425 430

Phe Ala His Ser Gln Glu Glu Leu Glu Lys Tyr Arg Leu Arg Asn Lys
 435 440 445

Lys Ile Asn Ala Thr Val Arg Thr Phe Pro Leu Leu Asn Lys Val Gly
 450 455 460

Val Asn Asn Thr Val Thr Thr Thr Ala Gly Asn Val Ile Ser Val Ile
 Page 1162

465 470 475 480
 Gly Ser Thr Glu Thr Thr Gly Lys Ile Val Pro Ser Thr Asn Gly Ile
 485 490 495
 Ser Asn Ala Glu Asn Ser Val Ser Gln Leu Ile Ser Arg Ser Thr Asp
 500 505 510
 Ser Thr Leu Arg Ala Leu Glu Thr Val Lys Lys Val Gly Lys Val Gly
 515 520 525
 Ala Asn Gly Gln Asn Ala Ala Gly Pro Ser Ala Asp Ser Val Thr Glu
 530 535 540
 Asn Lys Ile Gly Ser Pro Pro Lys Thr Pro Val Ser Asn Val Ala Ala
 545 550 555 560
 Thr Ser Ala Gly Pro Ser Asn Val Gly Thr Glu Leu Asn Ser Val Pro
 565 570 575
 Gln Lys Ser Ser Pro Phe Leu Thr Arg Val Pro Val Tyr Pro Pro His
 580 585 590
 Ser Glu Asn Ile Gln Tyr Phe Gln Asp Pro Arg Thr Gln Ile Pro Phe
 595 600 605
 Glu Val Pro Gln Tyr Pro Gln Thr Gly Tyr Tyr Pro Pro Pro Pro Thr
 610 615 620
 Val Pro Ala Gly Val Ala Pro Cys Val Pro Arg Phe Val Arg Ser Asn
 625 630 635 640
 Asn Val Pro Glu Ser Ser Leu Pro Pro Ala Ser Met Pro Tyr Ala Asp
 645 650 655
 His Tyr Ser Thr Phe Ser Pro Arg Asp Arg Met Asn Ser Ser Pro Tyr
 660 665 670
 Gln Pro Pro Pro Pro Gln Pro Tyr Gly Pro Val Pro Pro Val Pro Ser
 675 680 685
 Gly Met Tyr Ala Pro Val Tyr Asp Ser Arg Arg Ile Trp Arg Pro Pro
 690 695 700
 Met Tyr Gln Arg Asp Asp Ile Ile Arg Ser Asn Ser Leu Pro Pro Met
 705 710 715 720
 Asp Val Met His Ser Ser Val Tyr Gln Thr Ser Leu Arg Glu Arg Tyr
 725 730 735
 Asn Ser Leu Asp Gly Tyr Tyr Ser Val Ala Cys Gln Pro Pro Ser Glu
 Page 1163

740

745

750

Pro Arg Thr Thr Val Pro Leu Pro Arg Glu Pro Cys Gly His Leu Lys
 755 760 765

Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
 770 775 780

Tyr His Thr Gln Lys Ala Pro Leu Val Ser Ser Thr Leu Pro Val Ala
 785 790 795 800

Thr Gln Ser Pro Thr Pro Pro Ser Pro Leu Phe Ser Val Asp Phe Arg
 805 810 815

Ala Asp Phe Ser Glu Ser Val Ser Gly Thr Lys Phe Glu Glu Asp His
 820 825 830

Leu Ser His Tyr Ser Pro Trp Ser Cys Gly Thr Ile Gly Ser Cys Ile
 835 840 845

Asn Ala Ile Asp Ser Glu Pro Lys Asp Val Ile Ala Asn Ser Asn Ala
 850 855 860

Val Leu Met Asp Leu Asp Ser Gly Asp Val Lys Arg Arg Val His Leu
 865 870 875 880

Phe Glu Thr Gln Arg Arg Thr Lys Glu Glu Asp Pro Ile Ile Pro Phe
 885 890 895

Ser Asp Gly Pro Ile Ile Ser Lys Trp Gly Ala Ile Ser Arg Ser Ser
 900 905 910

Arg Thr Gly Tyr His Thr Thr Asp Pro Val Gln Ala Thr Ala Ser Gln
 915 920 925

Gly Ser Ala Thr Lys Pro Ile Ser Val Ser Asp Tyr Val Pro Tyr Val
 930 935 940

Asn Ala Val Asp Ser Arg Trp Ser Ser Tyr Gly Asn Glu Ala Thr Ser
 945 950 955 960

Ser Ala His Tyr Val Glu Arg Asp Arg Phe Ile Val Thr Asp Leu Ser
 965 970 975

Gly His Arg Lys His Ser Ser Thr Gly Asp Leu Leu Ser Leu Glu Leu
 980 985 990

Gln Gln Ala Lys Ser Asn Ser Leu Leu Leu Gln Arg Glu Ala Asn Ala
 995 1000 1005

Leu Ala Met Gln Gln Lys Trp Asn Ser Leu Asp Glu Gly Arg His

1010

1015

1020

Leu Thr Leu Asn Leu Leu Ser Lys Glu Ile Glu Leu Arg Asn Gly
 1025 1030 1035

Glu Val Lys Lys Leu Asn Leu Ser Ala Ser Cys Leu Met Tyr Leu
 1040 1045 1050

Phe Ser Ala Ala Ala Ser Trp Leu Tyr His Tyr
 1055 1060

<210> 706
 <211> 1566
 <212> PRT
 <213> Homo sapiens

<400> 706

Met Thr Ala Asp Lys Asp Lys Asp Lys Asp Lys Glu Lys Asp Arg Asp
 1 5 10 15

Arg Asp Arg Asp Arg Glu Arg Glu Lys Arg Asp Lys Ala Arg Glu Ser
 20 25 30

Glu Asn Ser Arg Pro Arg Arg Ser Cys Thr Leu Glu Gly Gly Ala Lys
 35 40 45

Asn Tyr Ala Glu Ser Asp His Ser Glu Asp Glu Asp Asn Asp Asn Asn
 50 55 60

Ser Ala Thr Ala Glu Glu Ser Thr Lys Lys Asn Lys Lys Lys Pro Pro
 65 70 75 80

Lys Lys Lys Ser Arg Tyr Glu Arg Thr Asp Thr Gly Glu Ile Thr Ser
 85 90 95

Tyr Ile Thr Glu Asp Asp Val Val Tyr Arg Pro Gly Asp Cys Val Tyr
 100 105 110

Ile Glu Ser Arg Arg Pro Asn Thr Pro Tyr Phe Ile Cys Ser Ile Gln
 115 120 125

Asp Phe Lys Leu Val His Asn Ser Gln Ala Cys Cys Arg Ser Pro Thr
 130 135 140

Pro Ala Leu Cys Asp Pro Pro Ala Cys Ser Leu Pro Val Ala Ser Gln
 145 150 155 160

Pro Pro Gln His Leu Ser Glu Ala Gly Arg Gly Pro Val Gly Ser Lys
 165 170 175

Arg Asp His Leu Leu Met Asn Val Lys Trp Tyr Tyr Arg Gln Ser Glu
 180 185 190

Val Pro Asp Ser Val Tyr Gln His Leu Val Gln Asp Arg His Asn Glu
 195 200 205
 Asn Asp Ser Gly Arg Glu Leu Val Ile Thr Asp Pro Val Ile Lys Asn
 210 215 220
 Arg Glu Leu Phe Ile Ser Asp Tyr Val Asp Thr Tyr His Ala Ala Ala
 225 230 235 240
 Leu Arg Gly Lys Cys Asn Ile Ser His Phe Ser Asp Ile Phe Ala Ala
 245 250 255
 Arg Glu Phe Lys Ala Arg Val Asp Ser Phe Phe Tyr Ile Leu Gly Tyr
 260 265 270
 Asn Pro Glu Thr Arg Arg Leu Asn Ser Thr Gln Gly Glu Ile Arg Val
 275 280 285
 Gly Pro Ser His Gln Ala Lys Leu Pro Asp Leu Gln Pro Phe Pro Ser
 290 295 300
 Pro Asp Gly Asp Thr Val Thr Gln His Glu Glu Leu Val Trp Met Pro
 305 310 315 320
 Gly Val Asn Asp Cys Asp Leu Leu Met Tyr Leu Arg Ala Ala Arg Ser
 325 330 335
 Met Ala Ala Phe Ala Gly Met Cys Asp Gly Gly Ser Thr Glu Asp Gly
 340 345 350
 Cys Val Ala Ala Ser Arg Asp Asp Thr Thr Leu Asn Ala Leu Asn Thr
 355 360 365
 Leu His Glu Ser Gly Tyr Asp Ala Gly Lys Ala Leu Gln Arg Leu Val
 370 375 380
 Lys Lys Pro Val Pro Lys Leu Ile Glu Lys Cys Trp Thr Glu Asp Glu
 385 390 395 400
 Val Lys Arg Phe Val Lys Gly Leu Arg Gln Tyr Gly Lys Asn Phe Phe
 405 410 415
 Arg Ile Arg Lys Glu Leu Leu Pro Asn Lys Glu Thr Gly Glu Leu Ile
 420 425 430
 Thr Phe Tyr Tyr Tyr Trp Lys Lys Thr Pro Glu Ala Ala Ser Ser Arg
 435 440 445
 Ala His Arg Arg His Arg Arg Gln Ala Val Phe Arg Arg Ile Lys Thr
 450 455 460

Arg Thr Ala Ser Thr Pro Val Asn Thr Pro Ser Arg Pro Pro Ser Ser
 465 470 475 480
 Glu Phe Leu Asp Leu Ser Ser Ala Ser Glu Asp Asp Phe Asp Ser Glu
 485 490 495
 Asp Ser Glu Gln Glu Leu Lys Gly Tyr Ala Cys Arg His Cys Phe Thr
 500 505 510
 Thr Thr Ser Lys Asp Trp His His Gly Gly Arg Glu Asn Ile Leu Leu
 515 520 525
 Cys Thr Asp Cys Arg Ile His Phe Lys Lys Tyr Gly Glu Leu Pro Pro
 530 535 540
 Ile Glu Lys Pro Val Asp Pro Pro Pro Phe Met Phe Lys Pro Val Lys
 545 550 555 560
 Glu Glu Asp Asp Gly Leu Ser Gly Lys His Ser Met Arg Thr Arg Arg
 565 570 575
 Ser Arg Gly Ser Met Ser Thr Leu Arg Ser Gly Arg Lys Lys Gln Pro
 580 585 590
 Ala Ser Pro Asp Gly Arg Thr Ser Pro Ile Asn Glu Asp Ile Arg Ser
 595 600 605
 Ser Gly Arg Asn Ser Pro Ser Ala Ala Ser Thr Ser Ser Asn Asp Ser
 610 615 620
 Lys Ala Glu Thr Val Lys Lys Ser Ala Lys Lys Val Lys Glu Glu Ala
 625 630 635 640
 Ser Ser Pro Leu Lys Ser Asn Lys Arg Gln Arg Glu Lys Val Ala Ser
 645 650 655
 Asp Thr Glu Glu Ala Asp Arg Thr Ser Ser Lys Lys Thr Lys Thr Gln
 660 665 670
 Glu Ile Ser Arg Pro Asn Ser Pro Ser Glu Gly Glu Gly Glu Ser Ser
 675 680 685
 Asp Ser Arg Ser Val Asn Asp Glu Gly Ser Ser Asp Pro Lys Asp Ile
 690 695 700
 Asp Gln Asp Asn Arg Ser Thr Ser Pro Ser Ile Pro Ser Pro Gln Asp
 705 710 715 720
 Asn Glu Ser Asp Ser Asp Ser Ser Ala Gln Gln Gln Met Leu Gln Ala
 725 730 735

Gln Pro Pro Ala Leu Gln Ala Pro Thr Gly Val Thr Pro Ala Pro Ser
 740 745 750
 Ser Ala Pro Pro Gly Thr Pro Gln Leu Pro Thr Pro Gly Pro Thr Pro
 755 760 765
 Ser Ala Thr Ala Val Pro Pro Gln Gly Ser Pro Thr Ala Ser Gln Ala
 770 775 780
 Pro Asn Gln Pro Gln Ala Pro Thr Ala Pro Val Pro His Thr His Ile
 785 790 795 800
 Gln Gln Ala Pro Ala Leu His Pro Gln Arg Pro Pro Ser Pro His Pro
 805 810 815
 Pro Pro His Pro Ser Pro His Pro Pro Leu Gln Pro Leu Thr Gly Ser
 820 825 830
 Ala Gly Gln Pro Ser Ala Pro Ser His Ala Gln Pro Pro Leu His Gly
 835 840 845
 Gln Gly Pro Pro Gly Pro His Ser Leu Gln Ala Gly Pro Leu Leu Gln
 850 855 860
 His Pro Gly Pro Pro Gln Pro Phe Gly Leu Pro Pro Gln Ala Ser Gln
 865 870 875 880
 Gly Gln Ala Pro Leu Gly Thr Ser Pro Ala Ala Ala Tyr Pro His Thr
 885 890 895
 Ser Leu Gln Leu Pro Ala Ser Gln Ser Ala Leu Gln Ser Gln Gln Pro
 900 905 910
 Pro Arg Glu Gln Pro Leu Pro Pro Ala Pro Leu Ala Met Pro His Ile
 915 920 925
 Lys Pro Pro Pro Thr Thr Pro Ile Pro Gln Leu Pro Ala Pro Gln Ala
 930 935 940
 His Lys His Pro Pro His Leu Ser Gly Pro Ser Pro Phe Ser Met Asn
 945 950 955 960
 Ala Asn Leu Pro Pro Pro Pro Ala Leu Lys Pro Leu Ser Ser Leu Ser
 965 970 975
 Thr His His Pro Pro Ser Ala His Pro Pro Pro Leu Gln Leu Met Pro
 980 985 990
 Gln Ser Gln Pro Leu Pro Ser Ser Pro Ala Gln Pro Pro Gly Leu Thr
 995 1000 1005

Gln	Ser	Gln	Asn	Leu	Pro	Pro	Pro	Pro	Ala	Ser	His	Pro	Pro	Thr
1010						1015					1020			
Gly	Leu	His	Gln	Val	Ala	Pro	Gln	Pro	Pro	Phe	Ala	Gln	His	Pro
1025						1030					1035			
Phe	Val	Pro	Gly	Gly	Pro	Pro	Pro	Ile	Thr	Pro	Pro	Thr	Cys	Pro
1040						1045					1050			
Ser	Thr	Ser	Thr	Pro	Pro	Ala	Gly	Pro	Gly	Thr	Ser	Ala	Gln	Pro
1055						1060					1065			
Pro	Cys	Ser	Gly	Ala	Ala	Ala	Ser	Gly	Gly	Ser	Ile	Ala	Gly	Gly
1070						1075					1080			
Ser	Ser	Cys	Pro	Leu	Pro	Thr	Val	Gln	Ile	Lys	Glu	Glu	Ala	Leu
1085						1090					1095			
Asp	Asp	Ala	Glu	Glu	Pro	Glu	Ser	Pro	Pro	Pro	Pro	Pro	Arg	Ser
1100						1105					1110			
Pro	Ser	Pro	Glu	Pro	Thr	Val	Val	Asp	Thr	Pro	Ser	His	Ala	Ser
1115						1120					1125			
Gln	Ser	Ala	Arg	Phe	Tyr	Lys	His	Leu	Asp	Arg	Gly	Tyr	Asn	Ser
1130						1135					1140			
Cys	Ala	Arg	Thr	Asp	Leu	Tyr	Phe	Met	Pro	Leu	Ala	Gly	Ser	Lys
1145						1150					1155			
Leu	Ala	Lys	Lys	Arg	Glu	Glu	Ala	Ile	Glu	Lys	Ala	Lys	Arg	Glu
1160						1165					1170			
Ala	Glu	Gln	Lys	Ala	Arg	Glu	Glu	Arg	Glu	Arg	Glu	Lys	Glu	Lys
1175						1180					1185			
Glu	Lys	Glu	Arg	Glu	Arg	Glu	Arg	Glu	Arg	Glu	Arg	Glu	Ala	Glu
1190						1195					1200			
Arg	Ala	Ala	Lys	Ala	Ser	Ser	Ser	Ala	His	Glu	Gly	Arg	Leu	Ser
1205						1210					1215			
Asp	Pro	Gln	Leu	Ser	Gly	Pro	Gly	His	Met	Arg	Pro	Ser	Phe	Glu
1220						1225					1230			
Pro	Pro	Pro	Thr	Thr	Ile	Ala	Ala	Val	Pro	Pro	Tyr	Ile	Gly	Pro
1235						1240					1245			
Asp	Thr	Pro	Ala	Leu	Arg	Thr	Leu	Ser	Glu	Tyr	Ala	Arg	Pro	His
1250						1255					1260			

Val	Met	Ser	Pro	Thr	Asn	Arg	Asn	His	Pro	Phe	Tyr	Met	Pro	Leu
	1265					1270					1275			
Asn	Pro	Thr	Asp	Pro	Leu	Leu	Ala	Tyr	His	Met	Pro	Gly	Leu	Tyr
	1280					1285					1290			
Asn	Val	Asp	Pro	Thr	Ile	Arg	Glu	Arg	Glu	Leu	Arg	Glu	Arg	Glu
	1295					1300					1305			
Ile	Arg	Glu	Arg	Glu	Ile	Arg	Glu	Arg	Glu	Leu	Arg	Glu	Arg	Met
	1310					1315					1320			
Lys	Pro	Gly	Phe	Glu	Val	Lys	Pro	Pro	Glu	Leu	Asp	Pro	Leu	His
	1325					1330					1335			
Pro	Ala	Ala	Asn	Pro	Met	Glu	His	Phe	Ala	Arg	His	Ser	Ala	Leu
	1340					1345					1350			
Thr	Ile	Pro	Pro	Thr	Ala	Gly	Pro	His	Pro	Phe	Ala	Ser	Phe	His
	1355					1360					1365			
Pro	Gly	Leu	Asn	Pro	Leu	Glu	Arg	Glu	Arg	Leu	Ala	Leu	Ala	Gly
	1370					1375					1380			
Pro	Gln	Leu	Arg	Pro	Glu	Met	Ser	Tyr	Pro	Asp	Arg	Leu	Ala	Ala
	1385					1390					1395			
Glu	Arg	Ile	His	Ala	Glu	Arg	Met	Ala	Ser	Leu	Thr	Ser	Asp	Pro
	1400					1405					1410			
Leu	Ala	Arg	Leu	Gln	Met	Phe	Asn	Val	Thr	Pro	His	His	His	Gln
	1415					1420					1425			
His	Ser	His	Ile	His	Ser	His	Leu	His	Leu	His	Gln	Gln	Asp	Pro
	1430					1435					1440			
Leu	His	Gln	Gly	Ser	Ala	Gly	Pro	Val	His	Pro	Leu	Val	Asp	Pro
	1445					1450					1455			
Leu	Thr	Ala	Gly	Pro	His	Leu	Ala	Arg	Phe	Pro	Tyr	Pro	Pro	Gly
	1460					1465					1470			
Thr	Leu	Pro	Asn	Pro	Leu	Leu	Gly	Gln	Pro	Pro	His	Glu	His	Glu
	1475					1480					1485			
Met	Leu	Arg	His	Pro	Val	Phe	Gly	Thr	Pro	Tyr	Pro	Arg	Asp	Leu
	1490					1495					1500			
Pro	Gly	Ala	Ile	Pro	Pro	Pro	Met	Ser	Ala	Ala	His	Gln	Leu	Gln
	1505					1510					1515			

Ala Met His Ala Gln Ser Ala Glu Leu Gln Arg Leu Ala Met Glu
1520 1525 1530

Gln Gln Trp Leu His Gly His Pro His Met His Gly Gly His Leu
1535 1540 1545

Pro Ser Gln Glu Asp Tyr Tyr Ser Arg Leu Lys Lys Glu Gly Asp
1550 1555 1560

Lys Gln Leu
1565

<210> 707
<211> 566
<212> PRT
<213> Homo sapiens

<400> 707

Met Pro Gly Lys Pro Lys His Leu Gly Val Pro Asn Gly Arg Met Val
1 5 10 15

Leu Ala Val Ser Asp Gly Glu Leu Ser Ser Thr Thr Gly Pro Gln Gly
20 25 30

Gln Gly Glu Gly Arg Gly Ser Ser Leu Ser Ile His Ser Leu Pro Ser
35 40 45

Gly Pro Ser Ser Pro Phe Pro Thr Glu Glu Gln Pro Val Ala Ser Trp
50 55 60

Ala Leu Ser Phe Glu Arg Leu Leu Gln Asp Pro Leu Gly Leu Ala Tyr
65 70 75 80

Phe Thr Glu Phe Leu Lys Lys Glu Phe Ser Ala Glu Asn Val Thr Phe
85 90 95

Trp Lys Ala Cys Glu Arg Phe Gln Gln Ile Pro Ala Ser Asp Thr Gln
100 105 110

Gln Leu Ala Gln Glu Ala Arg Asn Ile Tyr Gln Glu Phe Leu Ser Ser
115 120 125

Gln Ala Leu Ser Pro Val Asn Ile Asp Arg Gln Ala Trp Leu Gly Glu
130 135 140

Glu Val Leu Ala Glu Pro Arg Pro Asp Met Phe Arg Ala Gln Gln Leu
145 150 155 160

Gln Ile Phe Asn Leu Met Lys Phe Asp Ser Tyr Ala Arg Phe Val Lys
165 170 175

Ser Pro Leu Tyr Arg Glu Cys Leu Leu Ala Glu Ala Glu Gly Arg Pro
 180 185 190
 Leu Arg Glu Pro Gly Ser Ser Arg Leu Gly Ser Pro Asp Ala Thr Arg
 195 200 205
 Lys Lys Pro Lys Leu Lys Pro Gly Lys Ser Leu Pro Leu Gly Val Glu
 210 215 220
 Glu Leu Gly Gln Leu Pro Pro Val Glu Gly Pro Gly Gly Arg Pro Leu
 225 230 235 240
 Arg Lys Ser Phe Arg Arg Glu Leu Gly Gly Thr Ala Asn Ala Ala Leu
 245 250 255
 Arg Arg Glu Ser Gln Gly Ser Leu Asn Ser Ser Ala Ser Leu Asp Leu
 260 265 270
 Gly Phe Leu Ala Phe Val Ser Ser Lys Ser Glu Ser His Arg Lys Ser
 275 280 285
 Leu Gly Ser Thr Glu Gly Glu Ser Glu Ser Arg Pro Gly Lys Tyr Cys
 290 295 300
 Cys Val Tyr Leu Pro Asp Gly Thr Ala Ser Leu Ala Leu Ala Arg Pro
 305 310 315 320
 Gly Leu Thr Ile Arg Asp Met Leu Ala Gly Ile Cys Glu Lys Arg Gly
 325 330 335
 Leu Ser Leu Pro Asp Ile Lys Val Tyr Leu Val Gly Asn Glu Gln Ala
 340 345 350
 Leu Val Leu Asp Gln Asp Cys Thr Val Leu Ala Asp Gln Glu Val Arg
 355 360 365
 Leu Glu Asn Arg Ile Thr Phe Glu Leu Glu Leu Thr Ala Leu Glu Arg
 370 375 380
 Val Val Arg Ile Ser Ala Lys Pro Thr Lys Arg Leu Gln Glu Ala Leu
 385 390 395 400
 Gln Pro Ile Leu Glu Lys His Gly Leu Ser Pro Leu Glu Val Val Leu
 405 410 415
 His Arg Pro Gly Glu Lys Gln Pro Leu Asp Leu Gly Lys Leu Val Ser
 420 425 430
 Ser Val Ala Ala Gln Arg Leu Val Leu Asp Thr Leu Pro Gly Val Lys
 435 440 445

Ile Ser Lys Ala Arg Asp Lys Ser Pro Cys Arg Ser Gln Gly Cys Pro
 450 455 460

Pro Arg Thr Gln Asp Lys Ala Thr His Pro Pro Pro Ala Ser Pro Ser
 465 470 475 480

Ser Leu Val Lys Val Pro Ser Ser Ala Thr Gly Lys Arg Gln Thr Cys
 485 490 495

Asp Ile Glu Gly Leu Val Glu Leu Leu Asn Arg Val Gln Ser Ser Gly
 500 505 510

Ala His Asp Gln Arg Gly Leu Leu Arg Lys Glu Asp Leu Val Leu Pro
 515 520 525

Glu Phe Leu Gln Leu Pro Ala Gln Gly Pro Ser Ser Glu Glu Thr Pro
 530 535 540

Pro Gln Thr Lys Ser Ala Ala Gln Pro Ile Gly Gly Ser Leu Asn Ser
 545 550 555 560

Thr Thr Asp Ser Ala Leu
 565

<210> 708
 <211> 217
 <212> PRT
 <213> Homo sapiens
 <400> 708

Met Pro Thr Pro His Glu Ala Glu Lys Gln Ile Thr Gly Pro Glu Glu
 1 5 10 15

Ala Asp Arg Pro Pro Ser Met Ser Ser His Asp Thr Ala Ser Pro Ala
 20 25 30

Ala Pro Ser Arg Asn Pro Cys Cys Leu Cys Trp Cys Cys Cys Ser
 35 40 45

Cys Ser Trp Asn Gln Glu Arg Arg Arg Ala Trp Gln Ala Ser Arg Glu
 50 55 60

Ser Lys Leu Gln Pro Leu Pro Ser Cys Glu Val Cys Ala Thr Pro Ser
 65 70 75 80

Pro Glu Glu Val Gln Ser Trp Ala Gln Ser Phe Asp Lys Leu Met His
 85 90 95

Ser Pro Ala Gly Arg Ser Val Phe Arg Ala Phe Leu Arg Thr Glu Tyr
 100 105 110

Ser Glu Glu Asn Met Leu Phe Trp Leu Ala Cys Glu Glu Leu Lys Ala
 115 120 125

Glu Ala Asn Gln His Val Val Asp Glu Lys Ala Arg Leu Ile Tyr Glu
 130 135 140

Asp Tyr Val Ser Ile Leu Ser Pro Lys Glu Val Ser Leu Asp Ser Arg
 145 150 155 160

Val Arg Glu Gly Ile Asn Lys Lys Met Gln Glu Pro Ser Ala His Thr
 165 170 175

Phe Asp Asp Ala Gln Leu Gln Ile Tyr Thr Leu Met His Arg Asp Ser
 180 185 190

Tyr Pro Arg Phe Leu Ser Ser Pro Thr Tyr Arg Ala Leu Leu Leu Gln
 195 200 205

Gly Pro Ser Gln Ser Ser Ser Glu Ala
 210 215

<210> 709
 <211> 191
 <212> PRT
 <213> Homo sapiens

<400> 709

Met Gln Ser Ile Lys Cys Val Val Val Gly Asp Gly Ala Val Gly Lys
 1 5 10 15

Thr Cys Leu Leu Ile Cys Tyr Thr Thr Asn Ala Phe Pro Lys Glu Tyr
 20 25 30

Ile Pro Thr Val Phe Asp Asn Tyr Ser Ala Gln Ser Ala Val Asp Gly
 35 40 45

Arg Thr Val Asn Leu Asn Leu Trp Asp Thr Ala Gly Gln Glu Glu Tyr
 50 55 60

Asp Arg Leu Arg Thr Leu Ser Tyr Pro Gln Thr Asn Val Phe Val Ile
 65 70 75 80

Cys Phe Ser Ile Ala Ser Pro Pro Ser Tyr Glu Asn Val Arg His Lys
 85 90 95

Trp His Pro Glu Val Cys His His Cys Pro Asp Val Pro Ile Leu Leu
 100 105 110

Val Gly Thr Lys Lys Asp Leu Arg Ala Gln Pro Asp Thr Leu Arg Arg
 115 120 125

Leu Lys Glu Gln Gly Gln Ala Pro Ile Thr Pro Gln Gln Gly Gln Ala

130

135

140

Leu Ala Lys Gln Ile His Ala Val Arg Tyr Leu Glu Cys Ser Ala Leu
145 150 155 160

Gln Gln Asp Gly Val Lys Glu Val Phe Ala Glu Ala Val Arg Ala Val
165 170 175

Leu Asn Pro Thr Pro Ile Lys Arg Gly Arg Ser Cys Ile Leu Leu
180 185 190

<210> 710
<211> 985
<212> PRT
<213> Homo sapiens

<400> 710

Met Ile Arg His Ala Gly Ala Pro Ala Arg Gly Asp Pro Thr Gly Pro
1 5 10 15

Val Pro Val Val Gly Lys Gly Glu Glu Glu Glu Glu Asp Gly Met
20 25 30

Arg Leu Cys Leu Pro Ala Asn Pro Lys Asn Cys Leu Pro His Arg Arg
35 40 45

Gly Ile Ser Ile Leu Glu Lys Leu Ile Lys Thr Cys Pro Val Trp Leu
50 55 60

Gln Leu Ser Leu Gly Gln Ala Glu Val Ala Arg Ile Leu His Arg Val
65 70 75 80

Val Ala Gly Met Phe Leu Val Arg Arg Asp Ser Ser Ser Lys Gln Leu
85 90 95

Val Leu Cys Val His Phe Pro Ser Leu Asn Glu Ser Ser Ala Glu Val
100 105 110

Leu Glu Tyr Thr Ile Lys Glu Glu Lys Ser Ile Leu Tyr Leu Glu Gly
115 120 125

Ser Ala Leu Val Phe Glu Asp Ile Phe Arg Leu Ile Ala Phe Tyr Cys
130 135 140

Val Ser Arg Asp Leu Leu Pro Phe Thr Leu Arg Leu Pro Gln Ala Ile
145 150 155 160

Leu Glu Ala Ser Ser Phe Thr Asp Leu Glu Thr Ile Ala Asn Leu Gly
165 170 175

Leu Gly Phe Trp Asp Ser Ser Leu Asn Pro Pro Gln Glu Arg Gly Lys
180 185 190

Pro Ala Glu Pro Pro Arg Asp Arg Ala Pro Gly Phe Pro Leu Val Ser
 195 200 205
 Ser Leu Arg Pro Thr Ala His Asp Ala Asn Cys Ala Cys Glu Ile Glu
 210 215 220
 Leu Ser Val Gly Asn Asp Arg Leu Trp Phe Val Asn Pro Ile Phe Ile
 225 230 235 240
 Glu Asp Cys Ser Ser Ala Leu Pro Thr Asp Gln Pro Pro Leu Gly Asn
 245 250 255
 Cys Pro Ala Arg Pro Leu Pro Pro Thr Ser Asp Ala Thr Ser Pro Thr
 260 265 270
 Ser Arg Trp Ala Pro Arg Arg Pro Pro Pro Pro Pro Val Leu Pro
 275 280 285
 Leu Gln Pro Cys Ser Pro Ala Gln Pro Pro Val Leu Pro Ala Leu Ala
 290 295 300
 Pro Ala Pro Ala Cys Pro Leu Pro Thr Ser Pro Pro Val Pro Ala Pro
 305 310 315 320
 His Val Thr Pro His Ala Pro Gly Pro Pro Asp His Pro Asn Gln Pro
 325 330 335
 Pro Met Met Thr Cys Glu Arg Leu Pro Cys Pro Thr Ala Gly Leu Gly
 340 345 350
 Pro Leu Arg Glu Glu Ala Met Lys Pro Gly Ala Ala Ser Ser Pro Leu
 355 360 365
 Gln Gln Val Pro Ala Pro Pro Leu Pro Ala Lys Lys Asn Leu Pro Thr
 370 375 380
 Ala Pro Pro Arg Arg Arg Val Ser Glu Arg Val Ser Leu Glu Asp Gln
 385 390 395 400
 Ser Pro Gly Met Ala Ala Glu Gly Asp Gln Leu Ser Leu Pro Pro Gln
 405 410 415
 Gly Thr Ser Asp Gly Pro Glu Asp Thr Pro Arg Glu Ser Thr Glu Gln
 420 425 430
 Gly Gln Asp Thr Glu Val Lys Ala Ser Asp Pro His Ser Met Pro Glu
 435 440 445
 Leu Pro Arg Thr Ala Lys Gln Pro Pro Val Pro Pro Pro Arg Lys Lys
 450 455 460

Arg Ile Ser Arg Gln Leu Ala Ser Thr Leu Pro Ala Pro Leu Glu Asn
 465 470 475 480
 Ala Glu Leu Cys Thr Gln Ala Met Ala Leu Glu Thr Pro Thr Pro Gly
 485 490 495
 Pro Pro Arg Glu Gly Gln Ser Pro Ala Ser Gln Ala Gly Thr Gln His
 500 505 510
 Pro Pro Ala Gln Ala Thr Ala His Ser Gln Ser Ser Pro Glu Phe Lys
 515 520 525
 Gly Ser Leu Ala Ser Leu Ser Asp Ser Leu Gly Val Ser Val Met Ala
 530 535 540
 Thr Asp Gln Asp Ser Tyr Ser Thr Ser Ser Thr Glu Glu Glu Leu Glu
 545 550 555 560
 Gln Phe Ser Ser Pro Ser Val Lys Lys Lys Pro Ser Met Ile Leu Gly
 565 570 575
 Lys Ala Arg His Arg Leu Ser Phe Ala Ser Phe Ser Ser Met Phe His
 580 585 590
 Ala Phe Leu Ser Asn Asn Arg Lys Leu Tyr Lys Lys Val Val Glu Leu
 595 600 605
 Ala Gln Asp Lys Gly Ser Tyr Phe Gly Ser Leu Val Gln Asp Tyr Lys
 610 615 620
 Val Tyr Ser Leu Glu Met Met Ala Arg Gln Thr Ser Ser Thr Glu Met
 625 630 635 640
 Leu Gln Glu Ile Arg Thr Met Met Thr Gln Leu Lys Ser Tyr Leu Leu
 645 650 655
 Gln Ser Thr Glu Leu Lys Ala Leu Val Asp Pro Ala Leu His Ser Glu
 660 665 670
 Glu Glu Leu Glu Ala Ile Val Glu Ser Ala Leu Tyr Lys Cys Val Leu
 675 680 685
 Lys Pro Leu Lys Glu Ala Ile Asn Ser Cys Leu His Gln Ile His Ser
 690 695 700
 Lys Asp Gly Ser Leu Gln Gln Leu Lys Glu Asn Gln Leu Val Ile Leu
 705 710 715 720
 Ala Thr Thr Thr Thr Asp Leu Gly Val Thr Thr Ser Val Pro Glu Val
 725 730 735

Pro Met Met Glu Lys Ile Leu Gln Lys Phe Thr Ser Met His Lys Ala
 740 745 750
 Tyr Ser Pro Glu Lys Lys Ile Ser Ile Leu Leu Lys Thr Cys Lys Leu
 755 760 765
 Ile Tyr Asp Ser Met Ala Leu Gly Asn Pro Gly Lys Pro Tyr Gly Ala
 770 775 780
 Asp Asp Phe Leu Pro Val Leu Met Tyr Val Leu Ala Arg Ser Asn Leu
 785 790 795 800
 Thr Glu Met Leu Leu Asn Val Glu Tyr Met Met Glu Leu Met Asp Pro
 805 810 815
 Ala Leu Gln Leu Gly Glu Gly Ser Tyr Tyr Leu Thr Thr Thr Tyr Gly
 820 825 830
 Ala Leu Glu His Ile Lys Ser Tyr Asp Lys Ile Thr Val Thr Arg Gln
 835 840 845
 Leu Ser Val Glu Val Gln Asp Ser Ile His Arg Trp Glu Arg Arg Arg
 850 855 860
 Thr Leu Asn Lys Ala Arg Ala Ser Arg Ser Ser Val Gln Asp Phe Ile
 865 870 875 880
 Cys Val Ser Tyr Leu Glu Pro Glu Gln Gln Ala Arg Thr Leu Ala Ser
 885 890 895
 Arg Ala Asp Thr Gln Ala Gln Ala Leu Cys Ala Gln Cys Ala Glu Lys
 900 905 910
 Phe Ala Val Glu Arg Pro Gln Ala His Arg Leu Phe Val Leu Val Asp
 915 920 925
 Gly Arg Cys Phe Gln Leu Ala Asp Asp Ala Leu Pro His Cys Ile Lys
 930 935 940
 Gly Tyr Leu Leu Arg Ser Glu Pro Lys Arg Asp Phe His Phe Val Tyr
 945 950 955 960
 Arg Pro Leu Asp Gly Gly Gly Gly Gly Gly Gly Ser Pro Pro Cys
 965 970 975
 Leu Val Val Arg Glu Pro Asn Phe Leu
 980 985

<210> 711

<211> 256

<212> PRT
 <213> Homo sapiens

<400> 711

```

Met Arg Pro Ala Ala Leu Arg Gly Ala Leu Leu Gly Cys Leu Cys Leu
1      5      10      15

Ala Leu Leu Cys Leu Gly Gly Ala Asp Lys Arg Leu Arg Asp Asn His
      20      25      30

Glu Trp Lys Lys Leu Ile Met Val Gln His Trp Pro Glu Thr Val Cys
      35      40      45

Glu Lys Ile Gln Asn Asp Cys Arg Asp Pro Pro Asp Tyr Trp Thr Ile
      50      55      60

His Gly Leu Trp Pro Asp Lys Ser Glu Gly Cys Asn Arg Ser Trp Pro
65      70      75      80

Phe Asn Leu Glu Glu Ile Lys Asp Leu Leu Pro Glu Met Arg Ala Tyr
      85      90      95

Trp Pro Asp Val Ile His Ser Phe Pro Asn Arg Ser Arg Phe Trp Lys
      100      105      110

His Glu Trp Glu Lys His Gly Thr Cys Ala Ala Gln Val Asp Ala Leu
      115      120      125

Asn Ser Gln Lys Lys Tyr Phe Gly Arg Ser Leu Glu Leu Tyr Arg Glu
      130      135      140

Leu Asp Leu Asn Ser Val Leu Leu Lys Leu Gly Ile Lys Pro Ser Ile
145      150      155      160

Asn Tyr Tyr Gln Val Ala Asp Phe Lys Asp Ala Leu Ala Arg Val Tyr
      165      170      175

Gly Val Ile Pro Lys Ile Gln Cys Leu Pro Pro Ser Gln Asp Glu Glu
      180      185      190

Val Gln Thr Ile Gly Gln Ile Glu Leu Cys Leu Thr Lys Gln Asp Gln
      195      200      205

Gln Leu Gln Asn Cys Thr Glu Pro Gly Glu Gln Pro Ser Pro Lys Gln
      210      215      220

Glu Val Trp Leu Ala Asn Gly Ala Ala Glu Ser Arg Gly Leu Arg Val
225      230      235      240

Cys Glu Asp Gly Pro Val Phe Tyr Pro Pro Pro Lys Lys Thr Lys His
      245      250      255

```

<210> 712
 <211> 419
 <212> PRT
 <213> Homo sapiens

<400> 712

Met Ser Cys Ala Gly Arg Ala Gly Pro Ala Arg Leu Ala Ala Leu Ala
 1 5 10 15

Leu Leu Thr Cys Ser Leu Trp Pro Ala Arg Ala Asp Asn Ala Ser Gln
 20 25 30

Glu Tyr Tyr Thr Ala Leu Ile Asn Val Thr Val Gln Glu Pro Gly Arg
 35 40 45

Gly Ala Pro Leu Thr Phe Arg Ile Asp Arg Gly Arg Tyr Gly Leu Asp
 50 55 60

Ser Pro Lys Ala Glu Val Arg Gly Gln Val Leu Ala Pro Leu Pro Leu
 65 70 75 80

His Gly Val Ala Asp His Leu Gly Cys Asp Pro Gln Thr Arg Phe Phe
 85 90 95

Val Pro Pro Asn Ile Lys Gln Trp Ile Ala Leu Leu Gln Arg Gly Asn
 100 105 110

Cys Thr Phe Lys Glu Lys Ile Ser Arg Ala Ala Phe His Asn Ala Val
 115 120 125

Ala Val Val Ile Tyr Asn Asn Lys Ser Lys Glu Glu Pro Val Thr Met
 130 135 140

Thr His Pro Gly Thr Gly Asp Ile Ile Ala Val Met Ile Thr Glu Leu
 145 150 155 160

Arg Gly Lys Asp Ile Leu Ser Tyr Leu Glu Lys Asn Ile Ser Val Gln
 165 170 175

Met Thr Ile Ala Val Gly Thr Arg Met Pro Pro Lys Asn Phe Ser Arg
 180 185 190

Gly Ser Leu Val Phe Val Ser Ile Ser Phe Ile Val Leu Met Ile Ile
 195 200 205

Ser Ser Ala Trp Leu Ile Phe Tyr Phe Ile Gln Lys Ile Arg Tyr Thr
 210 215 220

Asn Ala Arg Asp Arg Asn Gln Arg Arg Leu Gly Asp Ala Ala Lys Lys
 225 230 235 240

Ala Ile Ser Lys Leu Thr Thr Arg Thr Val Lys Lys Gly Asp Lys Glu
 245 250 255

Thr Asp Pro Asp Phe Asp His Cys Ala Val Cys Ile Glu Ser Tyr Lys
 260 265 270

Gln Asn Asp Val Val Arg Ile Leu Pro Cys Lys His Val Phe His Lys
 275 280 285

Ser Cys Val Asp Pro Trp Leu Ser Glu His Cys Thr Cys Pro Met Cys
 290 295 300

Lys Leu Asn Ile Leu Lys Ala Leu Gly Ile Val Pro Asn Leu Pro Cys
 305 310 315 320

Thr Asp Asn Val Ala Phe Asp Met Glu Arg Leu Thr Arg Thr Gln Ala
 325 330 335

Val Asn Arg Arg Ser Ala Leu Gly Asp Leu Ala Gly Asp Asn Ser Leu
 340 345 350

Gly Leu Glu Pro Leu Arg Thr Ser Gly Ile Ser Pro Leu Pro Gln Asp
 355 360 365

Gly Glu Leu Thr Pro Arg Thr Gly Glu Ile Asn Ile Ala Val Thr Lys
 370 375 380

Glu Trp Phe Ile Ile Ala Ser Phe Gly Leu Leu Ser Ala Leu Thr Leu
 385 390 395 400

Cys Tyr Met Ile Ile Arg Ala Thr Ala Ser Leu Asn Ala Asn Glu Val
 405 410 415

Glu Trp Phe

<210> 713
 <211> 230
 <212> PRT
 <213> Homo sapiens

<400> 713

Met Gly Gln Gln Ile Ser Asp Gln Thr Gln Leu Val Ile Asn Lys Leu
 1 5 10 15

Pro Glu Lys Val Ala Lys His Val Thr Leu Val Arg Glu Ser Gly Ser
 20 25 30

Leu Thr Tyr Glu Glu Phe Leu Gly Arg Val Ala Glu Leu Asn Asp Val
 35 40 45

Thr Ala Lys Val Ala Ser Gly Gln Glu Lys His Leu Leu Phe Glu Val
 Page 1181

50

55

60

Gln Pro Gly Ser Asp Ser Ser Ala Phe Trp Lys Val Val Val Arg Val
65 70 75 80

Val Cys Thr Lys Ile Asn Lys Ser Ser Gly Ile Val Glu Ala Ser Arg
85 90 95

Ile Met Asn Leu Tyr Gln Phe Ile Gln Leu Tyr Lys Asp Ile Thr Ser
100 105 110

Gln Ala Ala Gly Val Leu Ala Gln Ser Ser Thr Ser Glu Glu Pro Asp
115 120 125

Glu Asn Ser Ser Ser Val Thr Ser Cys Gln Ala Ser Leu Trp Met Gly
130 135 140

Arg Val Lys Gln Leu Thr Asp Glu Glu Glu Cys Cys Ile Cys Met Asp
145 150 155 160

Gly Arg Ala Asp Leu Ile Leu Pro Cys Ala His Ser Phe Cys Gln Lys
165 170 175

Cys Ile Asp Lys Trp Ser Asp Arg His Arg Asn Cys Pro Ile Cys Arg
180 185 190

Leu Gln Met Thr Gly Ala Asn Glu Ser Trp Val Val Ser Asp Ala Pro
195 200 205

Thr Glu Asp Asp Met Ala Asn Tyr Ile Leu Asn Met Ala Asp Glu Ala
210 215 220

Gly Gln Pro His Arg Pro
225 230

<210> 714
<211> 358
<212> PRT
<213> Homo sapiens

<400> 714

Met Ala Gly Cys Gly Glu Ile Asp His Ser Ile Asn Met Leu Pro Thr
1 5 10 15

Asn Arg Lys Ala Asn Glu Ser Cys Ser Asn Thr Ala Pro Ser Leu Thr
20 25 30

Val Pro Glu Cys Ala Ile Cys Leu Gln Thr Cys Val His Pro Val Ser
35 40 45

Leu Pro Cys Lys His Val Phe Cys Tyr Leu Cys Val Lys Gly Ala Ser
50 55 60

Trp Leu Gly Lys Arg Cys Ala Leu Cys Arg Gln Glu Ile Pro Glu Asp
 65 70 75 80
 Phe Leu Asp Lys Pro Thr Leu Leu Ser Pro Glu Glu Leu Lys Ala Ala
 85 90 95
 Ser Arg Gly Asn Gly Glu Tyr Ala Trp Tyr Tyr Glu Gly Arg Asn Gly
 100 105 110
 Trp Trp Gln Tyr Asp Glu Arg Thr Ser Arg Glu Leu Glu Asp Ala Phe
 115 120 125
 Ser Lys Gly Lys Lys Asn Thr Glu Met Leu Ile Ala Gly Phe Leu Tyr
 130 135 140
 Val Ala Asp Leu Glu Asn Met Val Gln Tyr Arg Arg Asn Glu His Gly
 145 150 155 160
 Arg Arg Arg Lys Ile Lys Arg Asp Ile Ile Asp Ile Pro Lys Lys Gly
 165 170 175
 Val Ala Gly Leu Arg Leu Asp Cys Asp Ala Asn Thr Val Asn Leu Ala
 180 185 190
 Arg Glu Ser Ser Ala Asp Gly Ala Asp Ser Val Ser Ala Gln Ser Gly
 195 200 205
 Ala Ser Val Gln Pro Leu Val Ser Ser Val Arg Pro Leu Thr Ser Val
 210 215 220
 Asp Gly Gln Leu Thr Ser Pro Ala Thr Pro Ser Pro Asp Ala Ser Thr
 225 230 235 240
 Ser Leu Glu Asp Ser Phe Ala His Leu Gln Leu Ser Gly Asp Asn Thr
 245 250 255
 Ala Glu Arg Ser His Arg Gly Glu Gly Glu Glu Asp His Glu Ser Pro
 260 265 270
 Ser Ser Gly Arg Val Pro Ala Pro Asp Thr Ser Ile Glu Glu Thr Glu
 275 280 285
 Ser Asp Ala Ser Ser Asp Ser Glu Asp Val Ser Ala Val Val Ala Gln
 290 295 300
 His Ser Leu Thr Gln Gln Arg Leu Leu Val Ser Asn Ala Asn Gln Thr
 305 310 315 320
 Val Pro Asp Arg Ser Asp Arg Ser Gly Thr Asp Arg Ser Val Ala Gly
 325 330 335

Gly Gly Thr Val Ser Val Ser Val Arg Ser Arg Arg Pro Asp Gly Gln
 340 345 350

Cys Thr Val Thr Glu Val
 355

<210> 715
 <211> 732
 <212> PRT
 <213> Homo sapiens
 <400> 715

Met Gly Ser Glu Lys Asp Ser Glu Ser Pro Arg Ser Thr Ser Leu His
 1 5 10 15

Ala Ala Ala Pro Asp Pro Lys Cys Arg Ser Gly Gly Arg Arg Arg Arg
 20 25 30

Leu Thr Leu His Ser Val Phe Ser Ala Ser Ala Arg Gly Arg Arg Ala
 35 40 45

Arg Ala Lys Pro Gln Ala Glu Pro Pro Pro Pro Ala Ala Gln Pro Pro
 50 55 60

Pro Ala Pro Ala Pro Ala Ala Ala Gln Gly Pro Pro Pro Glu Ala Leu
 65 70 75 80

Pro Ala Glu Pro Ala Ala Glu Ala Glu Ala Ala Ala Ala Ala Ala
 85 90 95

Ala Glu Pro Gly Phe Asp Asp Glu Glu Ala Ala Glu Gly Gly Gly Pro
 100 105 110

Gly Ala Glu Glu Val Glu Cys Pro Leu Cys Leu Val Arg Leu Pro Pro
 115 120 125

Glu Arg Ala Pro Arg Leu Leu Ser Cys Pro His Arg Ser Cys Arg Asp
 130 135 140

Cys Leu Arg His Tyr Leu Arg Leu Glu Ile Ser Glu Ser Arg Val Pro
 145 150 155 160

Ile Ser Cys Pro Glu Cys Ser Glu Arg Leu Asn Pro His Asp Ile Arg
 165 170 175

Leu Leu Leu Ala Asp Pro Pro Leu Met His Lys Tyr Glu Glu Phe Met
 180 185 190

Leu Arg Arg Tyr Leu Ala Ser Asp Pro Asp Cys Arg Trp Cys Pro Ala
 195 200 205

Pro Asp Cys Gly Tyr Ala Val Ile Ala Tyr Gly Cys Ala Ser Cys Pro
 210 215 220
 Lys Leu Thr Cys Glu Arg Glu Gly Cys Gln Thr Glu Phe Cys Tyr His
 225 230 235 240
 Cys Lys Gln Ile Trp His Pro Asn Gln Thr Cys Asp Met Ala Arg Gln
 245 250 255
 Gln Arg Ala Gln Thr Leu Arg Val Arg Thr Lys His Thr Ser Gly Leu
 260 265 270
 Ser Tyr Gly Gln Glu Ser Gly Pro Ala Asp Asp Ile Lys Pro Cys Pro
 275 280 285
 Arg Cys Ser Ala Tyr Ile Ile Lys Met Asn Asp Gly Ser Cys Asn His
 290 295 300
 Met Thr Cys Ala Val Cys Gly Cys Glu Phe Cys Trp Leu Cys Met Lys
 305 310 315 320
 Glu Ile Ser Asp Leu His Tyr Leu Ser Pro Ser Gly Cys Thr Phe Trp
 325 330 335
 Gly Lys Lys Pro Trp Ser Arg Lys Lys Lys Ile Leu Trp Gln Leu Gly
 340 345 350
 Thr Leu Ile Gly Ala Pro Val Gly Ile Ser Leu Ile Ala Gly Ile Ala
 355 360 365
 Ile Pro Ala Met Val Ile Gly Ile Pro Val Tyr Val Gly Arg Lys Ile
 370 375 380
 His Ser Arg Tyr Glu Gly Arg Lys Thr Ser Lys His Lys Arg Asn Leu
 385 390 395 400
 Ala Ile Thr Gly Gly Val Thr Leu Ser Val Ile Ala Ser Pro Val Ile
 405 410 415
 Ala Ala Val Ser Val Gly Ile Gly Val Pro Ile Met Leu Ala Tyr Val
 420 425 430
 Tyr Gly Val Val Pro Ile Ser Leu Cys Arg Gly Gly Gly Cys Gly Val
 435 440 445
 Ser Thr Ala Asn Gly Lys Gly Val Lys Ile Glu Phe Asp Glu Asp Asp
 450 455 460
 Gly Pro Ile Thr Val Ala Asp Ala Trp Arg Ala Leu Lys Asn Pro Ser
 465 470 475 480

Ile Gly Glu Ser Ser Ile Glu Gly Leu Thr Ser Val Leu Ser Thr Ser
 485 490 495
 Gly Ser Pro Thr Asp Gly Leu Ser Val Met Gln Gly Pro Tyr Ser Glu
 500 505 510
 Thr Ala Ser Phe Ala Ala Leu Ser Gly Gly Thr Leu Ser Gly Gly Ile
 515 520 525
 Leu Ser Ser Gly Lys Gly Lys Tyr Ser Arg Leu Glu Val Gln Ala Asp
 530 535 540
 Val Gln Lys Glu Ile Phe Pro Lys Asp Thr Ala Ser Leu Gly Ala Ile
 545 550 555 560
 Ser Asp Asn Ala Ser Thr Arg Ala Met Ala Gly Ser Ile Ile Ser Ser
 565 570 575
 Tyr Asn Pro Gln Asp Arg Glu Cys Asn Asn Met Glu Ile Gln Val Asp
 580 585 590
 Ile Glu Ala Lys Pro Ser His Tyr Gln Leu Val Ser Gly Ser Ser Thr
 595 600 605
 Glu Asp Ser Leu His Val His Ala Gln Met Ala Glu Asn Glu Glu Glu
 610 615 620
 Gly Ser Gly Gly Gly Gly Ser Glu Glu Asp Pro Pro Cys Arg His Gln
 625 630 635 640
 Ser Cys Glu Gln Lys Asp Cys Leu Ala Ser Lys Pro Trp Asp Ile Ser
 645 650 655
 Leu Ala Gln Pro Glu Ser Ile Arg Ser Asp Leu Glu Ser Ser Asp Ala
 660 665 670
 Gln Ser Asp Asp Val Pro Asp Ile Thr Ser Asp Glu Cys Gly Ser Pro
 675 680 685
 Arg Ser His Thr Ala Ala Cys Pro Ser Thr Pro Arg Ala Gln Gly Ala
 690 695 700
 Pro Ser Pro Ser Ala His Met Asn Leu Ser Ala Leu Ala Glu Gly Gln
 705 710 715 720
 Thr Val Leu Lys Pro Glu Gly Gly Glu Ala Arg Val
 725 730

<210> 716
 <211> 217
 <212> PRT

<213> Homo sapiens

<400> 716

Met Ser Ser Lys Val Ser Arg Asp Thr Leu Tyr Glu Ala Val Arg Glu
1 5 10 15

Val Leu His Gly Asn Gln Arg Lys Arg Arg Lys Phe Leu Glu Thr Val
20 25 30

Glu Leu Gln Ile Ser Leu Lys Asn Tyr Asp Pro Gln Lys Asp Lys Arg
35 40 45

Phe Ser Gly Thr Val Arg Leu Lys Ser Thr Pro Arg Pro Lys Phe Ser
50 55 60

Val Cys Val Leu Gly Asp Gln Gln His Cys Asp Glu Ala Lys Ala Val
65 70 75 80

Asp Ile Pro His Met Asp Ile Glu Ala Leu Lys Lys Leu Asn Lys Asn
85 90 95

Lys Lys Leu Val Lys Lys Leu Ala Lys Lys Tyr Asp Ala Phe Leu Ala
100 105 110

Ser Glu Ser Leu Ile Lys Gln Ile Pro Arg Ile Leu Gly Pro Gly Leu
115 120 125

Asn Lys Ala Gly Lys Phe Pro Ser Leu Leu Thr His Asn Glu Asn Met
130 135 140

Val Ala Lys Val Asp Glu Val Lys Ser Thr Ile Lys Phe Gln Met Lys
145 150 155 160

Lys Val Leu Cys Leu Ala Val Ala Val Gly His Val Lys Met Thr Asp
165 170 175

Asp Glu Leu Val Tyr Asn Ile His Leu Ala Val Asn Phe Leu Val Ser
180 185 190

Leu Leu Lys Lys Asn Trp Gln Asn Val Arg Ala Leu Tyr Ile Lys Ser
195 200 205

Thr Met Gly Lys Pro Gln Arg Leu Tyr
210 215

<210> 717

<211> 128

<212> PRT

<213> Homo sapiens

<400> 717

Met Ala Pro Val Lys Lys Leu Val Val Lys Gly Gly Lys Lys Lys Lys

1 5 10 15
 Gln Val Leu Lys Phe Thr Leu Asp Cys Thr His Pro Val Glu Asp Gly
 20 25 30
 Ile Met Asp Ala Ala Asn Phe Glu Gln Phe Leu Gln Glu Arg Ile Lys
 35 40 45
 Val Asn Gly Lys Ala Gly Asn Leu Gly Gly Gly Val Val Thr Ile Glu
 50 55 60
 Arg Ser Lys Ser Lys Ile Thr Val Thr Ser Glu Val Pro Phe Ser Lys
 65 70 75 80
 Arg Tyr Leu Lys Tyr Leu Thr Lys Lys Tyr Leu Lys Lys Asn Asn Leu
 85 90 95
 Arg Asp Trp Leu Arg Val Val Ala Asn Ser Lys Glu Ser Tyr Glu Leu
 100 105 110
 Arg Tyr Phe Gln Ile Asn Gln Asp Glu Glu Glu Glu Glu Asp Glu Asp
 115 120 125
 <210> 718
 <211> 735
 <212> PRT
 <213> Homo sapiens
 <400> 718
 Met Pro Leu Ala Gln Leu Lys Glu Pro Trp Pro Leu Met Glu Leu Val
 1 5 10 15
 Pro Leu Asp Pro Glu Asn Gly Gln Thr Ser Gly Glu Glu Ala Gly Leu
 20 25 30
 Gln Pro Ser Lys Asp Glu Gly Val Leu Lys Glu Ile Ser Ile Thr His
 35 40 45
 His Val Lys Ala Gly Ser Glu Lys Ala Asp Pro Ser His Phe Glu Leu
 50 55 60
 Leu Lys Val Leu Gly Gln Gly Ser Phe Gly Lys Val Phe Leu Val Arg
 65 70 75 80
 Lys Val Thr Arg Pro Asp Ser Gly His Leu Tyr Ala Met Lys Val Leu
 85 90 95
 Lys Lys Ala Thr Leu Lys Val Arg Asp Arg Val Arg Thr Lys Met Glu
 100 105 110
 Arg Asp Ile Leu Ala Asp Val Asn His Pro Phe Val Val Lys Leu His
 115 120 125

Tyr Ala Phe Gln Thr Glu Gly Lys Leu Tyr Leu Ile Leu Asp Phe Leu
 130 135 140
 Arg Gly Gly Asp Leu Phe Thr Arg Leu Ser Lys Glu Val Met Phe Thr
 145 150 155 160
 Glu Glu Asp Val Lys Phe Tyr Leu Ala Glu Leu Ala Leu Gly Leu Asp
 165 170 175
 His Leu His Ser Leu Gly Ile Ile Tyr Arg Asp Leu Lys Pro Glu Asn
 180 185 190
 Ile Leu Leu Asp Glu Glu Gly His Ile Lys Leu Thr Asp Phe Gly Leu
 195 200 205
 Ser Lys Glu Ala Ile Asp His Glu Lys Lys Ala Tyr Ser Phe Cys Gly
 210 215 220
 Thr Val Glu Tyr Met Ala Pro Glu Val Val Asn Arg Gln Gly His Ser
 225 230 235 240
 His Ser Ala Asp Trp Trp Ser Tyr Gly Val Leu Met Phe Glu Met Leu
 245 250 255
 Thr Gly Ser Leu Pro Phe Gln Gly Lys Asp Arg Lys Glu Thr Met Thr
 260 265 270
 Leu Ile Leu Lys Ala Lys Leu Gly Met Pro Gln Phe Leu Ser Thr Glu
 275 280 285
 Ala Gln Ser Leu Leu Arg Ala Leu Phe Lys Arg Asn Pro Ala Asn Arg
 290 295 300
 Leu Gly Ser Gly Pro Asp Gly Ala Glu Glu Ile Lys Arg His Val Phe
 305 310 315 320
 Tyr Ser Thr Ile Asp Trp Asn Lys Leu Tyr Arg Arg Glu Ile Lys Pro
 325 330 335
 Pro Phe Lys Pro Ala Val Ala Gln Pro Asp Asp Thr Phe Tyr Phe Asp
 340 345 350
 Thr Glu Phe Thr Ser Arg Thr Pro Lys Asp Ser Pro Gly Ile Pro Pro
 355 360 365
 Ser Ala Gly Ala His Gln Leu Phe Arg Gly Phe Ser Phe Val Ala Thr
 370 375 380
 Gly Leu Met Glu Asp Asp Gly Lys Pro Arg Ala Pro Gln Ala Pro Leu
 385 390 395 400

His Ser Val Val Gln Gln Leu His Gly Lys Asn Leu Val Phe Ser Asp
 405 410 415
 Gly Tyr Val Val Lys Glu Thr Ile Gly Val Gly Ser Tyr Ser Glu Cys
 420 425 430
 Lys Arg Cys Val His Lys Ala Thr Asn Met Glu Tyr Ala Val Lys Val
 435 440 445
 Ile Asp Lys Ser Lys Arg Asp Pro Ser Glu Glu Ile Glu Ile Leu Leu
 450 455 460
 Arg Tyr Gly Gln His Pro Asn Ile Ile Thr Leu Lys Asp Val Tyr Asp
 465 470 475 480
 Asp Gly Lys His Val Tyr Leu Val Thr Glu Leu Met Arg Gly Gly Glu
 485 490 495
 Leu Leu Asp Lys Ile Leu Arg Gln Lys Phe Phe Ser Glu Arg Glu Ala
 500 505 510
 Ser Phe Val Leu His Thr Ile Gly Lys Thr Val Glu Tyr Leu His Ser
 515 520 525
 Gln Gly Val Val His Arg Asp Leu Lys Pro Ser Asn Ile Leu Tyr Val
 530 535 540
 Asp Glu Ser Gly Asn Pro Glu Cys Leu Arg Ile Cys Asp Phe Gly Phe
 545 550 555 560
 Ala Lys Gln Leu Arg Ala Glu Asn Gly Leu Leu Met Thr Pro Cys Tyr
 565 570 575
 Thr Ala Asn Phe Val Ala Pro Glu Val Leu Lys Arg Gln Gly Tyr Asp
 580 585 590
 Glu Gly Cys Asp Ile Trp Ser Leu Gly Ile Leu Leu Tyr Thr Met Leu
 595 600 605
 Ala Gly Tyr Thr Pro Phe Ala Asn Gly Pro Ser Asp Thr Pro Glu Glu
 610 615 620
 Ile Leu Thr Arg Ile Gly Ser Gly Lys Phe Thr Leu Ser Gly Gly Asn
 625 630 635 640
 Trp Asn Thr Val Ser Glu Thr Ala Lys Asp Leu Val Ser Lys Met Leu
 645 650 655
 His Val Asp Pro His Gln Arg Leu Thr Ala Lys Gln Val Leu Gln His
 660 665 670

Pro Trp Val Thr Gln Lys Asp Lys Leu Pro Gln Ser Gln Leu Ser His
675 680 685

Gln Asp Leu Gln Leu Val Lys Gly Ala Met Ala Ala Thr Tyr Ser Ala
690 695 700

Leu Asn Ser Ser Lys Pro Thr Pro Gln Leu Lys Pro Ile Glu Ser Ser
705 710 715 720

Ile Leu Ala Gln Arg Arg Val Arg Lys Leu Pro Ser Thr Thr Leu
725 730 735

<210> 719
<211> 740
<212> PRT
<213> Homo sapiens

<400> 719

Met Pro Leu Ala Gln Leu Ala Asp Pro Trp Gln Lys Met Ala Val Glu
1 5 10 15

Ser Pro Ser Asp Ser Ala Glu Asn Gly Gln Gln Ile Met Asp Glu Pro
20 25 30

Met Gly Glu Glu Glu Ile Asn Pro Gln Thr Glu Glu Val Ser Ile Lys
35 40 45

Glu Ile Ala Ile Thr His His Val Lys Glu Gly His Glu Lys Ala Asp
50 55 60

Pro Ser Gln Phe Glu Leu Leu Lys Val Leu Gly Gln Gly Ser Phe Gly
65 70 75 80

Lys Val Phe Leu Val Lys Lys Ile Ser Gly Ser Asp Ala Arg Gln Leu
85 90 95

Tyr Ala Met Lys Val Leu Lys Lys Ala Thr Leu Lys Val Arg Asp Arg
100 105 110

Val Arg Thr Lys Met Glu Arg Asp Ile Leu Val Glu Val Asn His Pro
115 120 125

Phe Ile Val Lys Leu His Tyr Ala Phe Gln Thr Glu Gly Lys Leu Tyr
130 135 140

Leu Ile Leu Asp Phe Leu Arg Gly Gly Asp Leu Phe Thr Arg Leu Ser
145 150 155 160

Lys Glu Val Met Phe Thr Glu Glu Asp Val Lys Phe Tyr Leu Ala Glu
165 170 175

Leu Ala Leu Ala Leu Asp His Leu His Ser Leu Gly Ile Ile Tyr Arg
 180 185 190
 Asp Leu Lys Pro Glu Asn Ile Leu Leu Asp Glu Glu Gly His Ile Lys
 195 200 205
 Leu Thr Asp Phe Gly Leu Ser Lys Glu Ser Ile Asp His Glu Lys Lys
 210 215 220
 Ala Tyr Ser Phe Cys Gly Thr Val Glu Tyr Met Ala Pro Glu Val Val
 225 230 235 240
 Asn Arg Arg Gly His Thr Gln Ser Ala Asp Trp Trp Ser Phe Gly Val
 245 250 255
 Leu Met Phe Glu Met Leu Thr Gly Thr Leu Pro Phe Gln Gly Lys Asp
 260 265 270
 Arg Lys Glu Thr Met Thr Met Ile Leu Lys Ala Lys Leu Gly Met Pro
 275 280 285
 Gln Phe Leu Ser Pro Glu Ala Gln Ser Leu Leu Arg Met Leu Phe Lys
 290 295 300
 Arg Asn Pro Ala Asn Arg Leu Gly Ala Gly Pro Asp Gly Val Glu Glu
 305 310 315 320
 Ile Lys Arg His Ser Phe Phe Ser Thr Ile Asp Trp Asn Lys Leu Tyr
 325 330 335
 Arg Arg Glu Ile His Pro Pro Phe Lys Pro Ala Thr Gly Arg Pro Glu
 340 345 350
 Asp Thr Phe Tyr Phe Asp Pro Glu Phe Thr Ala Lys Thr Pro Lys Asp
 355 360 365
 Ser Pro Gly Ile Pro Pro Ser Ala Asn Ala His Gln Leu Phe Arg Gly
 370 375 380
 Phe Ser Phe Val Ala Ile Thr Ser Asp Asp Glu Ser Gln Ala Met Gln
 385 390 395 400
 Thr Val Gly Val His Ser Ile Val Gln Gln Leu His Arg Asn Ser Ile
 405 410 415
 Gln Phe Thr Asp Gly Tyr Glu Val Lys Glu Asp Ile Gly Val Gly Ser
 420 425 430
 Tyr Ser Val Cys Lys Arg Cys Ile His Lys Ala Thr Asn Met Glu Phe
 435 440 445

Ala Val Lys Ile Ile Asp Lys Ser Lys Arg Asp Pro Thr Glu Glu Ile
 450 455 460
 Glu Ile Leu Leu Arg Tyr Gly Gln His Pro Asn Ile Ile Thr Leu Lys
 465 470 475 480
 Asp Val Tyr Asp Asp Gly Lys Tyr Val Tyr Val Val Thr Glu Leu Met
 485 490 495
 Lys Gly Gly Glu Leu Leu Asp Lys Ile Leu Arg Gln Lys Phe Phe Ser
 500 505 510
 Glu Arg Glu Ala Ser Ala Val Leu Phe Thr Ile Thr Lys Thr Val Glu
 515 520 525
 Tyr Leu His Ala Gln Gly Val Val His Arg Asp Leu Lys Pro Ser Asn
 530 535 540
 Ile Leu Tyr Val Asp Glu Ser Gly Asn Pro Glu Ser Ile Arg Ile Cys
 545 550 555 560
 Asp Phe Gly Phe Ala Lys Gln Leu Arg Ala Glu Asn Gly Leu Leu Met
 565 570 575
 Thr Pro Cys Tyr Thr Ala Asn Phe Val Ala Pro Glu Val Leu Lys Arg
 580 585 590
 Gln Gly Tyr Asp Ala Ala Cys Asp Ile Trp Ser Leu Gly Val Leu Leu
 595 600 605
 Tyr Thr Met Leu Thr Gly Tyr Thr Pro Phe Ala Asn Gly Pro Asp Asp
 610 615 620
 Thr Pro Glu Glu Ile Leu Ala Arg Ile Gly Ser Gly Lys Phe Ser Leu
 625 630 635 640
 Ser Gly Gly Tyr Trp Asn Ser Val Ser Asp Thr Ala Lys Asp Leu Val
 645 650 655
 Ser Lys Met Leu His Val Asp Pro His Gln Arg Leu Thr Ala Ala Leu
 660 665 670
 Val Leu Arg His Pro Trp Ile Val His Trp Asp Gln Leu Pro Gln Tyr
 675 680 685
 Gln Leu Asn Arg Gln Asp Ala Pro His Leu Val Lys Gly Ala Met Ala
 690 695 700
 Ala Thr Tyr Ser Ala Leu Asn Arg Asn Gln Ser Pro Val Leu Glu Pro
 705 710 715 720

Val Gly Arg Ser Thr Leu Ala Gln Arg Arg Gly Ile Lys Lys Ile Thr
 725 730 735

Ser Thr Ala Leu
 740

<210> 720
 <211> 361
 <212> PRT
 <213> Homo sapiens
 <400> 720

Met Trp Val Leu Thr Pro Ala Ala Phe Ala Gly Lys Leu Leu Ser Val
 1 5 10 15

Phe Arg Gln Pro Leu Ser Ser Leu Trp Arg Ser Leu Val Pro Leu Phe
 20 25 30

Cys Trp Leu Arg Ala Thr Phe Trp Leu Leu Ala Thr Lys Arg Arg Lys
 35 40 45

Gln Gln Leu Val Leu Arg Gly Pro Asp Glu Thr Lys Glu Glu Glu Glu
 50 55 60

Asp Pro Pro Leu Pro Thr Thr Pro Thr Ser Val Asn Tyr His Phe Thr
 65 70 75 80

Arg Gln Cys Asn Tyr Lys Cys Gly Phe Cys Phe His Thr Ala Lys Thr
 85 90 95

Ser Phe Val Leu Pro Leu Glu Glu Ala Lys Arg Gly Leu Leu Leu Leu
 100 105 110

Lys Glu Ala Gly Met Glu Lys Ile Asn Phe Ser Gly Gly Glu Pro Phe
 115 120 125

Leu Gln Asp Arg Gly Glu Tyr Leu Gly Lys Leu Val Arg Phe Cys Lys
 130 135 140

Val Glu Leu Arg Leu Pro Ser Val Ser Ile Val Ser Asn Gly Ser Leu
 145 150 155 160

Ile Arg Glu Arg Trp Phe Gln Asn Tyr Gly Glu Tyr Leu Asp Ile Leu
 165 170 175

Ala Ile Ser Cys Asp Ser Phe Asp Glu Glu Val Asn Val Leu Ile Gly
 180 185 190

Arg Gly Gln Gly Lys Lys Asn His Val Glu Asn Leu Gln Lys Leu Arg
 195 200 205

Arg Trp Cys Arg Asp Tyr Arg Val Ala Phe Lys Ile Asn Ser Val Ile
210 215 220

Asn Arg Phe Asn Val Glu Glu Asp Met Thr Glu Gln Ile Lys Ala Leu
225 230 235 240

Asn Pro Val Arg Trp Lys Val Phe Gln Cys Leu Leu Ile Glu Gly Glu
245 250 255

Asn Cys Gly Glu Asp Ala Leu Arg Glu Ala Glu Arg Phe Val Ile Gly
260 265 270

Asp Glu Glu Phe Glu Arg Phe Leu Glu Arg His Lys Glu Val Ser Cys
275 280 285

Leu Val Pro Glu Ser Asn Gln Lys Met Lys Asp Ser Tyr Leu Ile Leu
290 295 300

Asp Glu Tyr Met Arg Phe Leu Asn Cys Arg Lys Gly Arg Lys Asp Pro
305 310 315 320

Ser Lys Ser Ile Leu Asp Val Gly Val Glu Glu Ala Ile Lys Phe Ser
325 330 335

Gly Phe Asp Glu Lys Met Phe Leu Lys Arg Gly Gly Lys Tyr Ile Trp
340 345 350

Ser Lys Ala Asp Leu Lys Leu Asp Trp
355 360

<210> 721
<211> 236
<212> PRT
<213> Homo sapiens

<400> 721

Met Ala Glu Pro Ser Ala Ala Thr Gln Ser His Ser Ile Ser Ser Ser
1 5 10 15

Ser Phe Gly Ala Glu Pro Ser Ala Pro Gly Gly Gly Gly Ser Pro Gly
20 25 30

Ala Cys Pro Ala Leu Gly Thr Lys Ser Cys Ser Ser Ser Cys Ala Val
35 40 45

His Asp Leu Ile Phe Trp Arg Asp Val Lys Lys Thr Gly Phe Val Phe
50 55 60

Gly Thr Thr Leu Ile Met Leu Leu Ser Leu Ala Ala Phe Ser Val Ile
65 70 75 80

Ser Val Val Ser Tyr Leu Ile Leu Ala Leu Leu Ser Val Thr Ile Ser

85

90

95

Phe Arg Ile Tyr Lys Ser Val Ile Gln Ala Val Gln Lys Ser Glu Glu
 100 105 110

Gly His Pro Phe Lys Ala Tyr Leu Asp Val Asp Ile Thr Leu Ser Ser
 115 120 125

Glu Ala Phe His Asn Tyr Met Asn Ala Ala Met Val His Ile Asn Arg
 130 135 140

Ala Leu Lys Leu Ile Ile Arg Leu Phe Leu Val Glu Asp Leu Val Asp
 145 150 155 160

Ser Leu Lys Leu Ala Val Phe Met Trp Leu Met Thr Tyr Val Gly Ala
 165 170 175

Val Phe Asn Gly Ile Thr Leu Leu Ile Leu Ala Glu Leu Leu Ile Phe
 180 185 190

Ser Val Pro Ile Val Tyr Glu Lys Tyr Lys Thr Gln Ile Asp His Tyr
 195 200 205

Val Gly Ile Ala Arg Asp Gln Thr Lys Ser Ile Val Glu Lys Ile Gln
 210 215 220

Ala Lys Leu Pro Gly Ile Ala Lys Lys Lys Ala Glu
 225 230 235

<210> 722
 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 722

Met Val Val Asp Phe Trp Thr Trp Glu Gln Thr Phe Gln Glu Leu Ile
 1 5 10 15

Gln Glu Ala Lys Pro Arg Ala Thr Trp Thr Leu Lys Leu Asp Gly Asn
 20 25 30

Leu Gln Leu Asp Cys Leu Ala Gln Gly Trp Lys Gln Tyr Gln Gln Arg
 35 40 45

Ala Phe Gly Trp Phe Arg Cys Ser Ser Cys Gln Arg Ser Trp Ala Ser
 50 55 60

Ala Gln Val Gln Ile Leu Cys His Thr Tyr Trp Glu His Trp Thr Ser
 65 70 75 80

Gln Gly Gln Val Arg Met Arg Leu Phe Gly Gln Arg Cys Gln Lys Cys
 85 90 95

Ser Trp Ser Gln Tyr Glu Met Pro Glu Phe Ser Ser Asp Ser Thr Met
100 105 110

Arg Ile Leu Ser Asn Leu Val Gln His Ile Leu Lys Lys Tyr Tyr Gly
115 120 125

Asn Gly Thr Arg Lys Ser Pro Glu Met Pro Val Ile Leu Glu Val Ser
130 135 140

Leu Glu Gly Ser His Asp Thr Ala Asn Cys Glu Ala Cys Thr Leu Gly
145 150 155 160

Ile Cys Gly Gln Gly Leu Lys Ser Cys Met Thr Lys Pro Ser Lys Ser
165 170 175

Leu Leu Pro His Leu Lys Thr Gly Asn Ser Ser Pro Gly Ile Gly Ala
180 185 190

Val Tyr Leu Ala Asn Gln Ala Lys Asn Gln Ser Ala Glu Ala Lys Glu
195 200 205

Ala Lys Gly Ser Gly Tyr Glu Lys Leu Gly Pro Ser Arg Asp Pro Asp
210 215 220

Pro Leu Asn Ile Cys Val Phe Ile Leu Leu Leu Val Phe Ile Val Val
225 230 235 240

Lys Cys Phe Thr Ser Glu
245

<210> 723
<211> 462
<212> PRT
<213> Homo sapiens

<400> 723

Met Asp Thr Lys His Phe Leu Pro Leu Asp Phe Ser Thr Gln Val Asn
1 5 10 15

Ser Ser Leu Thr Ser Pro Thr Gly Arg Gly Ser Met Ala Ala Pro Ser
20 25 30

Leu His Pro Ser Leu Gly Pro Gly Ile Gly Ser Pro Gly Gln Leu His
35 40 45

Ser Pro Ile Ser Thr Leu Ser Ser Pro Ile Asn Gly Met Gly Pro Pro
50 55 60

Phe Ser Val Ile Ser Ser Pro Met Gly Pro His Ser Met Ser Val Pro
65 70 75 80

Thr Thr Pro Thr Leu Gly Phe Ser Thr Gly Ser Pro Gln Leu Ser Ser
 85 90 95
 Pro Met Asn Pro Val Ser Ser Ser Glu Asp Ile Lys Pro Pro Leu Gly
 100 105 110
 Leu Asn Gly Val Leu Lys Val Pro Ala His Pro Ser Gly Asn Met Ala
 115 120 125
 Ser Phe Thr Lys His Ile Cys Ala Ile Cys Gly Asp Arg Ser Ser Gly
 130 135 140
 Lys His Tyr Gly Val Tyr Ser Cys Glu Gly Cys Lys Gly Phe Phe Lys
 145 150 155 160
 Arg Thr Val Arg Lys Asp Leu Thr Tyr Thr Cys Arg Asp Asn Lys Asp
 165 170 175
 Cys Leu Ile Asp Lys Arg Gln Arg Asn Arg Cys Gln Tyr Cys Arg Tyr
 180 185 190
 Gln Lys Cys Leu Ala Met Gly Met Lys Arg Glu Ala Val Gln Glu Glu
 195 200 205
 Arg Gln Arg Gly Lys Asp Arg Asn Glu Asn Glu Val Glu Ser Thr Ser
 210 215 220
 Ser Ala Asn Glu Asp Met Pro Val Glu Arg Ile Leu Glu Ala Glu Leu
 225 230 235 240
 Ala Val Glu Pro Lys Thr Glu Thr Tyr Val Glu Ala Asn Met Gly Leu
 245 250 255
 Asn Pro Ser Ser Pro Asn Asp Pro Val Thr Asn Ile Cys Gln Ala Ala
 260 265 270
 Asp Lys Gln Leu Phe Thr Leu Val Glu Trp Ala Lys Arg Ile Pro His
 275 280 285
 Phe Ser Glu Leu Pro Leu Asp Asp Gln Val Ile Leu Leu Arg Ala Gly
 290 295 300
 Trp Asn Glu Leu Leu Ile Ala Ser Phe Ser His Arg Ser Ile Ala Val
 305 310 315 320
 Lys Asp Gly Ile Leu Leu Ala Thr Gly Leu His Val His Arg Asn Ser
 325 330 335
 Ala His Ser Ala Gly Val Gly Ala Ile Phe Asp Arg Val Leu Thr Glu
 340 345 350

Leu Val Ser Lys Met Arg Asp Met Gln Met Asp Lys Thr Glu Leu Gly
 355 360 365

Cys Leu Arg Ala Ile Val Leu Phe Asn Pro Asp Ser Lys Gly Leu Ser
 370 375 380

Asn Pro Ala Glu Val Glu Ala Leu Arg Glu Lys Val Tyr Ala Ser Leu
 385 390 395 400

Glu Ala Tyr Cys Lys His Lys Tyr Pro Glu Gln Pro Gly Arg Phe Ala
 405 410 415

Lys Leu Leu Leu Arg Leu Pro Ala Leu Arg Ser Ile Gly Leu Lys Cys
 420 425 430

Leu Glu His Leu Phe Phe Phe Lys Leu Ile Gly Asp Thr Pro Ile Asp
 435 440 445

Thr Phe Leu Met Glu Met Leu Glu Ala Pro His Gln Met Thr
 450 455 460

<210> 724
 <211> 317
 <212> PRT
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)..(1)
 <223> Xaa can be any naturally occurring amino acid

<400> 724

Xaa Leu Pro Ala Pro Ala Ala Ala Leu Pro Gly Ala Pro Pro Pro Pro
 1 5 10 15

Pro Gly Val Arg Gly Tyr Pro Ala Arg Ala Arg Gly Leu Gln Gly Ala
 20 25 30

Ser Gly Gly Ala Arg Phe Pro Ser Ser Leu Ser Leu Pro Val Pro Gly
 35 40 45

Lys Gly Gly Trp Val Val Ser Arg Ala Lys Phe Pro Ala Leu Asp Ser
 50 55 60

Cys Glu Ile Thr Thr Ala His Pro Arg Leu Cys Phe Ala Val Ser Pro
 65 70 75 80

Pro Phe Ser Cys Ser Leu Pro Leu Pro Ser Leu Phe Pro His Ser Pro
 85 90 95

Leu Leu Gly Arg Pro Lys Arg Gln Ala Lys Pro Ala Ala Asp Glu Gly
 100 105 110

Phe Trp Asp Cys Ser Val Cys Thr Phe Arg Asn Ser Ala Glu Ala Phe
 115 120 125

Lys Cys Ser Ile Cys Asp Val Arg Lys Gly Thr Ser Thr Arg Lys Pro
 130 135 140

Arg Ile Asn Ser Gln Leu Val Ala Gln Gln Val Ala Gln Gln Tyr Ala
 145 150 155 160

Thr Pro Pro Pro Pro Lys Lys Glu Lys Lys Glu Lys Val Glu Lys Gln
 165 170 175

Asp Lys Glu Lys Pro Glu Lys Asp Lys Glu Ile Ser Pro Ser Val Thr
 180 185 190

Lys Lys Asn Thr Asn Lys Lys Thr Lys Pro Lys Ser Asp Ile Leu Lys
 195 200 205

Asp Pro Pro Ser Glu Ala Asn Ser Ile Gln Ser Ala Asn Ala Thr Thr
 210 215 220

Lys Thr Ser Glu Thr Asn His Thr Ser Arg Pro Arg Leu Lys Asn Val
 225 230 235 240

Asp Arg Ser Thr Ala Gln Gln Leu Ala Val Thr Val Gly Asn Val Thr
 245 250 255

Val Ile Ile Thr Asp Phe Lys Glu Lys Thr Arg Ser Ser Ser Thr Ser
 260 265 270

Ser Ser Thr Val Thr Ser Ser Ala Gly Ser Glu Gln Gln Asn Gln Ser
 275 280 285

Ser Ser Gly Ser Glu Ser Thr Asp Lys Gly Ser Ser Arg Ser Ser Thr
 290 295 300

Pro Lys Gly Asp Met Ser Ala Val Asn Asp Glu Ser Phe
 305 310 315

<210> 725
 <211> 953
 <212> PRT
 <213> Homo sapiens

<400> 725

Met Ala Glu Thr Leu Pro Gly Ser Gly Asp Ser Gly Pro Gly Thr Ala
 1 5 10 15

Ser Leu Gly Pro Gly Val Ala Glu Thr Gly Thr Arg Arg Leu Ser Glu
 20 25 30

Leu Arg Val Ile Asp Leu Arg Ala Glu Leu Lys Lys Arg Asn Leu Asp
 35 40 45

Thr Gly Gly Asn Lys Ser Val Leu Met Glu Arg Leu Lys Lys Ala Val
 50 55 60

Lys Glu Glu Gly Gln Asp Pro Asp Glu Ile Gly Ile Glu Leu Glu Ala
 65 70 75 80

Thr Ser Lys Lys Ser Ala Lys Arg Cys Val Lys Gly Leu Lys Met Glu
 85 90 95

Glu Glu Gly Thr Glu Asp Asn Gly Leu Glu Asp Asp Ser Arg Asp Gly
 100 105 110

Gln Glu Asp Met Glu Ala Ser Leu Glu Asn Leu Gln Asn Met Gly Met
 115 120 125

Met Asp Met Ser Val Leu Asp Glu Thr Glu Val Ala Asn Ser Ser Ala
 130 135 140

Pro Asp Phe Gly Glu Asp Gly Thr Asp Gly Leu Leu Asp Ser Phe Cys
 145 150 155 160

Asp Ser Lys Glu Tyr Val Ala Ala Gln Leu Arg Gln Leu Pro Ala Gln
 165 170 175

Pro Pro Glu His Ala Val Asp Gly Glu Gly Phe Lys Asn Thr Leu Glu
 180 185 190

Thr Ser Ser Leu Asn Phe Lys Val Thr Pro Asp Ile Glu Glu Ser Leu
 195 200 205

Leu Glu Pro Glu Asn Glu Lys Ile Leu Asp Ile Leu Gly Glu Thr Cys
 210 215 220

Lys Ser Glu Pro Val Lys Glu Glu Ser Ser Glu Leu Glu Gln Pro Phe
 225 230 235 240

Ala Gln Asp Thr Ser Ser Val Gly Pro Asp Arg Lys Leu Ala Glu Glu
 245 250 255

Glu Asp Leu Phe Asp Ser Ala His Pro Glu Glu Gly Asp Leu Asp Leu
 260 265 270

Ala Ser Glu Ser Thr Ala His Ala Gln Ser Ser Lys Ala Asp Ser Leu
 275 280 285

Leu Ala Val Val Lys Arg Glu Pro Ala Glu Gln Pro Gly Asp Gly Glu
 290 295 300

Arg Thr Asp Cys Glu Pro Val Gly Leu Glu Pro Ala Val Glu Gln Ser
 305 310 315 320
 Ser Ala Ala Ser Glu Leu Ala Glu Ala Ser Ser Glu Glu Leu Ala Glu
 325 330 335
 Ala Pro Thr Glu Ala Pro Ser Pro Glu Ala Arg Asp Ser Lys Glu Asp
 340 345 350
 Gly Arg Lys Phe Asp Phe Asp Ala Cys Asn Glu Val Pro Pro Ala Pro
 355 360 365
 Lys Glu Ser Ser Thr Ser Glu Gly Ala Asp Gln Lys Met Ser Ser Phe
 370 375 380
 Lys Glu Glu Lys Asp Ile Lys Pro Ile Ile Lys Asp Glu Lys Gly Arg
 385 390 395 400
 Val Gly Ser Gly Ser Gly Arg Asn Leu Trp Val Ser Gly Leu Ser Ser
 405 410 415
 Thr Thr Arg Ala Thr Asp Leu Lys Asn Leu Phe Ser Lys Tyr Gly Lys
 420 425 430
 Val Val Gly Ala Lys Val Val Thr Asn Ala Arg Ser Pro Gly Ala Arg
 435 440 445
 Cys Tyr Gly Phe Val Thr Met Ser Thr Ser Asp Glu Ala Thr Lys Cys
 450 455 460
 Ile Ser His Leu His Arg Thr Glu Leu His Gly Arg Met Ile Ser Val
 465 470 475 480
 Glu Lys Ala Lys Asn Glu Pro Ala Gly Lys Lys Leu Ser Asp Arg Lys
 485 490 495
 Glu Cys Glu Val Lys Lys Glu Lys Leu Ser Ser Val Asp Arg His His
 500 505 510
 Ser Val Glu Ile Lys Ile Glu Lys Thr Val Ile Lys Lys Glu Glu Lys
 515 520 525
 Ile Glu Lys Lys Glu Glu Lys Lys Pro Glu Asp Ile Lys Lys Glu Glu
 530 535 540
 Lys Asp Gln Asp Glu Leu Lys Pro Gly Pro Thr Asn Arg Ser Arg Val
 545 550 555 560
 Thr Lys Ser Gly Ser Arg Gly Met Glu Arg Thr Val Val Met Asp Lys
 565 570 575

Ser Lys Gly Glu Pro Val Ile Ser Val Lys Thr Thr Ser Arg Ser Lys
 580 585 590
 Glu Arg Ser Ser Lys Ser Gln Asp Arg Lys Ser Glu Ser Lys Glu Lys
 595 600 605
 Arg Asp Ile Leu Ser Phe Asp Lys Ile Lys Glu Gln Arg Glu Arg Glu
 610 615 620
 Arg Gln Arg Gln Arg Glu Arg Glu Ile Arg Glu Thr Glu Arg Arg Arg
 625 630 635 640
 Glu Arg Glu Gln Arg Glu Arg Glu Gln Arg Leu Glu Ala Phe His Glu
 645 650 655
 Arg Lys Glu Lys Ala Arg Leu Gln Arg Glu Arg Leu Gln Leu Glu Cys
 660 665 670
 Gln Arg Gln Arg Leu Glu Arg Glu Arg Met Glu Arg Glu Arg Leu Glu
 675 680 685
 Arg Glu Arg Met Arg Val Glu Arg Glu Arg Arg Lys Glu Gln Glu Arg
 690 695 700
 Ile His Arg Glu Arg Glu Glu Leu Arg Arg Gln Gln Glu Gln Leu Arg
 705 710 715 720
 Tyr Glu Gln Glu Arg Arg Pro Gly Arg Arg Pro Tyr Asp Leu Asp Arg
 725 730 735
 Arg Asp Asp Ala Tyr Trp Pro Glu Gly Lys Arg Val Ala Met Glu Asp
 740 745 750
 Arg Tyr Arg Ala Asp Phe Pro Arg Pro Asp His Arg Phe His Asp Phe
 755 760 765
 Asp His Arg Asp Arg Gly Gln Tyr Gln Asp His Ala Ile Asp Arg Arg
 770 775 780
 Glu Gly Ser Arg Pro Met Met Gly Asp His Arg Asp Gly Gln His Tyr
 785 790 795 800
 Gly Asp Asp Arg His Gly His Gly Gly Pro Pro Glu Arg His Gly Arg
 805 810 815
 Asp Ser Arg Asp Gly Trp Gly Gly Tyr Gly Ser Asp Lys Arg Leu Ser
 820 825 830
 Glu Gly Arg Gly Leu Pro Pro Pro Pro Arg Gly Gly Arg Asp Trp Gly
 835 840 845

Glu His Asn Gln Arg Leu Glu Glu His Gln Ala Arg Ala Trp Gln Gly
850 855 860

Ala Met Asp Ala Gly Ala Ala Ser Arg Glu His Ala Arg Trp Gln Gly
865 870 875 880

Gly Glu Arg Gly Leu Ser Gly Pro Ser Gly Pro Gly His Met Ala Ser
885 890 895

Arg Gly Gly Val Ala Gly Arg Gly Gly Phe Ala Gln Gly Gly His Ser
900 905 910

Gln Gly His Val Val Pro Gly Gly Gly Leu Glu Gly Gly Gly Val Ala
915 920 925

Ser Gln Asp Arg Gly Ser Arg Val Pro His Pro His Pro His Pro Pro
930 935 940

Pro Tyr Pro His Phe Thr Arg Arg Tyr
945 950

<210> 726
<211> 763
<212> PRT
<213> Homo sapiens

<400> 726

Met Asp His Leu Asn Glu Ala Thr Gln Gly Lys Glu His Ser Glu Met
1 5 10 15

Ser Asn Asn Val Ser Asp Pro Lys Gly Pro Pro Ala Lys Ile Ala Arg
20 25 30

Leu Glu Gln Asn Gly Ser Pro Leu Gly Arg Gly Arg Leu Gly Ser Thr
35 40 45

Gly Ala Lys Met Gln Gly Val Pro Leu Lys His Ser Gly His Leu Met
50 55 60

Lys Thr Asn Leu Arg Lys Gly Thr Met Leu Pro Val Phe Cys Val Val
65 70 75 80

Glu His Tyr Glu Asn Ala Ile Glu Tyr Asp Cys Lys Glu Glu His Ala
85 90 95

Glu Phe Val Leu Val Arg Lys Asp Met Leu Phe Asn Gln Leu Ile Glu
100 105 110

Met Ala Leu Leu Ser Leu Gly Tyr Ser His Ser Ser Ala Ala Gln Ala
115 120 125

Lys Gly Leu Ile Gln Val Gly Lys Trp Asn Pro Val Pro Leu Ser Tyr
 130 135 140
 Val Thr Asp Ala Pro Asp Ala Thr Val Ala Asp Met Leu Gln Asp Val
 145 150 155 160
 Tyr His Val Val Thr Leu Lys Ile Gln Leu His Ser Cys Pro Lys Leu
 165 170 175
 Glu Asp Leu Pro Pro Glu Gln Trp Ser His Thr Thr Val Arg Asn Ala
 180 185 190
 Leu Lys Asp Leu Leu Lys Asp Met Asn Gln Ser Ser Leu Ala Lys Glu
 195 200 205
 Cys Pro Leu Ser Gln Ser Met Ile Ser Ser Ile Val Asn Ser Thr Tyr
 210 215 220
 Tyr Ala Asn Val Ser Ala Ala Lys Cys Gln Glu Phe Gly Arg Trp Tyr
 225 230 235 240
 Lys His Phe Lys Lys Thr Lys Asp Met Met Val Glu Met Asp Ser Leu
 245 250 255
 Ser Glu Leu Ser Gln Gln Gly Ala Asn His Val Asn Phe Gly Gln Gln
 260 265 270
 Pro Val Pro Gly Asn Thr Ala Glu Gln Pro Pro Ser Pro Ala Gln Leu
 275 280 285
 Ser His Gly Ser Gln Pro Ser Val Arg Thr Pro Leu Pro Asn Leu His
 290 295 300
 Pro Gly Leu Val Ser Thr Pro Ile Ser Pro Gln Leu Val Asn Gln Gln
 305 310 315 320
 Leu Val Met Ala Gln Leu Leu Asn Gln Gln Tyr Ala Val Asn Arg Leu
 325 330 335
 Leu Ala Gln Gln Ser Leu Asn Gln Gln Tyr Leu Asn His Pro Pro Pro
 340 345 350
 Val Ser Arg Ser Met Asn Lys Pro Leu Glu Gln Gln Val Ser Thr Asn
 355 360 365
 Thr Glu Val Ser Ser Glu Ile Tyr Gln Trp Val Arg Asp Glu Leu Lys
 370 375 380
 Arg Ala Gly Ile Ser Gln Ala Val Phe Ala Arg Val Ala Phe Asn Arg
 385 390 395 400

Thr Gln Gly Leu Leu Ser Glu Ile Leu Arg Lys Glu Glu Asp Pro Lys
 405 410 415

Thr Ala Ser Gln Ser Leu Leu Val Asn Leu Arg Ala Met Gln Asn Phe
 420 425 430

Leu Gln Leu Pro Glu Ala Glu Arg Asp Arg Ile Tyr Gln Asp Glu Arg
 435 440 445

Glu Arg Ser Leu Asn Ala Ala Ser Ala Met Gly Pro Ala Pro Leu Ile
 450 455 460

Ser Thr Pro Pro Ser Arg Pro Pro Gln Val Lys Thr Ala Thr Ile Ala
 465 470 475 480

Thr Glu Arg Asn Gly Lys Pro Glu Asn Asn Thr Met Asn Ile Asn Ala
 485 490 495

Ser Ile Tyr Asp Glu Ile Gln Gln Glu Met Lys Arg Ala Lys Val Ser
 500 505 510

Gln Ala Leu Phe Ala Lys Val Ala Ala Thr Lys Ser Gln Gly Trp Leu
 515 520 525

Cys Glu Leu Leu Arg Trp Lys Glu Asp Pro Ser Pro Glu Asn Arg Thr
 530 535 540

Leu Trp Glu Asn Leu Ser Met Ile Arg Arg Phe Leu Ser Leu Pro Gln
 545 550 555 560

Pro Glu Arg Asp Ala Ile Tyr Glu Gln Glu Ser Asn Ala Val His His
 565 570 575

His Gly Asp Arg Pro Pro His Ile Ile His Val Pro Ala Glu Gln Ile
 580 585 590

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala
 595 600 605

Pro Pro Pro Pro Gln Pro Gln Gln Gln Pro Gln Thr Gly Pro Arg Leu
 610 615 620

Pro Pro Arg Gln Pro Thr Val Ala Ser Pro Ala Glu Ser Asp Glu Glu
 625 630 635 640

Asn Arg Gln Lys Thr Arg Pro Arg Thr Lys Ile Ser Val Glu Ala Leu
 645 650 655

Gly Ile Leu Gln Ser Phe Ile Gln Asp Val Gly Leu Tyr Pro Asp Glu
 660 665 670

Glu Ala Ile Gln Thr Leu Ser Ala Gln Leu Asp Leu Pro Lys Tyr Thr
 675 680 685

Ile Ile Lys Phe Phe Gln Asn Gln Arg Tyr Tyr Leu Lys His His Gly
 690 695 700

Lys Leu Lys Asp Asn Ser Gly Leu Glu Val Asp Val Ala Glu Tyr Lys
 705 710 715 720

Glu Glu Glu Leu Leu Lys Asp Leu Glu Glu Ser Val Gln Asp Lys Asn
 725 730 735

Thr Asn Thr Leu Phe Ser Val Lys Leu Glu Glu Glu Leu Ser Val Glu
 740 745 750

Gly Asn Thr Asp Ile Asn Thr Asp Leu Lys Asp
 755 760

<210> 727
 <211> 399
 <212> PRT
 <213> Homo sapiens

<400> 727

Met Ala Glu Arg Arg Arg His Lys Lys Arg Ile Gln Glu Val Gly Glu
 1 5 10 15

Pro Ser Lys Glu Glu Lys Ala Val Ala Lys Tyr Leu Arg Phe Asn Cys
 20 25 30

Pro Thr Lys Ser Thr Asn Met Met Gly His Arg Val Asp Tyr Phe Ile
 35 40 45

Ala Ser Lys Ala Val Asp Cys Leu Leu Asp Ser Lys Trp Ala Lys Ala
 50 55 60

Lys Lys Gly Glu Glu Ala Leu Phe Thr Thr Arg Glu Ser Val Val Asp
 65 70 75 80

Tyr Cys Asn Arg Leu Leu Lys Lys Gln Phe Phe His Arg Ala Leu Lys
 85 90 95

Val Met Lys Met Lys Tyr Asp Lys Asp Ile Lys Lys Glu Lys Asp Lys
 100 105 110

Gly Lys Ala Glu Ser Gly Lys Glu Glu Asp Lys Lys Ser Lys Lys Glu
 115 120 125

Asn Ile Lys Asp Glu Lys Thr Lys Lys Glu Lys Glu Lys Lys Lys Asp
 130 135 140

Gly Glu Lys Glu Glu Ser Lys Lys Glu Glu Thr Pro Gly Thr Pro Lys

145 150 155 160
 Lys Lys Glu Thr Lys Lys Lys Phe Lys Leu Glu Pro His Asp Asp Gln
 165 170 175
 Val Phe Leu Asp Gly Asn Glu Val Tyr Val Trp Ile Tyr Asp Pro Val
 180 185 190
 His Phe Lys Thr Phe Val Met Gly Leu Ile Leu Val Ile Ala Val Ile
 195 200 205
 Ala Ala Thr Leu Phe Pro Leu Trp Pro Ala Glu Met Arg Val Gly Val
 210 215 220
 Tyr Tyr Leu Ser Val Gly Ala Gly Cys Phe Val Ala Ser Ile Leu Leu
 225 230 235 240
 Leu Ala Val Ala Arg Cys Ile Leu Phe Leu Ile Ile Trp Leu Ile Thr
 245 250 255
 Gly Gly Arg His His Phe Trp Phe Leu Pro Asn Leu Thr Ala Asp Val
 260 265 270
 Gly Phe Ile Asp Ser Phe Arg Pro Leu Tyr Thr His Glu Tyr Lys Gly
 275 280 285
 Pro Lys Ala Asp Leu Lys Lys Asp Glu Lys Ser Glu Thr Lys Lys Gln
 290 295 300
 Gln Lys Ser Asp Ser Glu Glu Lys Ser Asp Ser Glu Lys Lys Glu Asp
 305 310 315 320
 Glu Glu Gly Lys Val Gly Pro Gly Asn His Gly Thr Glu Gly Ser Gly
 325 330 335
 Gly Glu Arg His Ser Asp Thr Asp Ser Asp Arg Arg Glu Asp Asp Arg
 340 345 350
 Ser Gln His Ser Ser Gly Asn Gly Asn Asp Phe Glu Met Ile Thr Lys
 355 360 365
 Glu Glu Leu Glu Gln Gln Thr Asp Gly Asp Cys Glu Glu Asp Glu Glu
 370 375 380
 Glu Glu Asn Asp Gly Glu Thr Pro Lys Ser Ser His Glu Lys Ser
 385 390 395

<210> 728
 <211> 862
 <212> PRT
 <213> Homo sapiens

<400> 728

Met Arg Met Cys Thr Pro Ile Arg Gly Leu Leu Met Ala Leu Ala Val
 1 5 10 15

Met Phe Gly Thr Ala Met Ala Phe Ala Pro Ile Pro Arg Ile Thr Trp
 20 25 30

Glu His Arg Glu Val His Leu Val Gln Phe His Glu Pro Asp Ile Tyr
 35 40 45

Asn Tyr Ser Ala Leu Leu Leu Ser Glu Asp Lys Asp Thr Leu Tyr Ile
 50 55 60

Gly Ala Arg Glu Ala Val Phe Ala Val Asn Ala Leu Asn Ile Ser Glu
 65 70 75 80

Lys Gln His Glu Val Tyr Trp Lys Val Ser Glu Asp Lys Lys Ala Lys
 85 90 95

Cys Ala Glu Lys Gly Lys Ser Lys Gln Thr Glu Cys Leu Asn Tyr Ile
 100 105 110

Arg Val Leu Gln Pro Leu Ser Ala Thr Ser Leu Tyr Val Cys Gly Thr
 115 120 125

Asn Ala Phe Gln Pro Ala Cys Asp His Leu Asn Leu Thr Ser Phe Lys
 130 135 140

Phe Leu Gly Lys Asn Glu Asp Gly Lys Gly Arg Cys Pro Phe Asp Pro
 145 150 155 160

Ala His Ser Tyr Thr Ser Val Met Val Asp Gly Glu Leu Tyr Ser Gly
 165 170 175

Thr Ser Tyr Asn Phe Leu Gly Ser Glu Pro Ile Ile Ser Arg Asn Ser
 180 185 190

Ser His Ser Pro Leu Arg Thr Glu Tyr Ala Ile Pro Trp Leu Asn Glu
 195 200 205

Pro Ser Phe Val Phe Ala Asp Val Ile Arg Lys Ser Pro Asp Ser Pro
 210 215 220

Asp Gly Glu Asp Asp Arg Val Tyr Phe Phe Phe Thr Glu Val Ser Val
 225 230 235 240

Glu Tyr Glu Phe Val Phe Arg Val Leu Ile Pro Arg Ile Ala Arg Val
 245 250 255

Cys Lys Gly Asp Gln Gly Gly Leu Arg Thr Leu Gln Lys Lys Trp Thr
 260 265 270

Ser Phe Leu Lys Ala Arg Leu Ile Cys Ser Arg Pro Asp Ser Gly Leu
 275 280 285
 Val Phe Asn Val Leu Arg Asp Val Phe Val Leu Arg Ser Pro Gly Leu
 290 295 300
 Lys Val Pro Val Phe Tyr Ala Leu Phe Thr Pro Gln Leu Asn Asn Val
 305 310 315 320
 Gly Leu Ser Ala Val Cys Ala Tyr Asn Leu Ser Thr Ala Glu Glu Val
 325 330 335
 Phe Ser His Gly Lys Tyr Met Gln Ser Thr Thr Val Glu Gln Ser His
 340 345 350
 Thr Lys Trp Val Arg Tyr Asn Gly Pro Val Pro Lys Pro Arg Pro Gly
 355 360 365
 Ala Cys Ile Asp Ser Glu Ala Arg Ala Ala Asn Tyr Thr Ser Ser Leu
 370 375 380
 Asn Leu Pro Asp Lys Thr Leu Gln Phe Val Lys Asp His Pro Leu Met
 385 390 395 400
 Asp Asp Ser Val Thr Pro Ile Asp Asn Arg Pro Arg Leu Ile Lys Lys
 405 410 415
 Asp Val Asn Tyr Thr Gln Ile Val Val Asp Arg Thr Gln Ala Leu Asp
 420 425 430
 Gly Thr Val Tyr Asp Val Met Phe Val Ser Thr Asp Arg Gly Ala Leu
 435 440 445
 His Lys Ala Ile Ser Leu Glu His Ala Val His Ile Ile Glu Glu Thr
 450 455 460
 Gln Leu Phe Gln Asp Phe Glu Pro Val Gln Thr Leu Leu Leu Ser Ser
 465 470 475 480
 Lys Lys Gly Asn Arg Phe Val Tyr Ala Gly Ser Asn Ser Gly Val Val
 485 490 495
 Gln Ala Pro Leu Ala Phe Cys Gly Lys His Gly Thr Cys Glu Asp Cys
 500 505 510
 Val Leu Ala Arg Asp Pro Tyr Cys Ala Trp Ser Pro Pro Thr Ala Thr
 515 520 525
 Cys Val Ala Leu His Gln Thr Glu Ser Pro Ser Arg Gly Leu Ile Gln
 530 535 540

Glu Met Ser Gly Asp Ala Ser Val Cys Pro Asp Lys Ser Lys Gly Ser
 545 550 555 560
 Tyr Arg Gln His Phe Phe Lys His Gly Gly Thr Ala Glu Leu Lys Cys
 565 570 575
 Ser Gln Lys Ser Asn Leu Ala Arg Val Phe Trp Lys Phe Gln Asn Gly
 580 585 590
 Val Leu Lys Ala Glu Ser Pro Lys Tyr Gly Leu Met Gly Arg Lys Asn
 595 600 605
 Leu Leu Ile Phe Asn Leu Ser Glu Gly Asp Ser Gly Val Tyr Gln Cys
 610 615 620
 Leu Ser Glu Glu Arg Val Lys Asn Lys Thr Val Phe Gln Val Val Ala
 625 630 635 640
 Lys His Val Leu Glu Val Lys Val Val Pro Lys Pro Val Val Ala Pro
 645 650 655
 Thr Leu Ser Val Val Gln Thr Glu Gly Ser Arg Ile Ala Thr Lys Val
 660 665 670
 Leu Val Ala Ser Thr Gln Gly Ser Ser Pro Pro Thr Pro Ala Val Gln
 675 680 685
 Ala Thr Ser Ser Gly Ala Ile Thr Leu Pro Pro Lys Pro Ala Pro Thr
 690 695 700
 Gly Thr Ser Cys Glu Pro Lys Ile Val Ile Asn Thr Val Pro Gln Leu
 705 710 715 720
 His Ser Glu Lys Thr Met Tyr Leu Lys Ser Ser Asp Asn Arg Leu Leu
 725 730 735
 Met Ser Leu Phe Leu Phe Phe Phe Val Leu Phe Leu Cys Leu Phe Phe
 740 745 750
 Tyr Asn Cys Tyr Lys Gly Tyr Leu Pro Arg Gln Cys Leu Lys Phe Arg
 755 760 765
 Ser Ala Leu Leu Ile Gly Lys Lys Lys Pro Lys Ser Asp Phe Cys Asp
 770 775 780
 Arg Glu Gln Ser Leu Lys Glu Thr Leu Val Glu Pro Gly Ser Phe Ser
 785 790 795 800
 Gln Gln Asn Gly Glu His Pro Lys Pro Ala Leu Asp Thr Gly Tyr Glu
 805 810 815

Thr Glu Gln Asp Thr Ile Thr Ser Lys Val Pro Thr Asp Arg Glu Asp
820 825 830

Ser Gln Arg Ile Asp Asp Leu Ser Ala Arg Asp Lys Pro Phe Asp Val
835 840 845

Lys Cys Glu Leu Lys Phe Ala Asp Ser Asp Ala Asp Gly Asp
850 855 860

<210> 729
<211> 473
<212> PRT
<213> Homo sapiens

<400> 729

Met Gly Ala Val Leu Gly Val Phe Ser Leu Ala Ser Trp Val Pro Cys
1 5 10 15

Leu Cys Ser Gly Ala Ser Cys Leu Leu Cys Ser Cys Cys Pro Asn Ser
20 25 30

Lys Asn Ser Thr Val Thr Arg Leu Ile Tyr Ala Phe Ile Leu Leu Leu
35 40 45

Ser Thr Val Val Ser Tyr Ile Met Gln Arg Lys Glu Met Glu Thr Tyr
50 55 60

Leu Lys Lys Ile Pro Gly Phe Cys Glu Gly Gly Phe Lys Ile His Glu
65 70 75 80

Ala Asp Ile Asn Ala Asp Lys Asp Cys Asp Val Leu Val Gly Tyr Lys
85 90 95

Ala Val Tyr Arg Ile Ser Phe Ala Met Ala Ile Phe Phe Phe Val Phe
100 105 110

Ser Leu Leu Met Phe Lys Val Lys Thr Ser Lys Asp Leu Arg Ala Ala
115 120 125

Val His Asn Gly Phe Trp Phe Phe Lys Ile Ala Ala Leu Ile Gly Ile
130 135 140

Met Val Gly Ser Phe Tyr Ile Pro Gly Gly Tyr Phe Ser Ser Val Trp
145 150 155 160

Phe Val Val Gly Met Ile Gly Ala Ala Leu Phe Ile Leu Ile Gln Leu
165 170 175

Val Leu Leu Val Asp Phe Ala His Ser Trp Asn Glu Ser Trp Val Asn
180 185 190

Arg Met Glu Glu Gly Asn Pro Arg Leu Trp Tyr Ala Ala Leu Leu Ser
 195 200 205
 Phe Thr Ser Ala Phe Tyr Ile Leu Ser Ile Ile Cys Val Gly Leu Leu
 210 215 220
 Tyr Thr Tyr Tyr Thr Lys Pro Asp Gly Cys Thr Glu Asn Lys Phe Phe
 225 230 235 240
 Ile Ser Ile Asn Leu Ile Leu Cys Val Val Ala Ser Ile Ile Ser Ile
 245 250 255
 His Pro Lys Ile Gln Glu His Gln Pro Arg Ser Gly Leu Leu Gln Ser
 260 265 270
 Ser Leu Ile Thr Leu Tyr Thr Met Tyr Leu Thr Trp Ser Ala Met Ser
 275 280 285
 Asn Glu Pro Asp Arg Ser Cys Asn Pro Asn Leu Met Ser Phe Ile Thr
 290 295 300
 Arg Ile Thr Ala Pro Thr Leu Ala Pro Gly Asn Ser Thr Ala Val Val
 305 310 315 320
 Pro Thr Pro Thr Pro Pro Ser Lys Ser Gly Ser Leu Leu Asp Ser Asp
 325 330 335
 Asn Phe Ile Gly Leu Phe Val Phe Val Leu Cys Leu Leu Tyr Ser Ser
 340 345 350
 Ile Arg Thr Ser Thr Asn Ser Gln Val Asp Lys Leu Thr Leu Ser Gly
 355 360 365
 Ser Asp Ser Val Ile Leu Gly Asp Thr Thr Thr Ser Gly Ala Ser Asp
 370 375 380
 Glu Glu Asp Gly Gln Pro Arg Arg Ala Val Asp Asn Glu Lys Glu Gly
 385 390 395 400
 Val Gln Tyr Ser Tyr Ser Leu Phe His Leu Met Leu Cys Leu Ala Ser
 405 410 415
 Leu Tyr Ile Met Met Thr Leu Thr Ser Trp Tyr Ser Pro Asp Ala Lys
 420 425 430
 Phe Gln Ser Met Thr Ser Lys Trp Pro Ala Val Trp Val Lys Ile Ser
 435 440 445
 Ser Ser Trp Val Cys Leu Leu Leu Tyr Val Trp Thr Leu Val Ala Pro
 450 455 460

Leu Val Leu Thr Ser Arg Asp Phe Ser
465 470

<210> 730
<211> 456
<212> PRT
<213> Homo sapiens

<400> 730

Met Ser Ala Gln Cys Cys Ala Gly Gln Leu Ala Cys Cys Cys Gly Ser
1 5 10 15

Ala Gly Cys Ser Leu Cys Cys Asp Cys Cys Pro Arg Ile Arg Gln Ser
20 25 30

Leu Ser Thr Arg Phe Met Tyr Ala Leu Tyr Phe Ile Leu Val Val Val
35 40 45

Leu Cys Cys Ile Met Met Ser Thr Thr Val Ala His Lys Met Lys Glu
50 55 60

His Ile Pro Phe Phe Glu Asp Met Cys Lys Gly Ile Lys Ala Gly Asp
65 70 75 80

Thr Cys Glu Lys Leu Val Gly Tyr Ser Ala Val Tyr Arg Val Cys Phe
85 90 95

Gly Met Ala Cys Phe Phe Phe Ile Phe Cys Leu Leu Thr Leu Lys Ile
100 105 110

Asn Asn Ser Lys Ser Cys Arg Ala His Ile His Asn Gly Phe Trp Phe
115 120 125

Phe Lys Leu Leu Leu Leu Gly Ala Met Cys Ser Gly Ala Phe Phe Ile
130 135 140

Pro Asp Gln Asp Thr Phe Leu Asn Ala Trp Arg Tyr Val Gly Ala Val
145 150 155 160

Gly Gly Phe Leu Phe Ile Gly Ile Gln Leu Leu Leu Leu Val Glu Phe
165 170 175

Ala His Lys Trp Asn Lys Asn Trp Thr Ala Gly Thr Ala Ser Asn Lys
180 185 190

Leu Trp Tyr Ala Ser Leu Ala Leu Val Thr Leu Ile Met Tyr Ser Ile
195 200 205

Ala Thr Gly Gly Leu Val Leu Met Ala Val Phe Tyr Thr Gln Lys Asp
210 215 220

Ser Cys Met Glu Asn Lys Ile Leu Leu Gly Val Asn Gly Gly Leu Cys
 225 230 235 240

Leu Leu Ile Ser Leu Val Ala Ile Ser Pro Trp Val Gln Asn Arg Gln
 245 250 255

Pro His Ser Gly Leu Leu Gln Ser Gly Val Ile Ser Cys Tyr Val Thr
 260 265 270

Tyr Leu Thr Phe Ser Ala Leu Ser Ser Lys Pro Ala Glu Val Asp Glu
 275 280 285

His Gly Lys Asn Val Thr Ile Cys Val Pro Asp Phe Gly Gln Asp Leu
 290 295 300

Tyr Arg Asp Glu Asn Leu Val Thr Ile Leu Gly Thr Ser Leu Leu Ile
 305 310 315 320

Gly Cys Ile Leu Tyr Ser Cys Leu Thr Ser Thr Thr Arg Ser Ser Ser
 325 330 335

Asp Ala Leu Gln Gly Arg Tyr Ala Ala Pro Glu Leu Glu Ile Ala Arg
 340 345 350

Cys Cys Phe Cys Phe Ser Pro Gly Gly Glu Asp Thr Glu Glu Gln Gln
 355 360 365

Pro Gly Lys Glu Gly Pro Arg Val Ile Tyr Asp Glu Lys Lys Gly Thr
 370 375 380

Val Tyr Ile Tyr Ser Tyr Phe His Phe Val Phe Phe Leu Ala Ser Leu
 385 390 395 400

Tyr Val Met Met Thr Val Thr Asn Trp Phe Lys Trp Ser Pro Thr Leu
 405 410 415

Leu Pro Arg Leu Glu Tyr Ser Gly Met Ile Leu Ala His Cys Asn Leu
 420 425 430

His Leu Pro Asp Val Lys Arg Phe Ser Cys Leu Ser Leu Pro Ser Ser
 435 440 445

Trp Gly Tyr Arg His Val Pro Pro
 450 455

<210> 731
 <211> 314
 <212> PRT
 <213> Homo sapiens

<400> 731

Met Leu Gly Lys Gly Gly Lys Arg Lys Phe Asp Glu His Glu Asp Gly
 Page 1215

1 5 10 15
 Leu Glu Gly Lys Ile Val Ser Pro Cys Asp Gly Pro Ser Lys Val Ser
 20 25 30
 Tyr Thr Leu Gln Arg Gln Thr Ile Phe Asn Ile Ser Leu Met Lys Leu
 35 40 45
 Tyr Asn His Arg Pro Leu Thr Glu Pro Ser Leu Gln Lys Thr Val Leu
 50 55 60
 Ile Asn Asn Met Leu Arg Arg Ile Gln Glu Glu Leu Lys Gln Glu Gly
 65 70 75 80
 Ser Leu Arg Pro Met Phe Thr Pro Ser Ser Gln Pro Thr Thr Glu Pro
 85 90 95
 Ser Asp Ser Tyr Arg Glu Ala Pro Pro Ala Phe Ser His Leu Ala Ser
 100 105 110
 Pro Ser Ser His Pro Cys Asp Leu Gly Ser Thr Thr Pro Leu Glu Ala
 115 120 125
 Cys Leu Thr Pro Ala Ser Leu Leu Glu Asp Asp Asp Asp Thr Phe Cys
 130 135 140
 Thr Ser Gln Ala Met Gln Pro Thr Ala Pro Thr Lys Leu Ser Pro Pro
 145 150 155 160
 Ala Leu Leu Pro Glu Lys Asp Ser Phe Ser Ser Ala Leu Asp Glu Ile
 165 170 175
 Glu Glu Leu Cys Pro Thr Ser Thr Ser Thr Glu Ala Ala Thr Ala Ala
 180 185 190
 Thr Asp Ser Val Lys Gly Thr Ser Ser Glu Ala Gly Thr Gln Lys Leu
 195 200 205
 Asp Gly Pro Gln Glu Ser Arg Ala Asp Asp Ser Lys Leu Met Asp Ser
 210 215 220
 Leu Pro Gly Asn Phe Glu Ile Thr Thr Ser Thr Gly Phe Leu Thr Asp
 225 230 235 240
 Leu Thr Leu Asp Asp Ile Leu Phe Ala Asp Ile Asp Thr Ser Met Tyr
 245 250 255
 Asp Phe Asp Pro Cys Thr Ser Ser Ser Gly Thr Ala Ser Lys Met Ala
 260 265 270
 Pro Val Ser Ala Asp Asp Leu Leu Lys Thr Leu Ala Pro Tyr Ser Ser
 Page 1216

275

280

285

Gln Pro Val Thr Pro Ser Gln Pro Phe Lys Met Asp Leu Thr Glu Leu
 290 295 300

Asp His Ile Met Glu Val Leu Val Gly Ser
 305 310

<210> 732
 <211> 551
 <212> PRT
 <213> Homo sapiens

<400> 732

Met Ala Glu Gly Glu Asn Glu Val Arg Trp Asp Gly Leu Cys Ser Arg
 1 5 10 15

Asp Ser Thr Thr Arg Glu Thr Ala Leu Glu Asn Ile Arg Gln Thr Ile
 20 25 30

Leu Arg Lys Thr Glu Tyr Leu Arg Ser Val Lys Glu Thr Pro His Arg
 35 40 45

Pro Ser Asp Gly Leu Ser Asn Thr Glu Ser Ser Asp Gly Leu Asn Lys
 50 55 60

Leu Leu Ala His Leu Leu Met Leu Ser Lys Arg Cys Pro Phe Lys Asp
 65 70 75 80

Val Arg Glu Lys Ser Glu Phe Ile Leu Lys Ser Ile Gln Glu Leu Gly
 85 90 95

Ile Arg Ile Pro Arg Pro Leu Gly Gln Gly Pro Ser Arg Phe Ile Pro
 100 105 110

Glu Lys Glu Ile Leu Gln Val Gly Ser Glu Asp Ala Gln Met His Ala
 115 120 125

Leu Phe Ala Asp Ser Phe Ala Ala Leu Gly Arg Leu Asp Asn Ile Thr
 130 135 140

Leu Val Met Val Phe His Pro Gln Tyr Leu Glu Ser Phe Leu Lys Thr
 145 150 155 160

Gln His Tyr Leu Leu Gln Met Asp Gly Pro Leu Pro Leu His Tyr Arg
 165 170 175

His Tyr Ile Gly Ile Met Ala Ala Ala Arg His Gln Cys Ser Tyr Leu
 180 185 190

Val Asn Leu His Val Asn Asp Phe Leu His Val Gly Gly Asp Pro Lys
 195 200 205

Trp Leu Asn Gly Leu Glu Asn Ala Pro Gln Lys Leu Gln Asn Leu Gly
 210 215 220
 Glu Leu Asn Lys Val Leu Ala His Arg Pro Trp Leu Ile Thr Lys Glu
 225 230 235 240
 His Ile Glu Gly Leu Leu Lys Ala Glu Glu His Ser Trp Ser Leu Ala
 245 250 255
 Glu Leu Val His Ala Val Val Leu Leu Thr His Tyr His Ser Leu Ala
 260 265 270
 Ser Phe Thr Phe Gly Cys Gly Ile Ser Pro Glu Ile His Cys Asp Gly
 275 280 285
 Gly His Thr Phe Arg Pro Pro Ser Val Ser Asn Tyr Cys Ile Cys Asp
 290 295 300
 Ile Thr Asn Gly Asn His Ser Val Asp Glu Met Pro Val Asn Ser Ala
 305 310 315 320
 Glu Asn Val Ser Val Ser Asp Ser Phe Phe Glu Val Glu Ala Leu Met
 325 330 335
 Glu Lys Met Arg Gln Leu Gln Glu Cys Arg Asp Glu Glu Glu Ala Ser
 340 345 350
 Gln Glu Glu Met Ala Ser Arg Phe Glu Ile Glu Lys Arg Glu Ser Met
 355 360 365
 Phe Val Phe Ser Ser Asp Asp Glu Glu Val Thr Pro Ala Arg Ala Val
 370 375 380
 Ser Arg His Phe Glu Asp Thr Ser Tyr Gly Tyr Lys Asp Phe Ser Arg
 385 390 395 400
 His Gly Met His Val Pro Thr Phe Arg Val Gln Asp Tyr Cys Trp Glu
 405 410 415
 Asp His Gly Tyr Ser Leu Val Asn Arg Leu Tyr Pro Asp Val Gly Gln
 420 425 430
 Leu Ile Asp Glu Lys Phe His Ile Ala Tyr Asn Leu Thr Tyr Asn Thr
 435 440 445
 Met Ala Met His Lys Asp Val Asp Thr Ser Met Leu Arg Arg Ala Ile
 450 455 460
 Trp Asn Tyr Ile His Cys Met Phe Gly Ile Arg Tyr Asp Asp Tyr Asp
 465 470 475 480

Tyr Gly Glu Ile Asn Gln Leu Leu Asp Arg Ser Phe Lys Val Tyr Ile
 485 490 495

Lys Thr Val Val Cys Thr Pro Glu Lys Val Thr Lys Arg Met Tyr Asp
 500 505 510

Ser Phe Trp Arg Gln Phe Lys His Ser Glu Lys Val His Val Asn Leu
 515 520 525

Leu Leu Ile Glu Ala Arg Met Gln Ala Glu Leu Leu Tyr Ala Leu Arg
 530 535 540

Ala Ile Thr Arg Tyr Met Thr
 545 550

<210> 733
 <211> 2564
 <212> PRT
 <213> Homo sapiens

<400> 733

Met Lys Gln Leu Gln Pro Gln Pro Pro Lys Met Gly Asp Phe Tyr
 1 5 10 15

Asp Pro Glu His Pro Thr Pro Glu Glu Glu Glu Asn Glu Ala Lys Ile
 20 25 30

Glu Asn Val Gln Lys Thr Gly Phe Ile Lys Gly Pro Met Phe Lys Gly
 35 40 45

Val Ala Ser Ser Arg Phe Leu Pro Lys Gly Thr Lys Thr Lys Val Asn
 50 55 60

Leu Glu Glu Gln Gly Arg Gln Lys Val Ser Phe Ser Phe Ser Leu Thr
 65 70 75 80

Lys Lys Thr Leu Gln Asn Arg Phe Leu Thr Ala Leu Gly Asn Glu Lys
 85 90 95

Gln Ser Asp Thr Pro Asn Pro Pro Ala Val Pro Leu Gln Val Asp Ser
 100 105 110

Thr Pro Lys Met Lys Met Glu Ile Gly Asp Thr Leu Ser Thr Ala Glu
 115 120 125

Glu Ser Ser Pro Pro Lys Ser Arg Val Glu Leu Gly Lys Ile His Phe
 130 135 140

Lys Lys His Leu Leu His Val Thr Ser Arg Pro Leu Leu Ala Thr Thr
 145 150 155 160

Thr Ala Val Ala Ser Pro Pro Thr His Ala Ala Pro Leu Pro Ala Val
 165 170 175
 Ile Ala Glu Ser Thr Thr Val Asp Ser Pro Pro Ser Ser Pro Pro Pro
 180 185 190
 Pro Pro Pro Pro Ala Gln Ala Thr Thr Leu Ser Ser Pro Ala Pro Val
 195 200 205
 Thr Glu Pro Val Ala Leu Pro His Thr Pro Ile Thr Val Leu Met Ala
 210 215 220
 Ala Pro Val Pro Leu Pro Val Asp Val Ala Val Arg Ser Leu Lys Glu
 225 230 235 240
 Pro Pro Ile Ile Ile Val Pro Glu Ser Leu Glu Ala Asp Thr Lys Gln
 245 250 255
 Asp Thr Ile Ser Asn Ser Leu Glu Glu His Val Thr Gln Ile Leu Asn
 260 265 270
 Glu Gln Ala Asp Ile Ser Ser Lys Lys Glu Asp Ser His Ile Gly Lys
 275 280 285
 Asp Glu Glu Ile Pro Asp Ser Ser Lys Ile Ser Leu Ser Cys Lys Lys
 290 295 300
 Thr Gly Ser Lys Lys Lys Ser Ser Gln Ser Glu Gly Ile Phe Leu Gly
 305 310 315 320
 Ser Glu Ser Asp Glu Asp Ser Val Arg Thr Ser Ser Ser Gln Arg Ser
 325 330 335
 His Asp Leu Lys Phe Ser Ala Ser Ile Glu Lys Glu Arg Asp Phe Lys
 340 345 350
 Lys Ser Ser Ala Pro Leu Lys Ser Glu Asp Leu Gly Lys Pro Ser Arg
 355 360 365
 Ser Lys Thr Asp Arg Asp Asp Lys Tyr Phe Ser Tyr Ser Lys Leu Glu
 370 375 380
 Arg Asp Thr Arg Tyr Val Ser Ser Arg Cys Arg Ser Glu Arg Glu Arg
 385 390 395 400
 Arg Arg Ser Arg Ser His Ser Arg Ser Glu Arg Gly Ser Arg Thr Asn
 405 410 415
 Leu Ser Tyr Ser Arg Ser Glu Arg Ser His Tyr Tyr Asp Ser Asp Arg
 420 425 430

Arg Tyr His Arg Ser Ser Pro Tyr Arg Glu Arg Thr Arg Tyr Ser Arg
 435 440 445

Pro Tyr Thr Asp Asn Arg Ala Arg Glu Ser Ser Asp Ser Glu Glu Glu
 450 455 460

Tyr Lys Lys Thr Tyr Ser Arg Arg Thr Ser Ser His Ser Ser Ser Tyr
 465 470 475 480

Arg Asp Leu Arg Thr Ser Ser Tyr Ser Lys Ser Asp Arg Asp Cys Lys
 485 490 495

Thr Glu Thr Ser Tyr Leu Glu Met Glu Arg Arg Gly Lys Tyr Ser Ser
 500 505 510

Lys Leu Glu Arg Glu Ser Lys Arg Thr Ser Glu Asn Glu Ala Ile Lys
 515 520 525

Arg Cys Cys Ser Pro Pro Asn Glu Leu Gly Phe Arg Arg Gly Ser Ser
 530 535 540

Tyr Ser Lys His Asp Ser Ser Ala Ser Arg Tyr Lys Ser Thr Leu Ser
 545 550 555 560

Lys Pro Ile Pro Lys Ser Asp Lys Phe Lys Asn Ser Phe Cys Cys Thr
 565 570 575

Glu Leu Asn Glu Glu Ile Lys Gln Ser His Ser Phe Ser Leu Gln Thr
 580 585 590

Pro Cys Ser Lys Gly Ser Glu Leu Arg Met Ile Asn Lys Asn Pro Glu
 595 600 605

Arg Glu Lys Ala Gly Ser Pro Ala Pro Ser Asn Arg Leu Asn Asp Ser
 610 615 620

Pro Thr Leu Lys Lys Leu Asp Glu Leu Pro Ile Phe Lys Ser Glu Phe
 625 630 635 640

Ile Thr His Asp Ser His Asp Ser Ile Lys Glu Leu Asp Ser Leu Ser
 645 650 655

Lys Val Lys Asn Asp Gln Leu Arg Ser Phe Cys Pro Ile Glu Leu Asn
 660 665 670

Ile Asn Gly Ser Pro Gly Ala Glu Ser Asp Leu Ala Thr Phe Cys Thr
 675 680 685

Ser Lys Thr Asp Ala Val Leu Met Thr Ser Asp Asp Ser Val Thr Gly
 690 695 700

Ser Glu Leu Ser Pro Leu Val Lys Ala Cys Met Leu Ser Ser Asn Gly
 705 710 715 720
 Phe Gln Asn Ile Ser Arg Cys Lys Glu Lys Asp Leu Asp Asp Thr Cys
 725 730 735
 Met Leu His Lys Lys Ser Glu Ser Pro Phe Arg Glu Thr Glu Pro Leu
 740 745 750
 Val Ser Pro His Gln Asp Lys Leu Met Ser Met Pro Val Met Thr Val
 755 760 765
 Asp Tyr Ser Lys Thr Val Val Lys Glu Pro Val Asp Thr Arg Val Ser
 770 775 780
 Cys Cys Lys Thr Lys Asp Ser Asp Ile Tyr Cys Thr Leu Asn Asp Ser
 785 790 795 800
 Asn Pro Ser Leu Cys Asn Ser Glu Ala Glu Asn Ile Glu Pro Ser Val
 805 810 815
 Met Lys Ile Ser Ser Asn Ser Phe Met Asn Val His Leu Glu Ser Lys
 820 825 830
 Pro Val Ile Cys Asp Ser Arg Asn Leu Thr Asp His Ser Lys Phe Ala
 835 840 845
 Cys Glu Glu Tyr Lys Gln Ser Ile Gly Ser Thr Ser Ser Ala Ser Val
 850 855 860
 Asn His Phe Asp Asp Leu Tyr Gln Pro Ile Gly Ser Ser Gly Ile Ala
 865 870 875 880
 Ser Ser Leu Gln Ser Leu Pro Pro Gly Ile Lys Val Asp Ser Leu Thr
 885 890 895
 Leu Leu Lys Cys Gly Glu Asn Thr Ser Pro Val Leu Asp Ala Val Leu
 900 905 910
 Lys Ser Lys Lys Ser Ser Glu Phe Leu Lys His Ala Gly Lys Glu Thr
 915 920 925
 Ile Val Glu Val Gly Ser Asp Leu Pro Asp Ser Gly Lys Gly Phe Ala
 930 935 940
 Ser Arg Glu Asn Arg Arg Asn Asn Gly Leu Ser Gly Lys Cys Leu Gln
 945 950 955 960
 Glu Ala Gln Glu Glu Gly Asn Ser Ile Leu Pro Glu Arg Arg Gly Arg
 965 970 975

Pro Glu Ile Ser Leu Asp Glu Arg Gly Glu Gly Gly His Val His Thr
 980 985 990

Ser Asp Asp Ser Glu Val Val Phe Ser Ser Cys Asp Leu Asn Leu Thr
 995 1000 1005

Met Glu Asp Ser Asp Gly Val Thr Tyr Ala Leu Lys Cys Asp Ser
 1010 1015 1020

Ser Gly His Ala Pro Glu Ile Val Ser Thr Val His Glu Asp Tyr
 1025 1030 1035

Ser Gly Ser Ser Glu Ser Ser Asn Asp Glu Ser Asp Ser Glu Asp
 1040 1045 1050

Thr Asp Ser Asp Asp Ser Ser Ile Pro Arg Asn Arg Leu Gln Ser
 1055 1060 1065

Val Val Val Val Pro Lys Asn Ser Thr Leu Pro Met Glu Glu Thr
 1070 1075 1080

Ser Pro Cys Ser Ser Arg Ser Ser Gln Ser Tyr Arg His Tyr Ser
 1085 1090 1095

Asp His Trp Glu Asp Glu Arg Leu Glu Ser Arg Arg His Leu Tyr
 1100 1105 1110

Glu Glu Lys Phe Glu Ser Ile Ala Ser Lys Ala Cys Pro Gln Thr
 1115 1120 1125

Asp Lys Phe Phe Leu His Lys Gly Thr Glu Lys Asn Pro Glu Ile
 1130 1135 1140

Ser Phe Thr Gln Ser Ser Arg Lys Gln Ile Asp Asn Arg Leu Pro
 1145 1150 1155

Glu Leu Ser His Pro Gln Ser Asp Gly Val Asp Ser Thr Ser His
 1160 1165 1170

Thr Asp Val Lys Ser Asp Pro Leu Gly His Pro Asn Ser Glu Glu
 1175 1180 1185

Thr Val Lys Ala Lys Ile Pro Ser Arg Gln Gln Glu Glu Leu Pro
 1190 1195 1200

Ile Tyr Ser Ser Asp Phe Glu Asp Val Pro Asn Lys Ser Trp Gln
 1205 1210 1215

Gln Thr Thr Phe Gln Asn Arg Pro Asp Ser Arg Leu Gly Lys Thr
 1220 1225 1230

Glu	Leu	Ser	Phe	Ser	Ser	Ser	Cys	Glu	Ile	Pro	His	Val	Asp	Gly
	1235					1240					1245			
Leu	His	Ser	Ser	Glu	Glu	Leu	Arg	Asn	Leu	Gly	Trp	Asp	Phe	Ser
	1250					1255					1260			
Gln	Glu	Lys	Pro	Ser	Thr	Thr	Tyr	Gln	Gln	Pro	Asp	Ser	Ser	Tyr
	1265					1270					1275			
Gly	Ala	Cys	Gly	Gly	His	Lys	Tyr	Gln	Gln	Asn	Ala	Glu	Gln	Tyr
	1280					1285					1290			
Gly	Gly	Thr	Arg	Asp	Tyr	Trp	Gln	Gly	Asn	Gly	Tyr	Trp	Asp	Pro
	1295					1300					1305			
Arg	Ser	Gly	Arg	Pro	Pro	Gly	Thr	Gly	Val	Val	Tyr	Asp	Arg	Thr
	1310					1315					1320			
Gln	Gly	Gln	Val	Pro	Asp	Ser	Leu	Thr	Asp	Asp	Arg	Glu	Glu	Glu
	1325					1330					1335			
Glu	Asn	Trp	Asp	Gln	Gln	Asp	Gly	Ser	His	Phe	Ser	Asp	Gln	Ser
	1340					1345					1350			
Asp	Lys	Phe	Leu	Leu	Ser	Leu	Gln	Lys	Asp	Lys	Gly	Ser	Val	Gln
	1355					1360					1365			
Ala	Pro	Glu	Ile	Ser	Ser	Asn	Ser	Ile	Lys	Asp	Thr	Leu	Ala	Val
	1370					1375					1380			
Asn	Glu	Lys	Lys	Asp	Phe	Ser	Lys	Asn	Leu	Glu	Lys	Asn	Asp	Ile
	1385					1390					1395			
Lys	Asp	Arg	Gly	Pro	Leu	Lys	Lys	Arg	Arg	Gln	Glu	Ile	Glu	Ser
	1400					1405					1410			
Asp	Ser	Glu	Ser	Asp	Gly	Glu	Leu	Gln	Asp	Arg	Lys	Lys	Val	Arg
	1415					1420					1425			
Val	Glu	Val	Glu	Gln	Gly	Glu	Thr	Ser	Val	Pro	Pro	Gly	Ser	Ala
	1430					1435					1440			
Leu	Val	Gly	Pro	Ser	Cys	Val	Met	Asp	Asp	Phe	Arg	Asp	Pro	Gln
	1445					1450					1455			
Arg	Trp	Lys	Glu	Cys	Ala	Lys	Gln	Gly	Lys	Met	Pro	Cys	Tyr	Phe
	1460					1465					1470			
Asp	Leu	Ile	Glu	Glu	Asn	Val	Tyr	Leu	Thr	Glu	Arg	Lys	Lys	Asn
	1475					1480					1485			

Lys	Ser	His	Arg	Asp	Ile	Lys	Arg	Met	Gln	Cys	Glu	Cys	Thr	Pro
	1490					1495					1500			
Leu	Ser	Lys	Asp	Glu	Arg	Ala	Gln	Gly	Glu	Ile	Ala	Cys	Gly	Glu
	1505					1510					1515			
Asp	Cys	Leu	Asn	Arg	Leu	Leu	Met	Ile	Glu	Cys	Ser	Ser	Arg	Cys
	1520					1525					1530			
Pro	Asn	Gly	Asp	Tyr	Cys	Ser	Asn	Arg	Arg	Phe	Gln	Arg	Lys	Gln
	1535					1540					1545			
His	Ala	Asp	Val	Glu	Val	Ile	Leu	Thr	Glu	Lys	Lys	Gly	Trp	Gly
	1550					1555					1560			
Leu	Arg	Ala	Ala	Lys	Asp	Leu	Pro	Ser	Asn	Thr	Phe	Val	Leu	Glu
	1565					1570					1575			
Tyr	Cys	Gly	Glu	Val	Leu	Asp	His	Lys	Glu	Phe	Lys	Ala	Arg	Val
	1580					1585					1590			
Lys	Glu	Tyr	Ala	Arg	Asn	Lys	Asn	Ile	His	Tyr	Tyr	Phe	Met	Ala
	1595					1600					1605			
Leu	Lys	Asn	Asp	Glu	Ile	Ile	Asp	Ala	Thr	Gln	Lys	Gly	Asn	Cys
	1610					1615					1620			
Ser	Arg	Phe	Met	Asn	His	Ser	Cys	Glu	Pro	Asn	Cys	Glu	Thr	Gln
	1625					1630					1635			
Lys	Trp	Thr	Val	Asn	Gly	Gln	Leu	Arg	Val	Gly	Phe	Phe	Thr	Thr
	1640					1645					1650			
Lys	Leu	Val	Pro	Ser	Gly	Ser	Glu	Leu	Thr	Phe	Asp	Tyr	Gln	Phe
	1655					1660					1665			
Gln	Arg	Tyr	Gly	Lys	Glu	Ala	Gln	Lys	Cys	Phe	Cys	Gly	Ser	Ala
	1670					1675					1680			
Asn	Cys	Arg	Gly	Tyr	Leu	Gly	Gly	Glu	Asn	Arg	Val	Ser	Ile	Arg
	1685					1690					1695			
Ala	Ala	Gly	Gly	Lys	Met	Lys	Lys	Glu	Arg	Ser	Arg	Lys	Lys	Asp
	1700					1705					1710			
Ser	Val	Asp	Gly	Glu	Leu	Glu	Ala	Leu	Met	Glu	Asn	Gly	Glu	Gly
	1715					1720					1725			
Leu	Ser	Asp	Lys	Asn	Gln	Val	Leu	Ser	Leu	Ser	Arg	Leu	Met	Val
	1730					1735					1740			

Arg	Ile	Glu	Thr	Leu	Glu	Gln	Lys	Leu	Thr	Cys	Leu	Glu	Leu	Ile
	1745					1750					1755			
Gln	Asn	Thr	His	Ser	Gln	Ser	Cys	Leu	Lys	Ser	Phe	Leu	Glu	Arg
	1760					1765					1770			
His	Gly	Leu	Ser	Leu	Leu	Trp	Ile	Trp	Met	Ala	Glu	Leu	Gly	Asp
	1775					1780					1785			
Gly	Arg	Glu	Ser	Asn	Gln	Lys	Leu	Gln	Glu	Glu	Ile	Ile	Lys	Thr
	1790					1795					1800			
Leu	Glu	His	Leu	Pro	Ile	Pro	Thr	Lys	Asn	Met	Leu	Glu	Glu	Ser
	1805					1810					1815			
Lys	Val	Leu	Pro	Ile	Ile	Gln	Arg	Trp	Ser	Gln	Thr	Lys	Thr	Ala
	1820					1825					1830			
Val	Pro	Pro	Leu	Ser	Glu	Gly	Asp	Gly	Tyr	Ser	Ser	Glu	Asn	Thr
	1835					1840					1845			
Ser	Arg	Ala	His	Thr	Pro	Leu	Asn	Thr	Pro	Asp	Pro	Ser	Thr	Lys
	1850					1855					1860			
Leu	Ser	Thr	Glu	Ala	Asp	Thr	Asp	Thr	Pro	Lys	Lys	Leu	Met	Phe
	1865					1870					1875			
Arg	Arg	Leu	Lys	Ile	Ile	Ser	Glu	Asn	Ser	Met	Asp	Ser	Ala	Ile
	1880					1885					1890			
Ser	Asp	Ala	Thr	Ser	Glu	Leu	Glu	Gly	Lys	Asp	Gly	Lys	Glu	Asp
	1895					1900					1905			
Leu	Asp	Gln	Leu	Glu	Asn	Val	Pro	Val	Glu	Glu	Glu	Glu	Glu	Leu
	1910					1915					1920			
Gln	Ser	Gln	Gln	Leu	Leu	Pro	Gln	Gln	Leu	Pro	Glu	Cys	Lys	Val
	1925					1930					1935			
Asp	Ser	Glu	Thr	Asn	Ile	Glu	Ala	Ser	Lys	Leu	Pro	Thr	Ser	Glu
	1940					1945					1950			
Pro	Glu	Ala	Asp	Ala	Glu	Ile	Glu	Pro	Lys	Glu	Ser	Asn	Gly	Thr
	1955					1960					1965			
Lys	Leu	Glu	Glu	Pro	Ile	Asn	Glu	Glu	Thr	Pro	Ser	Gln	Asp	Glu
	1970					1975					1980			
Glu	Glu	Gly	Val	Ser	Asp	Val	Glu	Ser	Glu	Arg	Ser	Gln	Glu	Gln
	1985					1990					1995			

Pro	Asp 2000	Lys	Thr	Val	Asp	Ile 2005	Ser	Asp	Leu	Ala	Thr 2010	Lys	Leu	Leu
Asp	Ser 2015	Trp	Lys	Asp	Leu	Lys 2020	Glu	Val	Tyr	Arg	Ile 2025	Pro	Lys	Lys
Ser	Gln 2030	Thr	Glu	Lys	Glu	Asn 2035	Thr	Thr	Thr	Glu	Arg 2040	Gly	Arg	Asp
Ala	Val 2045	Gly	Phe	Arg	Asp	Gln 2050	Thr	Pro	Ala	Pro	Lys 2055	Thr	Pro	Asn
Arg	Ser 2060	Arg	Glu	Arg	Asp	Pro 2065	Asp	Lys	Gln	Thr	Gln 2070	Asn	Lys	Glu
Lys	Arg 2075	Lys	Arg	Arg	Ser	Ser 2080	Leu	Ser	Pro	Pro	Ser 2085	Ser	Ala	Tyr
Glu	Arg 2090	Gly	Thr	Lys	Arg	Pro 2095	Asp	Asp	Arg	Tyr	Asp 2100	Thr	Pro	Thr
Ser	Lys 2105	Lys	Lys	Val	Arg	Ile 2110	Lys	Asp	Arg	Asn	Lys 2115	Leu	Ser	Thr
Glu	Glu 2120	Arg	Arg	Lys	Leu	Phe 2125	Glu	Gln	Glu	Val	Ala 2130	Gln	Arg	Glu
Ala	Gln 2135	Lys	Gln	Gln	Gln	Gln 2140	Met	Gln	Asn	Leu	Gly 2145	Met	Thr	Ser
Pro	Leu 2150	Pro	Tyr	Asp	Ser	Leu 2155	Gly	Tyr	Asn	Ala	Pro 2160	His	His	Pro
Phe	Ala 2165	Gly	Tyr	Pro	Pro	Gly 2170	Tyr	Pro	Met	Gln	Ala 2175	Tyr	Val	Asp
Pro	Ser 2180	Asn	Pro	Asn	Ala	Gly 2185	Lys	Val	Leu	Leu	Pro 2190	Thr	Pro	Ser
Met	Asp 2195	Pro	Val	Cys	Ser	Pro 2200	Ala	Pro	Tyr	Asp	His 2205	Ala	Gln	Pro
Leu	Val 2210	Gly	His	Ser	Thr	Glu 2215	Pro	Leu	Ser	Ala	Pro 2220	Pro	Pro	Val
Pro	Val 2225	Val	Pro	His	Val	Ala 2230	Ala	Pro	Val	Glu	Val 2235	Ser	Ser	Ser
Gln	Tyr 2240	Val	Ala	Gln	Ser	Asp 2245	Gly	Val	Val	His	Gln 2250	Asp	Ser	Ser

Val	Ala	Val	Leu	Pro	Val	Pro	Ala	Pro	Gly	Pro	Val	Gln	Gly	Gln
	2255					2260					2265			
Asn	Tyr	Ser	Val	Trp	Asp	Ser	Asn	Gln	Gln	Ser	Val	Ser	Val	Gln
	2270					2275					2280			
Gln	Gln	Tyr	Ser	Pro	Ala	Gln	Ser	Gln	Ala	Thr	Ile	Tyr	Tyr	Gln
	2285					2290					2295			
Gly	Gln	Thr	Cys	Pro	Thr	Val	Tyr	Gly	Val	Thr	Ser	Pro	Tyr	Ser
	2300					2305					2310			
Gln	Thr	Thr	Pro	Pro	Ile	Val	Gln	Ser	Tyr	Ala	Gln	Pro	Ser	Leu
	2315					2320					2325			
Gln	Tyr	Ile	Gln	Gly	Gln	Gln	Ile	Phe	Thr	Ala	His	Pro	Gln	Gly
	2330					2335					2340			
Val	Val	Val	Gln	Pro	Ala	Ala	Ala	Val	Thr	Thr	Ile	Val	Ala	Pro
	2345					2350					2355			
Gly	Gln	Pro	Gln	Pro	Leu	Gln	Pro	Ser	Glu	Met	Val	Val	Thr	Asn
	2360					2365					2370			
Asn	Leu	Leu	Asp	Leu	Pro	Pro	Pro	Ser	Pro	Pro	Lys	Pro	Lys	Thr
	2375					2380					2385			
Ile	Val	Leu	Pro	Pro	Asn	Trp	Lys	Thr	Ala	Arg	Asp	Pro	Glu	Gly
	2390					2395					2400			
Lys	Ile	Tyr	Tyr	Tyr	His	Val	Ile	Thr	Arg	Gln	Thr	Gln	Trp	Asp
	2405					2410					2415			
Pro	Pro	Thr	Trp	Glu	Ser	Pro	Gly	Asp	Asp	Ala	Ser	Leu	Glu	His
	2420					2425					2430			
Glu	Ala	Glu	Met	Asp	Leu	Gly	Thr	Pro	Thr	Tyr	Asp	Glu	Asn	Pro
	2435					2440					2445			
Met	Lys	Ala	Ser	Lys	Lys	Pro	Lys	Thr	Ala	Glu	Ala	Asp	Thr	Ser
	2450					2455					2460			
Ser	Glu	Leu	Ala	Lys	Lys	Ser	Lys	Glu	Val	Phe	Arg	Lys	Glu	Met
	2465					2470					2475			
Ser	Gln	Phe	Ile	Val	Gln	Cys	Leu	Asn	Pro	Tyr	Arg	Lys	Pro	Asp
	2480					2485					2490			
Cys	Lys	Val	Gly	Arg	Ile	Thr	Thr	Thr	Glu	Asp	Phe	Lys	His	Leu
	2495					2500					2505			

Ala Arg Lys Leu Thr His Gly Val Met Asn Lys Glu Leu Lys Tyr
 2510 2515 2520

Cys Lys Asn Pro Glu Asp Leu Glu Cys Asn Glu Asn Val Lys His
 2525 2530 2535

Lys Thr Lys Glu Tyr Ile Lys Lys Tyr Met Gln Lys Phe Gly Ala
 2540 2545 2550

Val Tyr Lys Pro Lys Glu Asp Thr Glu Leu Glu
 2555 2560

<210> 734
 <211> 575
 <212> PRT
 <213> Homo sapiens

<400> 734

Met Asn Gly Pro Ala Leu Gln Pro Ser Ser Pro Ser Ser Ala Pro Ser
 1 5 10 15

Ala Ser Pro Ala Ala Ala Pro Arg Gly Trp Ser Glu Phe Cys Glu Leu
 20 25 30

His Ala Val Ala Ala Ala Arg Glu Leu Ala Arg Gln Tyr Trp Leu Phe
 35 40 45

Ala Arg Glu His Pro Gln His Ala Pro Leu Arg Ala Glu Leu Val Ser
 50 55 60

Leu Gln Phe Thr Asp Leu Phe Gln Arg Tyr Phe Cys Arg Glu Val Arg
 65 70 75 80

Asp Gly Arg Ala Pro Gly Arg Asp Tyr Arg Asp Thr Gly Arg Gly Pro
 85 90 95

Pro Ala Lys Ala Glu Ala Ser Pro Glu Pro Gly Pro Gly Pro Ala Ala
 100 105 110

Pro Gly Leu Pro Lys Ala Arg Ser Ser Glu Glu Leu Ala Pro Pro Arg
 115 120 125

Pro Pro Gly Pro Cys Ser Phe Gln His Phe Arg Arg Ser Leu Arg His
 130 135 140

Ile Phe Arg Arg Arg Ser Ala Gly Glu Leu Pro Ala Ala His Thr Ala
 145 150 155 160

Ala Ala Pro Gly Thr Pro Gly Glu Ala Ala Glu Thr Pro Ala Arg Pro
 165 170 175

Gly Leu Ala Lys Lys Phe Leu Pro Trp Ser Leu Ala Arg Glu Pro Pro
 180 185 190

Pro Glu Ala Leu Lys Glu Ala Val Leu Arg Tyr Ser Leu Ala Asp Glu
 195 200 205

Ala Ser Met Asp Ser Gly Ala Arg Trp Gln Arg Gly Arg Leu Ala Leu
 210 215 220

Arg Arg Ala Pro Gly Pro Asp Gly Pro Asp Arg Val Leu Glu Leu Phe
 225 230 235 240

Asp Pro Pro Lys Ser Ser Arg Pro Lys Leu Gln Ala Ala Cys Ser Ser
 245 250 255

Ile Gln Glu Val Arg Trp Cys Thr Arg Leu Glu Met Pro Asp Asn Leu
 260 265 270

Tyr Thr Phe Val Leu Lys Val Lys Asp Arg Thr Asp Ile Ile Phe Glu
 275 280 285

Val Gly Asp Glu Gln Gln Leu Asn Ser Trp Met Ala Glu Leu Ser Glu
 290 295 300

Cys Thr Gly Arg Gly Leu Glu Ser Thr Glu Ala Glu Met His Ile Pro
 305 310 315 320

Ser Ala Leu Glu Pro Ser Thr Ser Ser Ser Pro Arg Gly Ser Thr Asp
 325 330 335

Ser Leu Asn Gln Gly Ala Ser Pro Gly Gly Leu Leu Asp Pro Ala Cys
 340 345 350

Gln Lys Thr Asp His Phe Leu Ser Cys Tyr Pro Trp Phe His Gly Pro
 355 360 365

Ile Ser Arg Val Lys Ala Ala Gln Leu Val Gln Leu Gln Gly Pro Asp
 370 375 380

Ala His Gly Val Phe Leu Val Arg Gln Ser Glu Thr Arg Arg Gly Glu
 385 390 395 400

Tyr Val Leu Thr Phe Asn Phe Gln Gly Ile Ala Lys His Leu Arg Leu
 405 410 415

Ser Leu Thr Glu Arg Gly Gln Cys Arg Val Gln His Leu His Phe Pro
 420 425 430

Ser Val Val Asp Met Leu His His Phe Gln Arg Ser Pro Ile Pro Leu
 435 440 445

Glu Cys Gly Ala Ala Cys Asp Val Arg Leu Ser Ser Tyr Val Val Val
 450 455 460

Val Ser Gln Pro Pro Gly Ser Cys Asn Thr Val Leu Phe Pro Phe Ser
 465 470 475 480

Leu Pro His Trp Asp Ser Glu Ser Leu Pro His Trp Gly Ser Glu Leu
 485 490 495

Gly Leu Pro His Leu Ser Ser Ser Gly Cys Pro Arg Gly Leu Ser Pro
 500 505 510

Glu Gly Leu Pro Gly Arg Ser Ser Pro Pro Glu Gln Ile Phe His Leu
 515 520 525

Val Pro Ser Pro Glu Glu Leu Ala Asn Ser Leu Gln His Leu Glu His
 530 535 540

Glu Pro Val Asn Arg Ala Arg Asp Ser Asp Tyr Glu Met Asp Ser Ser
 545 550 555 560

Ser Arg Ser His Leu Arg Ala Ile Asp Asn Gln Tyr Thr Pro Leu
 565 570 575

<210> 735
 <211> 703
 <212> PRT
 <213> Homo sapiens

<400> 735

Met Thr Ala Val Gly Arg Arg Cys Pro Ala Leu Gly Ser Arg Gly Ala
 1 5 10 15

Ala Gly Glu Pro Glu Ala Gly Ser Asp Tyr Val Lys Phe Ser Lys Glu
 20 25 30

Lys Tyr Ile Leu Asp Ser Ser Pro Glu Lys Leu His Lys Glu Leu Glu
 35 40 45

Glu Glu Leu Lys Leu Ser Ser Thr Asp Leu Arg Ser His Ala Trp Tyr
 50 55 60

His Gly Arg Ile Pro Arg Glu Val Ser Glu Thr Leu Val Gln Arg Asn
 65 70 75 80

Gly Asp Phe Leu Ile Arg Asp Ser Leu Thr Ser Leu Gly Asp Tyr Val
 85 90 95

Leu Thr Cys Arg Trp Arg Asn Gln Ala Leu His Phe Lys Ile Asn Lys
 100 105 110

Val Val Val Lys Ala Gly Glu Ser Tyr Thr His Ile Gln Tyr Leu Phe
 Page 1231

115

120

125

Glu Gln Glu Ser Phe Asp His Val Pro Ala Leu Val Arg Tyr His Val
 130 135 140

Gly Ser Arg Lys Ala Val Ser Glu Gln Ser Gly Ala Ile Ile Tyr Cys
 145 150 155 160

Pro Val Asn Arg Thr Phe Pro Leu Arg Tyr Leu Glu Ala Ser Tyr Gly
 165 170 175

Leu Gly Gln Gly Ser Ser Lys Pro Ala Ser Pro Val Ser Pro Ser Gly
 180 185 190

Pro Lys Gly Ser His Met Lys Arg Arg Ser Val Thr Met Thr Asp Gly
 195 200 205

Leu Thr Ala Asp Lys Val Thr Arg Ser Asp Gly Cys Pro Thr Ser Thr
 210 215 220

Ser Leu Pro Arg Pro Arg Asp Ser Ile Arg Ser Cys Ala Leu Ser Met
 225 230 235 240

Asp Gln Ile Pro Asp Leu His Ser Pro Met Ser Pro Ile Ser Glu Ser
 245 250 255

Pro Ser Ser Pro Ala Tyr Ser Thr Val Thr Arg Val His Ala Ala Pro
 260 265 270

Ala Ala Pro Ser Ala Thr Ala Leu Pro Ala Ser Pro Val Ala Arg Arg
 275 280 285

Ser Ser Glu Pro Gln Leu Cys Pro Gly Ser Ala Pro Lys Thr His Gly
 290 295 300

Glu Ser Asp Lys Gly Pro His Thr Ser Pro Ser His Thr Leu Gly Lys
 305 310 315 320

Ala Ser Pro Ser Pro Ser Leu Ser Ser Tyr Ser Asp Pro Asp Ser Gly
 325 330 335

His Tyr Cys Gln Leu Gln Pro Pro Val Arg Gly Ser Arg Glu Trp Ala
 340 345 350

Ala Thr Glu Thr Ser Ser Gln Gln Ala Arg Ser Tyr Gly Glu Arg Leu
 355 360 365

Lys Glu Leu Ser Glu Asn Gly Ala Pro Glu Gly Asp Trp Gly Lys Thr
 370 375 380

Phe Thr Val Pro Ile Val Glu Val Thr Ser Ser Phe Asn Pro Ala Thr

385 390 395 400
 Phe Gln Ser Leu Leu Ile Pro Arg Asp Asn Arg Pro Leu Glu Val Gly
 405 410 415
 Leu Leu Arg Lys Val Lys Glu Leu Leu Ala Glu Val Asp Ala Arg Thr
 420 425 430
 Leu Ala Arg His Val Thr Lys Val Asp Cys Leu Val Ala Arg Ile Leu
 435 440 445
 Gly Val Thr Lys Glu Met Gln Thr Leu Met Gly Val Arg Trp Gly Met
 450 455 460
 Glu Leu Leu Thr Leu Pro His Gly Arg Gln Leu Arg Leu Asp Leu Leu
 465 470 475 480
 Glu Arg Phe His Thr Met Ser Ile Met Leu Ala Val Asp Ile Leu Gly
 485 490 495
 Cys Thr Gly Ser Ala Glu Glu Arg Ala Ala Leu Leu His Lys Thr Ile
 500 505 510
 Gln Leu Ala Ala Glu Leu Arg Gly Thr Met Gly Asn Met Phe Ser Phe
 515 520 525
 Ala Ala Val Met Gly Ala Leu Asp Met Ala Gln Ile Ser Arg Leu Glu
 530 535 540
 Gln Thr Trp Val Thr Leu Arg Gln Arg His Thr Glu Gly Ala Ile Leu
 545 550 555 560
 Tyr Glu Lys Lys Leu Lys Pro Phe Leu Lys Ser Leu Asn Glu Gly Lys
 565 570 575
 Glu Gly Pro Pro Leu Ser Asn Thr Thr Phe Pro His Val Leu Pro Leu
 580 585 590
 Ile Thr Leu Leu Glu Cys Asp Ser Ala Pro Pro Glu Gly Pro Glu Pro
 595 600 605
 Trp Gly Ser Thr Glu His Gly Val Glu Val Val Leu Ala His Leu Glu
 610 615 620
 Ala Ala Arg Thr Val Ala His His Gly Gly Leu Tyr His Thr Asn Ala
 625 630 635 640
 Glu Val Lys Leu Gln Gly Phe Gln Ala Arg Pro Glu Leu Leu Glu Val
 645 650 655
 Phe Ser Thr Glu Phe Gln Met Arg Leu Leu Trp Gly Ser Gln Gly Ala
 660 665 670 675

660

665

670

Ser Ser Ser Gln Ala Arg Arg Tyr Glu Lys Phe Asp Lys Val Leu Thr
 675 680 685

Ala Leu Ser His Lys Leu Glu Pro Ala Val Arg Ser Ser Glu Leu
 690 695 700

<210> 736
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 736

Met Glu Pro Ala Gly Pro Ala Pro Gly Arg Leu Gly Pro Leu Leu Cys
 1 5 10 15

Leu Leu Leu Ala Ala Ser Cys Ala Trp Ser Gly Val Ala Gly Glu Glu
 20 25 30

Glu Leu Gln Val Ile Gln Pro Asp Lys Ser Val Leu Val Ala Ala Gly
 35 40 45

Glu Thr Ala Thr Leu Arg Cys Thr Ala Thr Ser Leu Ile Pro Val Gly
 50 55 60

Pro Ile Gln Trp Phe Arg Gly Ala Gly Pro Gly Arg Glu Leu Ile Tyr
 65 70 75 80

Asn Gln Lys Glu Gly His Phe Pro Arg Val Thr Thr Val Ser Asp Leu
 85 90 95

Thr Lys Arg Asn Asn Met Asp Phe Ser Ile Arg Ile Gly Asn Ile Thr
 100 105 110

Pro Ala Asp Ala Gly Thr Tyr Tyr Cys Val Lys Phe Arg Lys Gly Ser
 115 120 125

Pro Asp Asp Val Glu Phe Lys Ser Gly Ala Gly Thr Glu Leu Ser Val
 130 135 140

Arg Ala Lys Pro Ser Ala Pro Val Val Ser Gly Pro Ala Ala Arg Ala
 145 150 155 160

Thr Pro Gln His Thr Val Ser Phe Thr Cys Glu Ser His Gly Phe Ser
 165 170 175

Pro Arg Asp Ile Thr Leu Lys Trp Phe Lys Asn Gly Asn Glu Leu Ser
 180 185 190

Asp Phe Gln Thr Asn Val Asp Pro Val Gly Glu Ser Val Ser Tyr Ser
 195 200 205

Ile His Ser Thr Ala Lys Val Val Leu Thr Arg Glu Asp Val His Ser
 210 215 220
 Gln Val Ile Cys Glu Val Ala His Val Thr Leu Gln Gly Asp Pro Leu
 225 230 235 240
 Arg Gly Thr Ala Asn Leu Ser Glu Thr Ile Arg Val Pro Pro Thr Leu
 245 250 255
 Glu Val Thr Gln Gln Pro Val Arg Ala Glu Asn Gln Val Asn Val Thr
 260 265 270
 Cys Gln Val Arg Lys Phe Tyr Pro Gln Arg Leu Gln Leu Thr Trp Leu
 275 280 285
 Glu Asn Gly Asn Val Ser Arg Thr Glu Thr Ala Ser Thr Val Thr Glu
 290 295 300
 Asn Lys Asp Gly Thr Tyr Asn Trp Met Ser Trp Leu Leu Val Asn Val
 305 310 315 320
 Ser Ala His Arg Asp Asp Val Lys Leu Thr Cys Gln Val Glu His Asp
 325 330 335
 Gly Gln Pro Ala Val Ser Lys Ser His Asp Leu Lys Val Ser Ala His
 340 345 350
 Pro Lys Glu Gln Gly Ser Asn Thr Ala Ala Glu Asn Thr Gly Ser Asn
 355 360 365
 Glu Arg Asn Ile Tyr Ile Val Val Gly Val Val Cys Thr Leu Leu Val
 370 375 380
 Ala Leu Leu Met Ala Ala Leu Tyr Leu Val Arg Ile Arg Gln Lys Lys
 385 390 395 400
 Ala Gln Gly Ser Thr Ser Ser Thr Arg Leu His Glu Pro Glu Lys Asn
 405 410 415
 Ala Arg Glu Ile Thr Gln Asp Thr Asn Asp Ile Thr Tyr Ala Asp Leu
 420 425 430
 Asn Leu Pro Lys Gly Lys Lys Pro Ala Pro Gln Ala Ala Glu Pro Asn
 435 440 445
 Asn His Thr Glu Tyr Ala Ser Ile Gln Thr Ser Pro Gln Pro Ala Ser
 450 455 460
 Glu Asp Thr Leu Thr Tyr Ala Asp Leu Asp Met Val His Leu Asn Arg
 465 470 475 480

Thr Pro Lys Gln Pro Ala Pro Lys Pro Glu Pro Ser Phe Ser Glu Tyr
485 490 495

Ala Ser Val Gln Val Pro Arg Lys
500

<210>	737
<211>	398
<212>	PRT
<213>	Homo sapiens

<400> 737

Met Pro Val Pro Ala Ser Trp Pro His Leu Pro Ser Pro Phe Leu Leu
1 5 10 15

Met Thr Leu Leu Leu Gly Arg Leu Thr Gly Val Ala Gly Glu Asp Glu
20 25 30

Leu Gln Val Ile Gln Pro Glu Lys Ser Val Ser Val Ala Ala Gly Glu
35 40 45

Ser Ala Thr Leu Arg Cys Ala Met Thr Ser Leu Ile Pro Val Gly Pro
50 55 60

Ile Met Trp Phe Arg Gly Ala Gly Ala Gly Arg Glu Leu Ile Tyr Asn
65 70 75 80

Gln Lys Glu Gly His Phe Pro Arg Val Thr Thr Val Ser Glu Leu Thr
85 90 95

Lys Arg Asn Asn Leu Asp Phe Ser Ile Ser Ile Ser Asn Ile Thr Pro
100 105 110

Ala Asp Ala Gly Thr Tyr Tyr Cys Val Lys Phe Arg Lys Gly Ser Pro
115 120 125

Asp Asp Val Glu Phe Lys Ser Gly Ala Gly Thr Glu Leu Ser Val Arg
130 135 140

Ala Lys Pro Ser Ala Pro Val Val Ser Gly Pro Ala Val Arg Ala Thr
145 150 155 160

Pro Glu His Thr Val Ser Phe Thr Cys Glu Ser His Gly Phe Ser Pro
165 170 175

Arg Asp Ile Thr Leu Lys Trp Phe Lys Asn Gly Asn Glu Leu Ser Asp
180 185 190

Phe Gln Thr Asn Val Asp Pro Ala Gly Asp Ser Val Ser Tyr Ser Ile
195 200 205

His Ser Thr Ala Arg Val Val Leu Thr Arg Gly Asp Val His Ser Gln
 210 215 220

Val Ile Cys Glu Ile Ala His Ile Thr Leu Gln Gly Asp Pro Leu Arg
 225 230 235 240

Gly Thr Ala Asn Leu Ser Glu Ala Ile Arg Val Pro Pro Thr Leu Glu
 245 250 255

Val Thr Gln Gln Pro Met Arg Ala Glu Asn Gln Ala Asn Val Thr Cys
 260 265 270

Gln Val Ser Asn Phe Tyr Pro Arg Gly Leu Gln Leu Thr Trp Leu Glu
 275 280 285

Asn Gly Asn Val Ser Arg Thr Glu Thr Ala Ser Thr Leu Ile Glu Asn
 290 295 300

Lys Asp Gly Thr Tyr Asn Trp Met Ser Trp Leu Leu Val Asn Thr Cys
 305 310 315 320

Ala His Arg Asp Asp Val Val Leu Thr Cys Gln Val Glu His Asp Gly
 325 330 335

Gln Gln Ala Val Ser Lys Ser Tyr Ala Leu Glu Ile Ser Ala His Gln
 340 345 350

Lys Glu His Gly Ser Asp Ile Thr His Glu Ala Ala Leu Ala Pro Thr
 355 360 365

Ala Pro Leu Leu Val Ala Leu Leu Leu Gly Pro Lys Leu Leu Leu Val
 370 375 380

Val Gly Val Ser Ala Ile Tyr Ile Cys Trp Lys Gln Lys Ala
 385 390 395

<210> 738
 <211> 710
 <212> PRT
 <213> Homo sapiens

<400> 738

Met Gln Gly Lys Lys Pro Gly Gly Ser Ser Gly Gly Gly Arg Ser Gly
 1 5 10 15

Glu Leu Gln Gly Asp Glu Ala Gln Arg Asn Lys Lys Lys Lys Lys Lys
 20 25 30

Val Ser Cys Phe Ser Asn Ile Lys Ile Phe Leu Val Ser Glu Cys Ala
 35 40 45

Leu Met Leu Ala Gln Gly Thr Val Gly Ala Tyr Leu Val Ser Val Leu
 50 55 60
 Thr Thr Leu Glu Arg Arg Phe Asn Leu Gln Ser Ala Asp Val Gly Val
 65 70 75 80
 Ile Ala Ser Ser Phe Glu Ile Gly Asn Leu Ala Leu Ile Leu Phe Val
 85 90 95
 Ser Tyr Phe Gly Ala Arg Gly His Arg Pro Arg Leu Ile Gly Cys Gly
 100 105 110
 Gly Ile Val Met Ala Leu Gly Ala Leu Leu Ser Ala Leu Pro Glu Phe
 115 120 125
 Leu Thr His Gln Tyr Lys Tyr Glu Ala Gly Glu Ile Arg Trp Gly Ala
 130 135 140
 Glu Gly Arg Asp Val Cys Ala Ala Asn Gly Ser Gly Gly Asp Glu Gly
 145 150 155 160
 Pro Asp Pro Asp Leu Ile Cys Arg Asn Arg Thr Ala Thr Asn Met Met
 165 170 175
 Tyr Leu Leu Leu Ile Gly Ala Gln Val Leu Leu Gly Ile Gly Ala Thr
 180 185 190
 Pro Val Gln Pro Leu Gly Val Ser Tyr Ile Asp Asp His Val Arg Arg
 195 200 205
 Lys Asp Ser Ser Leu Tyr Ile Gly Ile Leu Phe Thr Met Leu Val Phe
 210 215 220
 Gly Pro Ala Cys Gly Phe Ile Leu Gly Ser Phe Cys Thr Lys Ile Tyr
 225 230 235 240
 Val Asp Ala Val Phe Ile Asp Thr Ser Asn Leu Asp Ile Thr Pro Asp
 245 250 255
 Asp Pro Arg Trp Ile Gly Ala Trp Trp Gly Gly Phe Leu Leu Cys Gly
 260 265 270
 Ala Leu Leu Phe Phe Ser Ser Leu Leu Met Phe Gly Phe Pro Gln Ser
 275 280 285
 Leu Pro Pro His Ser Glu Pro Ala Met Glu Ser Glu Gln Ala Met Leu
 290 295 300
 Ser Glu Arg Glu Tyr Glu Arg Pro Lys Pro Ser Asn Gly Val Leu Arg
 305 310 315 320

His Pro Leu Glu Pro Asp Ser Ser Ala Ser Cys Phe Gln Gln Leu Arg
 325 330 335

Val Ile Pro Lys Val Thr Lys His Leu Leu Ser Asn Pro Val Phe Thr
 340 345 350

Cys Ile Ile Leu Ala Ala Cys Met Glu Ile Ala Val Val Ala Gly Phe
 355 360 365

Ala Ala Phe Leu Gly Lys Tyr Leu Glu Gln Gln Phe Asn Leu Thr Thr
 370 375 380

Ser Ser Ala Asn Gln Leu Leu Gly Met Thr Ala Ile Pro Cys Ala Cys
 385 390 395 400

Leu Gly Ile Phe Leu Gly Gly Leu Leu Val Lys Lys Leu Ser Leu Ser
 405 410 415

Ala Leu Gly Ala Ile Arg Met Ala Met Leu Val Asn Leu Val Ser Thr
 420 425 430

Ala Cys Tyr Val Ser Phe Leu Phe Leu Gly Cys Asp Thr Gly Pro Val
 435 440 445

Ala Gly Val Thr Val Pro Tyr Gly Asn Ser Thr Ala Pro Gly Ser Ala
 450 455 460

Leu Asp Pro Tyr Ser Pro Cys Asn Asn Asn Cys Glu Cys Gln Thr Asp
 465 470 475 480

Ser Phe Thr Pro Val Cys Gly Ala Asp Gly Ile Thr Tyr Leu Ser Ala
 485 490 495

Cys Phe Ala Gly Cys Asn Ser Thr Asn Leu Thr Gly Cys Ala Cys Leu
 500 505 510

Thr Thr Val Pro Ala Glu Asn Ala Thr Val Val Pro Gly Lys Cys Pro
 515 520 525

Ser Pro Gly Cys Gln Glu Ala Phe Leu Thr Phe Leu Cys Val Met Cys
 530 535 540

Ile Cys Ser Leu Ile Gly Ala Met Ala Gln Thr Pro Ser Val Ile Ile
 545 550 555 560

Leu Ile Arg Thr Val Ser Pro Glu Leu Lys Ser Tyr Ala Leu Gly Val
 565 570 575

Leu Phe Leu Leu Leu Arg Leu Leu Gly Phe Ile Pro Pro Pro Leu Ile
 580 585 590

Phe Gly Ala Gly Ile Asp Ser Thr Cys Leu Phe Trp Ser Thr Phe Cys
 595 600 605

Gly Glu Gln Gly Ala Cys Val Leu Tyr Asp Asn Val Val Tyr Arg Tyr
 610 615 620

Leu Tyr Val Ser Ile Ala Ile Ala Leu Lys Ser Phe Ala Phe Ile Leu
 625 630 635 640

Tyr Thr Thr Thr Trp Gln Cys Leu Arg Lys Asn Tyr Lys Arg Tyr Ile
 645 650 655

Lys Asn His Glu Gly Gly Leu Ser Thr Ser Glu Phe Phe Ala Ser Thr
 660 665 670

Leu Thr Leu Asp Asn Leu Gly Arg Asp Pro Val Pro Ala Asn Gln Thr
 675 680 685

His Arg Thr Lys Phe Ile Tyr Asn Leu Glu Asp His Glu Trp Cys Glu
 690 695 700

Asn Met Glu Ser Val Leu
 705 710

<210> 739
 <211> 552
 <212> PRT
 <213> Homo sapiens

<400> 739

Met Asp Asn Met Ser Ile Thr Asn Thr Pro Thr Ser Asn Asp Ala Cys
 1 5 10 15

Leu Ser Ile Val His Ser Leu Met Cys His Arg Gln Gly Gly Glu Ser
 20 25 30

Glu Thr Phe Ala Lys Arg Ala Ile Glu Ser Leu Val Lys Lys Leu Lys
 35 40 45

Glu Lys Lys Asp Glu Leu Asp Ser Leu Ile Thr Ala Ile Thr Thr Asn
 50 55 60

Gly Ala His Pro Ser Lys Cys Val Thr Ile Gln Arg Thr Leu Asp Gly
 65 70 75 80

Arg Leu Gln Val Ala Gly Arg Lys Gly Phe Pro His Val Ile Tyr Ala
 85 90 95

Arg Leu Trp Arg Trp Pro Asp Leu His Lys Asn Glu Leu Lys His Val
 100 105 110

Lys Tyr Cys Gln Tyr Ala Phe Asp Leu Lys Cys Asp Ser Val Cys Val

115

120

125

Asn Pro Tyr His Tyr Glu Arg Val Val Ser Pro Gly Ile Asp Leu Ser
 130 135 140

Gly Leu Thr Leu Gln Ser Asn Ala Pro Ser Ser Met Met Val Lys Asp
 145 150 155 160

Glu Tyr Val His Asp Phe Glu Gly Gln Pro Ser Leu Ser Thr Glu Gly
 165 170 175

His Ser Ile Gln Thr Ile Gln His Pro Pro Ser Asn Arg Ala Ser Thr
 180 185 190

Glu Thr Tyr Ser Thr Pro Ala Leu Leu Ala Pro Ser Glu Ser Asn Ala
 195 200 205

Thr Ser Thr Ala Asn Phe Pro Asn Ile Pro Val Ala Ser Thr Ser Gln
 210 215 220

Pro Ala Ser Ile Leu Gly Gly Ser His Ser Glu Gly Leu Leu Gln Ile
 225 230 235 240

Ala Ser Gly Pro Gln Pro Gly Gln Gln Gln Asn Gly Phe Thr Gly Gln
 245 250 255

Pro Ala Thr Tyr His His Asn Ser Thr Thr Thr Trp Thr Gly Ser Arg
 260 265 270

Thr Ala Pro Tyr Thr Pro Asn Leu Pro His His Gln Asn Gly His Leu
 275 280 285

Gln His His Pro Pro Met Pro Pro His Pro Gly His Tyr Trp Pro Val
 290 295 300

His Asn Glu Leu Ala Phe Gln Pro Pro Ile Ser Asn His Pro Ala Pro
 305 310 315 320

Glu Tyr Trp Cys Ser Ile Ala Tyr Phe Glu Met Asp Val Gln Val Gly
 325 330 335

Glu Thr Phe Lys Val Pro Ser Ser Cys Pro Ile Val Thr Val Asp Gly
 340 345 350

Tyr Val Asp Pro Ser Gly Gly Asp Arg Phe Cys Leu Gly Gln Leu Ser
 355 360 365

Asn Val His Arg Thr Glu Ala Ile Glu Arg Ala Arg Leu His Ile Gly
 370 375 380

Lys Gly Val Gln Leu Glu Cys Lys Gly Glu Gly Asp Val Trp Val Arg

385 390 395 400

Cys Leu Ser Asp His Ala Val Phe Val Gln Ser Tyr Tyr Leu Asp Arg
405 410 415

Glu Ala Gly Arg Ala Pro Gly Asp Ala Val His Lys Ile Tyr Pro Ser
420 425 430

Ala Tyr Ile Lys Val Phe Asp Leu Arg Gln Cys His Arg Gln Met Gln
435 440 445

Gln Gln Ala Ala Thr Ala Gln Ala Ala Ala Ala Ala Gln Ala Ala Ala
450 455 460

Val Ala Gly Asn Ile Pro Gly Pro Gly Ser Val Gly Gly Ile Ala Pro
465 470 475 480

Ala Ile Ser Leu Ser Ala Ala Ala Gly Ile Gly Val Asp Asp Leu Arg
485 490 495

Arg Leu Cys Ile Leu Arg Met Ser Phe Val Lys Gly Trp Gly Pro Asp
500 505 510

Tyr Pro Arg Gln Ser Ile Lys Glu Thr Pro Cys Trp Ile Glu Ile His
515 520 525

Leu His Arg Ala Leu Gln Leu Leu Asp Glu Val Leu His Thr Met Pro
530 535 540

Ile Ala Asp Pro Gln Pro Leu Asp
545 550

<210> 740
<211> 88
<212> PRT
<213> Homo sapiens

<400> 740

Met Ser Ile Met Asp His Ser Pro Thr Thr Gly Val Val Thr Val Ile
1 5 10 15

Val Ile Leu Ile Ala Ile Ala Ala Leu Gly Ala Leu Ile Leu Gly Cys
20 25 30

Trp Cys Tyr Leu Arg Leu Gln Arg Ile Ser Gln Ser Glu Asp Glu Glu
35 40 45

Ser Ile Val Gly Asp Gly Glu Thr Lys Glu Pro Phe Leu Leu Val Gln
50 55 60

Tyr Ser Ala Lys Gly Pro Cys Val Glu Arg Lys Ala Lys Leu Met Thr
65 70 75 80

Pro Asn Gly Pro Glu Val His Gly
85

<210> 741
<211> 765
<212> PRT
<213> Homo sapiens

<400> 741

Met Ala Gly Phe Lys Arg Gly Tyr Asp Gly Lys Ile Ala Gly Leu Tyr
1 5 10 15

Asp Leu Asp Lys Thr Leu Gly Arg Gly His Phe Ala Val Val Lys Leu
20 25 30

Ala Arg His Val Phe Thr Gly Glu Lys Val Ala Val Lys Val Ile Asp
35 40 45

Lys Thr Lys Leu Asp Thr Leu Ala Thr Gly His Leu Phe Gln Glu Val
50 55 60

Arg Cys Met Lys Leu Val Gln His Pro Asn Ile Val Arg Leu Tyr Glu
65 70 75 80

Val Ile Asp Thr Gln Thr Lys Leu Tyr Leu Ile Leu Glu Leu Gly Asp
85 90 95

Gly Gly Asp Met Phe Asp Tyr Ile Met Lys His Glu Glu Gly Leu Asn
100 105 110

Glu Asp Leu Ala Lys Lys Tyr Phe Ala Gln Ile Val His Ala Ile Ser
115 120 125

Tyr Cys His Lys Leu His Val Val His Arg Asp Leu Lys Pro Glu Asn
130 135 140

Val Val Phe Phe Glu Lys Gln Gly Leu Val Lys Leu Thr Asp Phe Gly
145 150 155 160

Phe Ser Asn Lys Phe Gln Pro Gly Lys Lys Leu Thr Thr Ser Cys Gly
165 170 175

Ser Leu Ala Tyr Ser Ala Pro Glu Ile Leu Leu Gly Asp Glu Tyr Asp
180 185 190

Ala Pro Ala Val Asp Ile Trp Ser Leu Gly Val Ile Leu Phe Met Leu
195 200 205

Val Cys Gly Gln Pro Pro Phe Gln Glu Ala Asn Asp Ser Glu Thr Leu
210 215 220

Thr Met Ile Met Asp Cys Lys Tyr Thr Val Pro Ser His Val Ser Lys
 225 230 235 240
 Glu Cys Lys Asp Leu Ile Thr Arg Met Leu Gln Arg Asp Pro Lys Arg
 245 250 255
 Arg Ala Ser Leu Glu Glu Ile Glu Asn His Pro Trp Leu Gln Gly Val
 260 265 270
 Asp Pro Ser Pro Ala Thr Lys Tyr Asn Ile Pro Leu Val Ser Tyr Lys
 275 280 285
 Asn Leu Ser Glu Glu Glu His Asn Ser Ile Ile Gln Arg Met Val Leu
 290 295 300
 Gly Asp Ile Ala Asp Arg Asp Ala Ile Val Glu Ala Leu Glu Thr Asn
 305 310 315 320
 Arg Tyr Asn His Ile Thr Ala Thr Tyr Phe Leu Leu Ala Glu Arg Ile
 325 330 335
 Leu Arg Glu Lys Gln Glu Lys Glu Ile Gln Thr Arg Ser Ala Ser Pro
 340 345 350
 Ser Asn Ile Lys Ala Gln Phe Arg Gln Ser Trp Pro Thr Lys Ile Asp
 355 360 365
 Val Pro Gln Asp Leu Glu Asp Asp Leu Thr Ala Thr Pro Leu Ser His
 370 375 380
 Ala Thr Val Pro Gln Ser Pro Ala Arg Ala Ala Asp Ser Val Leu Asn
 385 390 395 400
 Gly His Arg Ser Lys Gly Leu Cys Asp Ser Ala Lys Lys Asp Asp Leu
 405 410 415
 Pro Glu Leu Ala Gly Pro Ala Leu Ser Thr Val Pro Pro Ala Ser Leu
 420 425 430
 Lys Pro Thr Ala Ser Gly Arg Lys Cys Leu Phe Arg Val Glu Glu Asp
 435 440 445
 Glu Glu Glu Asp Glu Glu Asp Lys Lys Pro Met Ser Leu Ser Thr Gln
 450 455 460
 Val Val Leu Arg Arg Lys Pro Ser Val Thr Asn Arg Leu Thr Ser Arg
 465 470 475 480
 Lys Ser Ala Pro Val Leu Asn Gln Ile Phe Glu Glu Gly Glu Ser Asp
 485 490 495

Asp Glu Phe Asp Met Asp Glu Asn Leu Pro Pro Lys Leu Ser Arg Leu
 500 505 510
 Lys Met Asn Ile Ala Ser Pro Gly Thr Val His Lys Arg Tyr His Arg
 515 520 525
 Arg Lys Ser Gln Gly Arg Gly Ser Ser Cys Ser Ser Ser Glu Thr Ser
 530 535 540
 Asp Asp Asp Ser Glu Ser Arg Arg Arg Leu Asp Lys Asp Ser Gly Phe
 545 550 555 560
 Thr Tyr Ser Trp His Arg Arg Asp Ser Ser Glu Gly Pro Pro Gly Ser
 565 570 575
 Glu Gly Asp Gly Gly Gly Gln Ser Lys Pro Ser Asn Ala Ser Gly Gly
 580 585 590
 Val Asp Lys Ala Ser Pro Ser Glu Asn Asn Ala Gly Gly Gly Ser Pro
 595 600 605
 Ser Ser Gly Ser Gly Gly Asn Pro Thr Asn Thr Ser Gly Thr Thr Arg
 610 615 620
 Arg Cys Ala Gly Pro Ser Asn Ser Met Gln Leu Ala Ser Arg Ser Ala
 625 630 635 640
 Gly Glu Leu Val Glu Ser Leu Lys Leu Met Ser Leu Cys Leu Gly Ser
 645 650 655
 Gln Leu His Gly Ser Thr Lys Tyr Ile Ile Asp Pro Gln Asn Gly Leu
 660 665 670
 Ser Phe Ser Ser Val Lys Val Gln Glu Lys Ser Thr Trp Lys Met Cys
 675 680 685
 Ile Ser Ser Thr Gly Asn Ala Gly Gln Val Pro Ala Val Gly Gly Ile
 690 695 700
 Lys Phe Phe Ser Asp His Met Ala Asp Thr Thr Thr Glu Leu Glu Arg
 705 710 715 720
 Ile Lys Ser Lys Asn Leu Lys Asn Asn Val Leu Gln Leu Pro Leu Cys
 725 730 735
 Glu Lys Thr Ile Ser Val Asn Ile Gln Arg Asn Pro Lys Glu Gly Leu
 740 745 750
 Leu Cys Ala Ser Ser Pro Ala Ser Cys Cys His Val Ile
 755 760 765

<210> 742
 <211> 528
 <212> PRT
 <213> Homo sapiens

<400> 742

Met Ala Asp Glu Asp Gly Glu Gly Ile His Pro Ser Ala Pro His Arg
 1 5 10 15

Asn Gly Gly Gly Gly Gly Gly Gly Gly Ser Gly Leu His Cys Ala Gly
 20 25 30

Asn Gly Gly Gly Gly Gly Gly Gly Pro Arg Val Val Arg Ile Val Lys
 35 40 45

Ser Glu Ser Gly Tyr Gly Phe Asn Val Arg Gly Gln Val Ser Glu Gly
 50 55 60

Gly Gln Leu Arg Ser Ile Asn Gly Glu Leu Tyr Ala Pro Leu Gln His
 65 70 75 80

Val Ser Ala Val Leu Pro Gly Gly Ala Ala Asp Arg Ala Gly Val Arg
 85 90 95

Lys Gly Asp Arg Ile Leu Glu Val Asn His Val Asn Val Glu Gly Ala
 100 105 110

Thr His Lys Gln Val Val Asp Leu Ile Arg Ala Gly Glu Lys Glu Leu
 115 120 125

Ile Leu Thr Val Leu Ser Val Pro Pro His Glu Ala Asp Asn Leu Asp
 130 135 140

Pro Ser Asp Asp Ser Leu Gly Gln Ser Phe Tyr Asp Tyr Thr Glu Lys
 145 150 155 160

Gln Ala Val Pro Ile Ser Val Pro Arg Tyr Lys His Val Glu Gln Asn
 165 170 175

Gly Glu Lys Phe Val Val Tyr Asn Val Tyr Met Ala Gly Arg Gln Leu
 180 185 190

Cys Ser Lys Arg Tyr Arg Glu Phe Ala Ile Leu His Gln Asn Leu Lys
 195 200 205

Arg Glu Phe Ala Asn Phe Thr Phe Pro Arg Leu Pro Gly Lys Trp Pro
 210 215 220

Phe Ser Leu Ser Glu Gln Gln Leu Asp Ala Arg Arg Arg Gly Leu Glu
 225 230 235 240

Glu Tyr Leu Glu Lys Val Cys Ser Ile Arg Val Ile Gly Glu Ser Asp
 245 250 255
 Ile Met Gln Glu Phe Leu Ser Glu Ser Asp Glu Asn Tyr Asn Gly Val
 260 265 270
 Ser Asp Val Glu Leu Arg Val Ala Leu Pro Asp Gly Thr Thr Val Thr
 275 280 285
 Val Arg Val Lys Lys Asn Ser Thr Thr Asp Gln Val Tyr Gln Ala Ile
 290 295 300
 Ala Ala Lys Val Gly Met Asp Ser Thr Thr Val Asn Tyr Phe Ala Leu
 305 310 315
 Phe Glu Val Ile Ser His Ser Phe Val Arg Lys Leu Ala Pro Asn Glu
 325 330 335
 Phe Pro His Lys Leu Tyr Ile Gln Asn Tyr Thr Ser Ala Val Pro Gly
 340 345 350
 Thr Cys Leu Thr Ile Arg Lys Trp Leu Phe Thr Thr Glu Glu Glu Ile
 355 360 365
 Leu Leu Asn Asp Asn Asp Leu Ala Val Thr Tyr Phe Phe His Gln Ala
 370 375 380
 Val Asp Asp Val Lys Lys Gly Tyr Ile Lys Ala Glu Glu Lys Ser Tyr
 385 390 395 400
 Gln Leu Gln Lys Leu Tyr Glu Gln Arg Lys Met Val Met Tyr Leu Asn
 405 410 415
 Met Leu Arg Thr Cys Glu Gly Tyr Asn Glu Ile Ile Phe Pro His Cys
 420 425 430
 Ala Cys Asp Ser Arg Arg Lys Gly His Val Ile Thr Ala Ile Ser Ile
 435 440 445
 Thr His Phe Lys Leu His Ala Cys Thr Glu Glu Gly Gln Leu Glu Asn
 450 455 460
 Gln Val Ile Ala Phe Glu Trp Asp Glu Met Gln Arg Trp Asp Thr Asp
 465 470 475 480
 Glu Glu Gly Met Ala Phe Cys Phe Glu Tyr Ala Arg Gly Glu Lys Lys
 485 490 495
 Pro Arg Trp Val Lys Ile Phe Thr Pro Tyr Phe Asn Tyr Met His Glu
 500 505 510

Cys Phe Glu Arg Val Phe Cys Glu Leu Lys Trp Arg Lys Glu Glu Tyr
 515 520 525

<210> 743
 <211> 550
 <212> PRT
 <213> Homo sapiens

<400> 743

Met Val Gly Glu Glu Lys Met Ser Leu Arg Asn Arg Leu Ser Lys Ser
 1 5 10 15

Arg Glu Asn Pro Glu Glu Asp Glu Asp Gln Arg Asn Pro Ala Lys Glu
 20 25 30

Ser Leu Glu Thr Pro Ser Asn Gly Arg Ile Asp Ile Lys Gln Leu Ile
 35 40 45

Ala Lys Lys Ile Lys Leu Thr Ala Glu Ala Glu Glu Leu Lys Pro Phe
 50 55 60

Phe Met Lys Glu Val Gly Ser His Phe Asp Asp Phe Val Thr Asn Leu
 65 70 75 80

Ile Glu Lys Ser Ala Ser Leu Asp Asn Gly Gly Cys Ala Leu Thr Thr
 85 90 95

Phe Ser Val Leu Glu Gly Glu Lys Asn Asn His Arg Ala Lys Asp Leu
 100 105 110

Arg Ala Pro Pro Glu Gln Gly Lys Ile Phe Ile Ala Arg Arg Ser Leu
 115 120 125

Leu Asp Glu Leu Leu Glu Val Asp His Ile Arg Thr Ile Tyr His Met
 130 135 140

Phe Ile Ala Leu Leu Ile Leu Phe Ile Leu Ser Thr Leu Val Val Asp
 145 150 155 160

Tyr Ile Asp Glu Gly Arg Leu Val Leu Glu Phe Ser Leu Leu Ser Tyr
 165 170 175

Ala Phe Gly Lys Phe Pro Thr Val Val Trp Thr Trp Trp Ile Met Phe
 180 185 190

Leu Ser Thr Phe Ser Val Pro Tyr Phe Leu Phe Gln His Trp Ala Thr
 195 200 205

Gly Tyr Ser Lys Ser Ser His Pro Leu Ile Arg Ser Leu Phe His Gly
 210 215 220

Phe Leu Phe Met Ile Phe Gln Ile Gly Val Leu Gly Phe Gly Pro Thr
 Page 1248

225 230 235 240
 Tyr Val Val Leu Ala Tyr Thr Leu Pro Pro Ala Ser Arg Phe Ile Ile
 245 250 255
 Ile Phe Glu Gln Ile Arg Phe Val Met Lys Ala His Ser Phe Val Arg
 260 265 270
 Glu Asn Val Pro Arg Val Leu Asn Ser Ala Lys Glu Lys Ser Ser Thr
 275 280 285
 Val Pro Ile Pro Thr Val Asn Gln Tyr Leu Tyr Phe Leu Phe Ala Pro
 290 295 300
 Thr Leu Ile Tyr Arg Asp Ser Tyr Pro Arg Asn Pro Thr Val Arg Trp
 305 310 315 320
 Gly Tyr Val Ala Met Lys Phe Ala Gln Val Phe Gly Cys Phe Phe Tyr
 325 330 335
 Val Tyr Tyr Ile Phe Glu Arg Leu Cys Ala Pro Leu Phe Arg Asn Ile
 340 345 350
 Lys Gln Glu Pro Phe Ser Ala Arg Val Leu Val Leu Cys Val Phe Asn
 355 360 365
 Ser Ile Leu Pro Gly Val Leu Ile Leu Phe Leu Thr Phe Phe Ala Phe
 370 375 380
 Leu His Cys Trp Leu Asn Ala Phe Ala Glu Met Leu Arg Phe Gly Asp
 385 390 395 400
 Arg Met Phe Tyr Lys Asp Trp Trp Asn Ser Thr Ser Tyr Ser Asn Tyr
 405 410 415
 Tyr Arg Thr Trp Asn Val Val Val His Asp Trp Leu Tyr Tyr Tyr Ala
 420 425 430
 Tyr Lys Asp Phe Leu Trp Phe Phe Ser Lys Arg Phe Lys Ser Ala Ala
 435 440 445
 Met Leu Ala Val Phe Ala Val Ser Ala Val Val His Glu Tyr Ala Leu
 450 455 460
 Ala Val Cys Leu Ser Phe Phe Tyr Pro Val Leu Phe Val Leu Phe Met
 465 470 475 480
 Phe Phe Gly Met Ala Phe Asn Phe Ile Val Asn Asp Ser Arg Lys Lys
 485 490 495
 Pro Ile Trp Asn Val Leu Met Trp Thr Ser Leu Phe Leu Gly Asn Gly
 Page 1249

500

505

510

Val Leu Leu Cys Phe Tyr Ser Gln Glu Trp Tyr Ala Arg Gln His Cys
 515 520 525

Pro Leu Lys Asn Pro Thr Phe Leu Asp Tyr Val Arg Pro Arg Ser Trp
 530 535 540

Thr Cys Arg Tyr Val Phe
 545 550

<210> 744
 <211> 2214
 <212> PRT
 <213> Homo sapiens

<400> 744

Met Ala Thr Arg Ser Ser Arg Arg Glu Ser Arg Leu Pro Phe Leu Phe
 1 5 10 15

Thr Leu Val Ala Leu Leu Pro Pro Gly Ala Leu Cys Glu Val Trp Thr
 20 25 30

Gln Arg Leu His Gly Gly Ser Ala Pro Leu Pro Gln Asp Arg Gly Phe
 35 40 45

Leu Val Val Gln Gly Asp Pro Arg Glu Leu Arg Leu Trp Ala Arg Gly
 50 55 60

Asp Ala Arg Gly Ala Ser Arg Ala Asp Glu Lys Pro Leu Arg Arg Lys
 65 70 75 80

Arg Ser Ala Ala Leu Gln Pro Glu Pro Ile Lys Val Tyr Gly Gln Val
 85 90 95

Ser Leu Asn Asp Ser His Asn Gln Met Val Val His Trp Ala Gly Glu
 100 105 110

Lys Ser Asn Val Ile Val Ala Leu Ala Arg Asp Ser Leu Ala Leu Ala
 115 120 125

Arg Pro Lys Ser Ser Asp Val Tyr Val Ser Tyr Asp Tyr Gly Lys Ser
 130 135 140

Phe Lys Lys Ile Ser Asp Lys Leu Asn Phe Gly Leu Gly Asn Arg Ser
 145 150 155 160

Glu Ala Val Ile Ala Gln Phe Tyr His Ser Pro Ala Asp Asn Lys Arg
 165 170 175

Tyr Ile Phe Ala Asp Ala Tyr Ala Gln Tyr Leu Trp Ile Thr Phe Asp
 180 185 190

Phe Cys Asn Thr Leu Gln Gly Phe Ser Ile Pro Phe Arg Ala Ala Asp
 195 200 205
 Leu Leu Leu His Ser Lys Ala Ser Asn Leu Leu Leu Gly Phe Asp Arg
 210 215 220
 Ser His Pro Asn Lys Gln Leu Trp Lys Ser Asp Asp Phe Gly Gln Thr
 225 230 235 240
 Trp Ile Met Ile Gln Glu His Val Lys Ser Phe Ser Trp Gly Ile Asp
 245 250 255
 Pro Tyr Asp Lys Pro Asn Thr Ile Tyr Ile Glu Arg His Glu Pro Ser
 260 265 270
 Gly Tyr Ser Thr Val Phe Arg Ser Thr Asp Phe Phe Gln Ser Arg Glu
 275 280 285
 Asn Gln Glu Val Ile Leu Glu Glu Val Arg Asp Phe Gln Leu Arg Asp
 290 295 300
 Lys Tyr Met Phe Ala Thr Lys Val Val His Leu Leu Gly Ser Glu Gln
 305 310 315 320
 Gln Ser Ser Val Gln Leu Trp Val Ser Phe Gly Arg Lys Pro Met Arg
 325 330 335
 Ala Ala Gln Phe Val Thr Arg His Pro Ile Asn Glu Tyr Tyr Ile Ala
 340 345 350
 Asp Ala Ser Glu Asp Gln Val Phe Val Cys Val Ser His Ser Asn Asn
 355 360 365
 Arg Thr Asn Leu Tyr Ile Ser Glu Ala Glu Gly Leu Lys Phe Ser Leu
 370 375 380
 Ser Leu Glu Asn Val Leu Tyr Tyr Ser Pro Gly Gly Ala Gly Ser Asp
 385 390 395 400
 Thr Leu Val Arg Tyr Phe Ala Asn Glu Pro Phe Ala Asp Phe His Arg
 405 410 415
 Val Glu Gly Leu Gln Gly Val Tyr Ile Ala Thr Leu Ile Asn Gly Ser
 420 425 430
 Met Asn Glu Glu Asn Met Arg Ser Val Ile Thr Phe Asp Lys Gly Gly
 435 440 445
 Thr Trp Glu Phe Leu Gln Ala Pro Ala Phe Thr Gly Tyr Gly Glu Lys
 450 455 460

Ile Asn Cys Glu Leu Ser Gln Gly Cys Ser Leu His Leu Ala Gln Arg
 465 470 475 480
 Leu Ser Gln Leu Leu Asn Leu Gln Leu Arg Arg Met Pro Ile Leu Ser
 485 490 495
 Lys Glu Ser Ala Pro Gly Leu Ile Ile Ala Thr Gly Ser Val Gly Lys
 500 505 510
 Asn Leu Ala Ser Lys Thr Asn Val Tyr Ile Ser Ser Ser Ala Gly Ala
 515 520 525
 Arg Trp Arg Glu Ala Leu Pro Gly Pro His Tyr Tyr Thr Trp Gly Asp
 530 535 540
 His Gly Gly Ile Ile Thr Ala Ile Ala Gln Gly Met Glu Thr Asn Glu
 545 550 555 560
 Leu Lys Tyr Ser Thr Asn Glu Gly Glu Thr Trp Lys Thr Phe Ile Phe
 565 570 575
 Ser Glu Lys Pro Val Phe Val Tyr Gly Leu Leu Thr Glu Pro Gly Glu
 580 585 590
 Lys Ser Thr Val Phe Thr Ile Phe Gly Ser Asn Lys Glu Asn Val His
 595 600 605
 Ser Trp Leu Ile Leu Gln Val Asn Ala Thr Asp Ala Leu Gly Val Pro
 610 615 620
 Cys Thr Glu Asn Asp Tyr Lys Leu Trp Ser Pro Ser Asp Glu Arg Gly
 625 630 635 640
 Asn Glu Cys Leu Leu Gly His Lys Thr Val Phe Lys Arg Arg Thr Pro
 645 650 655
 His Ala Thr Cys Phe Asn Gly Glu Asp Phe Asp Arg Pro Val Val Val
 660 665 670
 Ser Asn Cys Ser Cys Thr Arg Glu Asp Tyr Glu Cys Asp Phe Gly Phe
 675 680 685
 Lys Met Ser Glu Asp Leu Ser Leu Glu Val Cys Val Pro Asp Pro Glu
 690 695 700
 Phe Ser Gly Lys Ser Tyr Ser Pro Pro Val Pro Cys Pro Val Gly Ser
 705 710 715 720
 Thr Tyr Arg Arg Thr Arg Gly Tyr Arg Lys Ile Ser Gly Asp Thr Cys
 725 730 735

Ser Gly Gly Asp Val Glu Ala Arg Leu Glu Gly Glu Leu Val Pro Cys
 740 745 750
 Pro Leu Ala Glu Glu Asn Glu Phe Ile Leu Tyr Ala Val Arg Lys Ser
 755 760 765
 Ile Tyr Arg Tyr Asp Leu Ala Ser Gly Ala Thr Glu Gln Leu Pro Leu
 770 775 780
 Thr Gly Leu Arg Ala Ala Val Ala Leu Asp Phe Asp Tyr Glu His Asn
 785 790 795 800
 Cys Leu Tyr Trp Ser Asp Leu Ala Leu Asp Val Ile Gln Arg Leu Cys
 805 810 815
 Leu Asn Gly Ser Thr Gly Gln Glu Val Ile Ile Asn Ser Gly Leu Glu
 820 825 830
 Thr Val Glu Ala Leu Ala Phe Glu Pro Leu Ser Gln Leu Leu Tyr Trp
 835 840 845
 Val Asp Ala Gly Phe Lys Lys Ile Glu Val Ala Asn Pro Asp Gly Asp
 850 855 860
 Phe Arg Leu Thr Ile Val Asn Ser Ser Val Leu Asp Arg Pro Arg Ala
 865 870 875 880
 Leu Val Leu Val Pro Gln Glu Gly Val Met Phe Trp Thr Asp Trp Gly
 885 890 895
 Asp Leu Lys Pro Gly Ile Tyr Arg Ser Asn Met Asp Gly Ser Ala Ala
 900 905 910
 Tyr His Leu Val Ser Glu Asp Val Lys Trp Pro Asn Gly Ile Ser Val
 915 920 925
 Asp Asp Gln Trp Ile Tyr Trp Thr Asp Ala Tyr Leu Glu Cys Ile Glu
 930 935 940
 Arg Ile Thr Phe Ser Gly Gln Gln Arg Ser Val Ile Leu Asp Asn Leu
 945 950 955 960
 Pro His Pro Tyr Ala Ile Ala Val Phe Lys Asn Glu Ile Tyr Trp Asp
 965 970 975
 Asp Trp Ser Gln Leu Ser Ile Phe Arg Ala Ser Lys Tyr Ser Gly Ser
 980 985 990
 Gln Met Glu Ile Leu Ala Asn Gln Leu Thr Gly Leu Met Asp Met Lys
 995 1000 1005

Ile	Phe	Tyr	Lys	Gly	Lys	Asn	Thr	Gly	Ser	Asn	Ala	Cys	Val	Pro
	1010					1015					1020			
Arg	Pro	Cys	Ser	Leu	Leu	Cys	Leu	Pro	Lys	Ala	Asn	Asn	Ser	Arg
	1025					1030					1035			
Ser	Cys	Arg	Cys	Pro	Glu	Asp	Val	Ser	Ser	Ser	Val	Leu	Pro	Ser
	1040					1045					1050			
Gly	Asp	Leu	Met	Cys	Asp	Cys	Pro	Gln	Gly	Tyr	Gln	Leu	Lys	Asn
	1055					1060					1065			
Asn	Thr	Cys	Val	Lys	Gln	Glu	Asn	Thr	Cys	Leu	Arg	Asn	Gln	Tyr
	1070					1075					1080			
Arg	Cys	Ser	Asn	Gly	Asn	Cys	Ile	Asn	Ser	Ile	Trp	Trp	Cys	Asp
	1085					1090					1095			
Phe	Asp	Asn	Asp	Cys	Gly	Asp	Met	Ser	Asp	Glu	Arg	Asn	Cys	Pro
	1100					1105					1110			
Thr	Thr	Ile	Cys	Asp	Leu	Asp	Thr	Gln	Phe	Arg	Cys	Gln	Glu	Ser
	1115					1120					1125			
Gly	Thr	Cys	Ile	Pro	Leu	Ser	Tyr	Lys	Cys	Asp	Leu	Glu	Asp	Asp
	1130					1135					1140			
Cys	Gly	Asp	Asn	Ser	Asp	Glu	Ser	His	Cys	Glu	Met	His	Gln	Cys
	1145					1150					1155			
Arg	Ser	Asp	Glu	Tyr	Asn	Cys	Ser	Ser	Gly	Met	Cys	Ile	Arg	Ser
	1160					1165					1170			
Ser	Trp	Val	Cys	Asp	Gly	Asp	Asn	Asp	Cys	Arg	Asp	Trp	Ser	Asp
	1175					1180					1185			
Glu	Ala	Asn	Cys	Thr	Ala	Ile	Tyr	His	Thr	Cys	Glu	Ala	Ser	Asn
	1190					1195					1200			
Phe	Gln	Cys	Arg	Asn	Gly	His	Cys	Ile	Pro	Gln	Arg	Trp	Ala	Cys
	1205					1210					1215			
Asp	Gly	Asp	Thr	Asp	Cys	Gln	Asp	Gly	Ser	Asp	Glu	Asp	Pro	Val
	1220					1225					1230			
Asn	Cys	Glu	Lys	Lys	Cys	Asn	Gly	Phe	Arg	Cys	Pro	Asn	Gly	Thr
	1235					1240					1245			
Cys	Ile	Pro	Ser	Ser	Lys	His	Cys	Asp	Gly	Leu	Arg	Asp	Cys	Ser
	1250					1255					1260			

Asp	Gly	Ser	Asp	Glu	Gln	His	Cys	Glu	Pro	Leu	Cys	Thr	His	Phe
	1265					1270					1275			
Met	Asp	Phe	Val	Cys	Lys	Asn	Arg	Gln	Gln	Cys	Leu	Phe	His	Ser
	1280					1285					1290			
Met	Val	Cys	Asp	Gly	Ile	Ile	Gln	Cys	Arg	Asp	Gly	Ser	Asp	Glu
	1295					1300					1305			
Asp	Ala	Ala	Phe	Ala	Gly	Cys	Ser	Gln	Asp	Pro	Glu	Phe	His	Lys
	1310					1315					1320			
Val	Cys	Asp	Glu	Phe	Gly	Phe	Gln	Cys	Gln	Asn	Gly	Val	Cys	Ile
	1325					1330					1335			
Ser	Leu	Ile	Trp	Lys	Cys	Asp	Gly	Met	Asp	Asp	Cys	Gly	Asp	Tyr
	1340					1345					1350			
Ser	Asp	Glu	Ala	Asn	Cys	Glu	Asn	Pro	Thr	Glu	Ala	Pro	Asn	Cys
	1355					1360					1365			
Ser	Arg	Tyr	Phe	Gln	Phe	Arg	Cys	Glu	Asn	Gly	His	Cys	Ile	Pro
	1370					1375					1380			
Asn	Arg	Trp	Lys	Cys	Asp	Arg	Glu	Asn	Asp	Cys	Gly	Asp	Trp	Ser
	1385					1390					1395			
Asp	Glu	Lys	Asp	Cys	Gly	Asp	Ser	His	Ile	Leu	Pro	Phe	Ser	Thr
	1400					1405					1410			
Pro	Gly	Pro	Ser	Thr	Cys	Leu	Pro	Asn	Tyr	Tyr	Arg	Cys	Ser	Ser
	1415					1420					1425			
Gly	Thr	Cys	Val	Met	Asp	Thr	Trp	Val	Cys	Asp	Gly	Tyr	Arg	Asp
	1430					1435					1440			
Cys	Ala	Asp	Gly	Ser	Asp	Glu	Glu	Ala	Cys	Pro	Leu	Leu	Ala	Asn
	1445					1450					1455			
Val	Thr	Ala	Ala	Ser	Thr	Pro	Thr	Gln	Leu	Gly	Arg	Cys	Asp	Arg
	1460					1465					1470			
Phe	Glu	Phe	Glu	Cys	His	Gln	Pro	Lys	Thr	Cys	Ile	Pro	Asn	Trp
	1475					1480					1485			
Lys	Arg	Cys	Asp	Gly	His	Gln	Asp	Cys	Gln	Asp	Gly	Arg	Asp	Glu
	1490					1495					1500			
Ala	Asn	Cys	Pro	Thr	His	Ser	Thr	Leu	Thr	Cys	Met	Ser	Arg	Glu
	1505					1510					1515			

Phe	Gln	Cys	Glu	Asp	Gly	Glu	Ala	Cys	Ile	Val	Leu	Ser	Glu	Arg
	1520					1525					1530			
Cys	Asp	Gly	Phe	Leu	Asp	Cys	Ser	Asp	Glu	Ser	Asp	Glu	Lys	Ala
	1535					1540					1545			
Cys	Ser	Asp	Glu	Leu	Thr	Val	Tyr	Lys	Val	Gln	Asn	Leu	Gln	Trp
	1550					1555					1560			
Thr	Ala	Asp	Phe	Ser	Gly	Asp	Val	Thr	Leu	Thr	Trp	Met	Arg	Pro
	1565					1570					1575			
Lys	Lys	Met	Pro	Ser	Ala	Ser	Cys	Val	Tyr	Asn	Val	Tyr	Tyr	Arg
	1580					1585					1590			
Val	Val	Gly	Glu	Ser	Ile	Trp	Lys	Thr	Leu	Glu	Thr	His	Ser	Asn
	1595					1600					1605			
Lys	Thr	Asn	Thr	Val	Leu	Lys	Val	Leu	Lys	Pro	Asp	Thr	Thr	Tyr
	1610					1615					1620			
Gln	Val	Lys	Val	Gln	Val	Gln	Cys	Leu	Ser	Lys	Ala	His	Asn	Thr
	1625					1630					1635			
Asn	Asp	Phe	Val	Thr	Leu	Arg	Thr	Pro	Glu	Gly	Leu	Pro	Asp	Ala
	1640					1645					1650			
Pro	Arg	Asn	Leu	Gln	Leu	Ser	Leu	Pro	Arg	Glu	Ala	Glu	Gly	Val
	1655					1660					1665			
Ile	Val	Gly	His	Trp	Ala	Pro	Pro	Ile	His	Thr	His	Gly	Leu	Ile
	1670					1675					1680			
Arg	Glu	Tyr	Ile	Val	Glu	Tyr	Ser	Arg	Ser	Gly	Ser	Lys	Met	Trp
	1685					1690					1695			
Ala	Ser	Gln	Arg	Ala	Ala	Ser	Asn	Phe	Thr	Glu	Ile	Lys	Asn	Leu
	1700					1705					1710			
Leu	Val	Asn	Thr	Leu	Tyr	Thr	Val	Arg	Val	Ala	Ala	Val	Thr	Ser
	1715					1720					1725			
Arg	Gly	Ile	Gly	Asn	Trp	Ser	Asp	Ser	Lys	Ser	Ile	Thr	Thr	Ile
	1730					1735					1740			
Lys	Gly	Lys	Val	Ile	Pro	Pro	Pro	Asp	Ile	His	Ile	Asp	Ser	Tyr
	1745					1750					1755			
Gly	Glu	Asn	Tyr	Leu	Ser	Phe	Thr	Leu	Thr	Met	Glu	Ser	Asp	Ile
	1760					1765					1770			

Lys	Val	Asn	Gly	Tyr	Val	Val	Asn	Leu	Phe	Trp	Ala	Phe	Asp	Thr
	1775					1780					1785			
His	Lys	Gln	Glu	Arg	Arg	Thr	Leu	Asn	Phe	Arg	Gly	Ser	Ile	Leu
	1790					1795					1800			
Ser	His	Lys	Val	Gly	Asn	Leu	Thr	Ala	His	Thr	Ser	Tyr	Glu	Ile
	1805					1810					1815			
Ser	Ala	Trp	Ala	Lys	Thr	Asp	Leu	Gly	Asp	Ser	Pro	Leu	Ala	Phe
	1820					1825					1830			
Glu	His	Val	Met	Thr	Arg	Gly	Val	Arg	Pro	Pro	Ala	Pro	Ser	Leu
	1835					1840					1845			
Lys	Ala	Lys	Ala	Ile	Asn	Gln	Thr	Ala	Val	Glu	Cys	Thr	Trp	Thr
	1850					1855					1860			
Gly	Pro	Arg	Asn	Val	Val	Tyr	Gly	Ile	Phe	Tyr	Ala	Thr	Ser	Phe
	1865					1870					1875			
Leu	Asp	Leu	Tyr	Arg	Asn	Pro	Lys	Ser	Leu	Thr	Thr	Ser	Leu	His
	1880					1885					1890			
Asn	Lys	Thr	Val	Ile	Val	Ser	Lys	Asp	Glu	Gln	Tyr	Leu	Phe	Leu
	1895					1900					1905			
Val	Arg	Val	Val	Val	Pro	Tyr	Gln	Gly	Pro	Ser	Ser	Asp	Tyr	Val
	1910					1915					1920			
Val	Val	Lys	Met	Ile	Pro	Asp	Ser	Arg	Leu	Pro	Pro	Arg	His	Leu
	1925					1930					1935			
His	Val	Val	His	Thr	Gly	Lys	Thr	Ser	Val	Val	Ile	Lys	Trp	Glu
	1940					1945					1950			
Ser	Pro	Tyr	Asp	Ser	Pro	Asp	Gln	Asp	Leu	Leu	Tyr	Ala	Val	Ala
	1955					1960					1965			
Val	Lys	Asp	Leu	Ile	Arg	Lys	Thr	Asp	Arg	Ser	Tyr	Lys	Val	Lys
	1970					1975					1980			
Ser	Arg	Asn	Ser	Thr	Val	Glu	Tyr	Thr	Leu	Asn	Lys	Leu	Glu	Pro
	1985					1990					1995			
Gly	Gly	Lys	Tyr	His	Ile	Ile	Val	Gln	Leu	Gly	Asn	Met	Ser	Lys
	2000					2005					2010			
Asp	Ser	Ser	Ile	Lys	Ile	Thr	Thr	Val	Ser	Leu	Ser	Ala	Pro	Asp
	2015					2020					2025			

Ala Leu Lys Ile Ile Thr Glu Asn Asp His Val Leu Leu Phe Trp
2030 2035 2040

Lys Ser Leu Ala Leu Lys Glu Lys His Phe Asn Glu Ser Arg Gly
2045 2050 2055

Tyr Glu Ile His Met Phe Asp Ser Ala Met Asn Ile Thr Ala Tyr
2060 2065 2070

Leu Gly Asn Thr Thr Asp Asn Phe Phe Lys Ile Ser Asn Leu Lys
2075 2080 2085

Met Gly His Asn Tyr Thr Phe Thr Val Gln Ala Arg Cys Leu Phe
2090 2095 2100

Gly Asn Gln Ile Cys Gly Glu Pro Ala Ile Leu Leu Tyr Asp Glu
2105 2110 2115

Leu Gly Ser Gly Ala Asp Ala Ser Ala Thr Gln Ala Ala Arg Ser
2120 2125 2130

Thr Asp Val Ala Ala Val Val Val Pro Ile Leu Phe Leu Ile Leu
2135 2140 2145

Leu Ser Leu Gly Val Gly Phe Ala Ile Leu Tyr Thr Lys His Arg
2150 2155 2160

Arg Leu Gln Ser Ser Phe Thr Ala Phe Ala Asn Ser His Tyr Ser
2165 2170 2175

Ser Arg Leu Gly Ser Ala Ile Phe Ser Ser Gly Asp Asp Leu Gly
2180 2185 2190

Glu Asp Asp Glu Asp Ala Pro Met Ile Thr Gly Phe Ser Asp Asp
2195 2200 2205

Val Pro Met Val Ile Ala
2210

<210> 745
<211> 1332
<212> PRT
<213> Homo sapiens

<400> 745

Met Gln Gln Ala Pro Gln Pro Tyr Glu Phe Phe Ser Glu Glu Asn Ser
1 5 10 15

Pro Lys Trp Arg Gly Leu Leu Val Ser Ala Leu Arg Lys Val Gln Glu
20 25 30

Gln Val His Pro Thr Leu Ser Ala Asn Glu Glu Ser Leu Tyr Tyr Ile
 35 40 45

Glu Glu Leu Ile Phe Gln Leu Leu Asn Lys Leu Cys Met Ala Gln Pro
 50 55 60

Arg Thr Val Gln Asp Val Glu Glu Arg Val Gln Lys Thr Phe Pro His
 65 70 75 80

Pro Ile Asp Lys Trp Ala Ile Ala Asp Ala Gln Ser Ala Ile Glu Lys
 85 90 95

Arg Lys Arg Arg Asn Pro Leu Leu Leu Pro Val Asp Lys Ile His Pro
 100 105 110

Ser Leu Lys Glu Val Leu Gly Tyr Lys Val Asp Tyr His Val Ser Leu
 115 120 125

Tyr Ile Val Ala Val Leu Glu Tyr Ile Ser Ala Asp Ile Leu Lys Leu
 130 135 140

Ala Gly Asn Tyr Val Phe Asn Ile Arg His Tyr Glu Ile Ser Gln Gln
 145 150 155 160

Asp Ile Lys Val Ser Met Cys Ala Asp Lys Val Leu Met Asp Met Phe
 165 170 175

Asp Gln Asp Asp Ile Gly Leu Val Ser Leu Cys Glu Asp Glu Pro Ser
 180 185 190

Ser Ser Gly Glu Leu Asn Tyr Tyr Asp Leu Val Arg Thr Glu Ile Ala
 195 200 205

Glu Glu Arg Gln Tyr Leu Arg Glu Leu Asn Met Ile Ile Lys Val Phe
 210 215 220

Arg Glu Ala Phe Leu Ser Asp Arg Lys Leu Phe Lys Pro Ser Asp Ile
 225 230 235 240

Glu Lys Ile Phe Ser Asn Ile Ser Asp Ile His Glu Leu Thr Val Lys
 245 250 255

Leu Leu Gly Leu Ile Glu Asp Thr Val Glu Met Thr Asp Glu Ser Ser
 260 265 270

Pro His Pro Leu Ala Gly Ser Cys Phe Glu Asp Leu Ala Glu Glu Gln
 275 280 285

Ala Phe Asp Pro Tyr Glu Thr Leu Ser Gln Asp Ile Leu Ser Pro Glu
 290 295 300

Phe His Glu His Phe Asn Lys Leu Met Ala Arg Pro Ala Val Ala Leu
 305 310 315 320
 His Phe Gln Ser Ile Ala Asp Gly Phe Lys Glu Ala Val Arg Tyr Val
 325 330 335
 Leu Pro Arg Leu Met Leu Val Pro Val Tyr His Cys Trp His Tyr Phe
 340 345 350
 Glu Leu Leu Lys Gln Leu Lys Ala Cys Ser Glu Glu Gln Glu Asp Arg
 355 360 365
 Glu Cys Leu Asn Gln Ala Ile Thr Ala Leu Met Asn Leu Gln Gly Ser
 370 375 380
 Met Asp Arg Ile Tyr Lys Gln Tyr Ser Pro Arg Arg Arg Pro Gly Asp
 385 390 395 400
 Pro Val Cys Pro Phe Tyr Ser His Gln Leu Arg Ser Lys His Leu Ala
 405 410 415
 Ile Lys Lys Met Asn Glu Ile Gln Lys Asn Ile Asp Gly Trp Glu Gly
 420 425 430
 Lys Asp Ile Gly Gln Cys Cys Asn Glu Phe Ile Met Glu Gly Pro Leu
 435 440 445
 Thr Arg Ile Gly Ala Lys His Glu Arg His Ile Phe Leu Phe Asp Gly
 450 455 460
 Leu Met Ile Ser Cys Lys Pro Asn His Gly Gln Thr Arg Leu Pro Gly
 465 470 475 480
 Tyr Ser Ser Ala Glu Tyr Arg Leu Lys Glu Lys Phe Val Met Arg Lys
 485 490 495
 Ile Gln Ile Cys Asp Lys Glu Asp Thr Cys Glu His Lys His Ala Phe
 500 505 510
 Glu Leu Val Ser Lys Asp Glu Asn Ser Ile Ile Phe Ala Ala Lys Ser
 515 520 525
 Ala Glu Glu Lys Asn Asn Trp Met Ala Ala Leu Ile Ser Leu His Tyr
 530 535 540
 Arg Ser Thr Leu Asp Arg Met Leu Asp Ser Val Leu Leu Lys Glu Glu
 545 550 555 560
 Asn Glu Gln Pro Leu Arg Leu Pro Ser Pro Glu Val Tyr Arg Phe Val
 565 570 575

Val Lys Asp Ser₅₈₀ Glu Glu Asn Ile Val₅₈₅ Phe Glu Asp Asn Leu₅₉₀ Gln Ser
 Arg Ser Gly₅₉₅ Ile Pro Ile Ile Lys₆₀₀ Gly Gly Thr Val Val₆₀₅ Lys Leu Ile
 Glu Arg₆₁₀ Leu Thr Tyr His Met₆₁₅ Tyr Ala Asp Pro Asn₆₂₀ Phe Val Arg Thr
 Phe₆₂₅ Leu Thr Thr Tyr Arg₆₃₀ Ser Phe Cys Lys Pro₆₃₅ Gln Glu Leu Leu Ser₆₄₀
 Leu Leu Ile Glu Arg₆₄₅ Phe Glu Ile Pro Glu₆₅₀ Pro Glu Pro Thr Asp₆₅₅ Ala
 Asp Lys Leu Ala₆₆₀ Ile Glu Lys Gly Glu₆₆₅ Gln Pro Ile Ser Ala₆₇₀ Asp Leu
 Lys Arg Phe₆₇₅ Arg Lys Glu Tyr Val₆₈₀ Gln Pro Val Gln Leu₆₈₅ Arg Ile Leu
 Asn Val₆₉₀ Phe Arg His Trp Val₆₉₅ Glu His His Phe Tyr₇₀₀ Asp Phe Glu Arg
 Asp₇₀₅ Leu Glu Leu Leu Glu₇₁₀ Arg Leu Glu Ser Phe₇₁₅ Ile Ser Ser Val Arg₇₂₀
 Gly Lys Ala Met Lys₇₂₅ Lys Trp Val Glu Ser₇₃₀ Ile Ala Lys Ile Ile₇₃₅ Arg
 Arg Lys Lys Gln₇₄₀ Ala Gln Ala Asn Gly₇₄₅ Val Ser His Asn Ile₇₅₀ Thr Phe
 Glu Ser Pro₇₅₅ Pro Pro Pro Ile Glu₇₆₀ Trp His Ile Ser Lys₇₆₅ Pro Gly Gln
 Phe Glu₇₇₀ Thr Phe Asp Leu Met₇₇₅ Thr Leu His Pro Ile₇₈₀ Glu Ile Ala Arg
 Gln₇₈₅ Leu Thr Leu Leu Glu₇₉₀ Ser Asp Leu Tyr Arg₇₉₅ Lys Val Gln Pro Ser₈₀₀
 Glu Leu Val Gly Ser₈₀₅ Val Trp Thr Lys Glu₈₁₀ Asp Lys Glu Ile Asn₈₁₅ Ser
 Pro Asn Leu₈₂₀ Leu Lys Met Ile Arg His₈₂₅ Thr Thr Asn Leu Thr₈₃₀ Leu Trp
 Phe Glu Lys₈₃₅ Cys Ile Val Glu Ala₈₄₀ Glu Asn Phe Glu Glu₈₄₅ Arg Val Ala

Val Leu Ser Arg Ile Ile Glu Ile Leu Gln Val Phe Gln Asp Leu Asn
 850 855 860
 Asn Phe Asn Gly Val Leu Glu Ile Val Ser Ala Val Asn Ser Val Ser
 865 870 875 880
 Val Tyr Arg Leu Asp His Thr Phe Glu Ala Leu Gln Glu Arg Lys Arg
 885 890 895
 Lys Ile Leu Asp Glu Ala Val Glu Leu Ser Gln Asp His Phe Lys Lys
 900 905 910
 Tyr Leu Val Lys Leu Lys Ser Ile Asn Pro Pro Cys Val Pro Phe Phe
 915 920 925
 Gly Ile Tyr Leu Thr Asn Ile Leu Lys Thr Glu Glu Gly Asn Asn Asp
 930 935 940
 Phe Leu Lys Lys Lys Gly Lys Asp Leu Ile Asn Phe Ser Lys Arg Arg
 945 950 955 960
 Lys Val Ala Glu Ile Thr Gly Glu Ile Gln Gln Tyr Gln Asn Gln Pro
 965 970 975
 Tyr Cys Leu Arg Ile Glu Pro Asp Met Arg Arg Phe Phe Glu Asn Leu
 980 985 990
 Asn Pro Met Gly Ser Ala Ser Glu Lys Glu Phe Thr Asp Tyr Leu Phe
 995 1000 1005
 Asn Lys Ser Leu Glu Ile Glu Pro Arg Asn Cys Lys Gln Pro Pro
 1010 1015 1020
 Arg Phe Pro Arg Lys Ser Thr Phe Ser Leu Lys Ser Pro Gly Ile
 1025 1030 1035
 Arg Pro Asn Thr Gly Arg His Gly Ser Thr Ser Gly Thr Leu Arg
 1040 1045 1050
 Gly His Pro Thr Pro Leu Glu Arg Glu Pro Cys Lys Ile Ser Phe
 1055 1060 1065
 Ser Arg Ile Ala Glu Thr Glu Leu Glu Ser Thr Val Ser Ala Pro
 1070 1075 1080
 Thr Ser Pro Asn Thr Pro Ser Thr Pro Pro Val Ser Ala Ser Ser
 1085 1090 1095
 Asp Leu Ser Val Phe Leu Asp Val Asp Leu Asn Ser Ser Cys Gly
 1100 1105 1110

Ser Asn Ser Ile Phe Ala Pro Val Leu Leu Pro His Ser Lys Ser
 1115 1120 1125
 Phe Phe Ser Ser Cys Gly Ser Leu His Lys Leu Ser Glu Glu Pro
 1130 1135 1140
 Leu Ile Pro Pro Pro Leu Pro Pro Arg Lys Lys Phe Asp His Asp
 1145 1150 1155
 Ala Ser Asn Ser Lys Gly Asn Met Lys Ser Asp Asp Asp Pro Pro
 1160 1165 1170
 Ala Ile Pro Pro Arg Gln Pro Pro Pro Pro Lys Val Lys Pro Arg
 1175 1180 1185
 Val Pro Val Pro Thr Gly Ala Phe Asp Gly Pro Leu His Ser Pro
 1190 1195 1200
 Pro Pro Pro Pro Pro Arg Asp Pro Leu Pro Asp Thr Pro Pro Pro
 1205 1210 1215
 Val Pro Leu Arg Pro Pro Glu His Phe Ile Asn Cys Pro Phe Asn
 1220 1225 1230
 Leu Gln Pro Pro Pro Leu Gly His Leu His Arg Asp Ser Asp Trp
 1235 1240 1245
 Leu Arg Asp Ile Ser Thr Cys Pro Asn Ser Pro Ser Thr Pro Pro
 1250 1255 1260
 Ser Thr Pro Ser Pro Arg Val Pro Arg Arg Cys Tyr Val Leu Ser
 1265 1270 1275
 Ser Ser Gln Asn Asn Leu Ala His Pro Pro Ala Pro Pro Val Pro
 1280 1285 1290
 Pro Arg Gln Asn Ser Ser Pro His Leu Pro Lys Leu Pro Pro Lys
 1295 1300 1305
 Thr Tyr Lys Arg Glu Leu Ser His Pro Pro Leu Tyr Arg Leu Pro
 1310 1315 1320
 Leu Leu Glu Asn Ala Glu Thr Pro Gln
 1325 1330

<210> 746
 <211> 781
 <212> PRT
 <213> Homo sapiens

<400> 746

Met Thr Ala Pro Glu Lys Pro Val Lys Gln Glu Glu Met Ala Ala Leu
 1 5 10 15
 Asp Val Asp Ser Gly Gly Gly Gly Gly Gly Gly Gly His Gly Glu
 20 25 30
 Tyr Leu Gln Gln Gln Gln His Gly Asn Gly Ala Val Ala Ala Ala
 35 40 45
 Ala Ala Ala Gln Asp Thr Gln Pro Ser Pro Leu Ala Leu Leu Ala Ala
 50 55 60
 Thr Cys Ser Lys Ile Gly Pro Pro Ser Pro Gly Asp Asp Glu Glu Glu
 65 70 75 80
 Ala Ala Ala Ala Ala Gly Ala Pro Ala Ala Ala Gly Ala Thr Gly Asp
 85 90 95
 Leu Ala Ser Ala Gln Leu Gly Gly Ala Pro Asn Arg Trp Glu Val Leu
 100 105 110
 Ser Ala Thr Pro Thr Thr Ile Lys Asp Glu Ala Gly Asn Leu Val Gln
 115 120 125
 Ile Pro Ser Ala Ala Thr Ser Ser Gly Gln Tyr Val Leu Pro Leu Gln
 130 135 140
 Asn Leu Gln Asn Gln Gln Ile Phe Ser Val Ala Pro Gly Ser Asp Ser
 145 150 155 160
 Ser Asn Gly Thr Val Ser Ser Val Gln Tyr Gln Val Ile Pro Gln Ile
 165 170 175
 Gln Ser Ala Asp Gly Gln Gln Val Gln Ile Gly Phe Thr Gly Ser Ser
 180 185 190
 Asp Asn Gly Gly Ile Asn Gln Glu Ser Ser Gln Ile Gln Ile Ile Pro
 195 200 205
 Gly Ser Asn Gln Thr Leu Leu Ala Ser Gly Thr Pro Ser Ala Asn Ile
 210 215 220
 Gln Asn Leu Ile Pro Gln Thr Gly Gln Val Gln Val Gln Gly Val Ala
 225 230 235 240
 Ile Gly Gly Ser Ser Phe Pro Gly Gln Thr Gln Val Val Ala Asn Val
 245 250 255
 Pro Leu Gly Leu Pro Gly Asn Ile Thr Phe Val Pro Ile Asn Ser Val
 260 265 270

Asp Leu Asp Ser Leu Gly Leu Ser Gly Ser Ser Gln Thr Met Thr Ala
 275 280 285
 Gly Ile Asn Ala Asp Gly His Leu Ile Asn Thr Gly Gln Ala Met Asp
 290 295 300
 Ser Ser Asp Asn Ser Glu Arg Thr Gly Glu Arg Val Ser Pro Asp Ile
 305 310 315 320
 Asn Glu Thr Asn Thr Asp Thr Asp Leu Phe Val Pro Thr Ser Ser Ser
 325 330 335
 Ser Gln Leu Pro Val Thr Ile Asp Ser Thr Gly Ile Leu Gln Gln Asn
 340 345 350
 Thr Asn Ser Leu Thr Thr Ser Ser Gly Gln Val His Ser Ser Asp Leu
 355 360 365
 Gln Gly Asn Tyr Ile Gln Ser Pro Val Ser Glu Glu Thr Gln Ala Gln
 370 375 380
 Asn Ile Gln Val Ser Thr Ala Gln Pro Val Val Gln His Leu Gln Leu
 385 390 395 400
 Gln Glu Ser Gln Gln Pro Thr Ser Gln Ala Gln Ile Val Gln Gly Ile
 405 410 415
 Thr Pro Gln Thr Ile His Gly Val Gln Ala Ser Gly Gln Asn Ile Ser
 420 425 430
 Gln Gln Ala Leu Gln Asn Leu Gln Leu Gln Leu Asn Pro Gly Thr Phe
 435 440 445
 Leu Ile Gln Ala Gln Thr Val Thr Pro Ser Gly Gln Val Thr Trp Gln
 450 455 460
 Thr Phe Gln Val Gln Gly Val Gln Asn Leu Gln Asn Leu Gln Ile Gln
 465 470 475 480
 Asn Thr Ala Ala Gln Gln Ile Thr Leu Thr Pro Val Gln Thr Leu Thr
 485 490 495
 Leu Gly Gln Val Ala Ala Gly Gly Ala Phe Thr Ser Thr Pro Val Ser
 500 505 510
 Leu Ser Thr Gly Gln Leu Pro Asn Leu Gln Thr Val Thr Val Asn Ser
 515 520 525
 Ile Asp Ser Ala Gly Ile Gln Leu His Pro Gly Glu Asn Ala Asp Ser
 530 535 540

Pro Ala Asp Ile Arg Ile Lys Glu Glu Glu Pro Asp Pro Glu Glu Trp
545 550 555 560

Gln Leu Ser Gly Asp Ser Thr Leu Asn Thr Asn Asp Leu Thr His Leu
565 570 575

Arg Val Gln Val Val Asp Glu Glu Gly Asp Gln Gln His Gln Glu Gly
580 585 590

Lys Arg Leu Arg Arg Val Ala Cys Thr Cys Pro Asn Cys Lys Glu Gly
595 600 605

Gly Gly Arg Gly Thr Asn Leu Gly Lys Lys Lys Gln His Ile Cys His
610 615 620

Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His Leu Arg Ala
625 630 635 640

His Leu Arg Trp His Ser Gly Glu Arg Pro Phe Val Cys Asn Trp Met
645 650 655

Tyr Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln Arg His Arg
660 665 670

Arg Thr His Thr Gly Glu Lys Lys Phe Val Cys Pro Glu Cys Ser Lys
675 680 685

Arg Phe Met Arg Ser Asp His Leu Ala Lys His Ile Lys Thr His Gln
690 695 700

Asn Lys Lys Gly Ile His Ser Ser Ser Thr Val Leu Ala Ser Val Glu
705 710 715 720

Ala Ala Arg Asp Asp Thr Leu Ile Thr Ala Gly Gly Thr Thr Leu Ile
725 730 735

Leu Ala Asn Ile Gln Gln Gly Ser Val Ser Gly Ile Gly Thr Val Asn
740 745 750

Thr Ser Ala Thr Ser Asn Gln Asp Ile Leu Thr Asn Thr Glu Ile Pro
755 760 765

Leu Gln Leu Val Thr Val Ser Gly Asn Glu Thr Met Glu
770 775 780

<210> 747
<211> 361
<212> PRT
<213> Homo sapiens

<400> 747

Met Tyr Gly Lys Gly Lys Ser Asn Ser Ser Ala Val Pro Ser Asp Ser
Page 1266

1 5 10 15
 Gln Ala Arg Glu Lys Leu Ala Leu Tyr Val Tyr Glu Tyr Leu Leu His
 20 25 30
 Val Gly Ala Gln Lys Ser Ala Gln Thr Phe Leu Ser Glu Ile Arg Trp
 35 40 45
 Glu Lys Asn Ile Thr Leu Gly Glu Pro Pro Gly Phe Leu His Ser Trp
 50 55 60
 Trp Cys Val Phe Trp Asp Leu Tyr Cys Ala Ala Pro Glu Arg Arg Glu
 65 70 75 80
 Thr Cys Glu His Ser Ser Glu Ala Lys Ala Phe His Asp Tyr Ser Ala
 85 90 95
 Ala Ala Ala Pro Ser Pro Val Leu Gly Asn Ile Pro Pro Gly Asp Gly
 100 105 110
 Met Pro Val Gly Pro Val Pro Pro Gly Phe Phe Gln Pro Phe Met Ser
 115 120 125
 Pro Arg Tyr Pro Gly Gly Pro Arg Pro Pro Leu Arg Ile Pro Asn Gln
 130 135 140
 Ala Leu Gly Gly Val Pro Gly Ser Gln Pro Leu Leu Pro Ser Gly Met
 145 150 155 160
 Asp Pro Thr Arg Gln Gln Gly His Pro Asn Met Gly Gly Pro Met Gln
 165 170 175
 Arg Met Thr Pro Pro Arg Gly Met Val Pro Leu Gly Pro Gln Asn Tyr
 180 185 190
 Gly Gly Ala Met Arg Pro Pro Leu Asn Ala Leu Gly Gly Pro Gly Met
 195 200 205
 Pro Gly Met Asn Met Gly Pro Gly Gly Gly Arg Pro Trp Pro Asn Pro
 210 215 220
 Thr Asn Ala Asn Ser Ile Pro Tyr Ser Ser Ala Ser Pro Gly Asn Tyr
 225 230 235 240
 Val Gly Pro Pro Gly Gly Gly Gly Pro Pro Gly Thr Pro Ile Met Pro
 245 250 255
 Ser Pro Ala Asp Ser Thr Asn Ser Gly Asp Asn Met Tyr Thr Leu Met
 260 265 270
 Asn Ala Val Pro Pro Gly Pro Asn Arg Pro Asn Phe Pro Met Gly Pro

275

280

285

Gly Ser Asp Gly Pro Met Gly Gly Leu Gly Gly Met Glu Ser His His
 290 295 300

Met Asn Gly Ser Leu Gly Ser Gly Asp Met Asp Ser Ile Ser Lys Asn
 305 310 315 320

Ser Pro Asn Asn Met Ser Leu Ser Asn Gln Pro Gly Thr Pro Arg Asp
 325 330 335

Asp Gly Glu Met Gly Gly Asn Phe Leu Asn Pro Phe Gln Ser Glu Ser
 340 345 350

Tyr Ser Pro Ser Met Thr Met Ser Val
 355 360

<210> 748
 <211> 1256
 <212> PRT
 <213> Homo sapiens

<400> 748

Met Asp Arg Pro Leu Ser Ser Ser Ala Glu Ala Glu Glu Glu Leu Glu
 1 5 10 15

Trp Gln Val Ala Ser Arg Arg Arg Lys Ala Trp Ala Lys Cys Arg Ser
 20 25 30

Ser Trp Gln Ala Ser Glu Thr Glu Asp Leu Ser Thr Glu Ala Thr Thr
 35 40 45

Gln Asp Glu Glu Glu Asp Glu Glu Glu Asp Leu Pro Gly Ala Gln Leu
 50 55 60

Pro Ala Ala Gly Gly Arg Gly Asn Val Pro Asn Glu Lys Ile Ala Ile
 65 70 75 80

Trp Leu Lys Asp Cys Arg Thr Pro Leu Gly Ala Ser Leu Asp Glu Gln
 85 90 95

Ser Ser Ser Thr Leu Lys Gly Val Leu Val Arg Asn Gly Gly Ser Phe
 100 105 110

Glu Asp Asp Leu Ser Leu Gly Ala Glu Ala Asn His Leu His Glu Ser
 115 120 125

Asp Ala Gln Ile Glu Asn Cys Asn Asn Ile Leu Ala Lys Glu Arg Arg
 130 135 140

Leu Gln Phe His Gln Lys Gly Arg Ser Met Asn Ser Thr Gly Ser Gly
 145 150 155 160

Lys Ser Ser Gly Thr Val Ser Ser Val Ser Glu Leu Leu Glu Leu Tyr
 165 170 175
 Glu Glu Asp Pro Glu Glu Ile Leu Tyr Asn Leu Gly Phe Gly Arg Asp
 180 185 190
 Glu Pro Asp Ile Ala Ser Lys Ile Pro Ser Arg Phe Phe Asn Ser Ser
 195 200 205
 Ser Phe Ala Lys Gly Ile Asp Ile Lys Val Phe Leu Ser Ala Gln Met
 210 215 220
 Gln Arg Met Glu Val Glu Asn Pro Asn Tyr Ala Leu Thr Ser Arg Phe
 225 230 235 240
 Arg Gln Ile Glu Val Leu Thr Thr Val Ala Asn Ala Phe Ser Ser Leu
 245 250 255
 Tyr Ser Gln Val Ser Gly Thr Pro Leu Gln Arg Ile Gly Ser Met Ser
 260 265 270
 Ser Val Thr Ser Asn Lys Glu Thr Asp Pro Pro Pro Pro Leu Thr Arg
 275 280 285
 Ser Asn Thr Ala Asn Arg Leu Met Lys Thr Leu Ser Lys Leu Asn Leu
 290 295 300
 Cys Val Asp Lys Thr Glu Lys Gly Glu Ser Ser Ser Pro Ser Pro Ser
 305 310 315 320
 Ala Glu Lys Gly Lys Ile Leu Asn Val Ser Val Ile Glu Glu Ser Gly
 325 330 335
 Asn Lys Asn Asp Gln Lys Ser Gln Lys Ile Met Lys Lys Lys Glu Ser
 340 345 350
 Ser Ser Met Leu Ala Thr Val Lys Glu Glu Val Ser Gly Ser Ser Ala
 355 360 365
 Ala Val Thr Glu Asn Ala Asp Ser Asp Arg Ile Ser Asp Glu Ala Asn
 370 375 380
 Ser Asn Phe Asn Gln Gly Thr Glu Asn Glu Gln Ser Lys Glu Thr Gln
 385 390 395 400
 Ser His Glu Ser Lys Leu Gly Glu Glu Ser Gly Ile Val Glu Ser Lys
 405 410 415
 Leu Asp Ser Asp Phe Asn Ile Ser Ser His Ser Glu Leu Glu Asn Ser
 420 425 430

Ser Glu Leu Lys Ser Val His Ile Ser Thr Pro Glu Lys Glu Pro Cys
 435 440 445
 Ala Pro Leu Thr Ile Pro Ser Ile Arg Asn Ile Met Thr Gln Gln Lys
 450 455 460
 Asp Ser Phe Glu Met Glu Glu Val Gln Ser Thr Glu Gly Glu Ala Pro
 465 470 475 480
 His Val Pro Ala Thr Tyr Gln Leu Gly Leu Thr Lys Ser Lys Arg Asp
 485 490 495
 His Leu Leu Arg Thr Ala Ser Gln His Ser Asp Ser Ser Gly Phe Ala
 500 505 510
 Glu Asp Ser Thr Asp Cys Leu Ser Leu Asn His Leu Gln Val Gln Glu
 515 520 525
 Ser Leu Gln Ala Met Gly Ser Ser Ala Asp Ser Cys Asp Ser Glu Thr
 530 535 540
 Thr Val Thr Ser Leu Gly Glu Asp Leu Ala Thr Pro Thr Ala Gln Asp
 545 550 555 560
 Gln Pro Tyr Phe Asn Glu Ser Glu Glu Glu Ser Leu Val Pro Leu Gln
 565 570 575
 Lys Gly Leu Glu Lys Ala Ala Ala Val Ala Asp Lys Arg Lys Ser Gly
 580 585 590
 Ser Gln Asp Phe Pro Gln Cys Asn Thr Ile Glu Asn Thr Gly Thr Lys
 595 600 605
 Gln Ser Thr Cys Ser Pro Gly Asp His Ile Ile Glu Ile Thr Glu Val
 610 615 620
 Glu Glu Asp Leu Phe Pro Ala Glu Thr Val Glu Leu Leu Arg Glu Ala
 625 630 635 640
 Ser Ala Glu Ser Asp Val Gly Lys Ser Ser Glu Ser Glu Phe Thr Gln
 645 650 655
 Tyr Thr Thr His His Ile Leu Lys Ser Leu Ala Ser Ile Glu Ala Lys
 660 665 670
 Cys Ser Asp Met Ser Ser Glu Asn Thr Thr Gly Pro Pro Ser Ser Met
 675 680 685
 Asp Arg Val Asn Thr Ala Leu Gln Arg Ala Gln Met Lys Val Cys Ser
 690 695 700

Leu Ser Asn Gln Arg Met Gly Arg Ser Leu Leu Lys Ser Lys Asp Leu
 705 710 715 720
 Leu Lys Gln Arg Tyr Leu Phe Ala Lys Ala Gly Tyr Pro Leu Arg Arg
 725 730 735
 Ser Gln Ser Leu Pro Thr Thr Leu Leu Ser Pro Val Arg Val Val Ser
 740 745 750
 Ser Val Asn Val Arg Leu Ser Pro Gly Lys Glu Thr Arg Cys Ser Pro
 755 760 765
 Pro Ser Phe Thr Tyr Lys Tyr Thr Pro Glu Glu Glu Gln Glu Leu Glu
 770 775 780
 Lys Arg Val Met Glu His Asp Gly Gln Ser Leu Val Lys Ser Thr Ile
 785 790 795 800
 Phe Ile Ser Pro Ser Ser Val Lys Lys Glu Glu Ala Pro Gln Ser Glu
 805 810 815
 Ala Pro Arg Val Glu Glu Cys His His Gly Arg Thr Pro Thr Cys Ser
 820 825 830
 Arg Leu Ala Pro Pro Pro Met Ser Gln Ser Thr Cys Ser Leu His Ser
 835 840 845
 Ile His Ser Glu Trp Gln Glu Arg Pro Leu Cys Glu His Thr Arg Thr
 850 855 860
 Leu Ser Thr His Ser Val Pro Asn Ile Ser Gly Ala Thr Cys Ser Ala
 865 870 875 880
 Phe Ala Ser Pro Phe Gly Cys Pro Tyr Ser His Arg His Ala Thr Tyr
 885 890 895
 Pro Tyr Arg Val Cys Ser Val Asn Pro Pro Ser Ala Ile Glu Met Gln
 900 905 910
 Leu Arg Arg Val Leu His Asp Ile Arg Asn Ser Leu Gln Asn Leu Ser
 915 920 925
 Gln Tyr Pro Met Met Arg Gly Pro Asp Pro Ala Ala Ala Pro Tyr Ser
 930 935 940
 Thr Gln Lys Ser Ser Val Leu Pro Leu Tyr Glu Asn Thr Phe Gln Glu
 945 950 955 960
 Leu Gln Val Met Arg Arg Ser Leu Asn Leu Phe Arg Thr Gln Met Met
 965 970 975

Asp Leu Glu Leu Ala Met Leu Arg Gln Gln Thr Met Val Tyr His His
 980 985 990

Met Thr Glu Glu Glu Arg Phe Glu Val Asp Gln Leu Gln Gly Leu Arg
 995 1000 1005

Asn Ser Val Arg Met Glu Leu Gln Asp Leu Glu Leu Gln Leu Glu
 1010 1015 1020

Glu Arg Leu Leu Gly Leu Glu Glu Gln Leu Arg Ala Val Arg Met
 1025 1030 1035

Pro Ser Pro Phe Arg Ser Ser Ala Leu Met Gly Met Cys Gly Ser
 1040 1045 1050

Arg Ser Ala Asp Asn Leu Ser Cys Pro Ser Pro Leu Asn Val Met
 1055 1060 1065

Glu Pro Val Thr Glu Leu Met Gln Glu Gln Ser Tyr Leu Lys Ser
 1070 1075 1080

Glu Leu Gly Leu Gly Leu Gly Glu Met Gly Phe Glu Ile Pro Pro
 1085 1090 1095

Gly Glu Ser Ser Glu Ser Val Phe Ser Gln Ala Thr Ser Glu Ser
 1100 1105 1110

Ser Ser Val Cys Ser Gly Pro Ser His Ala Asn Arg Arg Thr Gly
 1115 1120 1125

Val Pro Ser Thr Ala Ser Val Gly Lys Ser Lys Thr Pro Leu Val
 1130 1135 1140

Ala Arg Lys Lys Val Phe Arg Ala Ser Val Ala Leu Thr Pro Thr
 1145 1150 1155

Ala Pro Ser Arg Thr Gly Ser Val Gln Thr Pro Pro Asp Leu Glu
 1160 1165 1170

Ser Ser Glu Glu Val Asp Ala Ala Glu Gly Ala Pro Glu Val Val
 1175 1180 1185

Gly Pro Lys Ser Glu Val Glu Glu Gly His Gly Lys Leu Pro Ser
 1190 1195 1200

Met Pro Ala Ala Glu Glu Met His Lys Asn Val Glu Gln Asp Glu
 1205 1210 1215

Leu Gln Gln Val Ile Arg Glu Val Gly Met Asp Pro Ile Ser Cys
 1220 1225 1230

Val Ile Leu Glu Leu Ser Met Ile Cys Thr Gly Gly Gly Val Ile
 1235 1240 1245

Cys Ala Leu Glu Asp Thr Cys Cys
 1250 1255

<210> 749
 <211> 369
 <212> PRT
 <213> Homo sapiens

<400> 749

Met Asp Pro Arg Lys Val Asn Glu Leu Arg Ala Phe Val Lys Met Cys
 1 5 10 15

Lys Gln Asp Pro Ser Val Leu His Thr Glu Glu Met Arg Phe Leu Arg
 20 25 30

Glu Trp Val Glu Ser Met Gly Gly Lys Val Pro Pro Ala Thr Gln Lys
 35 40 45

Ala Lys Ser Glu Glu Asn Thr Lys Glu Glu Lys Pro Asp Ser Lys Lys
 50 55 60

Val Glu Glu Asp Leu Lys Ala Asp Glu Pro Ser Ser Glu Glu Ser Asp
 65 70 75 80

Leu Glu Ile Asp Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro
 85 90 95

Gln Glu Met Gly Asp Glu Asn Ala Glu Ile Thr Glu Glu Met Met Asp
 100 105 110

Gln Ala Asn Asp Lys Lys Val Ala Ala Ile Glu Ala Leu Asn Asp Gly
 115 120 125

Glu Leu Gln Lys Ala Ile Asp Leu Phe Thr Asp Ala Ile Lys Leu Asn
 130 135 140

Pro Arg Leu Ala Ile Leu Tyr Ala Lys Arg Ala Ser Val Phe Val Lys
 145 150 155 160

Leu Gln Lys Pro Asn Ala Ala Ile Arg Asp Cys Asp Arg Ala Ile Glu
 165 170 175

Ile Asn Pro Asp Ser Ala Gln Pro Tyr Lys Trp Arg Gly Lys Ala His
 180 185 190

Arg Leu Leu Gly His Trp Glu Glu Ala Ala His Asp Leu Ala Leu Ala
 195 200 205

Cys Lys Leu Asp Tyr Asp Glu Asp Ala Ser Ala Met Leu Lys Glu Val
 210 215 220

Gln Pro Arg Ala Gln Lys Ile Ala Glu His Arg Arg Lys Tyr Glu Arg
 225 230 235 240

Lys Arg Glu Glu Arg Glu Ile Lys Glu Arg Ile Glu Arg Val Lys Lys
 245 250 255

Ala Arg Glu Glu His Glu Arg Ala Gln Arg Glu Glu Glu Ala Arg Arg
 260 265 270

Gln Ser Gly Ala Gln Tyr Gly Ser Phe Pro Gly Gly Phe Pro Gly Gly
 275 280 285

Met Pro Gly Asn Phe Pro Gly Gly Met Pro Gly Met Gly Gly Gly Met
 290 295 300

Pro Gly Met Ala Gly Met Pro Gly Leu Asn Glu Ile Leu Ser Asp Pro
 305 310 315 320

Glu Val Leu Ala Ala Met Gln Asp Pro Glu Val Met Val Ala Phe Gln
 325 330 335

Asp Val Ala Gln Asn Pro Ala Asn Met Ser Lys Tyr Gln Ser Asn Pro
 340 345 350

Lys Val Met Asn Leu Ile Ser Lys Leu Ser Ala Lys Phe Gly Gly Gln
 355 360 365

Ala

<210> 750
 <211> 340
 <212> PRT
 <213> Homo sapiens

<400> 750

Met Val Thr Leu Arg Lys Arg Thr Leu Lys Val Leu Thr Phe Leu Val
 1 5 10 15

Leu Phe Ile Phe Leu Thr Ser Phe Phe Leu Asn Tyr Ser His Thr Met
 20 25 30

Val Ala Thr Thr Trp Phe Pro Lys Gln Met Val Leu Glu Leu Ser Glu
 35 40 45

Asn Leu Lys Arg Leu Ile Lys His Arg Pro Cys Thr Cys Thr His Cys
 50 55 60

Ile Gly Gln Arg Lys Leu Ser Ala Trp Phe Asp Glu Arg Phe Asn Gln
 65 70 75 80

Thr Met Gln Pro Leu Leu Thr Ala Gln Asn Ala Leu Leu Glu Asp Asp
 85 90 95

Thr Tyr Arg Trp Trp Leu Arg Leu Gln Arg Glu Lys Lys Pro Asn Asn
 100 105 110

Leu Asn Asp Thr Ile Lys Glu Leu Phe Arg Val Val Pro Gly Asn Val
 115 120 125

Asp Pro Met Leu Glu Lys Arg Ser Val Gly Cys Arg Arg Cys Ala Val
 130 135 140

Val Gly Asn Ser Gly Asn Leu Arg Glu Ser Ser Tyr Gly Pro Glu Ile
 145 150 155 160

Asp Ser His Asp Phe Val Leu Arg Met Asn Lys Ala Pro Thr Ala Gly
 165 170 175

Phe Glu Ala Asp Val Gly Thr Lys Thr Thr His His Leu Val Tyr Pro
 180 185 190

Glu Ser Phe Arg Glu Leu Gly Asp Asn Val Ser Met Ile Leu Val Pro
 195 200 205

Phe Lys Thr Ile Asp Leu Glu Trp Val Val Ser Ala Ile Thr Thr Gly
 210 215 220

Thr Ile Ser His Thr Tyr Ile Pro Val Pro Ala Lys Ile Arg Val Lys
 225 230 235 240

Gln Asp Lys Ile Leu Ile Tyr His Pro Ala Phe Ile Lys Tyr Val Phe
 245 250 255

Asp Asn Trp Leu Gln Gly His Gly Arg Tyr Pro Ser Thr Gly Ile Leu
 260 265 270

Ser Val Ile Phe Ser Met His Val Cys Asp Glu Val Asp Leu Tyr Gly
 275 280 285

Phe Gly Ala Asp Ser Lys Gly Asn Trp His His Tyr Trp Glu Asn Asn
 290 295 300

Pro Ser Ala Gly Ala Phe Arg Lys Thr Gly Val His Asp Ala Asp Phe
 305 310 315 320

Glu Ser Asn Val Thr Ala Thr Leu Ala Ser Ile Asn Lys Ile Arg Ile
 325 330 335

Phe Lys Gly Arg
340

<210> 751
<211> 525
<212> PRT
<213> Homo sapiens

<400> 751

Met Pro Leu Phe Thr Ala Asn Pro Phe Glu Gln Asp Val Glu Lys Ala
1 5 10 15

Thr Asn Glu Tyr Asn Thr Thr Glu Asp Trp Ser Leu Ile Met Asp Ile
20 25 30

Cys Asp Lys Val Gly Ser Thr Pro Asn Gly Ala Lys Asp Cys Leu Lys
35 40 45

Ala Ile Met Lys Arg Val Asn His Lys Val Pro His Val Ala Leu Gln
50 55 60

Ala Leu Thr Leu Leu Gly Ala Cys Val Ala Asn Cys Gly Lys Ile Phe
65 70 75 80

His Leu Glu Val Cys Ser Arg Asp Phe Ala Thr Glu Val Arg Ala Val
85 90 95

Ile Lys Asn Lys Ala His Pro Lys Val Cys Glu Lys Leu Lys Ser Leu
100 105 110

Met Val Glu Trp Ser Glu Glu Phe Gln Lys Asp Pro Gln Phe Ser Leu
115 120 125

Ile Ser Ala Thr Ile Lys Ser Met Lys Glu Glu Gly Ile Thr Phe Pro
130 135 140

Pro Ala Gly Ser Gln Thr Val Ser Ala Ala Lys Asn Gly Thr Ser
145 150 155 160

Ser Asn Lys Asn Lys Glu Asp Glu Asp Ile Ala Lys Ala Ile Glu Leu
165 170 175

Ser Leu Gln Glu Gln Lys Gln Gln His Thr Glu Thr Lys Ser Leu Tyr
180 185 190

Pro Ser Ser Glu Ile Gln Leu Asn Asn Lys Val Ala Arg Lys Val Arg
195 200 205

Ala Leu Tyr Asp Phe Glu Ala Val Glu Asp Asn Glu Leu Thr Phe Lys
210 215 220

His Gly Glu Ile Ile Ile Val Leu Asp Asp Ser Asp Ala Asn Trp Trp
Page 1276

225 230 235 240
 Lys Gly Glu Asn His Arg Gly Ile Gly Leu Phe Pro Ser Asn Phe Val
 245 250 255
 Thr Thr Asn Leu Asn Ile Glu Thr Glu Ala Ala Ala Val Asp Lys Leu
 260 265 270
 Asn Val Ile Asp Asp Asp Val Glu Glu Ile Lys Lys Ser Glu Pro Glu
 275 280 285
 Pro Val Tyr Ile Asp Glu Asp Lys Met Asp Arg Ala Leu Gln Val Leu
 290 295 300
 Gln Ser Ile Asp Pro Thr Asp Ser Lys Pro Asp Ser Gln Asp Leu Leu
 305 310 315 320
 Asp Leu Glu Asp Ile Cys Gln Gln Met Gly Pro Met Ile Asp Glu Lys
 325 330 335
 Leu Glu Glu Ile Asp Arg Lys His Ser Glu Leu Ser Glu Leu Asn Val
 340 345 350
 Lys Val Leu Glu Ala Leu Glu Leu Tyr Asn Lys Leu Val Asn Glu Ala
 355 360 365
 Pro Val Tyr Ser Val Tyr Ser Lys Leu His Pro Pro Ala His Tyr Pro
 370 375 380
 Pro Ala Ser Ser Gly Val Pro Met Gln Thr Tyr Pro Val Gln Ser His
 385 390 395 400
 Gly Gly Asn Tyr Met Gly Gln Ser Ile His Gln Val Thr Val Ala Gln
 405 410 415
 Ser Tyr Ser Leu Gly Pro Asp Gln Ile Gly Pro Leu Arg Ser Leu Pro
 420 425 430
 Pro Asn Val Asn Ser Ser Val Thr Ala Gln Pro Ala Gln Thr Ser Tyr
 435 440 445
 Leu Ser Thr Gly Gln Asp Thr Val Ser Asn Pro Thr Tyr Met Asn Gln
 450 455 460
 Asn Ser Asn Leu Gln Ser Ala Thr Gly Thr Thr Ala Tyr Thr Gln Gln
 465 470 475 480
 Met Gly Met Ser Val Asp Met Ser Ser Tyr Gln Asn Thr Thr Ser Asn
 485 490 495
 Leu Pro Gln Leu Ala Gly Phe Pro Val Thr Val Pro Ala His Pro Val

500

505

510

Ala Gln Gln His Thr Asn Tyr His Gln Gln Pro Leu Leu
 515 520 525

<210> 752
 <211> 750
 <212> PRT
 <213> Homo sapiens

<400> 752

Met Ser Gln Trp Tyr Glu Leu Gln Gln Leu Asp Ser Lys Phe Leu Glu
 1 5 10 15

Gln Val His Gln Leu Tyr Asp Asp Ser Phe Pro Met Glu Ile Arg Gln
 20 25 30

Tyr Leu Ala Gln Trp Leu Glu Lys Gln Asp Trp Glu His Ala Ala Asn
 35 40 45

Asp Val Ser Phe Ala Thr Ile Arg Phe His Asp Leu Leu Ser Gln Leu
 50 55 60

Asp Asp Gln Tyr Ser Arg Phe Ser Leu Glu Asn Asn Phe Leu Leu Gln
 65 70 75 80

His Asn Ile Arg Lys Ser Lys Arg Asn Leu Gln Asp Asn Phe Gln Glu
 85 90 95

Asp Pro Ile Gln Met Ser Met Ile Ile Tyr Ser Cys Leu Lys Glu Glu
 100 105 110

Arg Lys Ile Leu Glu Asn Ala Gln Arg Phe Asn Gln Ala Gln Ser Gly
 115 120 125

Asn Ile Gln Ser Thr Val Met Leu Asp Lys Gln Lys Glu Leu Asp Ser
 130 135 140

Lys Val Arg Asn Val Lys Asp Lys Val Met Cys Ile Glu His Glu Ile
 145 150 155 160

Lys Ser Leu Glu Asp Leu Gln Asp Glu Tyr Asp Phe Lys Cys Lys Thr
 165 170

Leu Gln Asn Arg Glu His Glu Thr Asn Gly Val Ala Lys Ser Asp Gln
 180 185 190

Lys Gln Glu Gln Leu Leu Leu Lys Lys Met Tyr Leu Met Leu Asp Asn
 195 200 205

Lys Arg Lys Glu Val Val His Lys Ile Ile Glu Leu Leu Asn Val Thr
 210 215 220

Glu Leu Thr Gln Asn Ala Leu Ile Asn Asp Glu Leu Val Glu Trp Lys
 225 230 235 240
 Arg Arg Gln Gln Ser Ala Cys Ile Gly Gly Pro Pro Asn Ala Cys Leu
 245 250 255
 Asp Gln Leu Gln Asn Trp Phe Thr Ile Val Ala Glu Ser Leu Gln Gln
 260 265 270
 Val Arg Gln Gln Leu Lys Lys Leu Glu Glu Leu Glu Gln Lys Tyr Thr
 275 280 285
 Tyr Glu His Asp Pro Ile Thr Lys Asn Lys Gln Val Leu Trp Asp Arg
 290 295 300
 Thr Phe Ser Leu Phe Gln Gln Leu Ile Gln Ser Ser Phe Val Val Glu
 305 310 315 320
 Arg Gln Pro Cys Met Pro Thr His Pro Gln Arg Pro Leu Val Leu Lys
 325 330 335
 Thr Gly Val Gln Phe Thr Val Lys Leu Arg Leu Leu Val Lys Leu Gln
 340 345 350
 Glu Leu Asn Tyr Asn Leu Lys Val Lys Val Leu Phe Asp Lys Asp Val
 355 360 365
 Asn Glu Arg Asn Thr Val Lys Gly Phe Arg Lys Phe Asn Ile Leu Gly
 370 375 380
 Thr His Thr Lys Val Met Asn Met Glu Glu Ser Thr Asn Gly Ser Leu
 385 390 395 400
 Ala Ala Glu Phe Arg His Leu Gln Leu Lys Glu Gln Lys Asn Ala Gly
 405 410 415
 Thr Arg Thr Asn Glu Gly Pro Leu Ile Val Thr Glu Glu Leu His Ser
 420 425 430
 Leu Ser Phe Glu Thr Gln Leu Cys Gln Pro Gly Leu Val Ile Asp Leu
 435 440 445
 Glu Thr Thr Ser Leu Pro Val Val Val Ile Ser Asn Val Ser Gln Leu
 450 455 460
 Pro Ser Gly Trp Ala Ser Ile Leu Trp Tyr Asn Met Leu Val Ala Glu
 465 470 475 480
 Pro Arg Asn Leu Ser Phe Phe Leu Thr Pro Pro Cys Ala Arg Trp Ala
 485 490 495

Gln Leu Ser Glu Val Leu Ser Trp Gln Phe Ser Ser Val Thr Lys Arg
 500 505 510
 Gly Leu Asn Val Asp Gln Leu Asn Met Leu Gly Glu Lys Leu Leu Gly
 515 520 525
 Pro Asn Ala Ser Pro Asp Gly Leu Ile Pro Trp Thr Arg Phe Cys Lys
 530 535 540
 Glu Asn Ile Asn Asp Lys Asn Phe Pro Phe Trp Leu Trp Ile Glu Ser
 545 550 555 560
 Ile Leu Glu Leu Ile Lys Lys His Leu Leu Pro Leu Trp Asn Asp Gly
 565 570 575
 Cys Ile Met Gly Phe Ile Ser Lys Glu Arg Glu Arg Ala Leu Leu Lys
 580 585 590
 Asp Gln Gln Pro Gly Thr Phe Leu Leu Arg Phe Ser Glu Ser Ser Arg
 595 600 605
 Glu Gly Ala Ile Thr Phe Thr Trp Val Glu Arg Ser Gln Asn Gly Gly
 610 615 620
 Glu Pro Asp Phe His Ala Val Glu Pro Tyr Thr Lys Lys Glu Leu Ser
 625 630 635 640
 Ala Val Thr Phe Pro Asp Ile Ile Arg Asn Tyr Lys Val Met Ala Ala
 645 650 655
 Glu Asn Ile Pro Glu Asn Pro Leu Lys Tyr Leu Tyr Pro Asn Ile Asp
 660 665 670
 Lys Asp His Ala Phe Gly Lys Tyr Tyr Ser Arg Pro Lys Glu Ala Pro
 675 680 685
 Glu Pro Met Glu Leu Asp Gly Pro Lys Gly Thr Gly Tyr Ile Lys Thr
 690 695 700
 Glu Leu Ile Ser Val Ser Glu Val His Pro Ser Arg Leu Gln Thr Thr
 705 710 715 720
 Asp Asn Leu Leu Pro Met Ser Pro Glu Glu Phe Asp Glu Val Ser Arg
 725 730 735
 Ile Val Gly Ser Val Glu Phe Asp Ser Met Met Asn Thr Val
 740 745 750

<210> 753

<211> 794

<212> PRT
 <213> Homo sapiens

<400> 753

Met Ala Gly Trp Ile Gln Ala Gln Gln Leu Gln Gly Asp Ala Leu Arg
 1 5 10 15

Gln Met Gln Val Leu Tyr Gly Gln His Phe Pro Ile Glu Val Arg His
 20 25 30

Tyr Leu Ala Gln Trp Ile Glu Ser Gln Pro Trp Asp Ala Ile Asp Leu
 35 40 45

Asp Asn Pro Gln Asp Arg Ala Gln Ala Thr Gln Leu Leu Glu Gly Leu
 50 55 60

Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly
 65 70 75 80

Phe Leu Leu Lys Ile Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Lys
 85 90 95

Thr Tyr Asp Arg Cys Pro Leu Glu Leu Val Arg Cys Ile Arg His Ile
 100 105 110

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Cys Ser Ser
 115 120 125

Pro Ala Gly Ile Leu Val Asp Ala Met Ser Gln Lys His Leu Gln Ile
 130 135 140

Asn Gln Thr Phe Glu Glu Leu Arg Leu Val Thr Gln Asp Thr Glu Asn
 145 150 155 160

Glu Leu Lys Lys Leu Gln Gln Thr Gln Glu Tyr Phe Ile Ile Gln Tyr
 165 170 175

Gln Glu Ser Leu Arg Ile Gln Ala Gln Phe Ala Gln Leu Ala Gln Leu
 180 185 190

Ser Pro Gln Glu Arg Leu Ser Arg Glu Thr Ala Leu Gln Gln Lys Gln
 195 200 205

Val Ser Leu Glu Ala Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
 210 215 220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu
 225 230 235 240

Arg Lys Gln Gln Thr Ile Ile Leu Asp Asp Glu Leu Ile Gln Trp Lys
 245 250 255

Arg Arg Gln Gln Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu
 260 265 270
 Asp Val Leu Gln Ser Trp Cys Glu Lys Leu Ala Glu Ile Ile Trp Gln
 275 280 285
 Asn Arg Gln Gln Ile Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro
 290 295 300
 Ile Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr Ile
 305 310 315 320
 Thr Asp Ile Ile Ser Ala Leu Val Thr Ser Thr Phe Ile Ile Glu Lys
 325 330 335
 Gln Pro Pro Gln Val Leu Lys Thr Gln Thr Lys Phe Ala Ala Thr Val
 340 345 350
 Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
 355 360 365
 Val Lys Ala Thr Ile Ile Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
 370 375 380
 Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu Ile Leu Asn Asn Cys
 385 390 395 400
 Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
 405 410 415
 Arg Asn Met Ser Leu Lys Arg Ile Lys Arg Ala Asp Arg Arg Gly Ala
 420 425 430
 Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
 435 440 445
 Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
 450 455 460
 Pro Val Val Val Ile Val His Gly Ser Gln Asp His Asn Ala Thr Ala
 465 470 475 480
 Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
 485 490 495
 Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
 500 505 510
 Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
 515 520 525

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Asn Ser Ser Ser His
 530 535 540
 Leu Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg
 545 550 555 560
 Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly
 565 570 575
 Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly
 580 585 590
 Ala Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile
 595 600 605
 Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu Ile
 610 615 620
 Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Pro Glu Arg Asn Leu
 625 630 635 640
 Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu
 645 650 655
 Ala Asp Arg Leu Gly Asp Leu Ser Tyr Leu Ile Tyr Val Phe Pro Asp
 660 665 670
 Arg Pro Lys Asp Glu Val Phe Ser Lys Tyr Tyr Thr Pro Val Leu Ala
 675 680 685
 Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile Lys Gln Val Val Pro
 690 695 700
 Glu Phe Val Asn Ala Ser Ala Asp Ala Gly Gly Ser Ser Ala Thr Tyr
 705 710 715 720
 Met Asp Gln Ala Pro Ser Pro Ala Val Cys Pro Gln Ala Pro Tyr Asn
 725 730 735
 Met Tyr Pro Gln Asn Pro Asp His Val Leu Asp Gln Asp Gly Glu Phe
 740 745 750
 Asp Leu Asp Glu Thr Met Asp Val Ala Arg His Val Glu Glu Leu Leu
 755 760 765
 Arg Arg Pro Met Asp Ser Leu Asp Ser Arg Leu Ser Pro Pro Ala Gly
 770 775 780
 Leu Phe Thr Ser Ala Arg Gly Ser Leu Ser
 785 790

<210> 754
 <211> 787
 <212> PRT
 <213> Homo sapiens

<400> 754

Met Ala Val Trp Ile Gln Ala Gln Gln Leu Gln Gly Glu Ala Leu His
 1 5 10 15

Gln Met Gln Ala Leu Tyr Gly Gln His Phe Pro Ile Glu Val Arg His
 20 25 30

Tyr Leu Ser Gln Trp Ile Glu Ser Gln Ala Trp Asp Ser Val Asp Leu
 35 40 45

Asp Asn Pro Gln Glu Asn Ile Lys Ala Thr Gln Leu Leu Glu Gly Leu
 50 55 60

Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly
 65 70 75 80

Phe Leu Leu Lys Ile Lys Leu Gly His Tyr Ala Thr Gln Leu Gln Asn
 85 90 95

Thr Tyr Asp Arg Cys Pro Met Glu Leu Val Arg Cys Ile Arg His Ile
 100 105 110

Leu Tyr Asn Glu Gln Arg Leu Val Arg Glu Ala Asn Asn Gly Ser Ser
 115 120 125

Pro Ala Gly Ser Leu Ala Asp Ala Met Ser Gln Lys His Leu Gln Ile
 130 135 140

Asn Gln Thr Phe Glu Glu Leu Arg Leu Val Thr Gln Asp Thr Glu Asn
 145 150 155 160

Glu Leu Lys Lys Leu Gln Gln Thr Gln Glu Tyr Phe Ile Ile Gln Tyr
 165 170 175

Gln Glu Ser Leu Arg Ile Gln Ala Gln Phe Gly Pro Leu Ala Gln Leu
 180 185 190

Ser Pro Gln Glu Arg Leu Ser Arg Glu Thr Ala Leu Gln Gln Lys Gln
 195 200 205

Val Ser Leu Glu Ala Trp Leu Gln Arg Glu Ala Gln Thr Leu Gln Gln
 210 215 220

Tyr Arg Val Glu Leu Ala Glu Lys His Gln Lys Thr Leu Gln Leu Leu
 225 230 235 240

Arg Lys Gln Gln Thr Ile Ile Leu Asp Asp Glu Leu Ile Gln Trp Lys
 245 250 255
 Arg Arg Gln Gln Leu Ala Gly Asn Gly Gly Pro Pro Glu Gly Ser Leu
 260 265 270
 Asp Val Leu Gln Ser Trp Cys Glu Lys Leu Ala Glu Ile Ile Trp Gln
 275 280 285
 Asn Arg Gln Gln Ile Arg Arg Ala Glu His Leu Cys Gln Gln Leu Pro
 290 295 300
 Ile Pro Gly Pro Val Glu Glu Met Leu Ala Glu Val Asn Ala Thr Ile
 305 310 315 320
 Thr Asp Ile Ile Ser Ala Leu Val Thr Ser Thr Phe Ile Ile Glu Lys
 325 330 335
 Gln Pro Pro Gln Val Leu Lys Thr Gln Thr Lys Phe Ala Ala Thr Val
 340 345 350
 Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
 355 360 365
 Val Lys Ala Thr Ile Ile Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
 370 375 380
 Asn Glu Asn Thr Arg Asn Asp Tyr Ser Gly Glu Ile Leu Asn Asn Cys
 385 390 395 400
 Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
 405 410 415
 Arg Asn Met Ser Leu Lys Arg Ile Lys Arg Ser Asp Arg Arg Gly Ala
 420 425 430
 Glu Ser Val Thr Glu Glu Lys Phe Thr Ile Leu Phe Glu Ser Gln Phe
 435 440 445
 Ser Val Gly Gly Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
 450 455 460
 Pro Val Val Val Ile Val His Gly Ser Gln Asp Asn Asn Ala Thr Ala
 465 470 475 480
 Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
 485 490 495
 Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
 500 505 510

Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
 515 520 525

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Asn Ser Ser Ser His
 530 535 540

Leu Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg
 545 550 555 560

Glu Asn Leu Pro Gly Arg Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly
 565 570 575

Val Met Glu Val Leu Lys Lys His Leu Lys Pro His Trp Asn Asp Gly
 580 585 590

Ala Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile
 595 600 605

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu Ile
 610 615 620

Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Gln Glu Arg Met Phe
 625 630 635 640

Trp Asn Leu Met Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu
 645 650 655

Ala Asp Arg Leu Gly Asp Leu Asn Tyr Leu Ile Tyr Val Phe Pro Asp
 660 665 670

Arg Pro Lys Asp Glu Val Tyr Ser Lys Tyr Tyr Thr Pro Val Pro Cys
 675 680 685

Glu Ser Ala Thr Ala Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile
 690 695 700

Lys Gln Val Val Pro Glu Phe Val Asn Ala Ser Ala Asp Ala Gly Gly
 705 710 715 720

Gly Ser Ala Thr Tyr Met Asp Gln Ala Pro Ser Pro Ala Val Cys Pro
 725 730 735

Gln Ala His Tyr Asn Met Tyr Pro Gln Asn Pro Asp Ser Val Leu Asp
 740 745 750

Thr Asp Gly Asp Phe Asp Leu Glu Asp Thr Met Asp Val Ala Arg Arg
 755 760 765

Val Glu Glu Leu Leu Gly Arg Pro Met Asp Ser Gln Trp Ile Pro His
 770 775 780

Ala Gln Ser
785

<210> 755
<211> 464
<212> PRT
<213> Homo sapiens

<400> 755

Met Ala Met Thr Ala Gly Thr Thr Thr Thr Phe Pro Met Ser Asn His
1 5 10 15

Thr Arg Glu Arg Val Thr Val Ala Lys Leu Thr Leu Glu Asn Phe Tyr
20 25 30

Ser Asn Leu Ile Leu Gln His Glu Glu Arg Glu Thr Arg Gln Lys Lys
35 40 45

Leu Glu Val Ala Met Glu Glu Glu Gly Leu Ala Asp Glu Glu Lys Lys
50 55 60

Leu Arg Arg Ser Gln His Ala Arg Lys Glu Thr Glu Phe Leu Arg Leu
65 70 75 80

Lys Arg Thr Arg Leu Gly Leu Asp Asp Phe Glu Ser Leu Lys Val Ile
85 90 95

Gly Arg Gly Ala Phe Gly Glu Val Arg Leu Val Gln Lys Lys Asp Thr
100 105 110

Gly His Ile Tyr Ala Met Lys Ile Leu Arg Lys Ser Asp Met Leu Glu
115 120 125

Lys Glu Gln Val Ala His Ile Arg Ala Glu Arg Asp Ile Leu Val Glu
130 135 140

Ala Asp Gly Ala Trp Val Val Lys Met Phe Tyr Ser Phe Gln Asp Lys
145 150 155 160

Arg Asn Leu Tyr Leu Ile Met Glu Phe Leu Pro Gly Gly Asp Met Met
165 170 175

Thr Leu Leu Met Lys Lys Asp Thr Leu Thr Glu Glu Glu Thr Gln Phe
180 185 190

Tyr Ile Ser Glu Thr Val Leu Ala Ile Asp Ala Ile His Gln Leu Gly
195 200 205

Phe Ile His Arg Asp Ile Lys Pro Asp Asn Leu Leu Leu Asp Ala Lys
210 215 220

Gly His Val Lys Leu Ser Asp Phe Gly Leu Cys Thr Gly Leu Lys Lys

225 230 235 240

Ala His Arg Thr Glu Phe Tyr Arg Asn Leu Thr His Asn Pro Pro Ser
245 250 255

Asp Phe Ser Phe Gln Asn Met Asn Ser Lys Arg Lys Ala Glu Thr Trp
260 265 270

Lys Lys Asn Arg Arg Gln Leu Ala Tyr Ser Thr Val Gly Thr Pro Asp
275 280 285

Tyr Ile Ala Pro Glu Val Phe Met Gln Thr Gly Tyr Asn Lys Leu Cys
290 295 300

Asp Trp Trp Ser Leu Gly Val Ile Met Tyr Glu Met Leu Ile Gly Tyr
305 310 315 320

Pro Pro Phe Cys Ser Glu Thr Pro Gln Glu Thr Tyr Arg Lys Val Met
325 330 335

Asn Trp Lys Glu Thr Leu Val Phe Pro Pro Glu Val Pro Ile Ser Glu
340 345 350

Lys Ala Lys Asp Leu Ile Leu Arg Phe Cys Ile Asp Ser Glu Asn Arg
355 360 365

Ile Gly Asn Ser Gly Val Glu Glu Ile Lys Gly His Pro Phe Phe Glu
370 375 380

Gly Val Asp Trp Glu His Ile Arg Glu Arg Pro Ala Ala Ile Pro Ile
385 390 395 400

Glu Ile Lys Ser Ile Asp Asp Thr Ser Asn Phe Asp Asp Phe Pro Glu
405 410 415

Ser Asp Ile Leu Gln Pro Val Pro Asn Thr Thr Glu Pro Asp Tyr Lys
420 425 430

Ser Lys Asp Trp Val Phe Leu Asn Tyr Thr Tyr Lys Arg Phe Glu Gly
435 440 445

Leu Thr Gln Arg Gly Ser Ile Pro Thr Tyr Met Lys Ala Gly Lys Leu
450 455 460

<210> 756

<211> 249

<212> PRT

<213> Homo sapiens

<400> 756

Met Ser Leu Glu Asp Pro Phe Phe Val Val Arg Gly Glu Val Gln Lys
1 5 10 15

Ala Val Asn Thr Ala Arg Gly Leu Tyr Gln Arg Trp Cys Glu Leu Leu
20 25 30

Gln Glu Ser Ala Ala Val Gly Arg Glu Glu Leu Asp Trp Thr Thr Asn
35 40 45

Glu Leu Arg Asn Gly Leu Arg Ser Ile Glu Trp Asp Leu Glu Asp Leu
50 55 60

Glu Glu Thr Ile Gly Ile Val Glu Ala Asn Pro Gly Lys Phe Lys Leu
65 70 75 80

Pro Ala Gly Asp Leu Gln Glu Arg Lys Val Phe Val Glu Arg Met Arg
85 90 95

Glu Ala Val Gln Glu Met Lys Asp His Met Val Ser Pro Thr Ala Val
100 105 110

Ala Phe Leu Glu Arg Asn Asn Arg Glu Ile Leu Ala Gly Lys Pro Ala
115 120 125

Ala Gln Lys Ser Pro Ser Asp Leu Leu Asp Ala Ser Ala Val Ser Ala
130 135 140

Thr Ser Arg Tyr Ile Glu Glu Gln Gln Ala Thr Gln Gln Leu Ile Met
145 150 155 160

Asp Glu Gln Asp Gln Gln Leu Glu Met Val Ser Gly Ser Ile Gln Val
165 170 175

Leu Lys His Met Ser Gly Arg Val Gly Glu Glu Leu Asp Glu Gln Gly
180 185 190

Ile Met Leu Asp Ala Phe Ala Gln Glu Met Asp His Thr Gln Ser Arg
195 200 205

Met Asp Gly Val Leu Arg Lys Leu Ala Lys Val Ser His Met Thr Ser
210 215 220

Asp Arg Arg Gln Trp Cys Ala Ile Ala Val Leu Val Gly Val Leu Leu
225 230 235 240

Leu Val Leu Ile Leu Leu Phe Ser Leu
245

<210> 757
<211> 289
<212> PRT
<213> Homo sapiens

<400> 757

Met Lys Asp Arg Leu Glu Gln Leu Lys Ala Lys Gln Leu Thr Gln Asp
 1 5 10 15
 Asp Asp Thr Asp Ala Val Glu Ile Ala Ile Asp Asn Thr Ala Phe Met
 20 25 30
 Asp Glu Phe Phe Ser Glu Ile Glu Glu Thr Arg Leu Asn Ile Asp Lys
 35 40 45
 Ile Ser Glu His Val Glu Glu Ala Lys Lys Leu Tyr Ser Ile Ile Leu
 50 55 60
 Ser Ala Pro Ile Pro Glu Pro Lys Thr Lys Asp Asp Leu Glu Gln Leu
 65 70 75 80
 Thr Thr Glu Ile Lys Lys Arg Ala Asn Asn Val Arg Asn Lys Leu Lys
 85 90 95
 Ser Met Glu Lys His Ile Glu Glu Asp Glu Val Arg Ser Ser Ala Asp
 100 105 110
 Leu Arg Ile Arg Lys Ser Gln His Ser Val Leu Ser Arg Lys Phe Val
 115 120 125
 Glu Val Met Thr Lys Tyr Asn Glu Ala Gln Val Asp Phe Arg Glu Arg
 130 135 140
 Ser Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Lys Lys Thr
 145 150 155 160
 Thr Asp Glu Glu Leu Glu Glu Met Leu Glu Ser Gly Asn Pro Ala Ile
 165 170 175
 Phe Thr Ser Gly Ile Ile Asp Ser Gln Ile Ser Lys Gln Ala Leu Ser
 180 185 190
 Glu Ile Glu Gly Arg His Lys Asp Ile Val Arg Leu Glu Ser Ser Ile
 195 200 205
 Lys Glu Leu His Asp Met Phe Met Asp Ile Ala Met Leu Val Glu Asn
 210 215 220
 Gln Gly Glu Met Leu Asp Asn Ile Glu Leu Asn Val Met His Thr Val
 225 230 235 240
 Asp His Val Glu Lys Ala Arg Asp Glu Thr Lys Lys Ala Val Lys Tyr
 245 250 255
 Gln Ser Gln Ala Arg Lys Lys Leu Ile Ile Ile Ile Val Leu Val Val
 260 265 270

Val Leu Leu Gly Ile Leu Ala Leu Ile Ile Gly Leu Ser Val Gly Leu
 275 280 285

Asn

<210> 758
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 758

Met Ser Met Glu Asp Pro Phe Phe Val Val Lys Gly Glu Val Gln Lys
 1 5 10 15

Ala Val Asn Thr Ala Gln Gly Leu Phe Gln Arg Trp Thr Glu Leu Leu
 20 25 30

Gln Asp Pro Ser Thr Ala Thr Arg Glu Glu Ile Asp Trp Thr Thr Asn
 35 40 45

Glu Leu Arg Asn Asn Leu Arg Ser Ile Glu Trp Asp Leu Glu Asp Leu
 50 55 60

Asp Glu Thr Ile Ser Ile Val Glu Ala Asn Pro Arg Lys Phe Asn Leu
 65 70 75 80

Asp Ala Thr Glu Leu Ser Ile Arg Lys Ala Phe Ile Thr Ser Thr Arg
 85 90 95

Gln Val Val Arg Asp Met Lys Asp Gln Met Ser Thr Ser Ser Val Gln
 100 105 110

Ala Leu Ala Glu Arg Lys Asn Arg Gln Ala Leu Leu Gly Asp Ser Gly
 115 120 125

Ser Gln Asn Trp Ser Thr Gly Thr Thr Asp Lys Tyr Gly Arg Leu Asp
 130 135 140

Arg Glu Leu Gln Arg Ala Asn Ser His Phe Ile Glu Glu Gln Gln Ala
 145 150 155 160

Gln Gln Gln Leu Ile Val Glu Gln Gln Asp Glu Gln Leu Glu Leu Val
 165 170 175

Ser Gly Ser Ile Gly Val Leu Lys Asn Met Ser Gln Arg Ile Gly Gly
 180 185 190

Glu Leu Glu Glu Gln Ala Val Met Leu Glu Asp Phe Ser His Glu Leu
 195 200 205

Glu Ser Thr Gln Ser Arg Leu Asp Asn Val Met Lys Lys Leu Ala Lys
 210 215 220

Val Ser His Met Thr Ser Asp Arg Arg Gln Trp Cys Ala Ile Ala Ile
 225 230 235 240

Leu Phe Ala Val Leu Leu Val Val Leu Ile Leu Phe Leu Val Leu
 245 250 255

<210> 759
 <211> 259
 <212> PRT
 <213> Homo sapiens

<400> 759

Met Ala Pro Asn Ile Tyr Leu Val Arg Gln Arg Ile Ser Arg Leu Gly
 1 5 10 15

Gln Arg Met Ser Gly Phe Gln Ile Asn Leu Asn Pro Leu Lys Glu Pro
 20 25 30

Leu Gly Phe Ile Lys Val Leu Glu Trp Ile Ala Ser Ile Phe Ala Phe
 35 40 45

Ala Thr Cys Gly Gly Phe Lys Gly Gln Thr Glu Ile Gln Val Asn Cys
 50 55 60

Pro Pro Ala Val Thr Glu Asn Lys Thr Val Thr Ala Thr Phe Gly Tyr
 65 70 75 80

Pro Phe Arg Leu Asn Glu Ala Ser Phe Gln Pro Pro Pro Gly Val Asn
 85 90 95

Ile Cys Asp Val Asn Trp Lys Asp Tyr Val Leu Ile Gly Asp Tyr Ser
 100 105 110

Ser Ser Ala Gln Phe Tyr Val Thr Phe Ala Val Phe Val Phe Leu Tyr
 115 120 125

Cys Ile Ala Ala Leu Leu Leu Tyr Val Gly Tyr Thr Ser Leu Tyr Leu
 130 135 140

Asp Ser Arg Lys Leu Pro Met Ile Asp Phe Val Val Thr Leu Val Ala
 145 150 155 160

Thr Phe Leu Trp Leu Val Ser Thr Ser Ala Trp Ala Lys Ala Leu Thr
 165 170 175

Asp Ile Lys Ile Ala Thr Gly His Asn Ile Ile Asp Glu Leu Pro Pro
 180 185 190

Cys Lys Lys Lys Ala Val Leu Cys Tyr Phe Gly Ser Val Thr Ser Met
 Page 1292

195

200

205

Gly Ser Leu Asn Val Ser Val Ile Phe Gly Phe Leu Asn Met Ile Leu
 210 215 220

Trp Gly Gly Asn Ala Trp Phe Val Tyr Lys Glu Thr Ser Leu His Ser
 225 230 235 240

Pro Ser Asn Thr Ser Ala Pro His Ser Gln Gly Gly Ile Pro Pro Pro
 245 250 255

Thr Gly Ile

<210> 760
 <211> 808
 <212> PRT
 <213> Homo sapiens

<400> 760

Met Ala Glu Leu Leu Ala Ser Ala Gly Ser Ala Cys Ser Trp Asp Phe
 1 5 10 15

Pro Arg Ala Pro Pro Ser Phe Pro Pro Pro Ala Ala Ser Arg Gly Gly
 20 25 30

Leu Gly Gly Thr Arg Ser Phe Arg Pro His Arg Gly Ala Glu Ser Pro
 35 40 45

Arg Pro Gly Arg Asp Arg Asp Gly Val Arg Val Pro Met Ala Ser Ser
 50 55 60

Arg Cys Pro Ala Pro Arg Gly Cys Arg Cys Leu Pro Gly Ala Ser Leu
 65 70 75 80

Ala Trp Leu Gly Thr Val Leu Leu Leu Leu Ala Asp Trp Val Leu Leu
 85 90 95

Arg Thr Ala Leu Pro Arg Ile Phe Ser Leu Leu Val Pro Thr Ala Leu
 100 105 110

Pro Leu Leu Arg Val Trp Ala Val Gly Leu Ser Arg Trp Ala Val Leu
 115 120 125

Trp Leu Gly Ala Cys Gly Val Leu Arg Ala Thr Val Gly Ser Lys Ser
 130 135 140

Glu Asn Ala Gly Ala Gln Gly Trp Leu Ala Ala Leu Lys Pro Leu Ala
 145 150 155 160

Ala Ala Leu Gly Leu Ala Leu Pro Gly Leu Ala Leu Phe Arg Glu Leu
 165 170 175

Ile Ser Trp Gly Ala Pro Gly Ser Ala Asp Ser Thr Arg Leu Leu His
 180 185 190
 Trp Gly Ser His Pro Thr Ala Phe Val Val Ser Tyr Ala Ala Ala Leu
 195 200 205
 Pro Ala Ala Ala Leu Trp His Lys Leu Gly Ser Leu Trp Val Pro Gly
 210 215 220
 Gly Gln Gly Gly Ser Gly Asn Pro Val Arg Arg Leu Leu Gly Cys Leu
 225 230 235 240
 Gly Ser Glu Thr Arg Arg Leu Ser Leu Phe Leu Val Leu Val Val Leu
 245 250 255
 Ser Ser Leu Gly Glu Met Ala Ile Pro Phe Phe Thr Gly Arg Leu Thr
 260 265 270
 Asp Trp Ile Leu Gln Asp Gly Ser Ala Asp Thr Phe Thr Arg Asn Leu
 275 280 285
 Thr Leu Met Ser Ile Leu Thr Ile Ala Ser Ala Val Leu Glu Phe Val
 290 295 300
 Gly Asp Gly Ile Tyr Asn Asn Thr Met Gly His Val His Ser His Leu
 305 310 315 320
 Gln Gly Glu Val Phe Gly Ala Val Leu Arg Gln Glu Thr Glu Phe Phe
 325 330 335
 Gln Gln Asn Gln Thr Gly Asn Ile Met Ser Arg Val Thr Glu Asp Thr
 340 345 350
 Ser Thr Leu Ser Asp Ser Leu Ser Glu Asn Leu Ser Leu Phe Leu Trp
 355 360 365
 Tyr Leu Val Arg Gly Leu Cys Leu Leu Gly Ile Met Leu Trp Gly Ser
 370 375 380
 Val Ser Leu Thr Met Val Thr Leu Ile Thr Leu Pro Leu Leu Phe Leu
 385 390 395 400
 Leu Pro Lys Lys Val Gly Lys Trp Tyr Gln Leu Leu Glu Val Gln Val
 405 410 415
 Arg Glu Ser Leu Ala Lys Ser Ser Gln Val Ala Ile Glu Ala Leu Ser
 420 425 430
 Ala Met Pro Thr Val Arg Ser Phe Ala Asn Glu Glu Gly Glu Ala Gln
 435 440 445

Lys Phe Arg Glu Lys Leu Gln Glu Ile Lys Thr Leu Asn Gln Lys Glu
 450 455 460
 Ala Val Ala Tyr Ala Val Asn Ser Trp Thr Thr Ser Ile Ser Gly Met
 465 470 475 480
 Leu Leu Lys Val Gly Ile Leu Tyr Ile Gly Gly Gln Leu Val Thr Ser
 485 490 495
 Gly Ala Val Ser Ser Gly Asn Leu Val Thr Phe Val Leu Tyr Gln Met
 500 505 510
 Gln Phe Thr Gln Ala Val Glu Val Leu Leu Ser Ile Tyr Pro Arg Val
 515 520 525
 Gln Lys Ala Val Gly Ser Ser Glu Lys Ile Phe Glu Tyr Leu Asp Arg
 530 535 540
 Thr Pro Arg Cys Pro Pro Ser Gly Leu Leu Thr Pro Leu His Leu Glu
 545 550 555 560
 Gly Leu Val Gln Phe Gln Asp Val Ser Phe Ala Tyr Pro Asn Arg Pro
 565 570 575
 Asp Val Leu Val Leu Gln Gly Leu Thr Phe Thr Leu Arg Pro Gly Glu
 580 585 590
 Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys Ser Thr Val Ala
 595 600 605
 Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly Gln Leu Leu Leu
 610 615 620
 Asp Gly Lys Pro Leu Pro Gln Tyr Glu His Arg Tyr Leu His Arg Gln
 625 630 635 640
 Val Ala Ala Val Gly Gln Glu Pro Gln Val Phe Gly Arg Ser Leu Gln
 645 650 655
 Glu Asn Ile Ala Tyr Gly Leu Thr Gln Lys Pro Thr Met Glu Glu Ile
 660 665 670
 Thr Ala Ala Ala Val Lys Ser Gly Ala His Ser Phe Ile Ser Gly Leu
 675 680 685
 Pro Gln Gly Tyr Asp Thr Glu Val Asp Glu Ala Gly Ser Gln Leu Ser
 690 695 700
 Gly Gly Gln Arg Gln Ala Val Ala Leu Ala Arg Ala Leu Ile Arg Lys
 705 710 715 720

Pro Cys Val Leu Ile Leu Asp Asp Ala Thr Ser Ala Leu Asp Ala Asn
 725 730 735

Ser Gln Leu Gln Val Glu Gln Leu Leu Tyr Glu Ser Pro Glu Arg Tyr
 740 745 750

Ser Arg Ser Val Leu Leu Ile Thr Gln His Leu Ser Leu Val Glu Gln
 755 760 765

Ala Asp His Ile Leu Phe Leu Glu Gly Gly Ala Ile Arg Glu Gly Gly
 770 775 780

Thr His Gln Gln Leu Met Glu Lys Lys Gly Cys Tyr Trp Ala Met Val
 785 790 795 800

Gln Ala Pro Ala Asp Ala Pro Glu
 805

<210> 761
 <211> 575
 <212> PRT
 <213> Homo sapiens

<400> 761

Met Ser His Ala Ala Glu Pro Ala Arg Asp Gly Val Glu Ala Ser Ala
 1 5 10 15

Glu Gly Pro Arg Ala Val Phe Val Leu Leu Glu Glu Arg Arg Pro Ala
 20 25 30

Asp Ser Ala Gln Leu Leu Ser Leu Asn Ser Leu Leu Pro Glu Ser Gly
 35 40 45

Ile Val Ala Asp Ile Glu Leu Glu Asn Val Leu Asp Pro Asp Ser Phe
 50 55 60

Tyr Glu Leu Lys Ser Gln Pro Leu Pro Leu Arg Ser Ser Leu Pro Ile
 65 70 75 80

Ser Leu Gln Ala Thr Pro Ala Thr Pro Ala Thr Leu Ser Ala Ser Ser
 85 90 95

Ser Ala Gly Gly Ser Arg Thr Pro Ala Met Ser Ser Ser Ser Ser Ser
 100 105 110

Arg Val Leu Leu Arg Gln Gln Leu Met Arg Ala Gln Ala Gln Glu Gln
 115 120 125

Glu Arg Arg Glu Arg Arg Glu Gln Ala Ala Ala Ala Pro Phe Pro Ser
 130 135 140

Pro Ala Pro Ala Ser Pro Ala Ile Ser Val Val Gly Val Ser Ala Gly
 145 150 155 160
 Gly His Thr Leu Ser Arg Pro Pro Pro Ala Gln Val Pro Arg Glu Val
 165 170 175
 Leu Lys Val Gln Thr His Leu Glu Asn Pro Thr Arg Tyr His Leu Gln
 180 185 190
 Gln Ala Arg Arg Gln Gln Val Lys Gln Tyr Leu Ser Thr Thr Leu Gly
 195 200 205
 Pro Lys Leu Ala Ser Gln Ala Leu Thr Pro Pro Pro Gly Pro Ala Ser
 210 215 220
 Ala Gln Pro Leu Pro Ala Pro Glu Ala Ala His Thr Thr Gly Pro Thr
 225 230 235 240
 Gly Ser Ala Pro Asn Ser Pro Met Ala Leu Leu Thr Ile Gly Ser Ser
 245 250 255
 Ser Glu Lys Glu Ile Asp Asp Val Ile Asp Glu Ile Ile Ser Leu Glu
 260 265 270
 Ser Ser Tyr Asn Asp Glu Met Leu Ser Tyr Leu Pro Gly Gly Thr Thr
 275 280 285
 Gly Leu Gln Leu Pro Ser Thr Leu Pro Val Ser Gly Asn Leu Leu Asp
 290 295 300
 Val Tyr Ser Ser Gln Gly Val Ala Thr Pro Ala Ile Thr Val Ser Asn
 305 310 315 320
 Ser Cys Pro Ala Glu Leu Pro Asn Ile Lys Arg Glu Ile Ser Glu Thr
 325 330 335
 Glu Ala Lys Ala Leu Leu Lys Glu Arg Gln Lys Lys Asp Asn His Asn
 340 345 350
 Leu Ile Glu Arg Arg Arg Arg Phe Asn Ile Asn Asp Arg Ile Lys Glu
 355 360 365
 Leu Gly Thr Leu Ile Pro Lys Ser Ser Asp Pro Glu Met Arg Trp Asn
 370 375 380
 Lys Gly Thr Ile Leu Lys Ala Ser Val Asp Tyr Ile Arg Lys Leu Gln
 385 390 395 400
 Lys Glu Gln Gln Arg Ser Lys Asp Leu Glu Ser Arg Gln Arg Ser Leu
 405 410 415

Glu Gln Ala Asn Arg Ser Leu Gln Leu Arg Ile Gln Glu Leu Glu Leu
 420 425 430

Gln Ala Gln Ile His Gly Leu Pro Val Pro Pro Thr Pro Gly Leu Leu
 435 440 445

Ser Leu Ala Thr Thr Ser Ala Ser Asp Ser Leu Lys Pro Glu Gln Leu
 450 455 460

Asp Ile Glu Glu Glu Gly Arg Pro Gly Ala Ala Thr Phe His Val Gly
 465 470 475 480

Gly Gly Pro Ala Gln Asn Ala Pro His Gln Gln Pro Pro Ala Pro Pro
 485 490 495

Ser Asp Ala Leu Leu Asp Leu His Phe Pro Ser Asp His Leu Gly Asp
 500 505 510

Leu Gly Asp Pro Phe His Leu Gly Leu Glu Asp Ile Leu Met Glu Glu
 515 520 525

Glu Glu Gly Val Val Gly Gly Leu Ser Gly Gly Ala Leu Ser Pro Leu
 530 535 540

Arg Ala Ala Ser Asp Pro Leu Leu Ser Ser Val Ser Pro Ala Val Ser
 545 550 555 560

Lys Ala Ser Ser Arg Arg Ser Ser Phe Ser Met Glu Glu Glu Ser
 565 570 575

<210> 762
 <211> 476
 <212> PRT
 <213> Homo sapiens

<400> 762

Met Ala Ser Arg Ile Gly Leu Arg Met Gln Leu Met Arg Glu Gln Ala
 1 5 10 15

Gln Gln Glu Glu Gln Arg Glu Arg Met Gln Gln Gln Ala Val Met His
 20 25 30

Tyr Met Gln Gln Gln Gln Gln Gln Gln Gln Gln Leu Gly Gly Pro
 35 40 45

Pro Thr Pro Ala Ile Asn Thr Pro Val His Phe Gln Ser Pro Pro Pro
 50 55 60

Val Pro Gly Glu Val Leu Lys Val Gln Ser Tyr Leu Glu Asn Pro Thr
 65 70 75 80

Ser Tyr His Leu Gln Gln Ser Gln His Gln Lys Val Arg Glu Tyr Leu
 85 90 95
 Ser Glu Thr Tyr Gly Asn Lys Phe Ala Ala His Ile Ser Pro Ala Gln
 100 105 110
 Gly Ser Pro Lys Pro Pro Pro Ala Ala Ser Pro Gly Val Arg Ala Gly
 115 120 125
 His Val Leu Ser Ser Ser Ala Gly Asn Ser Ala Pro Asn Ser Pro Met
 130 135 140
 Ala Met Leu His Ile Gly Ser Asn Pro Glu Arg Glu Leu Asp Asp Val
 145 150 155 160
 Ile Asp Asn Ile Met Arg Leu Asp Asp Val Leu Gly Tyr Ile Asn Pro
 165 170 175
 Glu Met Gln Met Pro Asn Thr Leu Pro Leu Ser Ser Ser His Leu Asn
 180 185 190
 Val Tyr Ser Ser Asp Pro Gln Val Thr Ala Ser Leu Val Gly Val Thr
 195 200 205
 Ser Ser Ser Cys Pro Ala Asp Leu Thr Gln Lys Arg Glu Leu Thr Asp
 210 215 220
 Ala Glu Ser Arg Ala Leu Ala Lys Glu Arg Gln Lys Lys Asp Asn His
 225 230 235 240
 Asn Leu Ile Glu Arg Arg Arg Arg Phe Asn Ile Asn Asp Arg Ile Lys
 245 250 255
 Glu Leu Gly Met Leu Ile Pro Lys Ala Asn Asp Leu Asp Val Arg Trp
 260 265 270
 Asn Lys Gly Thr Ile Leu Lys Ala Ser Val Asp Tyr Ile Arg Arg Met
 275 280 285
 Gln Lys Asp Leu Gln Lys Ser Arg Glu Leu Glu Asn His Ser Arg Arg
 290 295 300
 Leu Glu Met Thr Asn Lys Gln Leu Trp Leu Arg Ile Gln Glu Leu Glu
 305 310 315 320
 Met Gln Ala Arg Val His Gly Leu Pro Thr Thr Ser Pro Ser Gly Met
 325 330 335
 Asn Met Ala Glu Leu Ala Gln Gln Val Val Lys Gln Glu Leu Pro Ser
 340 345 350

Glu Glu Gly Pro Gly Glu Ala Leu Met Leu Gly Ala Glu Val Pro Asp
 355 360 365

Pro Glu Pro Leu Pro Ala Leu Pro Pro Gln Ala Pro Leu Pro Leu Pro
 370 375 380

Thr Gln Pro Pro Ser Pro Phe His His Leu Asp Phe Ser His Ser Leu
 385 390 395 400

Ser Phe Gly Gly Arg Glu Asp Glu Gly Pro Pro Gly Tyr Pro Glu Pro
 405 410 415

Leu Ala Pro Gly His Gly Ser Pro Phe Pro Ser Leu Ser Lys Lys Asp
 420 425 430

Leu Asp Leu Met Leu Leu Asp Asp Ser Leu Leu Pro Leu Ala Ser Asp
 435 440 445

Pro Leu Leu Ser Thr Met Ser Pro Glu Ala Ser Lys Ala Ser Ser Arg
 450 455 460

Arg Ser Ser Phe Ser Met Glu Glu Gly Asp Val Leu
 465 470 475

<210> 763
 <211> 683
 <212> PRT
 <213> Homo sapiens

<400> 763

Met Ala Leu Phe Val Arg Leu Leu Ala Leu Ala Leu Ala Leu Ala Leu
 1 5 10 15

Gly Pro Ala Ala Thr Leu Ala Gly Pro Ala Lys Ser Pro Tyr Gln Leu
 20 25 30

Val Leu Gln His Ser Arg Leu Arg Gly Arg Gln His Gly Pro Asn Val
 35 40 45

Cys Ala Val Gln Lys Val Ile Gly Thr Asn Arg Lys Tyr Phe Thr Asn
 50 55 60

Cys Lys Gln Trp Tyr Gln Arg Lys Ile Cys Gly Lys Ser Thr Val Ile
 65 70 75 80

Ser Tyr Glu Cys Cys Pro Gly Tyr Glu Lys Val Pro Gly Glu Lys Gly
 85 90 95

Cys Pro Ala Ala Leu Pro Leu Ser Asn Leu Tyr Glu Thr Leu Gly Val
 100 105 110

Val Gly Ser Thr Thr Thr Gln Leu Tyr Thr Asp Arg Thr Glu Lys Leu

115

120

125

Arg Pro Glu Met Glu Gly Pro Gly Ser Phe Thr Ile Phe Ala Pro Ser
 130 135 140

Asn Glu Ala Trp Ala Ser Leu Pro Ala Glu Val Leu Asp Ser Leu Val
 145 150 155 160

Ser Asn Val Asn Ile Glu Leu Leu Asn Ala Leu Arg Tyr His Met Val
 165 170 175

Gly Arg Arg Val Leu Thr Asp Glu Leu Lys His Gly Met Thr Leu Thr
 180 185 190

Ser Met Tyr Gln Asn Ser Asn Ile Gln Ile His His Tyr Pro Asn Gly
 195 200 205

Ile Val Thr Val Asn Cys Ala Arg Leu Leu Lys Ala Asp His His Ala
 210 215 220

Thr Asn Gly Val Val His Leu Ile Asp Lys Val Ile Ser Thr Ile Thr
 225 230 235 240

Asn Asn Ile Gln Gln Ile Ile Glu Ile Glu Asp Thr Phe Glu Thr Leu
 245 250 255

Arg Ala Ala Val Ala Ala Ser Gly Leu Asn Thr Met Leu Glu Gly Asn
 260 265 270

Gly Gln Tyr Thr Leu Leu Ala Pro Thr Asn Glu Ala Phe Glu Lys Ile
 275 280 285

Pro Ser Glu Thr Leu Asn Arg Ile Leu Gly Asp Pro Glu Ala Leu Arg
 290 295 300

Asp Leu Leu Asn Asn His Ile Leu Lys Ser Ala Met Cys Ala Glu Ala
 305 310 315 320

Ile Val Ala Gly Leu Ser Val Glu Thr Leu Glu Gly Thr Thr Leu Glu
 325 330 335

Val Gly Cys Ser Gly Asp Met Leu Thr Ile Asn Gly Lys Ala Ile Ile
 340 345 350

Ser Asn Lys Asp Ile Leu Ala Thr Asn Gly Val Ile His Tyr Ile Asp
 355 360 365

Glu Leu Leu Ile Pro Asp Ser Ala Lys Thr Leu Phe Glu Leu Ala Ala
 370 375 380

Glu Ser Asp Val Ser Thr Ala Ile Asp Leu Phe Arg Gln Ala Gly Leu

385 390 395 400
 Gly Asn His Leu Ser Gly Ser Glu Arg Leu Thr Leu Leu Ala Pro Leu
 405 410 415
 Asn Ser Val Phe Lys Asp Gly Thr Pro Pro Ile Asp Ala His Thr Arg
 420 425 430
 Asn Leu Leu Arg Asn His Ile Ile Lys Asp Gln Leu Ala Ser Lys Tyr
 435 440 445
 Leu Tyr His Gly Gln Thr Leu Glu Thr Leu Gly Gly Lys Lys Leu Arg
 450 455 460
 Val Phe Val Tyr Arg Asn Ser Leu Cys Ile Glu Asn Ser Cys Ile Ala
 465 470 475 480
 Ala His Asp Lys Arg Gly Arg Tyr Gly Thr Leu Phe Thr Met Asp Arg
 485 490 495
 Val Leu Thr Pro Pro Met Gly Thr Val Met Asp Val Leu Lys Gly Asp
 500 505 510
 Asn Arg Phe Ser Met Leu Val Ala Ala Ile Gln Ser Ala Gly Leu Thr
 515 520 525
 Glu Thr Leu Asn Arg Glu Gly Val Tyr Thr Val Phe Ala Pro Thr Asn
 530 535 540
 Glu Ala Phe Arg Ala Leu Pro Pro Arg Glu Arg Ser Arg Leu Leu Gly
 545 550 555 560
 Asp Ala Lys Glu Leu Ala Asn Ile Leu Lys Tyr His Ile Gly Asp Glu
 565 570 575
 Ile Leu Val Ser Gly Gly Ile Gly Ala Leu Val Arg Leu Lys Ser Leu
 580 585 590
 Gln Gly Asp Lys Leu Glu Val Ser Leu Lys Asn Asn Val Val Ser Val
 595 600 605
 Asn Lys Glu Pro Val Ala Glu Pro Asp Ile Met Ala Thr Asn Gly Val
 610 615 620
 Val His Val Ile Thr Asn Val Leu Gln Pro Pro Ala Asn Arg Pro Gln
 625 630 635 640
 Glu Arg Gly Asp Glu Leu Ala Asp Ser Ala Leu Glu Ile Phe Lys Gln
 645 650 655
 Ala Ser Ala Phe Ser Arg Ala Ser Gln Arg Ser Val Arg Leu Ala Pro

660

665

670

Val Tyr Gln Lys Leu Leu Glu Arg Met Lys His
 675 680

<210> 764
 <211> 567
 <212> PRT
 <213> Homo sapiens

<400> 764

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

Trp Thr Arg Ile Ala Ser Thr Ile Pro Pro His Val Gln Lys Ser Val
 20 25 30

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Leu
 145 150 155 160

Leu Leu Val Ile Phe Gln Val Thr Gly Ile Ser Leu Leu Pro Pro Leu
 165 170 175

Gly Val Ala Ile Ser Val Ile Ile Ile Phe Tyr Cys Tyr Arg Val Asn
 180 185 190

Arg Gln Gln Lys Leu Ser Ser Thr Trp Glu Thr Gly Lys Thr Arg Lys
 195 200 205

Leu Met Glu Phe Ser Glu His Cys Ala Ile Ile Leu Glu Asp Asp Arg
 210 215 220

Ser Asp Ile Ser Ser Thr Cys Ala Asn Asn Ile Asn His Asn Thr Glu
 225 230 235 240
 Leu Leu Pro Ile Glu Leu Asp Thr Leu Val Gly Lys Gly Arg Phe Ala
 245 250 255
 Glu Val Tyr Lys Ala Lys Leu Lys Gln Asn Thr Ser Glu Gln Phe Glu
 260 265 270
 Thr Val Ala Val Lys Ile Phe Pro Tyr Glu Glu Tyr Ala Ser Trp Lys
 275 280 285
 Thr Glu Lys Asp Ile Phe Ser Asp Ile Asn Leu Lys His Glu Asn Ile
 290 295 300
 Leu Gln Phe Leu Thr Ala Glu Glu Arg Lys Thr Glu Leu Gly Lys Gln
 305 310 315 320
 Tyr Trp Leu Ile Thr Ala Phe His Ala Lys Gly Asn Leu Gln Glu Tyr
 325 330 335
 Leu Thr Arg His Val Ile Ser Trp Glu Asp Leu Arg Lys Leu Gly Ser
 340 345 350
 Ser Leu Ala Arg Gly Ile Ala His Leu His Ser Asp His Thr Pro Cys
 355 360 365
 Gly Arg Pro Lys Met Pro Ile Val His Arg Asp Leu Lys Ser Ser Asn
 370 375 380
 Ile Leu Val Lys Asn Asp Leu Thr Cys Cys Leu Cys Asp Phe Gly Leu
 385 390 395 400
 Ser Leu Arg Leu Asp Pro Thr Leu Ser Val Asp Asp Leu Ala Asn Ser
 405 410 415
 Gly Gln Val Gly Thr Ala Arg Tyr Met Ala Pro Glu Val Leu Glu Ser
 420 425 430
 Arg Met Asn Leu Glu Asn Val Glu Ser Phe Lys Gln Thr Asp Val Tyr
 435 440 445
 Ser Met Ala Leu Val Leu Trp Glu Met Thr Ser Arg Cys Asn Ala Val
 450 455 460
 Gly Glu Val Lys Asp Tyr Glu Pro Pro Phe Gly Ser Lys Val Arg Glu
 465 470 475 480
 His Pro Cys Val Glu Ser Met Lys Asp Asn Val Leu Arg Asp Arg Gly
 485 490 495

Arg Pro Glu Ile Pro Ser Phe Trp Leu Asn His Gln Gly Ile Gln Met
 500 505 510

Val Cys Glu Thr Leu Thr Glu Cys Trp Asp His Asp Pro Glu Ala Arg
 515 520 525

Leu Thr Ala Gln Cys Val Ala Glu Arg Phe Ser Glu Leu Glu His Leu
 530 535 540

Asp Arg Leu Ser Gly Arg Ser Cys Ser Glu Glu Lys Ile Pro Glu Asp
 545 550 555 560

Gly Ser Leu Asn Thr Thr Lys
 565

<210> 765
 <211> 437
 <212> PRT
 <213> Homo sapiens

<400> 765

Met Arg Phe Val Val Ala Leu Val Leu Leu Asn Val Ala Ala Ala Gly
 1 5 10 15

Ala Val Pro Leu Leu Ala Thr Glu Ser Val Lys Gln Glu Glu Ala Gly
 20 25 30

Val Arg Pro Ser Ala Gly Asn Val Ser Thr His Pro Ser Leu Ser Gln
 35 40 45

Arg Pro Gly Gly Ser Thr Lys Ser His Pro Glu Pro Gln Thr Pro Lys
 50 55 60

Asp Ser Pro Ser Lys Ser Ser Ala Glu Ala Gln Thr Pro Glu Asp Thr
 65 70 75 80

Pro Asn Lys Ser Gly Ala Glu Ala Lys Thr Gln Lys Asp Ser Ser Asn
 85 90 95

Lys Ser Gly Ala Glu Ala Lys Thr Gln Lys Gly Ser Thr Ser Lys Ser
 100 105 110

Gly Ser Glu Ala Gln Thr Thr Lys Asp Ser Thr Ser Lys Ser His Pro
 115 120 125

Glu Leu Gln Thr Pro Lys Asp Ser Thr Gly Lys Ser Gly Ala Glu Ala
 130 135 140

Gln Thr Pro Glu Asp Ser Pro Asn Arg Ser Gly Ala Glu Ala Lys Thr
 145 150 155 160

Gln Lys Asp Ser Pro Ser Lys Ser Gly Ser Glu Ala Gln Thr Thr Lys
 165 170 175
 Asp Val Pro Asn Lys Ser Gly Ala Asp Gly Gln Thr Pro Lys Asp Gly
 180 185 190
 Ser Ser Lys Ser Gly Ala Glu Asp Gln Thr Pro Lys Asp Val Pro Asn
 195 200 205
 Lys Ser Gly Ala Glu Lys Gln Thr Pro Lys Asp Gly Ser Asn Lys Ser
 210 215 220
 Gly Ala Glu Glu Gln Gly Pro Ile Asp Gly Pro Ser Lys Ser Gly Ala
 225 230 235 240
 Glu Glu Gln Thr Ser Lys Asp Ser Pro Asn Lys Val Val Pro Glu Gln
 245 250 255
 Pro Ser Arg Lys Asp His Ser Lys Pro Ile Ser Asn Pro Ser Asp Asn
 260 265 270
 Lys Glu Leu Pro Lys Ala Asp Thr Asn Gln Leu Ala Asp Lys Gly Lys
 275 280 285
 Leu Ser Pro His Ala Phe Lys Thr Glu Ser Gly Glu Glu Thr Asp Leu
 290 295 300
 Ile Ser Pro Pro Gln Glu Glu Val Lys Ser Ser Glu Pro Thr Glu Asp
 305 310 315 320
 Val Glu Pro Lys Glu Ala Glu Asp Asp Thr Gly Pro Glu Glu Gly
 325 330 335
 Ser Pro Pro Lys Glu Glu Lys Glu Lys Met Ser Gly Ser Ala Ser Ser
 340 345 350
 Glu Asn Arg Glu Gly Thr Leu Ser Asp Ser Thr Gly Ser Glu Lys Asp
 355 360 365
 Asp Leu Tyr Pro Asn Gly Ser Gly Asn Gly Ser Ala Glu Ser Ser His
 370 375 380
 Phe Phe Ala Tyr Leu Val Thr Ala Ala Ile Leu Val Ala Val Leu Tyr
 385 390 395 400
 Ile Ala His His Asn Lys Arg Lys Ile Ile Ala Phe Val Leu Glu Gly
 405 410 415
 Lys Arg Ser Lys Val Thr Arg Arg Pro Lys Ala Ser Asp Tyr Gln Arg
 420 425 430

Leu Asp Gln Lys Ser
435

<210> 766
<211> 1591
<212> PRT
<213> Homo sapiens

<400> 766

Met Gly Asn Ala Glu Ser Gln His Val Glu His Glu Phe Tyr Gly Glu
1 5 10 15

Lys His Ala Ser Leu Gly Arg Lys His Thr Ser Arg Ser Leu Arg Leu
20 25 30

Ser His Lys Thr Arg Arg Thr Arg His Ala Ser Ser Gly Lys Val Ile
35 40 45

His Arg Asn Ser Glu Val Ser Thr Arg Ser Ser Ser Thr Pro Ser Ile
50 55 60

Pro Gln Ser Leu Ala Glu Asn Gly Leu Glu Pro Phe Ser Gln Asp Gly
65 70 75 80

Thr Leu Glu Asp Phe Gly Ser Pro Ile Trp Val Asp Arg Val Asp Met
85 90 95

Gly Leu Arg Pro Val Ser Tyr Thr Asp Ser Ser Val Thr Pro Ser Val
100 105 110

Asp Ser Ser Ile Val Leu Thr Ala Ala Ser Val Gln Ser Met Pro Asp
115 120 125

Thr Glu Glu Ser Arg Leu Tyr Gly Asp Asp Ala Thr Tyr Leu Ala Glu
130 135 140

Gly Gly Arg Arg Gln His Ser Tyr Thr Ser Asn Gly Pro Thr Phe Met
145 150 155 160

Glu Thr Ala Ser Phe Lys Lys Lys Arg Ser Lys Ser Ala Asp Ile Trp
165 170 175

Arg Glu Asp Ser Leu Glu Phe Ser Leu Ser Asp Leu Ser Gln Glu His
180 185 190

Leu Thr Ser Asn Glu Glu Ile Leu Gly Ser Ala Glu Glu Lys Asp Cys
195 200 205

Glu Glu Ala Arg Gly Met Glu Thr Arg Ala Ser Pro Arg Gln Leu Ser
210 215 220

Thr Cys Gln Arg Ala Asn Ser Leu Gly Asp Leu Tyr Ala Gln Lys Asn
 225 230 235 240
 Ser Gly Val Thr Ala Asn Gly Gly Pro Gly Ser Lys Phe Ala Gly Tyr
 245 250 255
 Cys Arg Asn Leu Val Ser Asp Ile Pro Asn Leu Ala Asn His Lys Met
 260 265 270
 Pro Pro Ala Ala Ala Glu Glu Thr Pro Pro Tyr Ser Asn Tyr Asn Thr
 275 280 285
 Leu Pro Cys Arg Lys Ser His Cys Leu Ser Glu Gly Ala Thr Asn Pro
 290 295 300
 Gln Ile Ser His Ser Asn Ser Met Gln Gly Arg Arg Ala Lys Thr Thr
 305 310 315 320
 Gln Asp Val Asn Ala Gly Glu Gly Ser Glu Phe Ala Asp Ser Gly Ile
 325 330 335
 Glu Gly Ala Thr Thr Asp Thr Asp Leu Leu Ser Arg Arg Ser Asn Ala
 340 345 350
 Thr Asn Ser Ser Tyr Ser Pro Thr Thr Gly Arg Ala Phe Val Gly Ser
 355 360 365
 Asp Ser Gly Ser Ser Ser Thr Gly Asp Ala Ala Arg Gln Gly Val Tyr
 370 375 380
 Glu Asn Phe Arg Arg Glu Leu Glu Met Ser Thr Thr Asn Ser Glu Ser
 385 390 395 400
 Leu Glu Glu Ala Gly Ser Ala His Ser Asp Glu Gln Ser Ser Gly Thr
 405 410 415
 Leu Ser Ser Pro Gly Gln Ser Asp Ile Leu Leu Thr Ala Ala Gln Gly
 420 425 430
 Thr Val Arg Lys Ala Gly Ala Leu Ala Val Lys Asn Phe Leu Val His
 435 440 445
 Lys Lys Asn Lys Lys Val Glu Ser Ala Thr Arg Arg Lys Trp Lys His
 450 455 460
 Tyr Trp Val Ser Leu Lys Gly Cys Thr Leu Phe Phe Tyr Glu Ser Asp
 465 470 475 480
 Gly Arg Ser Gly Ile Asp His Asn Ser Ile Pro Lys His Ala Val Trp
 485 490 495

Val Glu Asn Ser Ile Val Gln Ala Val Pro Glu His Pro Lys Lys Asp
 500 505 510
 Phe Val Phe Cys Leu Ser Asn Ser Leu Gly Asp Ala Phe Leu Phe Gln
 515 520 525
 Thr Thr Ser Gln Thr Glu Leu Glu Asn Trp Ile Thr Ala Ile His Ser
 530 535 540
 Ala Cys Ala Thr Ala Val Ala Arg His His His Lys Glu Asp Thr Leu
 545 550 555 560
 Arg Leu Leu Lys Ser Glu Ile Lys Lys Leu Glu Gln Lys Ile Asp Met
 565 570 575
 Asp Glu Lys Met Lys Lys Met Gly Glu Met Gln Leu Ser Ser Val Thr
 580 585 590
 Asp Ser Lys Lys Lys Lys Thr Ile Leu Asp Gln Ile Phe Val Trp Glu
 595 600 605
 Gln Asn Leu Glu Gln Phe Gln Met Asp Leu Phe Arg Phe Arg Cys Tyr
 610 615 620
 Leu Ala Ser Leu Gln Gly Gly Glu Leu Pro Asn Pro Lys Arg Leu Leu
 625 630 635 640
 Ala Phe Ala Ser Arg Pro Thr Lys Val Ala Met Gly Arg Leu Gly Ile
 645 650 655
 Phe Ser Val Ser Ser Phe His Ala Leu Val Ala Ala Arg Thr Gly Glu
 660 665 670
 Thr Gly Val Arg Arg Arg Thr Gln Ala Met Ser Arg Ser Ala Ser Lys
 675 680 685
 Arg Arg Ser Arg Phe Ser Ser Leu Trp Gly Leu Asp Thr Thr Ser Lys
 690 695 700
 Lys Lys Gln Gly Arg Pro Ser Ile Asn Gln Val Phe Gly Glu Gly Thr
 705 710 715 720
 Glu Ala Val Lys Lys Ser Leu Glu Gly Ile Phe Asp Asp Ile Val Pro
 725 730 735
 Asp Gly Lys Arg Glu Lys Glu Val Val Leu Pro Asn Val His Gln His
 740 745 750
 Asn Pro Asp Cys Asp Ile Trp Val His Glu Tyr Phe Thr Pro Ser Trp
 755 760 765

Phe Cys Leu Pro Asn Asn Gln Pro Ala Leu Thr Val Val Arg Pro Gly
 770 775 780
 Asp Thr Ala Arg Asp Thr Leu Glu Leu Ile Cys Lys Thr His Gln Leu
 785 790 795 800
 Asp His Ser Ala His Tyr Leu Arg Leu Lys Phe Leu Ile Glu Asn Lys
 805 810 815
 Met Gln Leu Tyr Val Pro Gln Pro Glu Glu Asp Ile Tyr Glu Leu Leu
 820 825 830
 Tyr Lys Glu Ile Glu Ile Cys Pro Lys Val Thr Gln Ser Ile His Ile
 835 840 845
 Glu Lys Ser Asp Thr Ala Ala Asp Thr Tyr Gly Phe Ser Leu Ser Ser
 850 855 860
 Val Glu Glu Asp Gly Ile Arg Arg Leu Tyr Val Asn Ser Val Lys Glu
 865 870 875 880
 Thr Gly Leu Ala Ser Lys Lys Gly Leu Lys Ala Gly Asp Glu Ile Leu
 885 890 895
 Glu Ile Asn Asn Arg Ala Ala Asp Ala Leu Asn Ser Ser Met Leu Lys
 900 905 910
 Asp Phe Leu Ser Gln Pro Ser Leu Gly Leu Leu Val Arg Thr Tyr Pro
 915 920 925
 Glu Leu Glu Glu Gly Val Glu Leu Leu Glu Ser Pro Pro His Arg Val
 930 935 940
 Asp Gly Pro Ala Asp Leu Gly Glu Ser Pro Leu Ala Phe Leu Thr Ser
 945 950 955 960
 Asn Pro Gly His Ser Leu Cys Ser Glu Gln Gly Ser Ser Ala Glu Thr
 965 970 975
 Ala Pro Glu Glu Thr Glu Gly Pro Asp Leu Glu Ser Ser Asp Glu Thr
 980 985 990
 Asp His Ser Ser Lys Ser Thr Glu Gln Val Ala Ala Phe Cys Arg Ser
 995 1000 1005
 Leu His Glu Met Asn Pro Ser Asp Gln Ser Pro Ser Pro Gln Asp
 1010 1015 1020
 Ser Thr Gly Pro Gln Leu Ala Thr Met Arg Gln Leu Ser Asp Ala
 1025 1030 1035

Asp	Lys	Leu	Arg	Lys	Val	Ile	Cys	Glu	Leu	Leu	Glu	Thr	Glu	Arg
1040						1045					1050			
Thr	Tyr	Val	Lys	Asp	Leu	Asn	Cys	Leu	Met	Glu	Arg	Tyr	Leu	Lys
1055						1060					1065			
Pro	Leu	Gln	Lys	Glu	Thr	Phe	Leu	Thr	Gln	Asp	Glu	Leu	Asp	Val
1070						1075					1080			
Leu	Phe	Gly	Asn	Leu	Thr	Glu	Met	Val	Glu	Phe	Gln	Val	Glu	Phe
1085						1090					1095			
Leu	Lys	Thr	Leu	Glu	Asp	Gly	Val	Arg	Leu	Val	Pro	Asp	Leu	Glu
1100						1105					1110			
Lys	Leu	Glu	Lys	Val	Asp	Gln	Phe	Lys	Lys	Val	Leu	Phe	Ser	Leu
1115						1120					1125			
Gly	Gly	Ser	Phe	Leu	Tyr	Tyr	Ala	Asp	Arg	Phe	Lys	Leu	Tyr	Ser
1130						1135					1140			
Ala	Phe	Cys	Ala	Ser	His	Thr	Lys	Val	Pro	Lys	Val	Leu	Val	Lys
1145						1150					1155			
Ala	Lys	Thr	Asp	Thr	Ala	Phe	Lys	Ala	Phe	Leu	Asp	Ala	Gln	Asn
1160						1165					1170			
Pro	Lys	Gln	Gln	His	Ser	Ser	Thr	Leu	Glu	Ser	Tyr	Leu	Ile	Lys
1175						1180					1185			
Pro	Ile	Gln	Arg	Ile	Leu	Lys	Tyr	Pro	Leu	Leu	Leu	Arg	Glu	Leu
1190						1195					1200			
Phe	Ala	Leu	Thr	Asp	Ala	Glu	Ser	Glu	Glu	His	Tyr	His	Leu	Asp
1205						1210					1215			
Val	Ala	Ile	Lys	Thr	Met	Asn	Lys	Val	Ala	Ser	His	Ile	Asn	Glu
1220						1225					1230			
Met	Gln	Lys	Ile	His	Glu	Glu	Phe	Gly	Ala	Val	Phe	Asp	Gln	Leu
1235						1240					1245			
Ile	Ala	Glu	Gln	Thr	Gly	Glu	Lys	Lys	Glu	Val	Ala	Asp	Leu	Ser
1250						1255					1260			
Met	Gly	Asp	Leu	Leu	Leu	His	Thr	Thr	Val	Ile	Trp	Leu	Asn	Pro
1265						1270					1275			
Pro	Ala	Ser	Leu	Gly	Lys	Trp	Lys	Lys	Glu	Pro	Glu	Leu	Ala	Ala
1280						1285					1290			

Phe	Val	Phe	Lys	Thr	Ala	Val	Val	Leu	Val	Tyr	Lys	Asp	Gly	Ser
	1295					1300					1305			
Lys	Gln	Lys	Lys	Lys	Leu	Val	Gly	Ser	His	Arg	Leu	Ser	Ile	Tyr
	1310					1315					1320			
Glu	Asp	Trp	Asp	Pro	Phe	Arg	Phe	Arg	His	Met	Ile	Pro	Thr	Glu
	1325					1330					1335			
Ala	Leu	Gln	Val	Arg	Ala	Leu	Ala	Ser	Ala	Asp	Ala	Glu	Ala	Asn
	1340					1345					1350			
Ala	Val	Cys	Glu	Ile	Val	His	Val	Lys	Ser	Glu	Ser	Glu	Gly	Arg
	1355					1360					1365			
Pro	Glu	Arg	Val	Phe	His	Leu	Cys	Cys	Ser	Ser	Pro	Glu	Ser	Arg
	1370					1375					1380			
Lys	Asp	Phe	Leu	Lys	Ala	Val	His	Ser	Ile	Leu	Arg	Asp	Lys	His
	1385					1390					1395			
Arg	Arg	Gln	Leu	Leu	Lys	Thr	Glu	Ser	Leu	Pro	Ser	Ser	Gln	Gln
	1400					1405					1410			
Tyr	Val	Pro	Phe	Gly	Gly	Lys	Arg	Leu	Cys	Ala	Leu	Lys	Gly	Ala
	1415					1420					1425			
Arg	Pro	Ala	Met	Ser	Arg	Ala	Val	Ser	Ala	Pro	Ser	Lys	Ser	Leu
	1430					1435					1440			
Gly	Arg	Arg	Arg	Arg	Arg	Leu	Ala	Arg	Asn	Arg	Phe	Thr	Ile	Asp
	1445					1450					1455			
Ser	Asp	Ala	Val	Ser	Ala	Ser	Ser	Pro	Glu	Lys	Glu	Ser	Gln	Gln
	1460					1465					1470			
Pro	Pro	Gly	Gly	Gly	Asp	Thr	Asp	Arg	Trp	Val	Glu	Glu	Gln	Phe
	1475					1480					1485			
Asp	Leu	Ala	Gln	Tyr	Glu	Glu	Gln	Asp	Asp	Ile	Lys	Glu	Thr	Asp
	1490					1495					1500			
Ile	Leu	Ser	Asp	Asp	Asp	Glu	Phe	Cys	Glu	Ser	Val	Lys	Gly	Ala
	1505					1510					1515			
Ser	Val	Asp	Arg	Asp	Leu	Gln	Glu	Arg	Leu	Gln	Ala	Thr	Ser	Ile
	1520					1525					1530			
Ser	Gln	Arg	Glu	Arg	Gly	Arg	Lys	Thr	Leu	Asp	Ser	His	Ala	Ser
	1535					1540					1545			

Arg Met Ala Gln Leu Lys Lys Gln Ala Ala Leu Ser Gly Ile Asn
 1550 1555 1560

Gly Gly Leu Glu Ser Ala Ser Glu Glu Val Ile Trp Val Arg Arg
 1565 1570 1575

Glu Asp Phe Ala Pro Ser Arg Lys Leu Asn Thr Glu Ile
 1580 1585 1590

<210> 767
 <211> 772
 <212> PRT
 <213> Homo sapiens

<400> 767

Met Tyr Pro Gln Gly Arg His Pro Ala Pro His Gln Pro Gly Gln Pro
 1 5 10 15

Gly Phe Lys Phe Thr Val Ala Glu Ser Cys Asp Arg Ile Lys Asp Glu
 20 25 30

Phe Gln Phe Leu Gln Ala Gln Tyr His Ser Leu Lys Val Glu Tyr Asp
 35 40 45

Lys Leu Ala Asn Glu Lys Thr Glu Met Gln Arg His Tyr Val Met Tyr
 50 55 60

Tyr Glu Met Ser Tyr Gly Leu Asn Ile Glu Met His Lys Gln Thr Glu
 65 70 75 80

Ile Ala Lys Arg Leu Asn Thr Ile Leu Ala Gln Ile Met Pro Phe Leu
 85 90 95

Ser Gln Glu His Gln Gln Gln Val Ala Gln Ala Val Glu Arg Ala Lys
 100 105 110

Gln Val Thr Met Thr Glu Leu Asn Ala Ile Ile Gly Gln Gln Gln Leu
 115 120 125

Gln Ala Gln His Leu Ser His Ala Thr His Gly Pro Pro Val Gln Leu
 130 135 140

Pro Pro His Pro Ser Gly Leu Gln Pro Pro Gly Ile Pro Pro Val Thr
 145 150 155 160

Gly Ser Ser Ser Gly Leu Leu Ala Leu Gly Ala Leu Gly Ser Gln Ala
 165 170 175

His Leu Thr Val Lys Asp Glu Lys Asn His His Glu Leu Asp His Arg
 180 185 190

Glu Arg Glu Ser Ser Ala Asn Asn Ser Val Ser Pro Ser Glu Ser Leu
 Page 1313

195

200

205

Arg Ala Ser Glu Lys His Arg Gly Ser Ala Asp Tyr Ser Met Glu Ala
 210 215 220

Lys Lys Arg Lys Ala Glu Glu Lys Asp Ser Leu Ser Arg Tyr Asp Ser
 225 230 235 240

Asp Gly Asp Lys Ser Asp Asp Leu Val Val Asp Val Ser Asn Glu Asp
 245 250 255

Pro Ala Thr Pro Arg Val Ser Pro Ala His Ser Pro Pro Glu Asn Gly
 260 265 270

Leu Asp Lys Ala Arg Ser Leu Lys Lys Asp Ala Pro Thr Ser Pro Ala
 275 280 285

Ser Val Ala Ser Ser Ser Ser Thr Pro Ser Ser Lys Thr Lys Asp Leu
 290 295 300

Gly His Asn Asp Lys Ser Ser Thr Pro Gly Leu Lys Ser Asn Thr Pro
 305 310 315 320

Thr Pro Arg Asn Asp Ala Pro Thr Pro Gly Thr Ser Thr Thr Pro Gly
 325 330 335

Leu Arg Ser Met Pro Gly Lys Pro Pro Gly Met Asp Pro Ile Gly Ile
 340 345 350

Met Ala Ser Ala Leu Arg Thr Pro Ile Ser Ile Thr Ser Ser Tyr Ala
 355 360 365

Ala Pro Phe Ala Met Met Ser His His Glu Met Asn Gly Ser Leu Thr
 370 375 380

Ser Pro Gly Ala Tyr Ala Gly Leu His Asn Ile Pro Pro Gln Met Ser
 385 390 395 400

Ala Ala Ala Ala Ala Ala Ala Ala Ala Tyr Gly Arg Ser Pro Met Val
 405 410 415

Ser Phe Gly Ala Val Gly Phe Asp Pro His Pro Pro Met Arg Ala Thr
 420 425 430

Gly Leu Pro Ser Ser Leu Ala Ser Ile Pro Gly Gly Lys Pro Ala Tyr
 435 440 445

Ser Phe His Val Ser Ala Asp Gly Gln Met Gln Pro Val Pro Phe Pro
 450 455 460

His Asp Ala Leu Ala Gly Pro Gly Ile Pro Arg His Ala Arg Gln Ile

465 470 475 480

Asn Thr Leu Ser His Gly Glu Val Val Cys Ala Val Thr Ile Ser Asn
485 490 495

Pro Thr Arg His Val Tyr Thr Gly Gly Lys Gly Cys Val Lys Ile Trp
500 505 510

Asp Ile Ser Gln Pro Gly Ser Lys Ser Pro Ile Ser Gln Leu Asp Cys
515 520 525

Leu Asn Arg Asp Asn Tyr Ile Arg Ser Cys Lys Leu Leu Pro Asp Gly
530 535 540

Arg Thr Leu Ile Val Gly Gly Glu Ala Ser Thr Leu Thr Ile Trp Asp
545 550 555 560

Leu Ala Ser Pro Thr Pro Arg Ile Lys Ala Glu Leu Thr Ser Ser Ala
565 570 575

Pro Ala Cys Tyr Ala Leu Ala Ile Ser Pro Asp Ala Lys Val Cys Phe
580 585 590

Ser Cys Cys Ser Asp Gly Asn Ile Ala Val Trp Asp Leu His Asn Gln
595 600 605

Thr Leu Val Arg Gln Phe Gln Gly His Thr Asp Gly Ala Ser Cys Ile
610 615 620

Asp Ile Ser His Asp Gly Thr Lys Leu Trp Thr Gly Gly Leu Asp Asn
625 630 635 640

Thr Val Arg Ser Trp Asp Leu Arg Glu Gly Arg Gln Leu Gln Gln His
645 650 655

Asp Phe Thr Ser Gln Ile Phe Ser Leu Gly Tyr Cys Pro Thr Gly Glu
660 665 670

Trp Leu Ala Val Gly Met Glu Ser Ser Asn Val Glu Val Leu His His
675 680 685

Thr Lys Pro Asp Lys Tyr Gln Leu His Leu His Glu Ser Cys Val Leu
690 695 700

Ser Leu Lys Phe Ala Tyr Cys Gly Lys Trp Phe Val Ser Thr Gly Lys
705 710 715 720

Asp Asn Leu Leu Asn Ala Trp Arg Thr Pro Tyr Gly Ala Ser Ile Phe
725 730 735

Gln Ser Lys Glu Ser Ser Ser Val Leu Ser Cys Asp Ile Ser Ala Asp

740

745

750

Asp Lys Tyr Ile Val Thr Gly Ser Gly Asp Lys Lys Ala Thr Val Tyr
 755 760 765

Glu Val Ile Tyr
 770

<210> 768
 <211> 773
 <212> PRT
 <213> Homo sapiens

<400> 768

Met Ile Arg Asp Leu Ser Lys Met Tyr Pro Gln Thr Arg His Pro Ala
 1 5 10 15

Pro His Gln Pro Ala Gln Pro Phe Lys Phe Thr Ile Ser Glu Ser Cys
 20 25 30

Asp Arg Ile Lys Glu Glu Phe Gln Phe Leu Gln Ala Gln Tyr His Ser
 35 40 45

Leu Lys Leu Glu Cys Glu Lys Leu Ala Ser Glu Lys Thr Glu Met Gln
 50 55 60

Arg His Tyr Val Met Tyr Tyr Glu Met Ser Tyr Gly Leu Asn Ile Glu
 65 70 75 80

Met His Lys Gln Ala Glu Ile Val Lys Arg Leu Asn Ala Ile Cys Ala
 85 90 95

Gln Val Ile Pro Phe Leu Ser Gln Glu His Gln Gln Gln Val Val Gln
 100 105 110

Ala Val Glu Arg Ala Lys Gln Val Thr Met Ala Glu Leu Asn Ala Ile
 115 120 125

Ile Gly Gln Gln Leu Gln Ala Gln His Leu Ser His Gly His Gly Leu
 130 135 140

Pro Val Pro Leu Thr Pro His Pro Ser Gly Leu Gln Pro Pro Ala Ile
 145 150 155 160

Pro Pro Ile Gly Ser Ser Ala Gly Leu Leu Ala Leu Ser Ser Ala Leu
 165 170 175

Gly Gly Gln Ser His Leu Pro Ile Lys Asp Glu Lys Lys His His Asp
 180 185 190

Asn Asp His Gln Arg Asp Arg Asp Ser Ile Lys Ser Ser Ser Val Ser
 195 200 205

Pro Ser Ala Ser Phe Arg Gly Ala Glu Lys His Arg Asn Ser Ala Asp
 210 215 220
 Tyr Ser Ser Glu Ser Lys Lys Gln Lys Thr Glu Glu Lys Glu Ile Ala
 225 230 235 240
 Ala Arg Tyr Asp Ser Asp Gly Glu Lys Ser Asp Asp Asn Leu Val Val
 245 250 255
 Asp Val Ser Asn Glu Asp Pro Ser Ser Pro Arg Gly Ser Pro Ala His
 260 265 270
 Ser Pro Arg Glu Asn Gly Leu Asp Lys Thr Arg Leu Leu Lys Lys Asp
 275 280 285
 Ala Pro Ile Ser Pro Ala Ser Ile Ala Ser Ser Ser Thr Pro Ser
 290 295 300
 Ser Lys Ser Lys Glu Leu Ser Leu Asn Glu Lys Ser Thr Thr Pro Val
 305 310 315 320
 Ser Lys Ser Asn Thr Pro Thr Pro Arg Thr Asp Ala Pro Thr Pro Gly
 325 330 335
 Ser Asn Ser Thr Pro Gly Leu Arg Pro Val Pro Gly Lys Pro Pro Gly
 340 345 350
 Val Asp Pro Leu Ala Ser Ser Leu Arg Thr Pro Met Ala Val Pro Cys
 355 360 365
 Pro Tyr Pro Thr Pro Phe Gly Ile Val Pro His Ala Gly Met Asn Gly
 370 375 380
 Glu Leu Thr Ser Pro Gly Ala Ala Tyr Ala Gly Leu His Asn Ile Ser
 385 390 395 400
 Pro Gln Met Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Tyr
 405 410 415
 Gly Arg Ser Pro Val Val Gly Phe Asp Pro His His His Met Arg Val
 420 425 430
 Pro Ala Ile Pro Pro Asn Leu Thr Gly Ile Pro Gly Gly Lys Pro Ala
 435 440 445
 Tyr Ser Phe His Val Ser Ala Asp Gly Gln Met Gln Pro Val Pro Phe
 450 455 460
 Pro Pro Asp Ala Leu Ile Gly Pro Gly Ile Pro Arg His Ala Arg Gln
 465 470 475 480

Ile Asn Thr Leu Asn His Gly Glu Val Val Cys Ala Val Thr Ile Ser
 485 490 495
 Asn Pro Thr Arg His Val Tyr Thr Gly Gly Lys Gly Cys Val Lys Val
 500 505 510
 Trp Asp Ile Ser His Pro Gly Asn Lys Ser Pro Val Ser Gln Leu Asp
 515 520 525
 Cys Leu Asn Arg Asp Asn Tyr Ile Arg Ser Cys Arg Leu Leu Pro Asp
 530 535 540
 Gly Arg Thr Leu Ile Val Gly Gly Glu Ala Ser Thr Leu Ser Ile Trp
 545 550 555 560
 Asp Leu Ala Ala Pro Thr Pro Arg Ile Lys Ala Glu Leu Thr Ser Ser
 565 570 575
 Ala Pro Ala Cys Tyr Ala Leu Ala Ile Ser Pro Asp Ser Lys Val Cys
 580 585 590
 Phe Ser Cys Cys Ser Asp Gly Asn Ile Ala Val Trp Asp Leu His Asn
 595 600 605
 Gln Thr Leu Val Arg Gln Phe Gln Gly His Thr Asp Gly Ala Ser Cys
 610 615 620
 Ile Asp Ile Ser Asn Asp Gly Thr Lys Leu Trp Thr Gly Gly Leu Asp
 625 630 635 640
 Asn Thr Val Arg Ser Trp Asp Leu Arg Glu Gly Arg Gln Leu Gln Gln
 645 650 655
 His Asp Phe Thr Ser Gln Ile Phe Ser Leu Gly Tyr Cys Pro Thr Gly
 660 665 670
 Glu Trp Leu Ala Val Gly Met Glu Asn Ser Asn Val Glu Val Leu His
 675 680 685
 Val Thr Lys Pro Asp Lys Tyr Gln Leu His Leu His Glu Ser Cys Val
 690 695 700
 Leu Ser Leu Lys Phe Ala His Cys Gly Lys Trp Phe Val Ser Thr Gly
 705 710 715 720
 Lys Asp Asn Leu Leu Asn Ala Trp Arg Thr Pro Tyr Gly Ala Ser Ile
 725 730 735
 Phe Gln Ser Lys Glu Ser Ser Ser Val Leu Ser Cys Asp Ile Ser Val
 740 745 750

Asp Asp Lys Tyr Ile Val Thr Gly Ser Gly Asp Lys Lys Ala Thr Val
 755 760 765

Tyr Glu Val Ile Tyr
 770

<210> 769
 <211> 784
 <212> PRT
 <213> Homo sapiens
 <400> 769

Met Pro His Thr Leu Trp Met Val Trp Val Leu Gly Val Ile Ile Ser
 1 5 10 15

Leu Ser Lys Glu Glu Ser Ser Asn Gln Ala Ser Leu Ser Cys Asp Arg
 20 25 30

Asn Gly Ile Cys Lys Gly Ser Ser Gly Ser Leu Asn Ser Ile Pro Ser
 35 40 45

Gly Leu Thr Glu Ala Val Lys Ser Leu Asp Leu Ser Asn Asn Arg Ile
 50 55 60

Thr Tyr Ile Ser Asn Ser Asp Leu Gln Arg Cys Val Asn Leu Gln Ala
 65 70 75 80

Leu Val Leu Thr Ser Asn Gly Ile Asn Thr Ile Glu Glu Asp Ser Phe
 85 90 95

Ser Ser Leu Gly Ser Leu Glu His Leu Asp Leu Ser Tyr Asn Tyr Leu
 100 105 110

Ser Asn Leu Ser Ser Ser Trp Phe Lys Pro Leu Ser Ser Leu Thr Phe
 115 120 125

Leu Asn Leu Leu Gly Asn Pro Tyr Lys Thr Leu Gly Glu Thr Ser Leu
 130 135 140

Phe Ser His Leu Thr Lys Leu Gln Ile Leu Arg Val Gly Asn Met Asp
 145 150 155 160

Thr Phe Thr Lys Ile Gln Arg Lys Asp Phe Ala Gly Leu Thr Phe Leu
 165 170 175

Glu Glu Leu Glu Ile Asp Ala Ser Asp Leu Gln Ser Tyr Glu Pro Lys
 180 185 190

Ser Leu Lys Ser Ile Gln Asn Val Ser His Leu Ile Leu His Met Lys
 195 200 205

Gln His Ile Leu Leu Leu Glu Ile Phe Val Asp Val Thr Ser Ser Val
 210 215 220

Glu Cys Leu Glu Leu Arg Asp Thr Asp Leu Asp Thr Phe His Phe Ser
 225 230 235 240

Glu Leu Ser Thr Gly Glu Thr Asn Ser Leu Ile Lys Lys Phe Thr Phe
 245 250 255

Arg Asn Val Lys Ile Thr Asp Glu Ser Leu Phe Gln Val Met Lys Leu
 260 265 270

Leu Asn Gln Ile Ser Gly Leu Leu Glu Leu Glu Phe Asp Asp Cys Thr
 275 280 285

Leu Asn Gly Val Gly Asn Phe Arg Ala Ser Asp Asn Asp Arg Val Ile
 290 295 300

Asp Pro Gly Lys Val Glu Thr Leu Thr Ile Arg Arg Leu His Ile Pro
 305 310 315 320

Arg Phe Tyr Leu Phe Tyr Asp Leu Ser Thr Leu Tyr Ser Leu Thr Glu
 325 330 335

Arg Val Lys Arg Ile Thr Val Glu Asn Ser Lys Val Phe Leu Val Pro
 340 345 350

Cys Leu Leu Ser Gln His Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser
 355 360 365

Glu Asn Leu Met Val Glu Glu Tyr Leu Lys Asn Ser Ala Cys Glu Asp
 370 375 380

Ala Trp Pro Ser Leu Gln Thr Leu Ile Leu Arg Gln Asn His Leu Ala
 385 390 395 400

Ser Leu Glu Lys Thr Gly Glu Thr Leu Leu Thr Leu Lys Asn Leu Thr
 405 410 415

Asn Ile Asp Ile Ser Lys Asn Ser Phe His Ser Met Pro Glu Thr Cys
 420 425 430

Gln Trp Pro Glu Lys Met Lys Tyr Leu Asn Leu Ser Ser Thr Arg Ile
 435 440 445

His Ser Val Thr Gly Cys Ile Pro Lys Thr Leu Glu Ile Leu Asp Val
 450 455 460

Ser Asn Asn Asn Leu Asn Leu Phe Ser Leu Asn Leu Pro Gln Leu Lys
 465 470 475 480

Glu Leu Tyr Ile Ser Arg Asn Lys Leu Met Thr Leu Pro Asp Ala Ser
 485 490 495
 Leu Leu Pro Met Leu Leu Val Leu Lys Ile Ser Arg Asn Ala Ile Thr
 500 505 510
 Thr Phe Ser Lys Glu Gln Leu Asp Ser Phe His Thr Leu Lys Thr Leu
 515 520 525
 Glu Ala Gly Gly Asn Asn Phe Ile Cys Ser Cys Glu Phe Leu Ser Phe
 530 535 540
 Thr Gln Glu Gln Gln Ala Leu Ala Lys Val Leu Ile Asp Trp Pro Ala
 545 550 555 560
 Asn Tyr Leu Cys Asp Ser Pro Ser His Val Arg Gly Gln Gln Val Gln
 565 570 575
 Asp Val Arg Leu Ser Val Ser Glu Cys His Arg Thr Ala Leu Val Ser
 580 585 590
 Gly Met Cys Cys Ala Leu Phe Leu Leu Ile Leu Leu Thr Gly Val Leu
 595 600 605
 Cys His Arg Phe His Gly Leu Trp Tyr Met Lys Met Met Trp Ala Trp
 610 615 620
 Leu Gln Ala Lys Arg Lys Pro Arg Lys Ala Pro Ser Arg Asn Ile Cys
 625 630 635 640
 Tyr Asp Ala Phe Val Ser Tyr Ser Glu Arg Asp Ala Tyr Trp Val Glu
 645 650 655
 Asn Leu Met Val Gln Glu Leu Glu Asn Phe Asn Pro Pro Phe Lys Leu
 660 665 670
 Cys Leu His Lys Arg Asp Phe Ile Pro Gly Lys Trp Ile Ile Asp Asn
 675 680 685
 Ile Ile Asp Ser Ile Glu Lys Ser His Lys Thr Val Phe Val Leu Ser
 690 695 700
 Glu Asn Phe Val Lys Ser Glu Trp Cys Lys Tyr Glu Leu Asp Phe Ser
 705 710 715 720
 His Phe Arg Leu Phe Asp Glu Asn Asn Asp Ala Ala Ile Leu Ile Leu
 725 730 735
 Leu Glu Pro Ile Glu Lys Lys Ala Ile Pro Gln Arg Phe Cys Lys Leu
 740 745 750

Arg Lys Ile Met Asn Thr Lys Thr Tyr Leu Glu Trp Pro Met Asp Glu
 755 760 765

Ala Gln Arg Glu Gly Phe Trp Val Asn Leu Arg Ala Ala Ile Lys Ser
 770 775 780

<210> 770
 <211> 221
 <212> PRT
 <213> Homo sapiens
 <400> 770

Met Ala Gly Gly Val Leu Pro Leu Arg Gly Leu Arg Ala Leu Cys Arg
 1 5 10 15

Val Leu Leu Phe Leu Ser Gln Phe Cys Ile Leu Ser Gly Gly Glu Ser
 20 25 30

Thr Glu Ile Pro Pro Tyr Val Met Lys Cys Pro Ser Asn Gly Leu Cys
 35 40 45

Ser Arg Leu Pro Ala Asp Cys Ile Asp Cys Thr Thr Asn Phe Ser Cys
 50 55 60

Thr Tyr Gly Lys Pro Val Thr Phe Asp Cys Ala Val Lys Pro Ser Val
 65 70 75 80

Thr Cys Val Asp Gln Asp Phe Lys Ser Gln Lys Asn Phe Ile Ile Asn
 85 90 95

Met Thr Cys Arg Phe Cys Trp Gln Leu Pro Glu Thr Asp Tyr Glu Cys
 100 105 110

Thr Asn Ser Thr Ser Cys Met Thr Val Ser Cys Pro Arg Gln Arg Tyr
 115 120 125

Pro Ala Asn Cys Thr Val Arg Asp His Val His Cys Leu Gly Asn Arg
 130 135 140

Thr Phe Pro Lys Met Leu Tyr Cys Asn Trp Thr Gly Gly Tyr Lys Trp
 145 150 155 160

Ser Thr Ala Leu Ala Leu Ser Ile Thr Leu Gly Gly Phe Gly Ala Asp
 165 170 175

Arg Phe Tyr Leu Gly Gln Trp Arg Glu Gly Leu Gly Lys Leu Phe Ser
 180 185 190

Phe Gly Gly Leu Gly Ile Trp Thr Leu Ile Asp Val Leu Leu Ile Gly
 195 200 205

Val Gly Tyr Val Gly Pro Ala Asp Gly Ser Leu Tyr Ile
 210 215 220

<210> 771
 <211> 311
 <212> PRT
 <213> Homo sapiens

<400> 771

Met Ser Asn Pro Ser Ala Pro Pro Pro Tyr Glu Asp Arg Asn Pro Leu
 1 5 10 15

Tyr Pro Gly Pro Pro Pro Pro Gly Gly Tyr Gly Gln Pro Ser Val Leu
 20 25 30

Pro Gly Gly Tyr Pro Ala Tyr Pro Gly Tyr Pro Gln Pro Gly Tyr Gly
 35 40 45

His Pro Ala Gly Tyr Pro Gln Pro Met Pro Pro Thr His Pro Met Pro
 50 55 60

Met Asn Tyr Gly Pro Gly His Gly Tyr Asp Gly Glu Glu Arg Ala Val
 65 70 75 80

Ser Asp Ser Phe Gly Pro Gly Glu Trp Asp Asp Arg Lys Val Arg His
 85 90 95

Thr Phe Ile Arg Lys Val Tyr Ser Ile Ile Ser Val Gln Leu Leu Ile
 100 105 110

Thr Val Ala Ile Ile Ala Ile Phe Thr Phe Val Glu Pro Val Ser Ala
 115 120 125

Phe Val Arg Arg Asn Val Ala Val Tyr Tyr Val Ser Tyr Ala Val Phe
 130 135 140

Val Val Thr Tyr Leu Ile Leu Ala Cys Cys Gln Gly Pro Arg Arg Arg
 145 150 155 160

Phe Pro Trp Asn Ile Ile Leu Leu Thr Leu Phe Thr Phe Ala Met Gly
 165 170 175

Phe Met Thr Gly Thr Ile Ser Ser Met Tyr Gln Thr Lys Ala Val Ile
 180 185 190

Ile Ala Met Ile Ile Thr Ala Val Val Ser Ile Ser Val Thr Ile Phe
 195 200 205

Cys Phe Gln Thr Lys Val Asp Phe Thr Ser Cys Thr Gly Leu Phe Cys
 210 215 220

Val Leu Gly Ile Val Leu Leu Val Thr Gly Ile Val Thr Ser Ile Val
 Page 1323

225 230 235 240

Leu Tyr Phe Gln Tyr Val Tyr Trp Leu His Met Leu Tyr Ala Ala Leu
245 250 255

Gly Ala Ile Cys Phe Thr Leu Phe Leu Ala Tyr Asp Thr Gln Leu Val
260 265 270

Leu Gly Asn Arg Lys His Thr Ile Ser Pro Glu Asp Tyr Ile Thr Gly
275 280 285

Ala Leu Gln Ile Tyr Thr Asp Ile Ile Tyr Ile Phe Thr Phe Val Leu
290 295 300

Gln Leu Met Gly Asp Arg Asn
305 310

<210> 772
<211> 238
<212> PRT
<213> Homo sapiens

<400> 772

Met Tyr Ala Pro Gly Gly Ala Gly Leu Pro Gly Gly Arg Arg Arg Arg
1 5 10 15

Ser Pro Gly Gly Ser Ala Leu Pro Lys Gln Pro Glu Arg Ser Leu Ala
20 25 30

Ser Ala Leu Pro Gly Ala Leu Ser Ile Thr Ala Leu Cys Thr Ala Leu
35 40 45

Ala Glu Pro Ala Trp Leu His Ile His Gly Gly Thr Cys Ser Arg Gln
50 55 60

Glu Leu Gly Val Ser Asp Val Leu Gly Tyr Val His Pro Asp Leu Leu
65 70 75 80

Lys Asp Phe Cys Met Asn Pro Gln Thr Val Leu Leu Leu Arg Val Ile
85 90 95

Ala Ala Phe Cys Phe Leu Gly Ile Leu Cys Ser Leu Ser Ala Phe Leu
100 105 110

Leu Asp Val Phe Gly Pro Lys His Pro Ala Leu Lys Ile Thr Arg Arg
115 120 125

Tyr Ala Phe Ala His Ile Leu Thr Val Leu Gln Cys Ala Thr Val Ile
130 135 140

Gly Phe Ser Tyr Trp Ala Ser Glu Leu Ile Leu Ala Gln Gln Gln Gln
145 150 155 160

His Lys Lys Tyr His Gly Ser Gln Val Tyr Val Thr Phe Ala Val Ser
165 170 175

Phe Tyr Leu Val Ala Gly Ala Gly Gly Ala Ser Ile Leu Ala Thr Ala
180 185 190

Ala Asn Leu Leu Arg His Tyr Pro Thr Glu Glu Glu Glu Gln Ala Leu
195 200 205

Glu Leu Leu Ser Glu Met Glu Glu Asn Glu Pro Tyr Pro Ala Glu Tyr
210 215 220

Glu Val Ile Asn Gln Phe Gln Pro Pro Pro Ala Tyr Thr Pro
225 230 235

<210> 773
<211> 226
<212> PRT
<213> Homo sapiens

<400> 773

Met Thr Val Gln Arg Leu Val Ala Ala Ala Val Leu Val Ala Leu Val
1 5 10 15

Ser Leu Ile Leu Asn Asn Val Ala Ala Phe Thr Ser Asn Trp Val Cys
20 25 30

Gln Thr Leu Glu Asp Gly Arg Arg Arg Ser Val Gly Leu Trp Arg Ser
35 40 45

Cys Trp Leu Val Asp Arg Thr Arg Gly Gly Pro Ser Pro Gly Ala Arg
50 55 60

Ala Gly Gln Val Asp Ala His Asp Cys Glu Ala Leu Gly Trp Gly Ser
65 70 75 80

Glu Ala Ala Gly Phe Gln Glu Ser Arg Gly Thr Val Lys Leu Gln Phe
85 90 95

Asp Met Met Arg Ala Cys Asn Leu Val Ala Thr Ala Ala Leu Thr Ala
100 105 110

Gly Gln Leu Thr Phe Leu Leu Gly Leu Val Gly Leu Pro Leu Leu Ser
115 120 125

Pro Asp Ala Pro Cys Trp Glu Glu Ala Met Ala Ala Ala Phe Gln Leu
130 135 140

Ala Ser Phe Val Leu Val Ile Gly Leu Val Thr Phe Tyr Arg Ile Gly
145 150 155 160

Pro Tyr Thr Asn Leu Ser Trp Ser Cys Tyr Leu Asn Ile Gly Ala Cys
 165 170 175

Leu Leu Ala Thr Leu Ala Ala Ala Met Leu Ile Trp Asn Ile Leu His
 180 185 190

Lys Arg Glu Asp Cys Met Ala Pro Arg Val Ile Val Ile Ser Arg Ser
 195 200 205

Leu Thr Ala Arg Phe Arg Arg Gly Leu Asp Asn Asp Tyr Val Glu Ser
 210 215 220

Pro Cys
 225

<210> 774
 <211> 455
 <212> PRT
 <213> Homo sapiens

<400> 774

Met Gly Leu Ser Thr Val Pro Asp Leu Leu Leu Pro Leu Val Leu Leu
 1 5 10 15

Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro
 20 25 30

His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys
 35 40 45

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys
 50 55 60

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp
 65 70 75 80

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu
 85 90 95

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val
 100 105 110

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg
 115 120 125

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe
 130 135 140

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu
 145 150 155 160

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu
 165 170 175
 Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr
 180 185 190
 Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser
 195 200 205
 Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu
 210 215 220
 Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys
 225 230 235 240
 Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu
 245 250 255
 Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser
 260 265 270
 Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val
 275 280 285
 Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr Pro Gly Asp Cys
 290 295 300
 Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro Pro Tyr Gln Gly
 305 310 315 320
 Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp Pro Ile Pro Asn
 325 330 335
 Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro Gln Ser Leu Asp
 340 345 350
 Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu Asn Val Pro Pro
 355 360 365
 Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu Ser Asp His Glu
 370 375 380
 Ile Asp Arg Leu Glu Leu Gln Asn Gly Arg Cys Leu Arg Glu Ala Gln
 385 390 395 400
 Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro Arg Arg Glu Ala
 405 410 415
 Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met Asp Leu Leu Gly
 420 425 430

Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro Ala Ala Leu Pro
 435 440 445

Pro Ala Pro Ser Leu Leu Arg
 450 455

<210> 775
 <211> 250
 <212> PRT
 <213> Homo sapiens

<400> 775

Met Pro Ala Ser Ser Pro Phe Leu Leu Ala Pro Lys Gly Pro Pro Gly
 1 5 10 15

Asn Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala Leu Trp
 20 25 30

Leu Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala Met Ala Leu
 35 40 45

Leu Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg Glu Val Ser Arg
 50 55 60

Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly Glu Gly Tyr Pro Trp
 65 70 75 80

Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala Leu Glu Ala Trp Glu Asn
 85 90 95

Gly Glu Arg Ser Arg Lys Arg Arg Ala Val Leu Thr Gln Lys Gln Lys
 100 105 110

Lys Gln His Ser Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys
 115 120 125

Asp Asp Ser Asp Val Thr Glu Val Met Trp Gln Pro Ala Leu Arg Arg
 130 135 140

Gly Arg Gly Leu Gln Ala Gln Gly Tyr Gly Val Arg Ile Gln Asp Ala
 145 150 155 160

Gly Val Tyr Leu Leu Tyr Ser Gln Val Leu Phe Gln Asp Val Thr Phe
 165 170 175

Thr Met Gly Gln Val Val Ser Arg Glu Gly Gln Gly Arg Gln Glu Thr
 180 185 190

Leu Phe Arg Cys Ile Arg Ser Met Pro Ser His Pro Asp Arg Ala Tyr
 195 200 205

Asn Ser Cys Tyr Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile

210

215

220

Leu Ser Val Ile Ile Pro Arg Ala Arg Ala Lys Leu Asn Leu Ser Pro
 225 230 235 240

His Gly Thr Phe Leu Gly Phe Val Lys Leu
 245 250

<210> 776
 <211> 636
 <212> PRT
 <213> Homo sapiens

<400> 776

Met Glu Gly Arg Gly Pro Tyr Arg Ile Tyr Asp Pro Gly Gly Ser Val
 1 5 10 15

Pro Ser Gly Glu Ala Ser Ala Ala Phe Glu Arg Leu Val Lys Glu Asn
 20 25 30

Ser Arg Leu Lys Glu Lys Met Gln Gly Ile Lys Met Leu Gly Glu Leu
 35 40 45

Leu Glu Glu Ser Gln Met Glu Ala Thr Arg Leu Arg Gln Lys Ala Glu
 50 55 60

Glu Leu Val Lys Asp Asn Glu Leu Leu Pro Pro Pro Ser Pro Ser Leu
 65 70 75 80

Gly Ser Phe Asp Pro Leu Ala Glu Leu Thr Gly Lys Asp Ser Asn Val
 85 90 95

Thr Ala Ser Pro Thr Ala Pro Ala Cys Pro Ser Asp Lys Pro Ala Pro
 100 105 110

Val Gln Lys Pro Pro Ser Ser Gly Thr Ser Ser Glu Phe Glu Val Val
 115 120 125

Thr Pro Glu Glu Gln Asn Ser Pro Glu Ser Ser Ser His Ala Asn Ala
 130 135 140

Met Ala Leu Gly Pro Leu Pro Arg Glu Asp Gly Asn Leu Met Leu His
 145 150 155 160

Leu Gln Arg Leu Glu Thr Thr Leu Ser Val Cys Ala Glu Glu Pro Asp
 165 170 175

His Gly Gln Leu Phe Thr His Leu Gly Arg Met Ala Leu Glu Phe Asn
 180 185 190

Arg Leu Ala Ser Lys Val His Lys Asn Glu Gln Arg Thr Ser Ile Leu
 195 200 205

Gln Thr Leu Cys Glu Gln Leu Arg Lys Glu Asn Glu Ala Leu Lys Ala
 210 215 220
 Lys Leu Asp Lys Gly Leu Glu Gln Arg Asp Gln Ala Ala Glu Arg Leu
 225 230 235 240
 Arg Glu Glu Asn Leu Glu Leu Lys Lys Leu Leu Met Ser Asn Gly Asn
 245 250 255
 Lys Glu Gly Ala Ser Gly Arg Pro Gly Ser Pro Lys Met Glu Gly Thr
 260 265 270
 Gly Lys Lys Ala Val Ala Gly Gln Gln Gln Ala Ser Val Thr Ala Gly
 275 280 285
 Lys Val Pro Glu Val Val Ala Leu Gly Ala Ala Glu Lys Lys Val Lys
 290 295 300
 Met Leu Glu Gln Gln Arg Ser Glu Leu Leu Glu Val Asn Lys Gln Trp
 305 310 315 320
 Asp Gln His Phe Arg Ser Met Lys Gln Gln Tyr Glu Gln Lys Ile Thr
 325 330 335
 Glu Leu Arg Gln Lys Leu Ala Asp Leu Gln Lys Gln Val Thr Asp Leu
 340 345 350
 Glu Ala Glu Arg Glu Gln Lys Gln Arg Asp Phe Asp Arg Lys Leu Leu
 355 360 365
 Leu Ala Lys Ser Lys Ile Glu Met Glu Glu Thr Asp Lys Glu Gln Leu
 370 375 380
 Thr Ala Glu Ala Lys Glu Leu Arg Gln Lys Val Lys Tyr Leu Gln Asp
 385 390 395 400
 Gln Leu Ser Pro Leu Thr Arg Gln Arg Glu Tyr Gln Glu Lys Glu Ile
 405 410 415
 Gln Arg Leu Asn Lys Ala Leu Glu Glu Ala Leu Ser Ile Gln Thr Pro
 420 425 430
 Pro Ser Ser Pro Pro Thr Ala Phe Gly Ser Pro Glu Gly Ala Gly Ala
 435 440 445
 Leu Leu Arg Lys Gln Glu Leu Val Thr Gln Asn Glu Leu Leu Lys Gln
 450 455 460
 Gln Val Lys Ile Phe Glu Glu Asp Phe Gln Arg Glu Arg Ser Asp Arg
 465 470 475 480

Glu Arg Met Asn Glu Glu Lys Glu Glu Leu Lys Lys Gln Val Glu Lys
485 490 495

Leu Gln Ala Gln Val Thr Leu Ser Asn Ala Gln Leu Lys Ala Phe Lys
500 505 510

Asp Glu Glu Lys Ala Arg Glu Ala Leu Arg Gln Gln Lys Arg Lys Ala
515 520 525

Lys Ala Ser Gly Glu Arg Tyr His Val Glu Pro His Pro Glu His Leu
530 535 540

Cys Gly Ala Tyr Pro Tyr Ala Tyr Pro Pro Met Pro Ala Met Val Pro
545 550 555 560

His His Gly Phe Glu Asp Trp Ser Gln Ile Arg Tyr Pro Pro Pro Pro
565 570 575

Met Ala Met Glu His Pro Pro Pro Leu Pro Asn Ser Arg Leu Phe His
580 585 590

Leu Pro Glu Tyr Thr Trp Arg Leu Pro Cys Gly Gly Val Arg Asn Pro
595 600 605

Asn Gln Ser Ser Gln Val Met Asp Pro Pro Thr Ala Arg Pro Thr Glu
610 615 620

Pro Glu Ser Pro Lys Asn Asp Arg Glu Gly Pro Gln
625 630 635

<210> 777
<211> 1038
<212> PRT
<213> Homo sapiens

<400> 777

Met Gln Pro Glu Glu Gly Thr Gly Trp Leu Leu Glu Leu Leu Ser Glu
1 5 10 15

Val Gln Leu Gln Gln Tyr Phe Leu Arg Leu Arg Asp Asp Leu Asn Val
20 25 30

Thr Arg Leu Ser His Phe Glu Tyr Val Lys Asn Glu Asp Leu Glu Lys
35 40 45

Ile Gly Met Gly Arg Pro Gly Gln Arg Arg Leu Trp Glu Ala Val Lys
50 55 60

Arg Arg Lys Ala Leu Cys Lys Arg Lys Ser Trp Met Ser Lys Val Phe
65 70 75 80

Ser Gly Lys Arg Leu₈₅ Glu Ala Glu Phe Pro₉₀ Pro His His Ser Gln₉₅ Ser
 Thr Phe Arg Lys₁₀₀ Thr Ser Pro Ala Pro₁₀₅ Gly Gly Pro Ala Gly₁₁₀ Glu Gly
 Pro Leu Gln₁₁₅ Ser Leu Thr Cys Leu₁₂₀ Ile Gly Glu Lys Asp₁₂₅ Leu Arg Leu
 Leu Glu Lys Leu Gly Asp Gly₁₃₅ Ser Phe Gly Val Val₁₄₀ Arg Arg Gly Glu
 Trp Asp Ala Pro Ser Gly₁₅₀ Lys Thr Val Ser Val₁₅₅ Ala Val Lys Cys Leu₁₆₀
 Lys Pro Asp Val Leu₁₆₅ Ser Gln Pro Glu Ala Met Asp Asp Phe Ile Arg₁₇₅
 Glu Val Asn Ala₁₈₀ Met His Ser Leu Asp₁₈₅ His Arg Asn Leu Ile Arg Leu₁₉₀
 Tyr Gly Val₁₉₅ Val Leu Thr Pro Pro₂₀₀ Met Lys Met Val Thr₂₀₅ Glu Leu Ala
 Pro Leu Gly Ser Leu Leu Asp₂₁₅ Arg Leu Arg Lys His₂₂₀ Gln Gly His Phe
 Leu Leu Gly Thr Leu Ser₂₃₀ Arg Tyr Ala Val Gln₂₃₅ Val Ala Glu Gly Met₂₄₀
 Gly Tyr Leu Glu Ser₂₄₅ Lys Arg Phe Ile His₂₅₀ Arg Asp Leu Ala Ala Arg₂₅₅
 Asn Leu Leu Leu₂₆₀ Ala Thr Arg Asp Leu₂₆₅ Val Lys Ile Gly Asp₂₇₀ Phe Gly
 Leu Met Arg₂₇₅ Ala Leu Pro Gln Asn₂₈₀ Asp Asp His Tyr Val Met Gln Glu
 His Arg₂₉₀ Lys Val Pro Phe Ala₂₉₅ Trp Cys Ala Pro Glu₃₀₀ Ser Leu Lys Thr
 Arg Thr Phe Ser His Ala₃₁₀ Ser Asp Thr Trp Met₃₁₅ Phe Gly Val Thr Leu₃₂₀
 Trp Glu Met Phe Thr₃₂₅ Tyr Gly Gln Glu Pro₃₃₀ Trp Ile Gly Leu Asn Gly₃₃₅
 Ser Gln Ile Leu₃₄₀ His Lys Ile Asp Lys₃₄₅ Glu Gly Glu Arg Leu Pro Arg₃₅₀

Pro Glu Asp Cys Pro Gln Asp Ile Tyr Asn Val Met Val Gln Cys Trp
 355 360 365
 Ala His Lys Pro Glu Asp Arg Pro Thr Phe Val Ala Leu Arg Asp Phe
 370 375 380
 Leu Leu Glu Ala Gln Pro Thr Asp Met Arg Ala Leu Gln Asp Phe Glu
 385 390 395 400
 Glu Pro Asp Lys Leu His Ile Gln Met Asn Asp Val Ile Thr Val Ile
 405 410 415
 Glu Gly Arg Ala Glu Asn Tyr Trp Trp Arg Gly Gln Asn Thr Arg Thr
 420 425 430
 Leu Cys Val Gly Pro Phe Pro Arg Asn Val Val Thr Ser Val Ala Gly
 435 440 445
 Leu Ser Ala Gln Asp Ile Ser Gln Pro Leu Gln Asn Ser Phe Ile His
 450 455 460
 Thr Gly His Gly Asp Ser Asp Pro Arg His Cys Trp Gly Phe Pro Asp
 465 470 475 480
 Arg Ile Asp Glu Leu Tyr Leu Gly Asn Pro Met Asp Pro Pro Asp Leu
 485 490 495
 Leu Ser Val Glu Leu Ser Thr Ser Arg Pro Pro Gln His Leu Gly Gly
 500 505 510
 Val Lys Lys Pro Thr Tyr Asp Pro Val Ser Glu Asp Gln Asp Pro Leu
 515 520 525
 Ser Ser Asp Phe Lys Arg Leu Gly Leu Arg Lys Pro Gly Leu Pro Arg
 530 535 540
 Gly Leu Trp Leu Ala Lys Pro Ser Ala Arg Val Pro Gly Thr Lys Ala
 545 550 555 560
 Ser Arg Gly Ser Gly Ala Glu Val Thr Leu Ile Asp Phe Gly Glu Glu
 565 570 575
 Pro Val Val Pro Ala Leu Arg Pro Cys Ala Pro Ser Leu Ala Gln Leu
 580 585 590
 Ala Met Asp Ala Cys Ser Leu Leu Asp Glu Thr Pro Pro Gln Ser Pro
 595 600 605
 Thr Arg Ala Leu Pro Arg Pro Leu His Pro Thr Pro Val Val Asp Trp
 610 615 620

Asp Ala Arg Pro Leu Pro Pro Pro Pro Ala Tyr Asp Asp Val Ala Gln
 625 630 635 640
 Asp Glu Asp Asp Phe Glu Ile Cys Ser Ile Asn Ser Thr Leu Val Gly
 645 650 655
 Ala Gly Val Pro Ala Gly Pro Ser Gln Gly Gln Thr Asn Tyr Ala Phe
 660 665 670
 Val Pro Glu Gln Ala Arg Pro Pro Pro Pro Leu Glu Asp Asn Leu Phe
 675 680 685
 Leu Pro Pro Gln Gly Gly Gly Lys Pro Pro Ser Ser Ala Gln Thr Ala
 690 695 700
 Glu Ile Phe Gln Ala Leu Gln Gln Glu Cys Met Arg Gln Leu Gln Ala
 705 710 715 720
 Pro Ala Gly Ser Pro Ala Pro Ser Pro Ser Pro Gly Gly Asp Asp Lys
 725 730 735
 Pro Gln Val Pro Pro Arg Val Pro Ile Pro Pro Arg Pro Thr Arg Pro
 740 745 750
 His Val Gln Leu Ser Pro Ala Pro Pro Gly Glu Glu Glu Thr Ser Gln
 755 760 765
 Trp Pro Gly Pro Ala Ser Pro Pro Arg Val Pro Pro Arg Glu Pro Leu
 770 775 780
 Ser Pro Gln Gly Ser Arg Thr Pro Ser Pro Leu Val Pro Pro Gly Ser
 785 790 795 800
 Ser Pro Leu Pro Pro Arg Leu Ser Ser Ser Pro Gly Lys Thr Met Pro
 805 810 815
 Thr Thr Gln Ser Phe Ala Ser Asp Pro Lys Tyr Ala Thr Pro Gln Val
 820 825 830
 Ile Gln Ala Pro Gly Pro Arg Ala Gly Pro Cys Ile Leu Pro Ile Val
 835 840 845
 Arg Asp Gly Lys Lys Val Ser Ser Thr His Tyr Tyr Leu Leu Pro Glu
 850 855 860
 Arg Pro Ser Tyr Leu Glu Arg Tyr Gln Arg Phe Leu Arg Glu Ala Gln
 865 870 875 880
 Ser Pro Glu Glu Pro Thr Pro Leu Pro Val Pro Leu Leu Leu Pro Pro
 885 890 895

Pro Ser Thr Pro Ala Pro Ala Ala Pro Thr Ala Thr Val Arg Pro Met
 900 905 910
 Pro Gln Ala Ala Leu Asp Pro Lys Ala Asn Phe Ser Thr Asn Asn Ser
 915 920 925
 Asn Pro Gly Ala Arg Pro Pro Pro Pro Arg Ala Thr Ala Arg Leu Pro
 930 935 940
 Gln Arg Gly Cys Pro Gly Asp Gly Pro Glu Ala Gly Arg Pro Ala Asp
 945 950 955 960
 Lys Ile Gln Met Ala Met Val His Gly Val Thr Thr Glu Glu Cys Gln
 965 970 975
 Ala Ala Leu Gln Cys His Gly Trp Ser Val Gln Arg Ala Ala Gln Tyr
 980 985 990
 Leu Lys Val Glu Gln Leu Phe Gly Leu Gly Leu Arg Pro Arg Gly Glu
 995 1000 1005
 Cys His Lys Val Leu Glu Met Phe Asp Trp Asn Leu Glu Gln Ala
 1010 1015 1020
 Gly Cys His Leu Leu Gly Ser Trp Gly Pro Ala His His Lys Arg
 1025 1030 1035
 <210> 778
 <211> 1723
 <212> PRT
 <213> Homo sapiens
 <400> 778
 Met Arg Glu Lys Glu Gln Glu Arg Glu Glu Gln Leu Met Glu Asp Lys
 1 5 10 15
 Lys Arg Lys Lys Glu Asp Lys Lys Lys Lys Glu Ala Thr Gln Lys Val
 20 25 30
 Thr Glu Gln Lys Thr Lys Val Pro Glu Val Thr Lys Pro Ser Leu Ser
 35 40 45
 Gln Pro Thr Ala Ala Ser Pro Ile Gly Ser Ser Pro Ser Pro Pro Val
 50 55 60
 Asn Gly Gly Asn Asn Ala Lys Arg Val Ala Val Pro Asn Gly Gln Pro
 65 70 75 80
 Pro Ser Ala Ala Arg Tyr Met Pro Arg Glu Val Pro Pro Arg Phe Arg
 85 90 95

Cys Gln Gln Asp His Lys Val Leu Leu Lys Arg Gly Gln Pro Pro Pro
 100 105 110
 Pro Ser Cys Met Leu Leu Gly Gly Gly Ala Gly Pro Pro Pro Cys Thr
 115 120 125
 Ala Pro Gly Ala Asn Pro Asn Asn Ala Gln Val Thr Gly Ala Leu Leu
 130 135 140
 Gln Ser Glu Ser Gly Thr Ala Pro Asp Ser Thr Leu Gly Gly Ala Ala
 145 150 155 160
 Ala Ser Asn Tyr Ala Asn Ser Thr Trp Gly Ser Gly Ala Ser Ser Asn
 165 170 175
 Asn Gly Thr Ser Pro Asn Pro Ile His Ile Trp Asp Lys Val Ile Val
 180 185 190
 Asp Gly Ser Asp Met Glu Glu Trp Pro Cys Ile Ala Ser Lys Asp Thr
 195 200 205
 Glu Ser Ser Ser Glu Asn Thr Thr Asp Asn Asn Ser Ala Ser Asn Pro
 210 215 220
 Gly Ser Glu Lys Ser Thr Leu Pro Gly Ser Thr Thr Ser Asn Lys Gly
 225 230 235 240
 Lys Gly Ser Gln Cys Gln Ser Ala Ser Ser Gly Asn Glu Cys Asn Leu
 245 250 255
 Gly Val Trp Lys Ser Asp Pro Lys Ala Lys Ser Val Gln Ser Ser Asn
 260 265 270
 Ser Thr Thr Glu Asn Asn Asn Gly Leu Gly Asn Trp Arg Asn Val Ser
 275 280 285
 Gly Gln Asp Arg Ile Gly Pro Gly Ser Gly Phe Ser Asn Phe Asn Pro
 290 295 300
 Asn Ser Asn Pro Ser Ala Trp Pro Ala Leu Val Gln Glu Gly Thr Ser
 305 310 315 320
 Arg Lys Gly Ala Leu Glu Thr Asp Asn Ser Asn Ser Ser Ala Gln Val
 325 330 335
 Ser Thr Val Gly Gln Thr Ser Arg Glu Gln Gln Ser Lys Met Glu Asn
 340 345 350
 Ala Gly Val Asn Phe Val Val Ser Gly Arg Glu Gln Ala Gln Ile His
 355 360 365

Asn Thr Asp Gly Pro Lys Asn Gly Asn Thr Asn Ser Leu Asn Leu Ser
 370 375 380
 Ser Pro Asn Pro Met Glu Asn Lys Gly Met Pro Phe Gly Met Gly Leu
 385 390 395 400
 Gly Asn Thr Ser Arg Ser Thr Asp Ala Pro Ser Gln Ser Thr Gly Asp
 405 410 415
 Arg Lys Thr Gly Ser Val Gly Ser Trp Gly Ala Ala Arg Gly Pro Ser
 420 425 430
 Gly Thr Asp Thr Val Ser Gly Gln Ser Asn Ser Gly Asn Asn Gly Asn
 435 440 445
 Asn Gly Lys Glu Arg Glu Asp Ser Trp Lys Gly Ala Ser Val Gln Lys
 450 455 460
 Ser Thr Gly Ser Lys Asn Asp Ser Trp Asp Asn Asn Asn Arg Ser Thr
 465 470 475 480
 Gly Gly Ser Trp Asn Phe Gly Pro Gln Asp Ser Asn Asp Asn Lys Trp
 485 490 495
 Gly Glu Gly Asn Lys Met Thr Ser Gly Val Ser Gln Gly Glu Trp Lys
 500 505 510
 Gln Pro Thr Gly Ser Asp Glu Leu Lys Ile Gly Glu Trp Ser Gly Pro
 515 520 525
 Asn Gln Pro Asn Ser Ser Thr Gly Ala Trp Asp Asn Gln Lys Gly His
 530 535 540
 Pro Leu Pro Glu Asn Gln Gly Asn Ala Gln Ala Pro Cys Trp Gly Arg
 545 550 555 560
 Ser Ser Ser Ser Thr Gly Ser Glu Val Gly Gly Gln Ser Thr Gly Ser
 565 570 575
 Asn His Lys Ala Gly Ser Ser Asp Ser His Asn Ser Gly Arg Arg Ser
 580 585 590
 Tyr Arg Pro Thr His Pro Asp Cys Gln Ala Val Leu Gln Thr Leu Leu
 595 600 605
 Ser Arg Thr Asp Leu Asp Pro Arg Val Leu Ser Asn Thr Gly Trp Gly
 610 615 620
 Gln Thr Gln Ile Lys Gln Asp Thr Val Trp Asp Ile Glu Glu Val Pro
 625 630 635 640

Arg Pro Glu Gly Lys Ser Asp Lys Gly Thr Glu Gly Trp Glu Ser Ala
 645 650 655
 Ala Thr Gln Thr Lys Asn Ser Gly Gly Trp Gly Asp Ala Pro Ser Gln
 660 665 670
 Ser Asn Gln Met Lys Ser Gly Trp Gly Glu Leu Ser Ala Ser Thr Glu
 675 680 685
 Trp Lys Asp Pro Lys Asn Thr Gly Gly Trp Asn Asp Tyr Lys Asn Asn
 690 695 700
 Asn Ser Ser Asn Trp Gly Gly Gly Arg Pro Asp Glu Lys Thr Pro Ser
 705 710 715 720
 Ser Trp Asn Glu Asn Pro Ser Lys Asp Gln Gly Trp Gly Gly Gly Arg
 725 730 735
 Gln Pro Asn Gln Gly Trp Ser Ser Gly Lys Asn Gly Trp Gly Glu Glu
 740 745 750
 Val Asp Gln Thr Lys Asn Ser Asn Trp Glu Ser Ser Ala Ser Lys Pro
 755 760 765
 Val Ser Gly Trp Gly Glu Gly Gly Gln Asn Glu Ile Gly Thr Trp Gly
 770 775 780
 Asn Gly Gly Asn Ala Ser Leu Ala Ser Lys Gly Gly Trp Glu Asp Cys
 785 790 795 800
 Lys Arg Ser Pro Ala Trp Asn Glu Thr Gly Arg Gln Pro Asn Ser Trp
 805 810 815
 Asn Lys Gln His Gln Gln Gln Gln Pro Pro Gln Gln Pro Pro Pro Pro
 820 825 830
 Gln Pro Glu Ala Ser Gly Ser Trp Gly Gly Pro Pro Pro Pro Pro Pro
 835 840 845
 Gly Asn Val Arg Pro Ser Asn Ser Ser Trp Ser Ser Gly Pro Gln Pro
 850 855 860
 Ala Thr Pro Lys Asp Glu Glu Pro Ser Gly Trp Glu Glu Pro Ser Pro
 865 870 875 880
 Gln Ser Ile Ser Arg Lys Met Asp Ile Asp Asp Gly Thr Ser Ala Trp
 885 890 895
 Gly Asp Pro Asn Ser Tyr Asn Tyr Lys Asn Val Asn Leu Trp Asp Lys
 900 905 910

Asn Ser Gln Gly Gly Pro Ala Pro Arg Glu Pro Asn Leu Pro Thr Pro
 915 920 925

Met Thr Ser Lys Ser Ala Ser Asp Ser Lys Ser Met Gln Asp Gly Trp
 930 935 940

Gly Glu Ser Asp Gly Pro Val Thr Gly Ala Arg His Pro Ser Trp Glu
 945 950 955 960

Glu Glu Glu Asp Gly Gly Val Trp Asn Thr Thr Gly Ser Gln Gly Ser
 965 970 975

Ala Ser Ser His Asn Ser Ala Ser Trp Gly Gln Gly Gly Lys Lys Gln
 980 985 990

Met Lys Cys Ser Leu Lys Gly Gly Asn Asn Asp Ser Trp Met Asn Pro
 995 1000 1005

Leu Ala Lys Gln Phe Ser Asn Met Gly Leu Leu Ser Gln Thr Glu
 1010 1015 1020

Asp Asn Pro Ser Ser Lys Met Asp Leu Ser Val Gly Ser Leu Ser
 1025 1030 1035

Asp Lys Lys Phe Asp Val Asp Lys Arg Ala Met Asn Leu Gly Asp
 1040 1045 1050

Phe Asn Asp Ile Met Arg Lys Asp Arg Ser Gly Phe Arg Pro Pro
 1055 1060 1065

Asn Ser Lys Asp Met Gly Thr Thr Asp Ser Gly Pro Tyr Phe Glu
 1070 1075 1080

Lys Gly Gly Ser His Gly Leu Phe Gly Asn Ser Thr Ala Gln Ser
 1085 1090 1095

Arg Gly Leu His Thr Pro Val Gln Pro Leu Asn Ser Ser Pro Ser
 1100 1105 1110

Leu Arg Ala Gln Val Pro Pro Gln Phe Ile Ser Pro Gln Val Ser
 1115 1120 1125

Ala Ser Met Leu Lys Gln Phe Pro Asn Ser Gly Leu Ser Pro Gly
 1130 1135 1140

Leu Phe Asn Val Gly Pro Gln Leu Ser Pro Gln Gln Ile Ala Met
 1145 1150 1155

Leu Ser Gln Leu Pro Gln Ile Pro Gln Phe Gln Leu Ala Cys Gln
 1160 1165 1170

Leu Leu Leu Gln Gln Gln Gln Gln Gln Gln Leu Leu Gln Asn Gln
 1175 1180 1185
 Arg Lys Ile Ser Gln Ala Val Arg Gln Gln Gln Glu Gln Gln Leu
 1190 1195 1200
 Ala Arg Met Val Ser Ala Leu Gln Gln Gln Gln Gln Gln Gln
 1205 1210 1215
 Arg Gln Pro Gly Met Lys His Ser Pro Ser His Pro Val Gly Pro
 1220 1225 1230
 Lys Pro His Leu Asp Asn Met Val Pro Asn Ala Leu Asn Val Gly
 1235 1240 1245
 Leu Pro Asp Leu Gln Thr Lys Gly Pro Ile Pro Gly Tyr Gly Ser
 1250 1255 1260
 Gly Phe Ser Ser Gly Gly Met Asp Tyr Gly Met Val Gly Gly Lys
 1265 1270 1275
 Glu Ala Gly Thr Glu Ser Arg Phe Lys Gln Trp Thr Ser Met Met
 1280 1285 1290
 Glu Gly Leu Pro Ser Val Ala Thr Gln Glu Ala Asn Met His Lys
 1295 1300 1305
 Asn Gly Ala Ile Val Ala Pro Gly Lys Thr Arg Gly Gly Ser Pro
 1310 1315 1320
 Tyr Asn Gln Phe Asp Ile Ile Pro Gly Asp Thr Leu Gly Gly His
 1325 1330 1335
 Thr Gly Pro Ala Gly Asp Ser Trp Leu Pro Ala Lys Ser Pro Pro
 1340 1345 1350
 Thr Asn Lys Ile Gly Ser Lys Ser Ser Asn Ala Ser Trp Pro Pro
 1355 1360 1365
 Glu Phe Gln Pro Gly Val Pro Trp Lys Gly Ile Gln Asn Ile Asp
 1370 1375 1380
 Pro Glu Ser Asp Pro Tyr Val Thr Pro Gly Ser Val Leu Gly Gly
 1385 1390 1395
 Thr Ala Thr Ser Pro Ile Val Asp Thr Asp His Gln Leu Leu Arg
 1400 1405 1410
 Asp Asn Thr Thr Gly Ser Asn Ser Ser Leu Asn Thr Ser Leu Pro
 1415 1420 1425

Ser	Pro	Gly	Ala	Trp	Pro	Tyr	Ser	Ala	Ser	Asp	Asn	Ser	Phe	Thr
	1430					1435					1440			
Asn	Val	His	Ser	Thr	Ser	Ala	Lys	Phe	Pro	Asp	Tyr	Lys	Ser	Thr
	1445					1450					1455			
Trp	Ser	Pro	Asp	Pro	Ile	Gly	His	Asn	Pro	Thr	His	Leu	Ser	Asn
	1460					1465					1470			
Lys	Met	Trp	Lys	Asn	His	Ile	Ser	Ser	Arg	Asn	Thr	Thr	Pro	Leu
	1475					1480					1485			
Pro	Arg	Pro	Pro	Pro	Gly	Leu	Thr	Asn	Pro	Lys	Pro	Ser	Ser	Pro
	1490					1495					1500			
Trp	Ser	Ser	Thr	Ala	Pro	Arg	Ser	Val	Arg	Gly	Trp	Gly	Thr	Gln
	1505					1510					1515			
Asp	Ser	Arg	Leu	Ala	Ser	Ala	Ser	Thr	Trp	Ser	Asp	Gly	Gly	Ser
	1520					1525					1530			
Val	Arg	Pro	Ser	Tyr	Trp	Leu	Val	Leu	His	Asn	Leu	Thr	Pro	Gln
	1535					1540					1545			
Ile	Asp	Gly	Ser	Thr	Leu	Arg	Thr	Ile	Cys	Met	Gln	His	Gly	Pro
	1550					1555					1560			
Leu	Leu	Thr	Phe	His	Leu	Asn	Leu	Thr	Gln	Gly	Thr	Ala	Leu	Ile
	1565					1570					1575			
Arg	Tyr	Ser	Thr	Lys	Gln	Glu	Ala	Ala	Lys	Ala	Gln	Thr	Ala	Leu
	1580					1585					1590			
His	Met	Cys	Val	Leu	Gly	Asn	Thr	Thr	Ile	Leu	Ala	Glu	Phe	Ala
	1595					1600					1605			
Thr	Asp	Asp	Glu	Val	Ser	Arg	Phe	Leu	Ala	Gln	Ala	Gln	Pro	Pro
	1610					1615					1620			
Thr	Pro	Ala	Ala	Thr	Pro	Ser	Ala	Pro	Ala	Ala	Gly	Trp	Gln	Ser
	1625					1630					1635			
Leu	Glu	Thr	Gly	Gln	Asn	Gln	Ser	Asp	Pro	Val	Gly	Pro	Ala	Leu
	1640					1645					1650			
Asn	Leu	Phe	Gly	Gly	Ser	Thr	Gly	Leu	Gly	Gln	Trp	Ser	Ser	Ser
	1655					1660					1665			
Ala	Gly	Gly	Ser	Ser	Gly	Ala	Asp	Leu	Ala	Gly	Ala	Ser	Leu	Trp
	1670					1675					1680			

Gly Pro Pro Asn Tyr Ser Ser Ser Leu Trp Gly Val Pro Thr Val
 1685 1690 1695

Glu Asp Pro His Arg Met Gly Ser Pro Ala Pro Leu Leu Pro Gly
 1700 1705 1710

Asp Leu Leu Gly Gly Gly Ser Asp Ser Ile
 1715 1720

<210> 779
 <211> 1045
 <212> PRT
 <213> Homo sapiens

<400> 779

Met Gly Ser Gln Pro Pro Leu Gly Ser Pro Leu Ser Arg Glu Glu Gly
 1 5 10 15

Glu Ala Pro Pro Pro Ala Pro Ala Ser Glu Gly Arg Arg Arg Ser Arg
 20 25 30

Arg Val Arg Leu Arg Gly Ser Cys Arg His Arg Pro Ser Phe Leu Gly
 35 40 45

Cys Arg Glu Leu Ala Ala Ser Ala Pro Ala Arg Pro Ala Pro Ala Ser
 50 55 60

Ser Glu Ile Met Ala Ser Ala Ala Lys Glu Phe Lys Met Asp Asn Phe
 65 70 75 80

Ser Pro Lys Ala Gly Thr Ser Lys Leu Gln Gln Thr Val Pro Ala Asp
 85 90 95

Ala Ser Pro Asp Ser Lys Cys Pro Ile Cys Leu Asp Arg Phe Asp Asn
 100 105 110

Val Ser Tyr Leu Asp Arg Cys Leu His Lys Phe Cys Phe Arg Cys Val
 115 120 125

Gln Glu Trp Ser Lys Asn Lys Ala Glu Cys Pro Leu Cys Lys Gln Pro
 130 135 140

Phe Asp Ser Ile Phe His Ser Val Arg Ala Glu Asp Asp Phe Lys Glu
 145 150 155 160

Tyr Val Leu Arg Pro Ser Tyr Asn Gly Ser Phe Val Thr Pro Asp Arg
 165 170 175

Arg Phe Arg Tyr Arg Thr Thr Leu Thr Arg Glu Arg Asn Ala Ser Val
 180 185 190

Tyr Ser Pro Ser Gly Pro Val Asn Arg Arg Thr Thr Thr Pro Pro Asp
 Page 1342

195

200

205

Ser Gly Val Leu Phe Glu Gly Leu Gly Ile Ser Thr Arg Pro Arg Asp
 210 215 220

Val Glu Ile Pro Gln Phe Met Arg Gln Ile Ala Val Arg Arg Pro Thr
 225 230 235 240

Thr Ala Asp Glu Arg Ser Leu Arg Lys Ile Gln Glu Gln Asp Ile Ile
 245 250 255

Asn Phe Arg Arg Thr Leu Tyr Arg Ala Gly Ala Arg Val Arg Asn Ile
 260 265 270

Glu Asp Gly Gly Arg Tyr Arg Asp Ile Ser Ala Glu Phe Phe Arg Arg
 275 280 285

Asn Pro Ala Cys Leu His Arg Leu Val Pro Trp Leu Lys Arg Glu Leu
 290 295 300

Thr Val Leu Phe Gly Ala His Gly Ser Leu Val Asn Ile Val Gln His
 305 310 315 320

Ile Ile Met Ser Asn Val Thr Arg Tyr Asp Leu Glu Ser Gln Ala Phe
 325 330 335

Val Ser Asp Leu Arg Pro Phe Leu Leu Asn Arg Thr Glu His Phe Ile
 340 345 350

His Glu Phe Ile Ser Phe Ala Arg Ser Pro Phe Asn Met Ala Ala Phe
 355 360 365

Asp Gln His Ala Asn Tyr Asp Cys Pro Ala Pro Ser Tyr Glu Glu Gly
 370 375 380

Ser His Ser Asp Ser Ser Val Ile Thr Ile Ser Pro Asp Glu Ala Glu
 385 390 395 400

Thr Gln Glu Leu Asp Ile Asn Val Ala Thr Val Ser Gln Ala Pro Trp
 405 410 415

Asp Asp Glu Thr Pro Gly Pro Ser Tyr Ser Ser Ser Glu Gln Val His
 420 425 430

Val Thr Met Ser Ser Leu Leu Asn Thr Ser Asp Ser Ser Asp Glu Glu
 435 440 445

Leu Val Thr Gly Gly Ala Thr Ser Gln Ile Gln Gly Val Gln Thr Asn
 450 455 460

Asp Asp Leu Asn Asn Asp Ser Asp Asp Ser Ser Asp Asn Cys Val Ile

465 470 475 480

Val Gly Phe Val Lys₄₈₅ Pro Leu Ala Glu Arg₄₉₀ Thr Pro Glu Leu Val₄₉₅ Glu

Leu Ser Ser Asp₅₀₀ Ser Glu Asp Leu Gly₅₀₅ Ser Tyr Glu Lys Met₅₁₀ Glu Thr

Val Lys Thr₅₁₅ Gln Glu Gln Glu Gln₅₂₀ Ser Tyr Ser Ser Gly₅₂₅ Asp Ser Asp

Val Ser₅₃₀ Arg Cys Ser Ser Pro₅₃₅ His Ser Val Leu Gly₅₄₀ Lys Asp Glu Gln

Ile₅₄₅ Asn Lys Gly His Cys₅₅₀ Asp Ser Ser Thr Arg₅₅₅ Ile Lys Ser Lys₅₆₀ Lys

Glu Glu Lys Arg Ser₅₆₅ Thr Ser Leu Ser Ser₅₇₀ Pro Arg Asn Leu Asn₅₇₅ Ser

Ser Val Arg Gly₅₈₀ Asp Arg Val Tyr Ser₅₈₅ Pro Tyr Asn His Arg₅₉₀ His Arg

Lys Arg Gly₅₉₅ Arg Ser Arg Ser Ser₆₀₀ Asp Ser Arg Ser Gln₆₀₅ Ser Arg Ser

Gly His₆₁₀ Asp Gln Lys Asn His₆₁₅ Arg Lys His His Gly₆₂₀ Lys Lys Arg Met

Lys₆₂₅ Ser Lys Arg Ser Arg₆₃₀ Ser Arg Glu Ser Ser₆₃₅ Arg Pro Arg Gly Arg₆₄₀

Arg Asp Lys Lys Arg₆₄₅ Ser Arg Thr Arg Asp₆₅₀ Ser Ser Trp Ser Arg₆₅₅ Arg

Ser Gln Thr Leu₆₆₀ Ser Leu Ser Ser Glu₆₆₅ Ser Thr Ser Arg Ser₆₇₀ Arg Ser

Arg Ser Ser₆₇₅ Asp His Gly Lys Arg₆₈₀ Arg Ser Arg Ser Arg₆₈₅ Asn Arg Asp

Arg Tyr₆₉₀ Tyr Leu Arg Asn Asn₆₉₅ Tyr Gly Ser Arg Tyr₇₀₀ Lys Trp Glu Tyr

Thr₇₀₅ Tyr Tyr Ser Arg Asn₇₁₀ Lys Asp Arg Asp Gly₇₁₅ Tyr Glu Ser Ser Tyr₇₂₀

Arg Arg Arg Thr Leu₇₂₅ Ser Arg Ala His Tyr₇₃₀ Ser Arg Gln Ser Ser₇₃₅ Ser

Pro Glu Phe Arg Val Gln Ser Phe Ser Glu Arg Thr Asn Ala Arg Lys

740

745

750

Lys Asn Asn His Ser Glu Arg Lys Tyr Tyr Tyr Tyr Glu Arg His Arg
755 760 765

Ser Arg Ser Leu Ser Ser Asn Arg Ser Arg Thr Ala Ser Thr Gly Thr
770 775 780

Asp Arg Val Arg Asn Glu Lys Pro Gly Gly Lys Arg Lys Tyr Lys Thr
785 790 795 800

Arg His Leu Glu Gly Thr Asn Glu Val Ala Gln Pro Ser Arg Glu Phe
805 810 815

Ala Ser Lys Ala Lys Asp Ser His Tyr Gln Lys Ser Ser Ser Lys Leu
820 825 830

Asp Gly Asn Tyr Lys Asn Glu Ser Asp Thr Phe Ser Asp Ser Arg Ser
835 840 845

Ser Asp Arg Glu Thr Lys His Lys Arg Arg Lys Arg Lys Thr Arg Ser
850 855 860

Leu Ser Val Glu Ile Val Tyr Glu Gly Lys Ala Thr Asp Thr Thr Lys
865 870 875 880

His His Lys Lys Lys Lys Lys Lys His Lys Lys Lys His Lys Lys His
885 890 895

His Gly Asp Asn Ala Ser Arg Ser Pro Val Val Ile Thr Ile Asp Ser
900 905 910

Asp Ser Asp Lys Asp Ser Glu Val Lys Glu Asp Thr Glu Cys Asp Asn
915 920 925

Ser Gly Pro Gln Asp Pro Leu Gln Asn Glu Phe Leu Ala Pro Ser Leu
930 935 940

Glu Pro Phe Glu Thr Lys Asp Val Val Thr Ile Glu Ala Glu Phe Gly
945 950 955 960

Val Leu Asp Lys Glu Cys Asp Ile Ala Thr Leu Ser Asn Asn Leu Asn
965 970 975

Asn Ala Asn Lys Thr Val Asp Asn Ile Pro Pro Leu Ala Ala Ser Val
980 985 990

Glu Gln Thr Leu Asp Val Arg Glu Glu Ser Thr Phe Val Ser Asp Leu
995 1000 1005

Glu Asn Gln Pro Ser Asn Ile Val Ser Leu Gln Thr Glu Pro Ser

1010

1015

1020

Arg Gln Leu Pro Ser Pro Arg Thr Ser Leu Met Ser Val Cys Leu
 1025 1030 1035

Gly Arg Asp Cys Asp Met Ser
 1040 1045

<210> 780
 <211> 686
 <212> PRT
 <213> Homo sapiens

<400> 780

Met Ser Leu Arg Asp Lys Gly Gly Glu Glu Glu Cys Phe Glu Tyr Asp
 1 5 10 15

Cys Gln Asp Glu Glu Arg Lys Pro Thr His Arg Gln His Asp Thr Gln
 20 25 30

Asp Leu Leu Glu Glu Val Leu Cys Ala Glu Arg Val Gly Gln Met Thr
 35 40 45

Lys Thr Tyr Asn Asp Ile Asp Ala Val Thr Arg Leu Leu Glu Glu Lys
 50 55 60

Glu Arg Asp Leu Glu Leu Ala Ala Arg Ile Gly Gln Ser Leu Leu Lys
 65 70 75 80

Lys Asn Lys Thr Leu Thr Glu Arg Asn Glu Leu Leu Glu Glu Gln Val
 85 90 95

Glu His Ile Arg Glu Glu Val Ser Gln Leu Arg His Glu Leu Ser Met
 100 105 110

Lys Asp Glu Leu Leu Gln Phe Tyr Thr Ser Ala Ala Glu Glu Ser Glu
 115 120 125

Pro Glu Ser Val Cys Ser Thr Pro Leu Lys Arg Asn Glu Ser Ser Ser
 130 135 140

Ser Val Gln Asn Tyr Phe His Leu Asp Ser Leu Gln Lys Lys Leu Lys
 145 150 155 160

Asp Leu Glu Glu Glu Asn Val Val Leu Arg Ser Glu Ala Ser Gln Leu
 165 170 175

Lys Thr Glu Thr Ile Thr Tyr Glu Glu Lys Glu Gln Gln Leu Val Asn
 180 185 190

Asp Cys Val Lys Glu Leu Arg Asp Ala Asn Val Gln Ile Ala Ser Ile
 195 200 205

Ser Glu Glu Leu Ala Lys Lys Thr Glu Asp Ala Ala Arg Gln Gln Glu
 210 215 220
 Glu Ile Thr His Leu Leu Ser Gln Ile Val Asp Leu Gln Lys Lys Ala
 225 230 235 240
 Lys Ala Cys Ala Val Glu Asn Glu Glu Leu Val Gln His Leu Gly Ala
 245 250 255
 Ala Lys Asp Ala Gln Arg Gln Leu Thr Ala Glu Leu Arg Glu Leu Glu
 260 265 270
 Asp Lys Tyr Ala Glu Cys Met Glu Met Leu His Glu Ala Gln Glu Glu
 275 280 285
 Leu Lys Asn Leu Arg Asn Lys Thr Met Pro Asn Thr Thr Ser Arg Arg
 290 295 300
 Tyr His Ser Leu Gly Leu Phe Pro Met Asp Ser Leu Ala Ala Glu Ile
 305 310 315 320
 Glu Gly Thr Met Arg Lys Glu Leu Gln Leu Glu Glu Ala Glu Ser Pro
 325 330 335
 Asp Ile Thr His Gln Lys Arg Val Phe Glu Thr Val Arg Asn Ile Asn
 340 345 350
 Gln Val Val Lys Gln Arg Ser Leu Thr Pro Ser Pro Met Asn Ile Pro
 355 360 365
 Gly Ser Asn Gln Ser Ser Ala Met Asn Ser Leu Leu Ser Ser Cys Val
 370 375 380
 Ser Thr Pro Arg Ser Ser Phe Tyr Gly Ser Asp Ile Gly Asn Val Val
 385 390 395 400
 Leu Asp Asn Lys Thr Asn Ser Ile Ile Leu Glu Thr Glu Ala Ala Asp
 405 410 415
 Leu Gly Asn Asp Glu Arg Ser Lys Lys Pro Gly Thr Pro Gly Thr Pro
 420 425 430
 Gly Ser His Asp Leu Glu Thr Ala Leu Arg Arg Leu Ser Leu Arg Arg
 435 440 445
 Glu Asn Tyr Leu Ser Glu Arg Arg Phe Phe Glu Glu Glu Gln Glu Arg
 450 455 460
 Lys Leu Gln Glu Leu Ala Glu Lys Gly Glu Leu Arg Ser Gly Ser Leu
 465 470 475 480

Thr Pro Thr Glu Ser Ile Met Ser Leu Gly Thr His Ser Arg Phe Ser
485 490 495

Glu Phe Thr Gly Phe Ser Gly Met Ser Phe Ser Ser Arg Ser Tyr Leu
500 505 510

Pro Glu Lys Leu Gln Ile Val Lys Pro Leu Glu Gly Ser Ala Thr Leu
515 520 525

His His Trp Gln Gln Leu Ala Gln Pro His Leu Gly Gly Ile Leu Asp
530 535 540

Pro Arg Pro Gly Val Val Thr Lys Gly Phe Arg Thr Leu Asp Val Asp
545 550 555 560

Leu Asp Glu Val Tyr Cys Leu Asn Asp Phe Glu Glu Asp Asp Thr Gly
565 570 575

Asp His Ile Ser Leu Pro Arg Leu Ala Thr Ser Thr Pro Val Gln His
580 585 590

Pro Glu Thr Ser Gly Glu Arg Ser Gln Ala Arg Val Thr Val Ser Gly
595 600 605

Ser Arg Ser Tyr Pro Ser Arg Pro Gln Ala Ser Pro Glu Glu Met Gln
610 615 620

Glu Pro Pro Ala Ala Thr Glu Glu Glu Glu Glu Glu Glu Glu Glu
625 630 635 640

Gly Ser Gly Glu Gly Thr Thr Ile Ser Pro Val Asn Leu Ala Pro Phe
645 650 655

Pro Glu Ala Glu Phe Trp Ala Ile Leu Thr Ser Val Pro Gly Thr Ile
660 665 670

Arg Ser Gly Ser Leu Ser Val Ala Ser Ala Arg Leu Cys Gly
675 680 685

<210> 781
<211> 234
<212> PRT
<213> Homo sapiens

<400> 781

Met Arg Lys Thr Arg Leu Trp Gly Leu Leu Trp Met Leu Phe Val Ser
1 5 10 15

Glu Leu Arg Ala Ala Thr Lys Leu Thr Glu Glu Lys Tyr Glu Leu Lys
20 25 30

Glu Gly Gln Thr Leu Asp Val Lys Cys Asp Tyr Thr Leu Glu Lys Phe
 35 40 45

Ala Ser Ser Gln Lys Ala Trp Gln Ile Ile Arg Asp Gly Glu Met Pro
 50 55 60

Lys Thr Leu Ala Cys Thr Glu Arg Pro Ser Lys Asn Ser His Pro Val
 65 70 75 80

Gln Val Gly Arg Ile Ile Leu Glu Asp Tyr His Asp His Gly Leu Leu
 85 90 95

Arg Val Arg Met Val Asn Leu Gln Val Glu Asp Ser Gly Leu Tyr Gln
 100 105 110

Cys Val Ile Tyr Gln Pro Pro Lys Glu Pro His Met Leu Phe Asp Arg
 115 120 125

Ile Arg Leu Val Val Thr Lys Gly Phe Ser Gly Thr Pro Gly Ser Asn
 130 135 140

Glu Asn Ser Thr Gln Asn Val Tyr Lys Ile Pro Pro Thr Thr Thr Lys
 145 150 155 160

Ala Leu Cys Pro Leu Tyr Thr Ser Pro Arg Thr Val Thr Gln Ala Pro
 165 170 175

Pro Lys Ser Thr Ala Asp Val Ser Thr Pro Asp Ser Glu Ile Asn Leu
 180 185 190

Thr Asn Val Thr Asp Ile Ile Arg Val Pro Val Phe Asn Ile Val Ile
 195 200 205

Leu Leu Ala Gly Gly Phe Leu Ser Lys Ser Leu Val Phe Ser Val Leu
 210 215 220

Phe Ala Val Thr Leu Arg Ser Phe Val Pro
 225 230

<210> 782
 <211> 343
 <212> PRT
 <213> Homo sapiens

<400> 782

Met Asn Ile His Arg Ser Thr Pro Ile Thr Ile Ala Arg Tyr Gly Arg
 1 5 10 15

Ser Arg Asn Lys Thr Gln Asp Phe Glu Glu Leu Ser Ser Ile Arg Ser
 20 25 30

Ala Glu Pro Ser Gln Ser Phe Ser Pro Asn Leu Gly Ser Pro Ser Pro
 35 40 45
 Pro Glu Thr Pro Asn Leu Ser His Cys Val Ser Cys Ile Gly Lys Tyr
 50 55 60
 Leu Leu Leu Glu Pro Leu Glu Gly Asp His Val Phe Arg Ala Val His
 65 70 75 80
 Leu His Ser Gly Glu Glu Leu Val Cys Lys Val Phe Asp Ile Ser Cys
 85 90 95
 Tyr Gln Glu Ser Leu Ala Pro Cys Phe Cys Leu Ser Ala His Ser Asn
 100 105 110
 Ile Asn Gln Ile Thr Glu Ile Ile Leu Gly Glu Thr Lys Ala Tyr Val
 115 120 125
 Phe Phe Glu Arg Ser Tyr Gly Asp Met His Ser Phe Val Arg Thr Cys
 130 135 140
 Lys Lys Leu Arg Glu Glu Glu Ala Ala Arg Leu Phe Tyr Gln Ile Ala
 145 150 155 160
 Ser Ala Val Ala His Cys His Asp Gly Gly Leu Val Leu Arg Asp Leu
 165 170 175
 Lys Leu Arg Lys Phe Ile Phe Lys Asp Glu Glu Arg Thr Arg Val Lys
 180 185 190
 Leu Glu Ser Leu Glu Asp Ala Tyr Ile Leu Arg Gly Asp Asp Asp Ser
 195 200 205
 Leu Ser Asp Lys His Gly Cys Pro Ala Tyr Val Ser Pro Glu Ile Leu
 210 215 220
 Asn Thr Ser Gly Ser Tyr Ser Gly Lys Ala Ala Asp Val Trp Ser Leu
 225 230 235 240
 Gly Val Met Leu Tyr Thr Met Leu Val Gly Arg Tyr Pro Phe His Asp
 245 250 255
 Ile Glu Pro Ser Ser Leu Phe Ser Lys Ile Arg Arg Gly Gln Phe Asn
 260 265 270
 Ile Pro Glu Thr Leu Ser Pro Lys Ala Lys Cys Leu Ile Arg Ser Ile
 275 280 285
 Leu Arg Arg Glu Pro Ser Glu Arg Leu Thr Ser Gln Glu Ile Leu Asp
 290 295 300

His Pro Trp Phe Ser Thr Asp Phe Ser Val Ser Asn Ser Ala Tyr Gly
 305 310 315 320

Ala Lys Glu Val Ser Asp Gln Leu Val Pro Asp Val Asn Met Glu Glu
 325 330 335

Asn Leu Asp Pro Phe Phe Asn
 340

<210> 783
 <211> 551
 <212> PRT
 <213> Homo sapiens

<400> 783

Met Ala Glu Asn Trp Lys Asn Cys Phe Glu Glu Glu Leu Ile Cys Pro
 1 5 10 15

Ile Cys Leu His Val Phe Val Glu Pro Val Gln Leu Pro Cys Lys His
 20 25 30

Asn Phe Cys Arg Gly Cys Ile Gly Glu Ala Trp Ala Lys Asp Ser Gly
 35 40 45

Leu Val Arg Cys Pro Glu Cys Asn Gln Ala Tyr Asn Gln Lys Pro Gly
 50 55 60

Leu Glu Lys Asn Leu Lys Leu Thr Asn Ile Val Glu Lys Phe Asn Ala
 65 70 75 80

Leu His Val Glu Lys Pro Pro Ala Ala Leu His Cys Val Phe Cys Arg
 85 90 95

Arg Gly Pro Pro Leu Pro Ala Gln Lys Val Cys Leu Arg Cys Glu Ala
 100 105 110

Pro Cys Cys Gln Ser His Val Gln Thr His Leu Gln Gln Pro Ser Thr
 115 120 125

Ala Arg Gly His Leu Leu Val Glu Ala Asp Asp Val Arg Ala Trp Ser
 130 135 140

Cys Pro Gln His Asn Ala Tyr Arg Leu Tyr His Cys Glu Ala Glu Gln
 145 150 155 160

Val Ala Val Cys Gln Tyr Cys Cys Tyr Tyr Ser Gly Ala His Gln Gly
 165 170 175

His Ser Val Cys Asp Val Glu Ile Arg Arg Asn Glu Ile Arg Lys Met
 180 185 190

Leu Met Lys Gln Gln Asp Arg Leu Glu Glu Arg Glu Gln Asp Ile Glu
 Page 1351

195

200

205

Asp Gln Leu Tyr Lys Leu Glu Ser Asp Lys Arg Leu Val Glu Glu Lys
 210 215 220

Val Asn Gln Leu Lys Glu Glu Val Arg Leu Gln Tyr Glu Lys Leu His
 225 230 235 240

Gln Leu Leu Asp Glu Asp Leu Arg Gln Thr Val Glu Val Leu Asp Lys
 245 250 255

Ala Gln Ala Lys Phe Cys Ser Glu Asn Ala Ala Gln Ala Leu His Leu
 260 265 270

Gly Glu Arg Met Gln Glu Ala Lys Lys Leu Leu Gly Ser Leu Gln Leu
 275 280 285

Leu Phe Asp Lys Thr Glu Asp Val Ser Phe Met Lys Asn Thr Lys Ser
 290 295 300

Val Lys Ile Leu Met Asp Arg Thr Gln Thr Cys Thr Ser Ser Ser Leu
 305 310 315 320

Ser Pro Thr Lys Ile Gly His Leu Asn Ser Lys Leu Phe Leu Asn Glu
 325 330 335

Val Ala Lys Lys Glu Lys Gln Leu Arg Lys Met Leu Glu Gly Pro Phe
 340 345 350

Ser Thr Pro Val Pro Phe Leu Gln Ser Val Pro Leu Tyr Pro Cys Gly
 355 360 365

Val Ser Ser Ser Gly Ala Glu Lys Arg Lys His Ser Thr Ala Phe Pro
 370 375 380

Glu Ala Ser Phe Leu Glu Thr Ser Ser Gly Pro Val Gly Gly Gln Tyr
 385 390 395 400

Gly Ala Ala Gly Thr Ala Ser Gly Glu Gly Gln Ser Gly Gln Pro Leu
 405 410 415

Gly Pro Cys Ser Ser Thr Gln His Leu Val Ala Leu Pro Gly Gly Ala
 420 425 430

Gln Pro Val His Ser Ser Pro Val Phe Pro Pro Ser Gln Tyr Pro Asn
 435 440 445

Gly Ser Ala Ala Gln Gln Pro Met Leu Pro Gln Tyr Gly Gly Arg Lys
 450 455 460

Ile Leu Val Cys Ser Val Asp Asn Cys Tyr Cys Ser Ser Val Ala Asn

465 470 475 480

His Gly Gly His Gln Pro Tyr Pro Arg Ser Gly His Phe Pro Trp Thr
485 490 495

Val Pro Ser Gln Glu Tyr Ser His Pro Leu Pro Pro Thr Pro Ser Val
500 505 510

Pro Gln Ser Leu Pro Ser Leu Ala Val Arg Asp Trp Leu Asp Ala Ser
515 520 525

Gln Gln Pro Gly His Gln Asp Phe Tyr Arg Val Tyr Gly Gln Pro Ser
530 535 540

Thr Lys His Tyr Val Thr Ser
545 550

<210> 784
<211> 652
<212> PRT
<213> Homo sapiens

<400> 784

Met Gly Gly Trp Lys Gly Pro Gly Gln Arg Arg Gly Lys Glu Gly Pro
1 5 10 15

Glu Ala Arg Arg Arg Ala Ala Glu Arg Gly Gly Gly Gly Gly Gly Gly
20 25 30

Gly Val Pro Ala Pro Arg Ser Pro Ala Arg Glu Pro Arg Pro Arg Ser
35 40 45

Cys Leu Leu Leu Pro Pro Pro Trp Gly Ala Ala Met Thr Pro Asp Leu
50 55 60

Leu Asn Phe Lys Lys Gly Trp Met Ser Ile Leu Asp Glu Pro Gly Glu
65 70 75 80

Pro Pro Ser Pro Ser Leu Thr Thr Thr Ser Thr Ser Gln Trp Lys Lys
85 90 95

His Trp Phe Val Leu Thr Asp Ser Ser Leu Lys Tyr Tyr Arg Asp Ser
100 105 110

Thr Ala Glu Glu Ala Asp Glu Leu Asp Gly Glu Ile Asp Leu Arg Ser
115 120 125

Cys Thr Asp Val Thr Glu Tyr Ala Val Gln Arg Asn Tyr Gly Phe Gln
130 135 140

Ile His Thr Lys Asp Ala Val Tyr Thr Leu Ser Ala Met Thr Ser Gly
145 150 155 160

Ile Arg Arg Asn Trp Ile Glu Ala Leu Arg Lys Thr Val Arg Pro Thr
 165 170 175
 Ser Ala Pro Asp Val Thr Lys Leu Ser Asp Ser Asn Lys Glu Asn Ala
 180 185 190
 Leu His Ser Tyr Ser Thr Gln Lys Gly Pro Leu Lys Ala Gly Glu Gln
 195 200 205
 Arg Ala Gly Ser Glu Val Ile Ser Arg Gly Gly Pro Arg Lys Ala Asp
 210 215 220
 Gly Gln Arg Gln Ala Leu Asp Tyr Val Glu Leu Ser Pro Leu Thr Gln
 225 230 235 240
 Ala Ser Pro Gln Arg Ala Arg Thr Pro Ala Arg Thr Pro Asp Arg Leu
 245 250 255
 Ala Lys Gln Glu Glu Leu Glu Arg Asp Leu Ala Gln Arg Ser Glu Glu
 260 265 270
 Arg Arg Lys Trp Phe Glu Ala Thr Asp Ser Arg Thr Pro Glu Val Pro
 275 280 285
 Ala Gly Glu Gly Pro Arg Arg Gly Leu Gly Ala Pro Leu Thr Glu Asp
 290 295 300
 Gln Gln Asn Arg Leu Ser Glu Glu Ile Glu Lys Lys Trp Gln Glu Leu
 305 310 315 320
 Glu Lys Leu Pro Leu Arg Glu Asn Lys Arg Val Pro Leu Thr Ala Leu
 325 330 335
 Leu Asn Gln Ser Arg Gly Glu Arg Arg Gly Pro Pro Ser Asp Gly His
 340 345 350
 Glu Ala Leu Glu Lys Glu Val Gln Ala Leu Arg Ala Gln Leu Glu Ala
 355 360 365
 Trp Arg Leu Gln Gly Glu Ala Pro Gln Ser Ala Leu Arg Ser Gln Glu
 370 375 380
 Asp Gly His Ile Pro Pro Gly Tyr Ile Ser Gln Glu Ala Cys Glu Arg
 385 390 395 400
 Ser Leu Ala Glu Met Glu Ser Ser His Gln Gln Val Met Glu Glu Leu
 405 410 415
 Gln Arg His His Glu Arg Glu Leu Gln Arg Leu Gln Gln Glu Lys Glu
 420 425 430

Trp Leu Leu Ala Glu Glu Thr Ala Ala Thr Ala Ser Ala Ile Glu Ala
 435 440 445

Met Lys Lys Ala Tyr Gln Glu Glu Leu Ser Arg Glu Leu Ser Lys Thr
 450 455 460

Arg Ser Leu Gln Gln Gly Pro Asp Gly Leu Arg Lys Gln His Gln Ser
 465 470 475 480

Asp Val Glu Ala Leu Lys Arg Glu Leu Gln Val Leu Ser Glu Gln Tyr
 485 490 495

Ser Gln Lys Cys Leu Glu Ile Gly Ala Leu Met Arg Gln Ala Glu Glu
 500 505 510

Arg Glu His Thr Leu Arg Arg Cys Gln Gln Glu Gly Gln Glu Leu Leu
 515 520 525

Arg His Asn Gln Glu Leu His Gly Arg Leu Ser Glu Glu Ile Asp Gln
 530 535 540

Leu Arg Gly Phe Ile Ala Ser Gln Gly Met Gly Asn Gly Cys Gly Arg
 545 550 555 560

Ser Asn Glu Arg Ser Ser Cys Glu Leu Glu Val Leu Leu Arg Val Lys
 565 570 575

Glu Asn Glu Leu Gln Tyr Leu Lys Lys Glu Val Gln Cys Leu Arg Asp
 580 585 590

Glu Leu Gln Met Met Gln Lys Asp Lys Arg Phe Thr Ser Gly Lys Tyr
 595 600 605

Gln Asp Val Tyr Val Glu Leu Ser His Ile Lys Thr Arg Ser Glu Arg
 610 615 620

Glu Ile Glu Gln Leu Lys Glu His Leu Arg Leu Ala Met Ala Ala Leu
 625 630 635 640

Gln Glu Lys Glu Ser Met Arg Asn Ser Leu Ala Glu
 645 650

<210> 785
 <211> 134
 <212> PRT
 <213> Homo sapiens

<400> 785

Met Asn Thr Glu Met Tyr Gln Thr Pro Met Glu Val Ala Val Tyr Gln
 1 5 10 15

Leu His Asn Phe Ser Ile Ser Phe Phe Ser Ser Leu Leu Gly Gly Asp
20 25 30

Val Val Ser Val Lys Leu Asp Asn Ser Ala Ser Gly Ala Ser Val Val
35 40 45

Ala Ile Asp Asn Lys Ile Glu Gln Ala Met Asp Leu Val Lys Asn His
50 55 60

Leu Met Tyr Ala Val Arg Glu Glu Val Glu Ile Leu Lys Glu Gln Ile
65 70 75 80

Arg Glu Leu Val Glu Lys Asn Ser Gln Leu Glu Arg Glu Asn Thr Leu
85 90 95

Leu Lys Thr Leu Ala Ser Pro Glu Gln Leu Glu Lys Phe Gln Ser Cys
100 105 110

Leu Ser Pro Glu Glu Pro Ala Pro Glu Ser Pro Gln Val Pro Glu Ala
115 120 125

Pro Gly Gly Ser Ala Val
130

<210> 786
<211> 1187
<212> PRT
<213> Homo sapiens

<400> 786

Met Pro Leu Arg His Trp Gly Met Ala Arg Gly Ser Lys Pro Val Gly
1 5 10 15

Asp Gly Ala Gln Pro Met Ala Ala Met Gly Gly Leu Lys Val Leu Leu
20 25 30

His Trp Ala Gly Pro Gly Gly Gly Glu Pro Trp Val Thr Phe Ser Glu
35 40 45

Ser Ser Leu Thr Ala Glu Glu Val Cys Ile His Ile Ala His Lys Val
50 55 60

Gly Ile Thr Pro Pro Cys Phe Asn Leu Phe Ala Leu Phe Asp Ala Gln
65 70 75 80

Ala Gln Val Trp Leu Pro Pro Asn His Ile Leu Glu Ile Pro Arg Asp
85 90 95

Ala Ser Leu Met Leu Tyr Phe Arg Ile Arg Phe Tyr Phe Arg Asn Trp
100 105 110

His Gly Met Asn Pro Arg Glu Pro Ala Val Tyr Arg Cys Gly Pro Pro
 115 120 125
 Gly Thr Glu Ala Ser Ser Asp Gln Thr Ala Gln Gly Met Gln Leu Leu
 130 135 140
 Asp Pro Ala Ser Phe Glu Tyr Leu Phe Glu Gln Gly Lys His Glu Phe
 145 150 155 160
 Val Asn Asp Val Ala Ser Leu Trp Glu Leu Ser Thr Glu Glu Glu Ile
 165 170 175
 His His Phe Lys Asn Glu Ser Leu Gly Met Ala Phe Leu His Leu Cys
 180 185 190
 His Leu Ala Leu Arg His Gly Ile Pro Leu Glu Glu Val Ala Lys Lys
 195 200 205
 Thr Ser Phe Lys Asp Cys Ile Pro Arg Ser Phe Arg Arg His Ile Arg
 210 215 220
 Gln His Ser Ala Leu Thr Arg Leu Arg Leu Arg Asn Val Phe Arg Arg
 225 230 235 240
 Phe Leu Arg Asp Phe Gln Pro Gly Arg Leu Ser Gln Gln Met Val Met
 245 250 255
 Val Lys Tyr Leu Ala Thr Leu Glu Arg Leu Ala Pro Arg Phe Gly Thr
 260 265 270
 Glu Arg Val Pro Val Cys His Leu Arg Leu Leu Ala Gln Ala Glu Gly
 275 280 285
 Glu Pro Cys Tyr Ile Arg Asp Ser Gly Val Ala Pro Thr Asp Pro Gly
 290 295 300
 Pro Glu Ser Ala Ala Gly Pro Pro Thr His Glu Val Leu Val Thr Gly
 305 310 315 320
 Thr Gly Gly Ile Gln Trp Trp Pro Val Glu Glu Glu Val Asn Lys Glu
 325 330 335
 Glu Gly Ser Ser Gly Ser Ser Gly Arg Asn Pro Gln Ala Ser Leu Phe
 340 345 350
 Gly Lys Lys Ala Lys Ala His Lys Ala Val Gly Gln Pro Ala Asp Arg
 355 360 365
 Pro Arg Glu Pro Leu Trp Ala Tyr Phe Cys Asp Phe Arg Asp Ile Thr
 370 375 380

His Val Val Leu Lys Glu His Cys Val Ser Ile His Arg Gln Asp Asn
 385 390 395 400
 Lys Cys Leu Glu Leu Ser Leu Pro Ser Arg Ala Ala Ala Leu Ser Phe
 405 410 415
 Val Ser Leu Val Asp Gly Tyr Phe Arg Leu Thr Ala Asp Ser Ser His
 420 425 430
 Tyr Leu Cys His Glu Val Ala Pro Pro Arg Leu Val Met Ser Ile Arg
 435 440 445
 Asp Gly Ile His Gly Pro Leu Leu Glu Pro Phe Val Gln Ala Lys Leu
 450 455 460
 Arg Pro Glu Asp Gly Leu Tyr Leu Ile His Trp Ser Thr Ser His Pro
 465 470 475 480
 Tyr Arg Leu Ile Leu Thr Val Ala Gln Arg Ser Gln Ala Pro Asp Gly
 485 490 495
 Met Gln Ser Leu Arg Leu Arg Lys Phe Pro Ile Glu Gln Gln Asp Gly
 500 505 510
 Ala Phe Val Leu Glu Gly Trp Gly Arg Ser Phe Pro Ser Val Arg Glu
 515 520 525
 Leu Gly Ala Ala Leu Gln Gly Cys Leu Leu Arg Ala Gly Asp Asp Cys
 530 535 540
 Phe Ser Leu Arg Arg Cys Cys Leu Pro Gln Pro Gly Glu Thr Ser Asn
 545 550 555 560
 Leu Ile Ile Met Arg Gly Ala Arg Ala Ser Pro Arg Thr Leu Asn Leu
 565 570 575
 Ser Gln Leu Ser Phe His Arg Val Asp Gln Lys Glu Ile Thr Gln Leu
 580 585 590
 Ser His Leu Gly Gln Gly Thr Arg Thr Asn Val Tyr Glu Gly Arg Leu
 595 600 605
 Arg Val Glu Gly Ser Gly Asp Pro Glu Glu Gly Lys Met Asp Asp Glu
 610 615 620
 Asp Pro Leu Val Pro Gly Arg Asp Arg Gly Gln Glu Leu Arg Val Val
 625 630 635 640
 Leu Lys Val Leu Asp Pro Ser His His Asp Ile Ala Leu Ala Phe Tyr
 645 650 655

Glu Thr Ala Ser Leu Met Ser Gln Val Ser His Thr His Leu Ala Phe
 660 665 670
 Val His Gly Val Cys Val Arg Gly Pro Glu Asn Ile Met Val Thr Glu
 675 680 685
 Tyr Val Glu His Gly Pro Leu Asp Val Trp Leu Arg Arg Glu Arg Gly
 690 695 700
 His Val Pro Met Ala Trp Lys Met Val Val Ala Gln Gln Leu Ala Ser
 705 710 715 720
 Ala Leu Ser Tyr Leu Glu Asn Lys Asn Leu Val His Gly Asn Val Cys
 725 730 735
 Gly Arg Asn Ile Leu Leu Ala Arg Leu Gly Leu Ala Glu Gly Thr Ser
 740 745 750
 Pro Phe Ile Lys Leu Ser Asp Pro Gly Val Gly Leu Gly Ala Leu Ser
 755 760 765
 Arg Glu Glu Arg Val Glu Arg Ile Pro Trp Leu Ala Pro Glu Cys Leu
 770 775 780
 Pro Gly Gly Ala Asn Ser Leu Ser Thr Ala Met Asp Lys Trp Gly Phe
 785 790 795 800
 Gly Ala Thr Leu Leu Glu Ile Cys Phe Asp Gly Glu Ala Pro Leu Gln
 805 810 815
 Ser Arg Ser Pro Ser Glu Lys Glu His Phe Tyr Gln Arg Gln His Arg
 820 825 830
 Leu Pro Glu Pro Ser Cys Pro Gln Leu Ala Thr Leu Thr Ser Gln Cys
 835 840 845
 Leu Thr Tyr Glu Pro Thr Gln Arg Pro Ser Phe Arg Thr Ile Leu Arg
 850 855 860
 Asp Leu Thr Arg Leu Gln Pro His Asn Leu Ala Asp Val Leu Thr Val
 865 870 875 880
 Asn Pro Asp Ser Pro Ala Ser Asp Pro Thr Val Phe His Lys Arg Tyr
 885 890 895
 Leu Lys Lys Ile Arg Asp Leu Gly Glu Gly His Phe Gly Lys Val Ser
 900 905 910
 Leu Tyr Cys Tyr Asp Pro Thr Asn Asp Gly Thr Gly Glu Met Val Ala
 915 920 925

Val Lys Ala Leu Lys Ala Asp Cys Gly Pro Gln His Arg Ser Gly Trp
 930 935 940
 Lys Gln Glu Ile Asp Ile Leu Arg Thr Leu Tyr His Glu His Ile Ile
 945 950 955 960
 Lys Tyr Lys Gly Cys Cys Glu Asp Gln Gly Glu Lys Ser Leu Gln Leu
 965 970 975
 Val Met Glu Tyr Val Pro Leu Gly Ser Leu Arg Asp Tyr Leu Pro Arg
 980 985 990
 His Ser Ile Gly Leu Ala Gln Leu Leu Leu Phe Ala Gln Gln Ile Cys
 995 1000 1005
 Glu Gly Met Ala Tyr Leu His Ala Gln His Tyr Ile His Arg Asp
 1010 1015 1020
 Leu Ala Ala Arg Asn Val Leu Leu Asp Asn Asp Arg Leu Val Lys
 1025 1030 1035
 Ile Gly Asp Phe Gly Leu Ala Lys Ala Val Pro Glu Gly His Glu
 1040 1045 1050
 Tyr Tyr Arg Val Arg Glu Asp Gly Asp Ser Pro Val Phe Trp Tyr
 1055 1060 1065
 Ala Pro Glu Cys Leu Lys Glu Tyr Lys Phe Tyr Tyr Ala Ser Asp
 1070 1075 1080
 Val Trp Ser Phe Gly Val Thr Leu Tyr Glu Leu Leu Thr His Cys
 1085 1090 1095
 Asp Ser Ser Gln Ser Pro Pro Thr Lys Phe Leu Glu Leu Ile Gly
 1100 1105 1110
 Ile Ala Gln Gly Gln Met Thr Val Leu Arg Leu Thr Glu Leu Leu
 1115 1120 1125
 Glu Arg Gly Glu Arg Leu Pro Arg Pro Asp Lys Cys Pro Cys Glu
 1130 1135 1140
 Val Tyr His Leu Met Lys Asn Cys Trp Glu Thr Glu Ala Ser Phe
 1145 1150 1155
 Arg Pro Thr Phe Glu Asn Leu Ile Pro Ile Leu Lys Thr Val His
 1160 1165 1170
 Glu Lys Tyr Gln Gly Gln Ala Pro Ser Val Phe Ser Val Cys
 1175 1180 1185

<210> 787
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 787

Met Gly Gly Leu Glu Pro Cys Ser Arg Leu Leu Leu Leu Pro Leu Leu
 1 5 10 15

Leu Ala Val Ser Gly Leu Arg Pro Val Gln Ala Gln Ala Gln Ser Asp
 20 25 30

Cys Ser Cys Ser Thr Val Ser Pro Gly Val Leu Ala Gly Ile Val Met
 35 40 45

Gly Asp Leu Val Leu Thr Val Leu Ile Ala Leu Ala Val Tyr Phe Leu
 50 55 60

Gly Arg Leu Val Pro Arg Gly Arg Gly Ala Ala Glu Ala Ala Thr Arg
 65 70 75 80

Lys Gln Arg Ile Thr Glu Thr Glu Ser Pro Tyr Gln Glu Leu Gln Gly
 85 90 95

Gln Arg Ser Asp Val Tyr Ser Asp Leu Asn Thr Gln Arg Pro Tyr Tyr
 100 105 110

Lys

<210> 788
 <211> 147
 <212> PRT
 <213> Homo sapiens

<400> 788

Met Ala Leu Lys Arg Ile His Lys Glu Leu Asn Asp Leu Ala Arg Asp
 1 5 10 15

Pro Pro Ala Gln Cys Ser Ala Gly Pro Val Gly Asp Asp Met Phe His
 20 25 30

Trp Gln Ala Thr Ile Met Gly Pro Asn Asp Ser Pro Tyr Gln Gly Gly
 35 40 45

Val Phe Phe Leu Thr Ile His Phe Pro Thr Asp Tyr Pro Phe Lys Pro
 50 55 60

Pro Lys Val Ala Phe Thr Thr Arg Ile Tyr His Pro Asn Ile Asn Ser
 65 70 75 80

Asn Gly Ser Ile Cys Leu Asp Ile Leu Arg Ser Gln Trp Ser Pro Ala
 85 90 95

Leu Thr Ile Ser Lys Val Leu Leu Ser Ile Cys Ser Leu Leu Cys Asp
 100 105 110

Pro Asn Pro Asp Asp Pro Leu Val Pro Glu Ile Ala Arg Ile Tyr Lys
 115 120 125

Thr Asp Arg Glu Lys Tyr Asn Arg Ile Ala Arg Glu Trp Thr Gln Lys
 130 135 140

Tyr Ala Met
 145

<210> 789
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 789

Met Met Ala Ser Met Arg Val Val Lys Glu Leu Glu Asp Leu Gln Lys
 1 5 10 15

Lys Pro Pro Pro Tyr Leu Arg Asn Leu Ser Ser Asp Asp Ala Asn Val
 20 25 30

Leu Val Trp His Ala Leu Leu Leu Pro Asp Gln Pro Pro Tyr His Leu
 35 40 45

Lys Ala Phe Asn Leu Arg Ile Ser Phe Pro Pro Glu Tyr Pro Phe Lys
 50 55 60

Pro Pro Met Ile Lys Phe Thr Thr Lys Ile Tyr His Pro Asn Val Asp
 65 70 75 80

Glu Asn Gly Gln Ile Cys Leu Pro Ile Ile Ser Ser Glu Asn Trp Lys
 85 90 95

Pro Cys Thr Lys Thr Cys Gln Val Leu Glu Ala Leu Asn Val Leu Val
 100 105 110

Asn Arg Pro Asn Ile Arg Glu Pro Leu Arg Met Asp Leu Ala Asp Leu
 115 120 125

Leu Thr Gln Asn Pro Glu Leu Phe Arg Lys Asn Ala Glu Glu Phe Thr
 130 135 140

Leu Arg Phe Gly Val Asp Arg Pro Ser
 145 150

<210> 790
 <211> 1134
 <212> PRT

<213> Homo sapiens

<400> 790

Met Ser Glu Pro His Arg Val Gln Phe Thr Ser Leu Pro Gly Ser Leu
 1 5 10 15
 Asn Pro Ala Phe Leu Lys Lys Ser Arg Lys Glu Glu Ala Gly Ala Gly
 20 25 30
 Glu Gln His Gln Asp Cys Glu Pro Ala Ala Ala Val Arg Ile Thr
 35 40 45
 Leu Thr Leu Phe Glu Pro Asp His Lys Arg Cys Pro Glu Phe Phe Tyr
 50 55 60
 Pro Glu Leu Val Lys Asn Ile Arg Gly Lys Val Lys Gly Leu Gln Pro
 65 70 75 80
 Gly Asp Lys Lys Lys Asp Leu Ser Asp Pro Phe Asn Asp Glu Glu Lys
 85 90 95
 Glu Arg His Lys Val Glu Ala Leu Ala Arg Lys Phe Glu Glu Lys Tyr
 100 105 110
 Gly Gly Lys Lys Arg Arg Lys Asp Arg Ile Gln Asp Leu Ile Asp Met
 115 120 125
 Gly Tyr Gly Tyr Asp Glu Ser Asp Ser Phe Ile Asp Asn Ser Glu Ala
 130 135 140
 Tyr Asp Glu Leu Val Pro Ala Ser Leu Thr Thr Lys Tyr Gly Gly Phe
 145 150 155 160
 Tyr Ile Asn Ser Gly Thr Leu Gln Phe Arg Gln Ala Ser Glu Ser Glu
 165 170 175
 Asp Asp Phe Ile Lys Glu Lys Lys Lys Lys Ser Pro Lys Lys Arg Lys
 180 185 190
 Leu Lys Glu Gly Gly Glu Lys Ile Lys Lys Lys Lys Lys Asp Asp Thr
 195 200 205
 Tyr Asp Lys Glu Lys Lys Ser Lys Lys Ser Lys Phe Ser Lys Ala Gly
 210 215 220
 Phe Thr Ala Leu Asn Ala Ser Lys Glu Lys Lys Lys Lys Tyr Ser
 225 230 235 240
 Gly Ala Leu Ser Val Lys Glu Met Leu Lys Lys Phe Gln Lys Glu Lys
 245 250 255

Glu Ala Gln Lys Lys Arg Glu Glu Glu His Lys Pro Val Ala Val Pro
 260 265 270
 Ser Ala Glu Ala Gln Gly Leu Arg Glu Leu Glu Gly Ala Ser Asp Pro
 275 280 285
 Leu Leu Ser Leu Phe Gly Ser Thr Ser Asp Asn Asp Leu Leu Gln Ala
 290 295 300
 Ala Thr Ala Met Asp Ser Leu Thr Asp Leu Asp Leu Glu His Leu Leu
 305 310 315 320
 Ser Glu Ser Pro Glu Gly Ser Pro Phe Arg Asp Met Asp Asp Gly Ser
 325 330 335
 Asp Ser Leu Gly Val Gly Leu Asp Gln Glu Phe Arg Gln Pro Ser Ser
 340 345 350
 Leu Pro Glu Gly Leu Pro Ala Pro Leu Glu Lys Arg Val Lys Glu Leu
 355 360 365
 Ala Gln Ala Ala Arg Ala Ala Glu Gly Glu Ser Arg Gln Lys Phe Phe
 370 375 380
 Thr Gln Asp Ile Asn Gly Ile Leu Leu Asp Ile Glu Ala Gln Thr Arg
 385 390 395 400
 Glu Leu Ser Ser Gln Val Arg Ser Gly Val Tyr Ala Tyr Leu Ala Ser
 405 410 415
 Phe Leu Pro Cys Ser Lys Asp Ala Leu Leu Lys Arg Ala Arg Lys Leu
 420 425 430
 His Leu Tyr Glu Gln Gly Gly Arg Leu Lys Glu Pro Leu Gln Lys Leu
 435 440 445
 Lys Glu Ala Ile Gly Arg Ala Met Pro Glu Gln Met Ala Lys Tyr Gln
 450 455 460
 Asp Glu Cys Gln Ala His Thr Gln Ala Lys Val Ala Lys Met Leu Glu
 465 470 475 480
 Glu Glu Lys Asp Lys Glu Gln Arg Asp Arg Ile Cys Ser Asp Glu Glu
 485 490 495
 Glu Asp Glu Glu Lys Gly Gly Arg Arg Ile Met Gly Pro Arg Lys Lys
 500 505 510
 Phe Gln Trp Asn Asp Glu Ile Arg Glu Leu Leu Cys Gln Val Val Lys
 515 520 525

Ile Lys Leu Glu Ser Gln Asp Leu Glu Arg Asn Asn Lys Ala Gln Ala
 530 535 540
 Trp Glu Asp Cys Val Lys Gly Phe Leu Asp Ala Glu Val Lys Pro Leu
 545 550 555 560
 Trp Pro Lys Gly Trp Met Gln Ala Arg Thr Leu Phe Lys Glu Ser Arg
 565 570 575
 Arg Gly His Gly His Leu Thr Ser Ile Leu Ala Lys Lys Lys Val Met
 580 585 590
 Ala Pro Ser Lys Ile Lys Val Lys Glu Ser Ser Thr Lys Pro Asp Lys
 595 600 605
 Lys Val Ser Val Pro Ser Gly Gln Ile Gly Gly Pro Ile Ala Leu Pro
 610 615 620
 Ser Asp His Gln Thr Gly Gly Leu Ser Ile Gly Ala Ser Ser Arg Glu
 625 630 635 640
 Leu Pro Ser Gln Ala Ser Gly Gly Leu Ala Asn Pro Pro Pro Val Asn
 645 650 655
 Leu Glu Asp Ser Leu Asp Glu Asp Leu Ile Arg Asn Pro Ala Ser Ser
 660 665 670
 Val Glu Ala Val Ser Lys Glu Leu Ala Ala Leu Asn Ser Arg Ala Ala
 675 680 685
 Gly Asn Ser Glu Phe Thr Leu Pro Ala Pro Ser Lys Ala Pro Ala Glu
 690 695 700
 Lys Val Gly Gly Val Leu Cys Thr Glu Glu Lys Arg Asn Phe Ala Lys
 705 710 715 720
 Pro Ser Pro Ser Ala Pro Pro Pro Ala Ser Ser Leu Gln Ser Pro Leu
 725 730 735
 Asn Phe Leu Ala Glu Gln Ala Leu Ala Leu Gly Gln Ser Ser Gln Glu
 740 745 750
 Lys Lys Pro Glu Ser Ser Gly Tyr Lys Glu Leu Ser Cys Gln Ala Pro
 755 760 765
 Leu Asn Lys Gly Leu Pro Glu Val His Gln Ser Lys Ala Lys His His
 770 775 780
 Ser Leu Pro Arg Thr Ser His Gly Pro Gln Val Ala Val Pro Val Pro
 785 790 795 800

Gly Pro Gln Val Lys Val Phe His Ala Gly Thr Gln Gln Gln Lys Asn
 805 810 815
 Phe Thr Pro Pro Ser Pro Phe Ala Asn Lys Leu Gln Gly Pro Lys Ala
 820 825 830
 Ser Pro Thr Gln Cys His Arg Ser Leu Leu Gln Leu Val Lys Thr Ala
 835 840 845
 Ala Lys Gly Gln Gly Phe His Pro Ser Ala Pro Ala Thr Ser Gly Gly
 850 855 860
 Leu Ser Ala Ser Ser Ser Ser Ser His Lys Thr Pro Ala Ser Ser Ser
 865 870 875 880
 Ser Ala Leu Ser His Pro Ala Lys Pro His Ser Val Ser Ser Ala Gly
 885 890 895
 Ser Ser Tyr Lys Asn Asn Pro Phe Ala Ser Ser Ile Ser Lys His Gly
 900 905 910
 Val Ser Ser Gly Ser Ser Ser Ser Gly Gly Thr Pro Val Gln Ser Ser
 915 920 925
 Val Ser Gly Ser Leu Val Pro Gly Ile Gln Pro Pro Ser Val Gly Gln
 930 935 940
 Ala Thr Ser Arg Pro Val Pro Ser Ser Ala Gly Lys Lys Met Pro Val
 945 950 955 960
 Ser Gln Lys Leu Thr Leu Val Ala Pro Pro Gly Gly Pro Asn Gly Asp
 965 970 975
 Ser Ser Gly Gly Thr Gln Gly Val Ala Lys Leu Leu Thr Ser Pro Ser
 980 985 990
 Leu Lys Pro Ser Ala Val Ser Ser Val Thr Ser Ser Thr Ser Leu Ser
 995 1000 1005
 Lys Gly Ala Ser Gly Thr Val Leu Leu Ala Gly Ser Ser Leu Met
 1010 1015 1020
 Ala Ser Pro Tyr Lys Ser Ser Ser Pro Lys Leu Ser Gly Ala Met
 1025 1030 1035
 Ser Ser Asn Ser Leu Gly Ile Ile Thr Pro Val Pro Ile Pro Val
 1040 1045 1050
 His Val Leu Ser Phe Ser Ala Asp Ser Ser Ala Lys Ala Gly Val
 1055 1060 1065

Ser Lys Asp Ala Ile Val Thr Gly Pro Ala Pro Gly Ser Phe His
 1070 1075 1080

His Gly Leu Gly His Ser Leu Leu Ala Gly Leu His Ser Ser Pro
 1085 1090 1095

Pro His Ala Ala Pro Leu Pro His Ala Ala Val Pro Thr His Ile
 1100 1105 1110

Pro Gln Ser Leu Pro Gly Ala Ser Gln Leu His Gly Lys Gly Pro
 1115 1120 1125

Ala Val Pro Arg Lys Leu
 1130

<210> 791
 <211> 624
 <212> PRT
 <213> Homo sapiens

<400> 791

Met Ala Glu Asn Gly Glu Ser Ser Gly Pro Pro Arg Pro Ser Arg Gly
 1 5 10 15

Pro Ala Ala Ala Gln Gly Ser Ala Ala Ala Pro Ala Glu Pro Lys Ile
 20 25 30

Ile Lys Val Thr Val Lys Thr Pro Lys Glu Lys Glu Glu Phe Ala Val
 35 40 45

Pro Glu Asn Ser Ser Val Gln Gln Phe Lys Glu Ala Ile Ser Lys Arg
 50 55 60

Phe Lys Ser Gln Thr Asp Gln Leu Val Leu Ile Phe Ala Gly Lys Ile
 65 70 75 80

Leu Lys Asp Gln Asp Thr Leu Ile Gln His Gly Ile His Asp Gly Leu
 85 90 95

Thr Val His Leu Val Ile Lys Ser Gln Asn Arg Pro Gln Gly Gln Ser
 100 105 110

Thr Gln Pro Ser Asn Ala Ala Gly Thr Asn Thr Thr Ser Ala Ser Thr
 115 120 125

Pro Arg Ser Asn Ser Thr Pro Ile Ser Thr Asn Ser Asn Pro Phe Gly
 130 135 140

Leu Gly Ser Leu Gly Gly Leu Ala Gly Leu Ser Ser Leu Gly Leu Ser
 145 150 155 160

Ser Thr Asn Phe Ser Glu Leu Gln Ser Gln Met Gln Gln Gln Leu Met

Ala Ser Pro Glu Met Met Ile Gln Ile Met Glu Asn Pro Phe Val Gln
180 185 190

Ser Met Leu Ser Asn Pro Asp Leu Met Arg Gln Leu Ile Met Ala Asn
195 200 205

Pro Gln Met Gln Gln Leu Ile Gln Arg Asn Pro Glu Ile Ser His Leu
210 215 220

Leu Asn Asn Pro Asp Ile Met Arg Gln Thr Leu Glu Ile Ala Arg Asn
225 230 235 240

Pro Ala Met Met Gln Glu Met Met Arg Asn Gln Asp Leu Ala Leu Ser
245 250 255

Asn Leu Glu Ser Ile Pro Gly Gly Tyr Asn Ala Leu Arg Arg Met Tyr
260 265 270

Thr Asp Ile Gln Glu Pro Met Leu Asn Ala Ala Gln Glu Gln Phe Gly
275 280 285

Gly Asn Pro Phe Ala Ser Val Gly Ser Ser Ser Ser Gly Glu Gly
290 295 300

Thr Gln Pro Ser Arg Thr Glu Asn Arg Asp Pro Leu Pro Asn Pro Trp
305 310 315 320

Ala Pro Pro Pro Ala Thr Gln Ser Ser Ala Thr Thr Ser Thr Thr Thr
325 330 335

Ser Thr Gly Ser Gly Ser Gly Asn Ser Ser Ser Asn Ala Thr Gly Asn
340 345 350

Thr Val Ala Ala Ala Asn Tyr Val Ala Ser Ile Phe Ser Thr Pro Gly
355 360 365

Met Gln Ser Leu Leu Gln Gln Ile Thr Glu Asn Pro Gln Leu Ile Gln
370 375 380

Asn Met Leu Ser Ala Pro Tyr Met Arg Ser Met Met Gln Ser Leu Ser
385 390 395 400

Gln Asn Pro Asp Leu Ala Ala Gln Met Met Leu Asn Ser Pro Leu Phe
405 410 415

Thr Ala Asn Pro Gln Leu Gln Glu Gln Met Arg Pro Gln Leu Pro Ala
420 425 430

Phe Leu Gln Gln Met Gln Asn Pro Asp Thr Leu Ser Ala Met Ser Asn
Page 1368

435

440

445

Pro Arg Ala Met Gln Ala Leu Met Gln Ile Gln Gln Gly Leu Gln Thr
 450 455 460

Leu Ala Thr Glu Ala Pro Gly Leu Ile Pro Ser Phe Thr Pro Gly Val
 465 470 475 480

Gly Val Gly Val Leu Gly Thr Ala Ile Gly Pro Val Gly Pro Val Thr
 485 490 495

Pro Ile Gly Pro Ile Gly Pro Ile Val Pro Phe Thr Pro Ile Gly Pro
 500 505 510

Ile Gly Pro Ile Gly Pro Thr Gly Pro Ala Ala Pro Pro Gly Ser Thr
 515 520 525

Gly Ser Gly Gly Pro Thr Gly Pro Thr Val Ser Ser Ala Ala Pro Ser
 530 535 540

Glu Thr Thr Ser Pro Thr Ser Glu Ser Gly Pro Asn Gln Gln Phe Ile
 545 550 555 560

Gln Gln Met Val Gln Ala Leu Ala Gly Ala Asn Ala Pro Gln Leu Pro
 565 570 575

Asn Pro Glu Val Arg Phe Gln Gln Gln Leu Glu Gln Leu Asn Ala Met
 580 585 590

Gly Phe Leu Asn Arg Glu Ala Asn Leu Gln Ala Leu Ile Ala Thr Gly
 595 600 605

Gly Asp Ile Asn Ala Ala Ile Glu Arg Leu Leu Gly Ser Gln Pro Ser
 610 615 620

<210> 792

<211> 331

<212> PRT

<213> Homo sapiens

<400> 792

Met Ala Glu Gly Gly Gly Pro Glu Pro Gly Glu Gln Glu Arg Arg Ser
 1 5 10 15

Ser Gly Pro Arg Pro Pro Ser Ala Arg Asp Leu Gln Leu Ala Leu Ala
 20 25 30

Glu Leu Tyr Glu Asp Glu Val Lys Cys Lys Ser Ser Lys Ser Asn Arg
 35 40 45

Pro Lys Ala Thr Val Phe Lys Ser Pro Arg Thr Pro Pro Gln Arg Phe
 50 55 60

Tyr Ser Ser Glu His Glu Tyr Ser Gly Leu Asn Ile Val Arg Pro Ser
 65 70 75 80
 Thr Gly Lys Ile Val Asn Glu Leu Phe Lys Glu Ala Arg Glu His Gly
 85 90 95
 Ala Val Pro Leu Asn Glu Ala Thr Arg Ala Ser Gly Asp Asp Lys Ser
 100 105 110
 Lys Ser Phe Thr Gly Gly Gly Tyr Arg Leu Gly Ser Ser Phe Cys Lys
 115 120 125
 Arg Ser Glu Tyr Ile Tyr Gly Glu Asn Gln Leu Gln Asp Val Gln Ile
 130 135 140
 Leu Leu Lys Leu Trp Ser Asn Gly Phe Ser Leu Asp Asp Gly Glu Leu
 145 150 155 160
 Arg Pro Tyr Asn Glu Pro Thr Asn Ala Gln Phe Leu Glu Ser Val Lys
 165 170 175
 Arg Gly Glu Ile Pro Leu Glu Leu Gln Arg Leu Val His Gly Gly Gln
 180 185 190
 Val Asn Leu Asp Met Glu Asp His Gln Asp Gln Glu Tyr Ile Lys Pro
 195 200 205
 Arg Leu Arg Phe Lys Ala Phe Ser Gly Glu Gly Gln Lys Leu Gly Ser
 210 215 220
 Leu Thr Pro Glu Ile Val Ser Thr Pro Ser Ser Pro Glu Glu Glu Asp
 225 230 235 240
 Lys Ser Ile Leu Asn Ala Val Val Leu Ile Asp Asp Ser Val Pro Thr
 245 250 255
 Thr Lys Ile Gln Ile Arg Leu Ala Asp Gly Ser Arg Leu Ile Gln Arg
 260 265 270
 Phe Asn Ser Thr His Arg Ile Leu Asp Val Arg Asn Phe Ile Val Gln
 275 280 285
 Ser Arg Pro Glu Phe Ala Ala Leu Asp Phe Ile Leu Val Thr Ser Phe
 290 295 300
 Pro Asn Lys Glu Leu Thr Asp Glu Ser Leu Thr Leu Leu Glu Ala Asp
 305 310 315 320
 Ile Leu Asn Thr Val Leu Leu Gln Gln Leu Lys
 325 330

<210> 793
 <211> 798
 <212> PRT
 <213> Homo sapiens

<400> 793

```

Met Ala Leu His Ser Pro Gln Tyr Ile Phe Gly Asp Phe Ser Pro Asp
 1          5          10          15

Glu Phe Asn Gln Phe Phe Val Thr Pro Arg Ser Ser Val Glu Leu Pro
          20          25          30

Pro Tyr Ser Gly Thr Val Leu Cys Gly Thr Gln Ala Val Asp Lys Leu
          35          40          45

Pro Asp Gly Gln Glu Tyr Gln Arg Ile Glu Phe Gly Val Asp Glu Val
 50          55          60

Ile Glu Pro Ser Asp Thr Leu Pro Arg Thr Pro Ser Tyr Ser Ile Ser
65          70          75          80

Ser Thr Leu Asn Pro Gln Ala Pro Glu Phe Ile Leu Gly Cys Thr Ala
          85          90          95

Ser Lys Ile Thr Pro Asp Gly Ile Thr Lys Glu Ala Ser Tyr Gly Ser
          100          105          110

Ile Asp Cys Gln Tyr Pro Gly Ser Ala Leu Ala Leu Asp Gly Ser Ser
          115          120          125

Asn Val Glu Ala Glu Val Leu Glu Asn Asp Gly Val Ser Gly Gly Leu
          130          135          140

Gly Gln Arg Glu Arg Lys Lys Lys Lys Lys Arg Pro Pro Gly Tyr Tyr
145          150          155          160

Ser Tyr Leu Lys Asp Gly Gly Asp Asp Ser Ile Ser Thr Glu Ala Leu
          165          170          175

Val Asn Gly His Ala Asn Ser Ala Val Pro Asn Ser Val Ser Ala Glu
          180          185          190

Asp Ala Glu Phe Met Gly Asp Met Pro Pro Ser Val Thr Pro Arg Thr
          195          200          205

Cys Asn Ser Pro Gln Asn Ser Thr Asp Ser Val Ser Asp Ile Val Pro
          210          215          220

Asp Ser Pro Phe Pro Gly Ala Leu Gly Ser Asp Thr Arg Thr Ala Gly
225          230          235          240

```

Gln Pro Glu Gly Gly Pro Gly Ala Asp Phe Gly Gln Ser Cys Phe Pro
 245 250 255
 Ala Glu Ala Gly Arg Asp Thr Leu Ser Arg Thr Ala Gly Ala Gln Pro
 260 265 270
 Cys Val Gly Thr Asp Thr Thr Glu Asn Leu Gly Val Ala Asn Gly Gln
 275 280 285
 Ile Leu Glu Ser Ser Gly Glu Gly Thr Ala Thr Asn Gly Val Glu Leu
 290 295 300
 His Thr Thr Glu Ser Ile Asp Leu Asp Pro Thr Lys Pro Glu Ser Ala
 305 310 315 320
 Ser Pro Pro Ala Asp Gly Thr Gly Ser Ala Ser Gly Thr Leu Pro Val
 325 330 335
 Ser Gln Pro Lys Ser Trp Ala Ser Leu Phe His Asp Ser Lys Pro Ser
 340 345 350
 Ser Ser Ser Pro Val Ala Tyr Val Glu Thr Lys Tyr Ser Pro Pro Ala
 355 360 365
 Ile Ser Pro Leu Val Ser Glu Lys Gln Val Glu Val Lys Glu Gly Leu
 370 375 380
 Val Pro Val Ser Glu Asp Pro Val Ala Ile Lys Ile Ala Glu Leu Leu
 385 390 395 400
 Glu Asn Val Thr Leu Ile His Lys Pro Val Ser Leu Gln Pro Arg Gly
 405 410 415
 Leu Ile Asn Lys Gly Asn Trp Cys Tyr Ile Asn Ala Thr Leu Gln Ala
 420 425 430
 Leu Val Ala Cys Pro Pro Met Tyr His Leu Met Lys Phe Ile Pro Leu
 435 440 445
 Tyr Ser Lys Val Gln Arg Pro Cys Thr Ser Thr Pro Met Ile Asp Ser
 450 455 460
 Phe Val Arg Leu Met Asn Glu Phe Thr Asn Met Pro Val Pro Pro Lys
 465 470 475 480
 Pro Arg Gln Ala Leu Gly Asp Lys Ile Val Arg Asp Ile Arg Pro Gly
 485 490 495
 Ala Ala Phe Glu Pro Thr Tyr Ile Tyr Arg Leu Leu Thr Val Asn Lys
 500 505 510

Ser Ser Leu Ser Glu Lys Gly Arg Gln Glu Asp Ala Glu Glu Tyr Leu
 515 520 525
 Gly Phe Ile Leu Asn Gly Leu His Glu Glu Met Leu Asn Leu Lys Lys
 530 535 540
 Leu Leu Ser Pro Ser Asn Glu Lys Leu Thr Ile Ser Asn Gly Pro Lys
 545 550 555 560
 Asn His Ser Val Asn Glu Glu Glu Gln Glu Glu Gln Gly Glu Gly Ser
 565 570 575
 Glu Asp Glu Trp Glu Gln Val Gly Pro Arg Asn Lys Thr Ser Val Thr
 580 585 590
 Arg Gln Ala Asp Phe Val Gln Thr Pro Ile Thr Gly Ile Phe Gly Gly
 595 600 605
 His Ile Arg Ser Val Val Tyr Gln Gln Ser Ser Lys Glu Ser Ala Thr
 610 615 620
 Leu Gln Pro Phe Phe Thr Leu Gln Leu Asp Ile Gln Ser Asp Lys Ile
 625 630 635 640
 Arg Thr Val Gln Asp Ala Leu Glu Ser Leu Val Ala Arg Glu Ser Val
 645 650 655
 Gln Gly Tyr Thr Thr Lys Thr Lys Gln Glu Val Glu Ile Ser Arg Arg
 660 665 670
 Val Thr Leu Glu Lys Leu Pro Pro Val Leu Val Leu His Leu Lys Arg
 675 680 685
 Phe Val Tyr Glu Lys Thr Gly Gly Cys Gln Lys Leu Ile Lys Asn Ile
 690 695 700
 Glu Tyr Pro Val Asp Leu Glu Ile Ser Lys Glu Leu Leu Ser Pro Gly
 705 710 715 720
 Val Lys Asn Lys Asn Phe Lys Cys His Arg Thr Tyr Arg Leu Phe Ala
 725 730 735
 Val Val Tyr His His Gly Asn Ser Ala Thr Gly Gly His Tyr Thr Thr
 740 745 750
 Asp Val Phe Gln Ile Gly Leu Asn Gly Trp Leu Arg Ile Asp Asp Gln
 755 760 765
 Thr Val Lys Val Ile Asn Gln Tyr Gln Val Val Lys Pro Thr Ala Glu
 770 775 780

Arg Thr Ala Tyr Leu Leu Tyr Tyr Arg Arg Val Asp Leu Leu
 785 790 795

<210> 794
 <211> 952
 <212> PRT
 <213> Homo sapiens

<400> 794

Met Ala Glu Gly Gly Ala Ala Asp Leu Asp Thr Gln Arg Ser Asp Ile
 1 5 10 15

Ala Thr Leu Leu Lys Thr Ser Leu Arg Lys Gly Asp Thr Trp Tyr Leu
 20 25 30

Val Asp Ser Arg Trp Phe Lys Gln Trp Lys Lys Tyr Val Gly Phe Asp
 35 40 45

Ser Trp Asp Lys Tyr Gln Met Gly Asp Gln Asn Val Tyr Pro Gly Pro
 50 55 60

Ile Asp Asn Ser Gly Leu Leu Lys Asp Gly Asp Ala Gln Ser Leu Lys
 65 70 75 80

Glu His Leu Ile Asp Glu Leu Asp Tyr Ile Leu Leu Pro Thr Glu Gly
 85 90 95

Trp Asn Lys Leu Val Ser Trp Tyr Thr Leu Met Glu Gly Gln Glu Pro
 100 105 110

Ile Ala Arg Lys Val Val Glu Gln Gly Met Phe Val Lys His Cys Lys
 115 120 125

Val Glu Val Tyr Leu Thr Glu Leu Lys Leu Cys Glu Asn Gly Asn Met
 130 135 140

Asn Asn Val Val Thr Arg Arg Phe Ser Lys Ala Asp Thr Ile Asp Thr
 145 150 155 160

Ile Glu Lys Glu Ile Arg Lys Ile Phe Ser Ile Pro Asp Glu Lys Glu
 165 170 175

Thr Arg Leu Trp Asn Lys Tyr Met Ser Asn Thr Phe Glu Pro Leu Asn
 180 185 190

Lys Pro Asp Ser Thr Ile Gln Asp Ala Gly Leu Tyr Gln Gly Gln Val
 195 200 205

Leu Val Ile Glu Gln Lys Asn Glu Asp Gly Thr Trp Pro Arg Gly Pro
 210 215 220

Ser Thr Pro Asn Val Lys Asn Ser Asn Tyr Cys Leu Pro Ser Tyr Thr
 225 230 235 240
 Ala Tyr Lys Asn Tyr Asp Tyr Ser Glu Pro Gly Arg Asn Asn Glu Gln
 245 250 255
 Pro Gly Leu Cys Gly Leu Ser Asn Leu Gly Asn Thr Cys Phe Met Asn
 260 265 270
 Ser Ala Ile Gln Cys Leu Ser Asn Thr Pro Pro Leu Thr Glu Tyr Phe
 275 280 285
 Leu Asn Asp Lys Tyr Gln Glu Glu Leu Asn Phe Asp Asn Pro Leu Gly
 290 295 300
 Met Arg Gly Glu Ile Ala Lys Ser Tyr Ala Glu Leu Ile Lys Gln Met
 305 310 315 320
 Trp Ser Gly Lys Phe Ser Tyr Val Thr Pro Arg Ala Phe Lys Thr Gln
 325 330 335
 Val Gly Arg Phe Ala Pro Gln Phe Ser Gly Tyr Gln Gln Gln Asp Cys
 340 345 350
 Gln Glu Leu Leu Ala Phe Leu Leu Asp Gly Leu His Glu Asp Leu Asn
 355 360 365
 Arg Ile Arg Lys Lys Pro Tyr Ile Gln Leu Lys Asp Ala Asp Gly Arg
 370 375 380
 Pro Asp Lys Val Val Ala Glu Glu Ala Trp Glu Asn His Leu Lys Arg
 385 390 395 400
 Asn Asp Ser Ile Ile Val Asp Ile Phe His Gly Leu Phe Lys Ser Thr
 405 410 415
 Leu Val Cys Pro Glu Cys Ala Lys Ile Ser Val Thr Phe Asp Pro Phe
 420 425 430
 Cys Tyr Leu Thr Leu Pro Leu Pro Met Lys Lys Glu Arg Thr Leu Glu
 435 440 445
 Val Tyr Leu Val Arg Met Asp Pro Leu Thr Lys Pro Met Gln Tyr Lys
 450 455 460
 Val Val Val Pro Lys Ile Gly Asn Ile Leu Asp Leu Cys Thr Ala Leu
 465 470 475 480
 Ser Ala Leu Ser Gly Ile Pro Ala Asp Lys Met Ile Val Thr Asp Ile
 485 490 495

Tyr Asn His Arg Phe His Arg Ile Phe Ala Met Asp Glu Asn Leu Ser
 500 505 510
 Ser Ile Met Glu Arg Asp Asp Ile Tyr Val Phe Glu Ile Asn Ile Asn
 515 520 525
 Arg Thr Glu Asp Thr Glu His Val Ile Ile Pro Val Cys Leu Arg Glu
 530 535 540
 Lys Phe Arg His Ser Ser Tyr Thr His His Thr Gly Ser Ser Leu Phe
 545 550 555 560
 Gly Gln Pro Phe Leu Met Ala Val Pro Arg Asn Asn Thr Glu Asp Lys
 565 570 575
 Leu Tyr Asn Leu Leu Leu Leu Arg Met Cys Arg Tyr Val Lys Ile Ser
 580 585 590
 Thr Glu Thr Glu Glu Thr Glu Gly Ser Leu His Cys Cys Lys Asp Gln
 595 600 605
 Asn Ile Asn Gly Asn Gly Pro Asn Gly Ile His Glu Glu Gly Ser Pro
 610 615 620
 Ser Glu Met Glu Thr Asp Glu Pro Asp Asp Glu Ser Ser Gln Asp Gln
 625 630 635 640
 Glu Leu Pro Ser Glu Asn Glu Asn Ser Gln Ser Glu Asp Ser Val Gly
 645 650 655
 Gly Asp Asn Asp Ser Glu Asn Gly Leu Cys Thr Glu Asp Thr Cys Lys
 660 665 670
 Gly Gln Leu Thr Gly His Lys Lys Arg Leu Phe Thr Phe Gln Phe Asn
 675 680 685
 Asn Leu Gly Asn Thr Asp Ile Asn Tyr Ile Lys Asp Asp Thr Arg His
 690 695 700
 Ile Arg Phe Asp Asp Arg Gln Leu Arg Leu Asp Glu Arg Ser Phe Leu
 705 710 715 720
 Ala Leu Asp Trp Asp Pro Asp Leu Lys Lys Arg Tyr Phe Asp Glu Asn
 725 730 735
 Ala Ala Glu Asp Phe Glu Lys His Glu Ser Val Glu Tyr Lys Pro Pro
 740 745 750
 Lys Lys Pro Phe Val Lys Leu Lys Asp Cys Ile Glu Leu Phe Thr Thr
 755 760 765

Lys Glu Lys Leu Gly Ala Glu Asp Pro Trp Tyr Cys Pro Asn Cys Lys
 770 775 780

Glu His Gln Gln Ala Thr Lys Lys Leu Asp Leu Trp Ser Leu Pro Pro
 785 790 795 800

Val Leu Val Val His Leu Lys Arg Phe Ser Tyr Ser Arg Tyr Met Arg
 805 810 815

Asp Lys Leu Asp Thr Leu Val Asp Phe Pro Ile Asn Asp Leu Asp Met
 820 825 830

Ser Glu Phe Leu Ile Asn Pro Asn Ala Gly Pro Cys Arg Tyr Asn Leu
 835 840 845

Ile Ala Val Ser Asn His Tyr Gly Gly Met Gly Gly Gly His Tyr Thr
 850 855 860

Ala Phe Ala Lys Asn Lys Asp Asp Gly Lys Trp Tyr Tyr Phe Asp Asp
 865 870 875 880

Ser Ser Val Ser Thr Ala Ser Glu Asp Gln Ile Val Ser Lys Ala Ala
 885 890 895

Tyr Val Leu Phe Tyr Gln Arg Gln Asp Thr Phe Ser Gly Thr Gly Phe
 900 905 910

Phe Pro Leu Asp Arg Glu Thr Lys Gly Ala Ser Ala Ala Thr Gly Ile
 915 920 925

Pro Leu Glu Ser Asp Glu Asp Ser Asn Asp Asn Asp Asn Asp Ile Glu
 930 935 940

Asn Glu Asn Cys Met His Thr Asn
 945 950

<210> 795
 <211> 372
 <212> PRT
 <213> Homo sapiens

<400> 795

Met Ser Lys Ala Phe Gly Leu Leu Arg Gln Ile Cys Gln Ser Ile Leu
 1 5 10 15

Ala Glu Ser Ser Gln Ser Pro Ala Asp Leu Glu Glu Lys Lys Glu Glu
 20 25 30

Asp Ser Asn Met Lys Arg Glu Gln Pro Arg Glu Arg Pro Arg Ala Trp
 35 40 45

Asp Tyr Pro His Gly Leu Val Gly Leu His Asn Ile Gly Gln Thr Cys
 Page 1377

50

55

60

Cys Leu Asn Ser Leu Ile Gln Val Phe Val Met Asn Val Asp Phe Thr
65 70 75 80

Arg Ile Leu Lys Arg Ile Thr Val Pro Arg Gly Ala Asp Glu Gln Arg
85 90 95

Arg Ser Val Pro Phe Gln Met Leu Leu Leu Glu Lys Met Gln Asp
100 105 110

Ser Arg Gln Lys Ala Val Arg Pro Leu Glu Leu Ala Tyr Cys Leu Gln
115 120 125

Lys Cys Asn Val Pro Leu Phe Val Gln His Asp Ala Ala Gln Leu Tyr
130 135 140

Leu Lys Leu Trp Asn Leu Ile Lys Asp Gln Ile Thr Asp Val His Leu
145 150 155 160

Val Glu Arg Leu Gln Ala Leu Tyr Thr Ile Arg Val Lys Asp Ser Leu
165 170 175

Ile Cys Val Asp Cys Ala Met Glu Ser Ser Arg Asn Ser Ser Met Leu
180 185 190

Thr Leu Pro Leu Ser Leu Phe Asp Val Asp Ser Lys Pro Leu Lys Thr
195 200 205

Leu Glu Asp Ala Leu His Cys Phe Phe Gln Pro Arg Glu Leu Ser Ser
210 215 220

Lys Ser Lys Cys Phe Cys Glu Asn Cys Gly Lys Lys Thr Arg Gly Lys
225 230 235 240

Gln Val Leu Lys Leu Thr His Leu Pro Gln Thr Leu Thr Ile His Leu
245 250 255

Met Arg Phe Ser Ile Arg Asn Ser Gln Thr Arg Lys Ile Cys His Ser
260 265 270

Leu Tyr Phe Pro Gln Ser Leu Asp Phe Ser Gln Ile Leu Pro Met Lys
275 280 285

Arg Glu Ser Cys Asp Ala Glu Glu Gln Ser Gly Gly Gln Tyr Glu Leu
290 295 300

Phe Ala Val Ile Ala His Val Gly Met Ala Asp Ser Gly His Tyr Cys
305 310 315 320

Val Tyr Ile Arg Asn Ala Val Asp Gly Lys Trp Phe Cys Phe Asn Asp

Ser Asn Ile Cys Leu Val Ser Trp Glu Asp Ile Gln Cys Thr Tyr Gly
340 345 350

Asn Pro Asn Tyr His Trp Gln Glu Thr Ala Tyr Leu Leu Val Tyr Met
355 360 365

Lys Met Glu Cys
370

<210> 796
<211> 963
<212> PRT
<213> Homo sapiens

<400> 796

Met Ala Glu Gly Gly Gly Cys Arg Glu Arg Pro Asp Ala Glu Thr Gln
1 5 10 15

Lys Ser Glu Leu Gly Pro Leu Met Arg Thr Thr Leu Gln Arg Gly Ala
20 25 30

Gln Trp Tyr Leu Ile Asp Ser Arg Trp Phe Lys Gln Trp Lys Lys Tyr
35 40 45

Val Gly Phe Asp Ser Trp Asp Met Tyr Asn Val Gly Glu His Asn Leu
50 55 60

Phe Pro Gly Pro Ile Asp Asn Ser Gly Leu Phe Ser Asp Pro Glu Ser
65 70 75 80

Gln Thr Leu Lys Glu His Leu Ile Asp Glu Leu Asp Tyr Val Leu Val
85 90 95

Pro Thr Glu Ala Trp Asn Lys Leu Leu Asn Trp Tyr Gly Cys Val Glu
100 105 110

Gly Gln Gln Pro Ile Val Arg Lys Val Val Glu His Gly Leu Phe Val
115 120 125

Lys His Cys Lys Val Glu Val Tyr Leu Leu Glu Leu Lys Leu Cys Glu
130 135 140

Asn Ser Asp Pro Thr Asn Val Leu Ser Cys His Phe Ser Lys Ala Asp
145 150 155 160

Thr Ile Ala Thr Ile Glu Lys Glu Met Arg Lys Leu Phe Asn Ile Pro
165 170 175

Ala Glu Arg Glu Thr Arg Leu Trp Asn Lys Tyr Met Ser Asn Thr Tyr
180 185 190

Glu Gln Leu Ser Lys Leu Asp Asn Thr Val Gln Asp Ala Gly Leu Tyr
 195 200 205
 Gln Gly Gln Val Leu Val Ile Glu Pro Gln Asn Glu Asp Gly Thr Trp
 210 215 220
 Pro Arg Gln Thr Leu Gln Ser Lys Ser Ser Thr Ala Pro Ser Arg Asn
 225 230 235 240
 Phe Thr Thr Ser Pro Lys Ser Ser Ala Ser Pro Tyr Ser Ser Val Ser
 245 250 255
 Ala Ser Leu Ile Ala Asn Gly Asp Ser Thr Ser Thr Cys Gly Met His
 260 265 270
 Ser Ser Gly Val Ser Arg Gly Gly Ser Gly Phe Ser Ala Ser Tyr Asn
 275 280 285
 Cys Gln Glu Pro Pro Ser Ser His Ile Gln Pro Gly Leu Cys Gly Leu
 290 295 300
 Gly Asn Leu Gly Asn Thr Cys Phe Met Asn Ser Ala Leu Gln Cys Leu
 305 310 315 320
 Ser Asn Thr Ala Pro Leu Thr Asp Tyr Phe Leu Lys Asp Glu Tyr Glu
 325 330 335
 Ala Glu Ile Asn Arg Asp Asn Pro Leu Gly Met Lys Gly Glu Ile Ala
 340 345 350
 Glu Ala Tyr Ala Glu Leu Ile Lys Gln Met Trp Ser Gly Arg Asp Ala
 355 360 365
 His Val Ala Pro Arg Met Phe Lys Thr Gln Val Gly Arg Phe Ala Pro
 370 375 380
 Gln Phe Ser Gly Tyr Gln Gln Gln Asp Ser Gln Glu Leu Leu Ala Phe
 385 390 395 400
 Leu Leu Asp Gly Leu His Glu Asp Leu Asn Arg Val Lys Lys Lys Pro
 405 410 415
 Tyr Leu Glu Leu Lys Asp Ala Asn Gly Arg Pro Asp Ala Val Val Ala
 420 425 430
 Lys Glu Ala Trp Glu Asn His Arg Leu Arg Asn Asp Ser Val Ile Val
 435 440 445
 Asp Thr Phe His Gly Leu Phe Lys Ser Thr Leu Val Cys Pro Glu Cys
 450 455 460

Ala Lys Val Ser Val Thr Phe Asp Pro Phe Cys Tyr Leu Thr Leu Pro
 465 470 475 480
 Leu Pro Leu Lys Lys Asp Arg Val Met Glu Val Phe Leu Val Pro Ala
 485 490 495
 Asp Pro His Cys Arg Pro Thr Gln Tyr Arg Val Thr Val Pro Leu Met
 500 505 510
 Gly Ala Val Ser Asp Leu Cys Glu Ala Leu Ser Arg Leu Ser Gly Ile
 515 520 525
 Ala Ala Glu Asn Met Val Val Ala Asp Val Tyr Asn His Arg Phe His
 530 535 540
 Lys Ile Phe Gln Met Asp Glu Gly Leu Asn His Ile Met Pro Arg Asp
 545 550 555 560
 Asp Ile Phe Val Tyr Glu Val Cys Ser Thr Ser Val Asp Gly Ser Glu
 565 570 575
 Cys Val Thr Leu Pro Val Tyr Phe Arg Glu Arg Lys Ser Arg Pro Ser
 580 585 590
 Ser Thr Ser Ser Ala Ser Ala Leu Tyr Gly Gln Pro Leu Leu Leu Ser
 595 600 605
 Val Pro Lys His Lys Leu Thr Leu Glu Ser Leu Tyr Gln Ala Val Cys
 610 615 620
 Asp Arg Ile Ser Arg Tyr Val Lys Gln Pro Leu Pro Asp Glu Phe Gly
 625 630 635 640
 Ser Ser Pro Leu Glu Pro Gly Ala Cys Asn Gly Ser Arg Asn Ser Cys
 645 650 655
 Glu Gly Glu Asp Glu Glu Glu Met Glu His Gln Glu Glu Gly Lys Glu
 660 665 670
 Gln Leu Ser Glu Thr Glu Gly Ser Gly Glu Asp Glu Pro Gly Asn Asp
 675 680 685
 Pro Ser Glu Thr Thr Gln Lys Lys Ile Lys Gly Gln Pro Cys Pro Lys
 690 695 700
 Arg Leu Phe Thr Phe Ser Leu Val Asn Ser Tyr Gly Thr Ala Asp Ile
 705 710 715 720
 Asn Ser Leu Ala Ala Asp Gly Lys Leu Leu Lys Leu Asn Ser Arg Ser
 725 730 735

Thr Leu Ala Met Asp Trp Asp Ser Glu Thr Arg Arg Leu Tyr Tyr Asp
 740 745 750
 Glu Gln Glu Ser Glu Ala Tyr Glu Lys His Val Ser Met Leu Gln Pro
 755 760 765
 Gln Lys Lys Lys Lys Thr Thr Val Ala Leu Arg Asp Cys Ile Glu Leu
 770 775 780
 Phe Thr Thr Met Glu Thr Leu Gly Glu His Asp Pro Trp Tyr Cys Pro
 785 790 795 800
 Asn Cys Lys Lys His Gln Gln Ala Thr Lys Lys Phe Asp Leu Trp Ser
 805 810 815
 Leu Pro Lys Ile Leu Val Val His Leu Lys Arg Phe Ser Tyr Asn Arg
 820 825 830
 Tyr Trp Arg Asp Lys Leu Asp Thr Val Val Glu Phe Pro Ile Arg Gly
 835 840 845
 Leu Asn Met Ser Glu Phe Val Cys Asn Leu Ser Ala Arg Pro Tyr Val
 850 855 860
 Tyr Asp Leu Ile Ala Val Ser Asn His Tyr Gly Ala Met Gly Val Gly
 865 870 875 880
 His Tyr Thr Ala Tyr Ala Lys Asn Lys Leu Asn Gly Lys Trp Tyr Tyr
 885 890 895
 Phe Asp Asp Ser Asn Val Ser Leu Ala Ser Glu Asp Gln Ile Val Thr
 900 905 910
 Lys Ala Ala Tyr Val Leu Phe Tyr Gln Arg Arg Asp Asp Glu Phe Tyr
 915 920 925
 Lys Thr Pro Ser Leu Ser Ser Ser Gly Ser Ser Asp Gly Gly Thr Arg
 930 935 940
 Pro Ser Ser Ser Gln Gln Gly Phe Gly Asp Asp Glu Ala Cys Ser Met
 945 950 955 960

Asp Thr Asn

<210> 797
 <211> 771
 <212> PRT
 <213> Homo sapiens

<400> 797

Met Thr Ala Asn Arg Leu Ala Glu Ser Leu Leu Ala Leu Ser Gln Gln
 1 5 10 15
 Glu Glu Leu Ala Asp Leu Pro Lys Asp Tyr Leu Leu Ser Glu Ser Glu
 20 25 30
 Asp Glu Gly Asp Asn Asp Gly Glu Arg Lys His Gln Lys Leu Leu Glu
 35 40 45
 Ala Ile Ser Ser Leu Asp Gly Lys Asn Arg Arg Lys Leu Ala Glu Arg
 50 55 60
 Ser Glu Ala Ser Leu Lys Val Ser Glu Phe Asn Val Ser Ser Glu Gly
 65 70 75 80
 Ser Gly Glu Lys Leu Val Leu Ala Asp Leu Leu Glu Pro Val Lys Thr
 85 90 95
 Ser Ser Ser Leu Ala Thr Val Lys Lys Gln Leu Ser Arg Val Lys Ser
 100 105 110
 Lys Lys Thr Val Glu Leu Pro Leu Asn Lys Glu Glu Ile Glu Arg Ile
 115 120 125
 His Arg Glu Val Ala Phe Asn Lys Thr Ala Gln Val Leu Ser Lys Trp
 130 135 140
 Asp Pro Val Val Leu Lys Asn Arg Gln Ala Glu Gln Leu Val Phe Pro
 145 150 155 160
 Leu Glu Lys Glu Glu Pro Ala Ile Ala Pro Ile Glu His Val Leu Ser
 165 170 175
 Gly Trp Lys Ala Arg Thr Pro Leu Glu Gln Glu Ile Phe Asn Leu Leu
 180 185 190
 His Lys Asn Lys Gln Pro Val Thr Asp Pro Leu Leu Thr Pro Val Glu
 195 200 205
 Lys Ala Ser Leu Arg Ala Met Ser Leu Glu Glu Ala Lys Met Arg Arg
 210 215 220
 Ala Glu Leu Gln Arg Ala Arg Ala Leu Gln Ser Tyr Tyr Glu Ala Lys
 225 230 235 240
 Ala Arg Arg Glu Lys Lys Ile Lys Ser Lys Lys Tyr His Lys Val Val
 245 250 255
 Lys Lys Gly Lys Ala Lys Lys Ala Leu Lys Glu Phe Glu Gln Leu Arg
 260 265 270

Lys Val Asn Pro Ala Ala Ala Leu Glu Glu Leu Glu Lys Ile Glu Lys
 275 280 285
 Ala Arg Met Met Glu Arg Met Ser Leu Lys His Gln Asn Ser Gly Lys
 290 295 300
 Trp Ala Lys Ser Lys Ala Ile Met Ala Lys Tyr Asp Leu Glu Ala Arg
 305 310 315 320
 Gln Ala Met Gln Glu Gln Leu Ser Lys Asn Lys Glu Leu Thr Gln Lys
 325 330 335
 Leu Gln Val Ala Ser Glu Ser Glu Glu Glu Gly Gly Thr Glu Asp
 340 345 350
 Val Glu Glu Leu Leu Val Pro Asp Val Val Asn Glu Val Gln Met Asn
 355 360 365
 Ala Asp Gly Pro Asn Pro Trp Met Leu Arg Ser Cys Thr Ser Asp Thr
 370 375 380
 Lys Glu Ala Ala Thr Gln Glu Asp Pro Glu Gln Leu Pro Glu Leu Glu
 385 390 395 400
 Ala His Gly Val Ser Glu Ser Glu Gly Glu Glu Arg Pro Val Ala Glu
 405 410 415
 Glu Glu Ile Leu Leu Arg Glu Phe Glu Glu Arg Arg Ser Leu Arg Lys
 420 425 430
 Arg Ser Glu Leu Ser Gln Asp Ala Glu Pro Ala Gly Ser Gln Glu Thr
 435 440 445
 Lys Asp Ser Gly Ser Gln Glu Val Leu Ser Glu Leu Arg Val Leu Ser
 450 455 460
 Gln Lys Leu Lys Glu Asn His Gln Ser Arg Lys Gln Lys Ala Ser Ser
 465 470 475 480
 Glu Gly Thr Ile Pro Gln Val Gln Arg Glu Glu Pro Ala Pro Glu Glu
 485 490 495
 Glu Glu Pro Leu Leu Leu Gln Arg Pro Glu Arg Val Gln Thr Leu Glu
 500 505 510
 Glu Leu Glu Glu Leu Gly Lys Glu Glu Cys Phe Gln Asn Lys Glu Leu
 515 520 525
 Pro Arg Pro Val Leu Glu Gly Gln Gln Ser Glu Arg Thr Pro Asn Asn
 530 535 540

Arg Pro Asp Ala Pro Lys Glu Lys Lys Lys Lys Glu Gln Met Ile Asp
545 550 555 560

Leu Gln Asn Leu Leu Thr Thr Gln Ser Pro Ser Val Lys Ser Leu Ala
565 570 575

Val Pro Thr Ile Glu Glu Leu Glu Asp Glu Glu Glu Arg Asn His Arg
580 585 590

Gln Met Ile Lys Glu Ala Phe Ala Gly Asp Asp Val Ile Arg Asp Phe
595 600 605

Leu Lys Glu Lys Arg Glu Ala Val Glu Ala Ser Lys Pro Lys Asp Val
610 615 620

Asp Leu Thr Leu Pro Gly Trp Gly Glu Trp Gly Gly Val Gly Leu Lys
625 630 635 640

Pro Ser Ala Lys Lys Arg Arg Arg Phe Leu Ile Lys Ala Pro Glu Gly
645 650 655

Pro Pro Arg Lys Asp Lys Asn Leu Pro Asn Val Ile Ile Asn Glu Lys
660 665 670

Arg Asn Ile His Ala Ala Ala His Gln Val Arg Val Leu Pro Tyr Pro
675 680 685

Phe Thr His His Trp Gln Phe Glu Arg Thr Ile Gln Thr Pro Ile Gly
690 695 700

Ser Thr Trp Asn Thr Gln Arg Ala Phe Gln Lys Leu Thr Thr Pro Lys
705 710 715 720

Val Val Thr Lys Pro Gly His Ile Ile Asn Pro Ile Lys Ala Glu Asp
725 730 735

Val Gly Tyr Arg Ser Ser Ser Arg Ser Asp Leu Ser Val Ile Gln Arg
740 745 750

Asn Pro Lys Arg Ile Thr Thr Arg His Lys Lys Gln Leu Lys Lys Cys
755 760 765

Ser Val Asp
770

<210> 798
<211> 100
<212> PRT
<213> Homo sapiens

<400> 798

Met Ser Thr Gly Pro Thr Ala Ala Thr Gly Ser Asn Arg Arg Leu Gln
 1 5 10 15

Gln Thr Gln Asn Gln Val Asp Glu Val Val Asp Ile Met Arg Val Asn
 20 25 30

Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp
 35 40 45

Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala
 50 55 60

Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys Met Trp Ala
 65 70 75 80

Ile Gly Ile Thr Val Leu Val Ile Phe Ile Ile Ile Ile Ile Val Trp
 85 90 95

Val Val Ser Ser
 100

<210> 799
 <211> 847
 <212> PRT
 <213> Homo sapiens

<400> 799

Met Glu Pro Trp Lys Gln Cys Ala Gln Trp Leu Ile His Cys Lys Val
 1 5 10 15

Leu Pro Thr Asn His Arg Val Thr Trp Asp Ser Ala Gln Val Phe Asp
 20 25 30

Leu Ala Gln Thr Leu Arg Asp Gly Val Leu Leu Cys Gln Leu Leu Asn
 35 40 45

Asn Leu Arg Ala His Ser Ile Asn Leu Lys Glu Ile Asn Leu Arg Pro
 50 55 60

Gln Met Ser Gln Phe Leu Cys Leu Lys Asn Ile Arg Thr Phe Leu Thr
 65 70 75 80

Ala Cys Cys Glu Thr Phe Gly Met Arg Lys Ser Glu Leu Phe Glu Ala
 85 90 95

Phe Asp Leu Phe Asp Val Arg Asp Phe Gly Lys Val Ile Glu Thr Leu
 100 105 110

Ser Arg Leu Ser Arg Thr Pro Ile Ala Leu Ala Thr Gly Ile Arg Pro
 115 120 125

Phe Pro Thr Glu Glu Ser Ile Asn Asp Glu Asp Ile Tyr Lys Gly Leu

130

135

140

Pro Asp Leu Ile Asp Glu Thr Leu Val Glu Asp Glu Glu Asp Leu Tyr
 145 150 155 160

Asp Cys Val Tyr Gly Glu Asp Glu Gly Gly Glu Val Tyr Glu Asp Leu
 165 170 175

Met Lys Ala Glu Glu Ala His Gln Pro Lys Cys Pro Glu Asn Asp Ile
 180 185 190

Arg Ser Cys Cys Leu Ala Glu Ile Lys Gln Thr Glu Glu Lys Tyr Thr
 195 200 205

Glu Thr Leu Glu Ser Ile Glu Lys Tyr Phe Met Ala Pro Leu Lys Arg
 210 215 220

Phe Leu Thr Ala Ala Glu Phe Asp Ser Val Phe Ile Asn Ile Pro Glu
 225 230 235 240

Leu Val Lys Leu His Arg Asn Leu Met Gln Glu Ile His Asp Ser Ile
 245 250 255

Val Asn Lys Asn Asp Gln Asn Leu Tyr Gln Val Phe Ile Asn Tyr Lys
 260 265 270

Glu Arg Leu Val Ile Tyr Gly Gln Tyr Cys Ser Gly Val Glu Ser Ala
 275 280 285

Ile Ser Ser Leu Asp Tyr Ile Ser Lys Thr Lys Glu Asp Val Lys Leu
 290 295 300

Lys Leu Glu Glu Cys Ser Lys Arg Ala Asn Asn Gly Lys Phe Thr Leu
 305 310 315 320

Arg Asp Leu Leu Val Val Pro Met Gln Arg Val Leu Lys Tyr His Leu
 325 330 335

Leu Leu Gln Glu Leu Val Lys His Thr Thr Asp Pro Thr Glu Lys Ala
 340 345 350

Asn Leu Lys Leu Ala Leu Asp Ala Met Lys Asp Leu Ala Gln Tyr Val
 355 360 365

Asn Glu Val Lys Arg Asp Asn Glu Thr Leu Arg Glu Ile Lys Gln Phe
 370 375 380

Gln Leu Ser Ile Glu Asn Leu Asn Gln Pro Val Leu Leu Phe Gly Arg
 385 390 395 400

Pro Gln Gly Asp Gly Glu Ile Arg Ile Thr Thr Leu Asp Lys His Thr

Lys Gln Glu Arg His Ile Phe Leu Phe Asp Leu Ala Val Ile Val Cys
420 425 430

Lys Arg Lys Gly Asp Asn Tyr Glu Met Lys Glu Ile Ile Asp Leu Gln
435 440 445

Gln Tyr Lys Ile Ala Asn Asn Pro Thr Thr Asp Lys Glu Asn Lys Lys
450 455 460

Trp Ser Tyr Gly Phe Tyr Leu Ile His Thr Gln Gly Gln Asn Gly Leu
465 470 475 480

Glu Phe Tyr Cys Lys Thr Lys Asp Leu Lys Lys Lys Trp Leu Glu Gln
485 490 495

Phe Glu Met Ala Leu Ser Asn Ile Arg Pro Asp Tyr Ala Asp Ser Asn
500 505 510

Phe His Asp Phe Lys Met His Thr Phe Thr Arg Val Thr Ser Cys Lys
515 520 525

Val Cys Gln Met Leu Leu Arg Gly Thr Phe Tyr Gln Gly Tyr Leu Cys
530 535 540

Phe Lys Cys Gly Ala Arg Ala His Lys Glu Cys Leu Gly Arg Val Asp
545 550 555 560

Asn Cys Gly Arg Val Asn Ser Gly Glu Gln Gly Thr Leu Lys Leu Pro
565 570 575

Glu Lys Arg Thr Asn Gly Leu Arg Arg Thr Pro Lys Gln Val Asp Pro
580 585 590

Gly Leu Pro Lys Met Gln Val Ile Arg Asn Tyr Ser Gly Thr Pro Pro
595 600 605

Pro Ala Leu His Glu Gly Pro Pro Leu Gln Leu Gln Ala Gly Asp Thr
610 615 620

Val Glu Leu Leu Lys Gly Asp Ala His Ser Leu Phe Trp Gln Gly Arg
625 630 635 640

Asn Leu Ala Ser Gly Glu Val Gly Phe Phe Pro Ser Asp Ala Val Lys
645 650 655

Pro Cys Pro Cys Val Pro Lys Pro Val Asp Tyr Ser Cys Gln Pro Trp
660 665 670

Tyr Ala Gly Ala Met Glu Arg Leu Gln Ala Glu Thr Glu Leu Ile Asn

675

680

685

Arg Val Asn Ser Thr Tyr Leu Val Arg His Arg Thr Lys Glu Ser Gly
690 695 700

Glu Tyr Ala Ile Ser Ile Lys Tyr Asn Asn Glu Ala Lys His Ile Lys
705 710 715 720

Ile Leu Thr Arg Asp Gly Phe Phe His Ile Ala Glu Asn Arg Lys Phe
725 730 735

Lys Ser Leu Met Glu Leu Val Glu Tyr Tyr Lys His His Ser Leu Lys
740 745 750

Glu Gly Phe Arg Thr Leu Asp Thr Thr Leu Gln Phe Pro Tyr Lys Glu
755 760 765

Pro Glu His Ser Ala Gly Gln Arg Gly Asn Arg Ala Gly Asn Ser Leu
770 775 780

Leu Ser Pro Lys Val Leu Gly Ile Ala Ile Ala Arg Tyr Asp Phe Cys
785 790 795 800

Ala Arg Asp Met Arg Glu Leu Ser Leu Leu Lys Gly Asp Val Val Lys
805 810 815

Ile Tyr Thr Lys Met Ser Ala Asn Gly Trp Trp Arg Gly Glu Val Asn
820 825 830

Gly Arg Val Gly Trp Phe Pro Ser Thr Tyr Val Glu Glu Asp Glu
835 840 845

<210> 800
<211> 521
<212> PRT
<213> Homo sapiens

<400> 800

Met Glu Ala Asn Trp Thr Ala Phe Leu Phe Gln Ala His Glu Ala Ser
1 5 10 15

His His Gln Gln Gln Ala Ala Gln Asn Ser Leu Leu Pro Leu Leu Ser
20 25 30

Ser Ala Val Glu Pro Pro Asp Gln Lys Pro Leu Leu Pro Ile Pro Ile
35 40 45

Thr Gln Lys Pro Gln Gly Ala Pro Glu Thr Leu Lys Asp Ala Ile Gly
50 55 60

Ile Lys Lys Glu Lys Pro Lys Thr Ser Phe Val Cys Thr Tyr Cys Ser
65 70 75 80

Lys Ala Phe Arg Asp Ser Tyr His Leu Arg Arg His Glu Ser Cys His
 85 90 95

Thr Gly Ile Lys Leu Val Ser Arg Pro Lys Lys Thr Pro Thr Thr Val
 100 105 110

Val Pro Leu Ile Ser Thr Ile Ala Gly Asp Ser Ser Arg Thr Ser Leu
 115 120 125

Val Ser Thr Ile Ala Gly Ile Leu Ser Thr Val Thr Thr Ser Ser Ser
 130 135 140

Gly Thr Asn Pro Ser Ser Ser Ala Ser Thr Thr Ala Met Pro Val Thr
 145 150 155 160

Gln Ser Val Lys Lys Pro Ser Lys Pro Val Lys Lys Asn His Ala Cys
 165 170 175

Glu Met Cys Gly Lys Ala Phe Arg Asp Val Tyr His Leu Asn Arg His
 180 185 190

Lys Leu Ser His Ser Asp Glu Lys Pro Phe Glu Cys Pro Ile Cys Asn
 195 200 205

Gln Arg Phe Lys Arg Lys Asp Arg Met Thr Tyr His Val Arg Ser His
 210 215 220

Glu Gly Gly Ile Thr Lys Pro Tyr Thr Cys Ser Val Cys Gly Lys Gly
 225 230 235 240

Phe Ser Arg Pro Asp His Leu Ser Cys His Val Lys His Val His Ser
 245 250 255

Thr Glu Arg Pro Phe Lys Cys Gln Thr Cys Thr Ala Ala Phe Ala Thr
 260 265 270

Lys Asp Arg Leu Arg Thr His Met Val Arg His Glu Gly Lys Val Ser
 275 280 285

Cys Asn Ile Cys Gly Lys Leu Leu Ser Ala Ala Tyr Ile Thr Ser His
 290 295 300

Leu Lys Thr His Gly Gln Ser Gln Ser Ile Asn Cys Asn Thr Cys Lys
 305 310 315 320

Gln Gly Ile Ser Lys Thr Cys Met Ser Glu Glu Thr Ser Asn Gln Lys
 325 330 335

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 340 345 350

Gln Gln His Val Thr Ser Trp Pro Gly Lys Gln Val Glu Thr Leu Arg
 355 360 365

Leu Trp Glu Glu Ala Val Lys Ala Arg Lys Lys Glu Ala Ala Asn Leu
 370 375 380

Cys Gln Thr Ser Thr Ala Ala Thr Thr Pro Val Thr Leu Thr Thr Pro
 385 390 395 400

Phe Ser Ile Thr Ser Ser Val Ser Ser Gly Thr Met Ser Asn Pro Val
 405 410 415

Thr Val Ala Ala Ala Met Ser Met Arg Ser Pro Val Asn Val Ser Ser
 420 425 430

Ala Val Asn Ile Thr Ser Pro Met Asn Ile Gly His Pro Val Thr Ile
 435 440 445

Thr Ser Pro Leu Ser Met Thr Ser Pro Leu Thr Leu Thr Thr Pro Val
 450 455 460

Asn Leu Pro Thr Pro Val Thr Ala Pro Val Asn Ile Ala His Pro Val
 465 470 475 480

Thr Ile Thr Ser Pro Met Asn Leu Pro Thr Pro Met Thr Leu Ala Ala
 485 490 495

Pro Leu Asn Ile Ala Met Arg Pro Val Glu Ser Met Pro Phe Leu Pro
 500 505 510

Gln Ala Leu Pro Thr Ser Pro Pro Trp
 515 520

<210> 801
 <211> 1426
 <212> PRT
 <213> Homo sapiens

<400> 801

Met Glu Asn Glu Pro Asp His Glu Asn Val Glu Gln Ser Leu Cys Ala
 1 5 10 15

Lys Thr Ser Glu Glu Glu Leu Asn Lys Ser Phe Asn Leu Glu Ala Ser
 20 25 30

Leu Ser Lys Phe Ser Tyr Ile Asp Met Asp Lys Glu Leu Glu Phe Lys
 35 40 45

Asn Asp Leu Ile Asp Asp Lys Glu Phe Asp Ile Pro Gln Val Asp Thr
 50 55 60

Pro 65 Pro Thr Leu Glu Ser 70 Ile Leu Asn Glu 75 Thr Asp Asp Glu Asp Glu 80
 Ser Phe Ile Leu 85 Glu Asp Pro Thr Leu 90 Leu Asn Ile Asp Thr Ile Asp 95
 Ser His Ser 100 Tyr Asp Thr Ser Ser 105 Val Ala Ser Ser Asp 110 Ser Gly Asp
 Arg Thr Asn 115 Leu Lys Arg Lys 120 Lys Lys Leu Pro Asp Ser 125 Phe Ser Leu
 His 130 Gly Ser Val Met Arg 135 His Ser Leu Leu Lys 140 Gly Ile Ser Ala Gln
 Ile 145 Val Ser Ala Ala Asp 150 Lys Val Asp Ala Gly 155 Leu Pro Thr Ala Ile 160
 Ala Val Ser Ser 165 Leu Ile Ala Val Gly 170 Thr Ser His Gly Leu Ala Leu 175
 Ile Phe Asp 180 Gln Asn Gln Ala Leu 185 Arg Leu Cys Leu Gly Ser 190 Thr Ser
 Val Gly Gly 195 Gln Tyr Gly Ala Ile 200 Ser Ala Leu Ser Ile 205 Asn Asn Asp
 Cys Ser 210 Arg Leu Leu Cys Gly 215 Phe Ala Lys Gly Gln 220 Ile Thr Met Trp
 Asp 225 Leu Ala Ser Gly 230 Lys Leu Leu Arg Ser Ile 235 Thr Asp Ala His Pro 240
 Pro Gly Thr Ala 245 Ile Leu His Ile Lys Phe 250 Thr Asp Asp Pro Thr Leu 255
 Ala Ile Cys Asn 260 Asp Ser Gly Gly Ser 265 Val Phe Glu Leu Thr Phe Lys 270
 Arg Val Met 275 Gly Val Arg Thr Cys 280 Glu Ser Arg Cys Leu 285 Phe Ser Gly
 Ser Lys 290 Gly Glu Val Cys Cys 295 Ile Glu Pro Leu His 300 Ser Lys Pro Glu
 Leu 305 Lys Asp His Pro Ile 310 Thr Gln Phe Ser Leu 315 Leu Ala Met Ala Ser 320
 Leu Thr Lys Ile 325 Leu Val Ile Gly Leu Lys 330 Pro Ser Leu Lys Val Trp 335

Met Thr Phe Pro Tyr Gly Arg Met Asp Pro Ser Ser Val Pro Leu Leu
 340 345 350
 Ala Trp His Phe Val Ala Val Gln Asn Tyr Val Asn Pro Met Leu Ala
 355 360 365
 Phe Cys Arg Gly Asp Val Val His Phe Leu Leu Val Lys Arg Asp Glu
 370 375 380
 Ser Gly Ala Ile His Val Thr Lys Gln Lys His Leu His Leu Tyr Tyr
 385 390 395 400
 Asp Leu Ile Asn Phe Thr Trp Ile Asn Ser Arg Thr Val Val Leu Leu
 405 410 415
 Asp Ser Val Glu Lys Leu His Val Ile Asp Arg Gln Thr Gln Glu Glu
 420 425 430
 Leu Glu Thr Val Glu Ile Ser Glu Val Gln Leu Val Tyr Asn Ser Ser
 435 440 445
 His Phe Lys Ser Leu Ala Thr Gly Gly Asn Val Ser Gln Ala Leu Ala
 450 455 460
 Leu Val Gly Glu Lys Ala Cys Tyr Gln Ser Ile Ser Ser Tyr Gly Gly
 465 470 475 480
 Gln Ile Phe Tyr Leu Gly Thr Lys Ser Val Tyr Val Met Met Leu Arg
 485 490 495
 Ser Trp Arg Glu Arg Val Asp His Leu Leu Lys Gln Asp Cys Leu Thr
 500 505 510
 Glu Ala Leu Ala Leu Ala Trp Ser Phe His Glu Gly Lys Ala Lys Ala
 515 520 525
 Val Val Gly Leu Ser Gly Asp Ala Ser Lys Arg Lys Ala Ile Val Ala
 530 535 540
 Asp Arg Met Val Glu Ile Leu Phe His Tyr Ala Asp Arg Ala Leu Lys
 545 550 555 560
 Lys Cys Pro Asp Gln Gly Lys Ile Gln Val Met Glu Gln His Phe Gln
 565 570 575
 Asp Met Val Pro Val Ile Val Asp Tyr Cys Leu Leu Leu Gln Arg Lys
 580 585 590
 Asp Leu Leu Phe Ser Gln Met Tyr Asp Lys Leu Ser Glu Asn Ser Val
 595 600 605

Ala Lys Gly Val Phe Leu Glu Cys Leu Glu Pro Tyr Ile Leu Ser Asp
 610 615 620
 Lys Leu Val Gly Ile Thr Pro Gln Val Met Lys Asp Leu Ile Val His
 625 630 635 640
 Phe Gln Asp Lys Lys Leu Met Glu Asn Val Glu Ala Leu Ile Val His
 645 650 655
 Met Asp Ile Thr Ser Leu Asp Ile Gln Gln Val Val Leu Met Cys Trp
 660 665 670
 Glu Asn Arg Leu Tyr Asp Ala Met Ile Tyr Val Tyr Asn Arg Gly Met
 675 680 685
 Asn Glu Phe Ile Ser Pro Met Glu Lys Leu Phe Arg Val Ile Ala Pro
 690 695 700
 Pro Leu Asn Ala Gly Lys Thr Leu Thr Asp Glu Gln Val Val Met Gly
 705 710 715 720
 Asn Lys Leu Leu Val Tyr Ile Ser Cys Cys Leu Ala Gly Arg Ala Tyr
 725 730 735
 Pro Leu Gly Asp Ile Pro Glu Asp Leu Val Pro Leu Val Lys Asn Gln
 740 745 750
 Val Phe Glu Phe Leu Ile Arg Leu His Ser Ala Glu Ala Ser Pro Glu
 755 760 765
 Glu Glu Ile Tyr Pro Tyr Ile Arg Thr Leu Leu His Phe Asp Thr Arg
 770 775 780
 Glu Phe Leu Asn Val Leu Ala Leu Thr Phe Glu Asp Phe Lys Asn Asp
 785 790 795 800
 Lys Gln Ala Val Glu Tyr Gln Gln Arg Ile Val Asp Ile Leu Leu Lys
 805 810 815
 Val Met Val Glu Asn Ser Asp Phe Thr Pro Ser Gln Val Gly Cys Leu
 820 825 830
 Phe Thr Phe Leu Ala Arg Gln Leu Ala Lys Pro Asp Asn Thr Leu Phe
 835 840 845
 Val Asn Arg Thr Leu Phe Asp Gln Val Leu Glu Phe Leu Cys Ser Pro
 850 855 860
 Asp Asp Asp Ser Arg His Ser Glu Arg Gln Gln Val Leu Leu Glu Leu
 865 870 875 880

Leu Gln Ala Gly Gly Ile Val Gln Phe Glu Glu Ser Arg Leu Ile Arg
 885 890 895

Met Ala Glu Lys Ala Glu Phe Tyr Gln Ile Cys Glu Phe Met Tyr Glu
 900 905 910

Arg Glu His Gln Tyr Asp Lys Ile Ile Asp Cys Tyr Leu Arg Asp Pro
 915 920 925

Leu Arg Glu Glu Glu Val Phe Asn Tyr Ile His Asn Ile Leu Ser Ile
 930 935 940

Pro Gly His Ser Ala Glu Glu Lys Gln Ser Val Trp Gln Lys Ala Met
 945 950 955 960

Asp His Ile Glu Glu Leu Val Ser Leu Lys Pro Cys Lys Ala Ala Glu
 965 970 975

Leu Val Ala Thr His Phe Ser Gly His Ile Glu Thr Val Ile Lys Lys
 980 985 990

Leu Gln Asn Gln Val Leu Leu Phe Lys Phe Leu Arg Ser Leu Leu Asp
 995 1000 1005

Pro Arg Glu Gly Ile His Val Asn Gln Glu Leu Leu Gln Ile Ser
 1010 1015 1020

Pro Cys Ile Thr Glu Gln Phe Ile Glu Leu Leu Cys Gln Phe Asn
 1025 1030 1035

Pro Thr Gln Val Ile Glu Thr Leu Gln Val Leu Glu Cys Tyr Arg
 1040 1045 1050

Leu Glu Glu Thr Ile Gln Ile Thr Gln Lys Tyr Gln Leu His Glu
 1055 1060 1065

Val Thr Ala Tyr Leu Leu Glu Lys Lys Gly Asp Ile His Gly Ala
 1070 1075 1080

Phe Leu Ile Met Leu Glu Arg Leu Gln Ser Lys Leu Gln Glu Val
 1085 1090 1095

Thr His Gln Gly Glu Asn Thr Lys Glu Asp Pro Ser Leu Lys Asp
 1100 1105 1110

Val Glu Asp Thr Met Val Glu Thr Ile Ala Leu Cys Gln Arg Asn
 1115 1120 1125

Ser His Asn Leu Asn Gln Gln Gln Arg Glu Ala Leu Trp Phe Pro
 1130 1135 1140

Leu	Leu	Glu	Ala	Met	Met	Ala	Pro	Gln	Lys	Leu	Ser	Ser	Ser	Ala
	1145					1150					1155			
Ile	Pro	His	Leu	His	Ser	Glu	Ala	Leu	Lys	Ser	Leu	Thr	Met	Gln
	1160					1165					1170			
Val	Leu	Asn	Ser	Met	Ala	Ala	Phe	Ile	Ala	Leu	Pro	Ser	Ile	Leu
	1175					1180					1185			
Gln	Arg	Ile	Leu	Gln	Asp	Pro	Val	Tyr	Gly	Lys	Gly	Lys	Leu	Gly
	1190					1195					1200			
Glu	Ile	Gln	Gly	Leu	Ile	Leu	Gly	Met	Leu	Asp	Thr	Phe	Asn	Tyr
	1205					1210					1215			
Glu	Gln	Thr	Leu	Leu	Glu	Thr	Thr	Thr	Ser	Leu	Leu	Asn	Gln	Asp
	1220					1225					1230			
Leu	His	Trp	Ser	Leu	Cys	Asn	Leu	Arg	Ala	Ser	Val	Thr	Arg	Gly
	1235					1240					1245			
Leu	Asn	Pro	Lys	Gln	Asp	Tyr	Cys	Ser	Ile	Cys	Leu	Gln	Gln	Tyr
	1250					1255					1260			
Lys	Arg	Arg	Gln	Glu	Met	Ala	Asp	Glu	Ile	Ile	Val	Phe	Ser	Cys
	1265					1270					1275			
Gly	His	Leu	Tyr	His	Ser	Phe	Cys	Leu	Gln	Asn	Lys	Glu	Cys	Thr
	1280					1285					1290			
Val	Glu	Phe	Glu	Gly	Gln	Thr	Arg	Trp	Thr	Cys	Tyr	Lys	Cys	Ser
	1295					1300					1305			
Ser	Ser	Asn	Lys	Val	Gly	Lys	Leu	Ser	Glu	Asn	Ser	Ser	Glu	Ile
	1310					1315					1320			
Lys	Lys	Gly	Arg	Ile	Thr	Pro	Ser	Gln	Val	Lys	Met	Ser	Pro	Ser
	1325					1330					1335			
Tyr	His	Gln	Ser	Lys	Gly	Asp	Pro	Thr	Ala	Lys	Lys	Gly	Thr	Ser
	1340					1345					1350			
Glu	Pro	Val	Leu	Asp	Pro	Gln	Gln	Ile	Gln	Ala	Phe	Asp	Gln	Leu
	1355					1360					1365			
Cys	Arg	Leu	Tyr	Arg	Gly	Ser	Ser	Arg	Leu	Ala	Leu	Leu	Thr	Glu
	1370					1375					1380			
Leu	Ser	Gln	Asn	Arg	Ser	Ser	Glu	Ser	Tyr	Arg	Pro	Phe	Ser	Gly
	1385					1390					1395			

Ser Gln Ser Ala Pro Ala Phe Asn Ser Ile Phe Gln Asn Glu Asn
 1400 1405 1410

Phe Gln Leu Gln Leu Ile Pro Pro Pro Val Thr Glu Asp
 1415 1420 1425

<210> 802
 <211> 498
 <212> PRT
 <213> Homo sapiens

<400> 802

Met Pro Leu Val Thr Arg Asn Ile Glu Pro Arg His Leu Cys Arg Gln
 1 5 10 15

Thr Leu Pro Ser Val Arg Ser Glu Leu Glu Cys Val Thr Asn Ile Thr
 20 25 30

Leu Ala Asn Val Ile Arg Gln Leu Gly Ser Leu Ser Lys Tyr Ala Glu
 35 40 45

Asp Ile Phe Gly Glu Leu Phe Thr Gln Ala Asn Thr Phe Ala Ser Arg
 50 55 60

Val Ser Ser Leu Ala Glu Arg Val Asp Arg Leu Gln Val Lys Val Thr
 65 70 75 80

Gln Leu Asp Pro Lys Glu Glu Glu Val Ser Leu Gln Gly Ile Asn Thr
 85 90 95

Arg Lys Ala Phe Arg Ser Ser Thr Ile Gln Asp Gln Lys Leu Phe Asp
 100 105 110

Arg Asn Ser Leu Pro Val Pro Val Leu Glu Thr Tyr Asn Thr Cys Asp
 115 120 125

Thr Pro Pro Pro Leu Asn Asn Leu Thr Pro Tyr Arg Asp Asp Gly Lys
 130 135 140

Glu Ala Leu Lys Phe Tyr Thr Asp Pro Ser Tyr Phe Phe Asp Leu Trp
 145 150 155 160

Lys Glu Lys Met Leu Gln Asp Thr Lys Asp Ile Met Lys Glu Lys Arg
 165 170 175

Lys His Arg Lys Glu Lys Lys Asp Asn Pro Asn Arg Gly Asn Val Asn
 180 185 190

Pro Arg Lys Ile Lys Thr Arg Lys Glu Glu Trp Glu Lys Met Lys Met
 195 200 205

Gly Gln Glu Phe Val Glu Ser Lys Glu Lys Leu Gly Thr Ser Gly Tyr
 210 215 220
 Pro Pro Thr Leu Val Tyr Gln Asn Gly Ser Ile Gly Cys Val Glu Asn
 225 230 235
 Val Asp Ala Ser Ser Tyr Pro Pro Pro Pro Gln Ser Asp Ser Ala Ser
 245 250 255
 Ser Pro Ser Pro Ser Phe Ser Glu Asp Asn Leu Pro Pro Pro Pro Ala
 260 265 270
 Glu Phe Ser Tyr Pro Val Asp Asn Gln Arg Gly Ser Gly Leu Ala Gly
 275 280 285
 Pro Lys Arg Ser Ser Val Val Ser Pro Ser His Pro Pro Pro Ala Pro
 290 295 300
 Pro Leu Gly Ser Pro Pro Gly Pro Lys Pro Gly Phe Ala Pro Pro Pro
 305 310 315 320
 Ala Pro Pro Pro Pro Pro Pro Pro Met Ile Gly Ile Pro Pro Pro Pro
 325 330 335
 Pro Pro Val Gly Phe Gly Ser Pro Gly Thr Pro Pro Pro Pro Ser Pro
 340 345 350
 Pro Ser Phe Pro Pro His Pro Asp Phe Ala Ala Pro Pro Pro Pro Pro
 355 360 365
 Pro Pro Pro Ala Ala Asp Tyr Pro Thr Leu Pro Pro Pro Pro Leu Ser
 370 375 380
 Gln Pro Thr Gly Gly Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro
 385 390 395 400
 Gly Pro Pro Pro Pro Pro Phe Thr Gly Ala Asp Gly Gln Pro Ala Ile
 405 410 415
 Pro Pro Pro Leu Ser Asp Thr Thr Lys Pro Lys Ser Ser Leu Pro Ala
 420 425 430
 Val Ser Asp Ala Arg Ser Asp Leu Leu Ser Ala Ile Arg Gln Gly Phe
 435 440 445
 Gln Leu Arg Arg Val Glu Glu Gln Arg Glu Gln Glu Lys Arg Asp Val
 450 455 460
 Val Gly Asn Asp Val Ala Thr Ile Leu Ser Arg Arg Ile Ala Val Glu
 465 470 475 480

Tyr Ser Asp Ser Glu Asp Asp Ser Ser Glu Phe Asp Glu Asp Asp Trp
 485 490 495

Ser Asp

<210> 803
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 803

Met Ala Leu Asn Lys Asn His Ser Glu Gly Gly Gly Val Ile Val Asn
 1 5 10 15

Asn Thr Glu Ser Ile Leu Met Ser Tyr Asp His Val Glu Leu Thr Phe
 20 25 30

Asn Asp Met Lys Asn Val Pro Glu Ala Phe Lys Gly Thr Lys Lys Gly
 35 40 45

Thr Val Tyr Leu Thr Pro Tyr Arg Val Ile Phe Leu Ser Lys Gly Lys
 50 55 60

Asp Ala Met Gln Ser Phe Met Met Pro Phe Tyr Leu Met Lys Asp Cys
 65 70 75 80

Glu Ile Lys Gln Pro Val Phe Gly Ala Asn Tyr Ile Lys Gly Thr Val
 85 90 95

Lys Ala Glu Ala Gly Gly Gly Trp Glu Gly Ser Ala Ser Tyr Lys Leu
 100 105 110

Thr Phe Thr Ala Gly Gly Ala Ile Glu Phe Gly Gln Arg Met Leu Gln
 115 120 125

Val Ala Ser Gln Ala Ser Arg Gly Glu Val Pro Ser Gly Ala Tyr Gly
 130 135 140

Tyr Ser Tyr Met Pro Ser Gly Ala Tyr Val Tyr Pro Pro Pro Val Ala
 145 150 155 160

Asn Gly Met Tyr Pro Cys Pro Pro Gly Tyr Pro Tyr Pro Pro Pro Pro
 165 170 175

Pro Glu Phe Tyr Pro Gly Pro Pro Met Met Asp Gly Ala Met Gly Tyr
 180 185 190

Val Gln Pro Pro Pro Pro Tyr Pro Gly Pro Met Glu Pro Pro Val
 195 200 205

Ser Gly Pro Asp Val Pro Ser Thr Pro Ala Ala Glu Ala Lys Ala Ala

210

215

220

Glu Ala Ala Ala Ser Ala Tyr Tyr Asn Pro Gly Asn Pro His Asn Val
 225 230 235 240

Tyr Met Pro Thr Ser Gln Pro Pro Pro Pro Tyr Tyr Pro Pro Glu
 245 250 255

Asp Lys Lys Thr Gln
 260

<210> 804
 <211> 494
 <212> PRT
 <213> Homo sapiens

<400> 804

Met Pro Thr Glu Ser Ala Ser Cys Ser Thr Ala Arg Gln Thr Lys Gln
 1 5 10 15

Lys Arg Lys Ser His Ser Leu Ser Ile Arg Arg Thr Asn Ser Ser Glu
 20 25 30

Gln Glu Arg Thr Gly Leu Pro Arg Asp Met Leu Glu Gly Gln Asp Ser
 35 40 45

Lys Leu Pro Ser Ser Val Arg Ser Thr Leu Leu Glu Leu Phe Gly Gln
 50 55 60

Ile Glu Arg Glu Phe Glu Asn Leu Tyr Ile Glu Asn Leu Glu Leu Arg
 65 70 75 80

Arg Glu Ile Asp Thr Leu Asn Glu Arg Leu Ala Ala Glu Gly Gln Ala
 85 90 95

Ile Asp Gly Ala Glu Leu Ser Lys Gly Gln Leu Lys Thr Lys Ala Ser
 100 105 110

His Ser Thr Ser Gln Leu Ser Gln Lys Leu Lys Thr Thr Tyr Lys Ala
 115 120 125

Ser Thr Ser Lys Ile Val Ser Ser Phe Lys Thr Thr Thr Ser Arg Ala
 130 135 140

Ala Cys Gln Leu Val Lys Glu Tyr Ile Gly His Arg Asp Gly Ile Trp
 145 150 155 160

Asp Val Ser Val Ala Lys Thr Gln Pro Val Val Leu Gly Thr Ala Ser
 165 170 175

Ala Asp His Thr Ala Leu Leu Trp Ser Ile Glu Thr Gly Lys Cys Leu
 180 185 190

Val Lys Tyr Ala Gly His Val Gly Ser Val Asn Ser Ile Lys Phe His
 195 200 205
 Pro Ser Glu Gln Leu Ala Leu Thr Ala Ser Gly Asp Gln Thr Ala His
 210 215 220
 Ile Trp Arg Tyr Ala Val Gln Leu Pro Thr Pro Gln Pro Val Ala Asp
 225 230 235 240
 Thr Ser Ile Ser Gly Glu Asp Glu Val Glu Cys Ser Asp Lys Asp Glu
 245 250 255
 Pro Asp Leu Asp Gly Asp Val Ser Ser Asp Cys Pro Thr Ile Arg Val
 260 265 270
 Pro Leu Thr Ser Leu Lys Ser His Gln Gly Val Val Ile Ala Ser Asp
 275 280 285
 Trp Leu Val Gly Gly Lys Gln Ala Val Thr Ala Ser Trp Asp Arg Thr
 290 295 300
 Ala Asn Leu Tyr Asp Val Glu Thr Ser Glu Leu Val His Ser Leu Thr
 305 310 315 320
 Gly His Asp Gln Glu Leu Thr His Cys Cys Thr His Pro Thr Gln Arg
 325 330 335
 Leu Val Val Thr Ser Ser Arg Asp Thr Thr Phe Arg Leu Trp Asp Phe
 340 345 350
 Arg Asp Pro Ser Ile His Ser Val Asn Val Phe Gln Gly His Thr Asp
 355 360 365
 Thr Val Thr Ser Ala Val Phe Thr Val Gly Asp Asn Val Val Ser Gly
 370 375 380
 Ser Asp Asp Arg Thr Val Lys Val Trp Asp Leu Lys Asn Met Arg Ser
 385 390 395 400
 Pro Ile Ala Thr Ile Arg Thr Asp Ser Ala Ile Asn Arg Ile Asn Val
 405 410 415
 Cys Val Gly Gln Lys Ile Ile Ala Leu Pro His Asp Asn Arg Gln Val
 420 425 430
 Arg Leu Phe Asp Met Ser Gly Val Arg Leu Ala Arg Leu Pro Arg Ser
 435 440 445
 Ser Arg Gln Gly His Arg Arg Met Val Cys Cys Ser Ala Trp Ser Glu
 450 455 460

Asp His Pro Val Cys Asn Leu Phe Thr Cys Gly Phe Asp Arg Gln Ala
465 470 475 480

Ile Gly Trp Asn Ile Asn Ile Pro Ala Leu Leu Gln Glu Lys
485 490

<210> 805
<211> 920
<212> PRT
<213> Homo sapiens

<400> 805

Met Thr Ala Glu Glu Thr Val Asn Val Lys Glu Val Glu Ile Ile Lys
1 5 10 15

Leu Ile Leu Asp Phe Leu Asn Ser Lys Lys Leu His Ile Ser Met Leu
20 25 30

Ala Leu Glu Lys Glu Ser Gly Val Ile Asn Gly Leu Phe Ser Asp Asp
35 40 45

Met Leu Phe Leu Arg Gln Leu Ile Leu Asp Gly Gln Trp Asp Glu Val
50 55 60

Leu Gln Phe Ile Gln Pro Leu Glu Cys Met Glu Lys Phe Asp Lys Lys
65 70 75 80

Arg Phe Arg Tyr Ile Ile Leu Lys Gln Lys Phe Leu Glu Ala Leu Cys
85 90 95

Val Asn Asn Ala Met Ser Ala Glu Asp Glu Pro Gln His Leu Glu Phe
100 105 110

Thr Met Gln Glu Ala Val Gln Cys Leu His Ala Leu Glu Glu Tyr Cys
115 120 125

Pro Ser Lys Asp Asp Tyr Ser Lys Leu Cys Leu Leu Leu Thr Leu Pro
130 135 140

Arg Leu Thr Asn His Ala Glu Phe Lys Asp Trp Asn Pro Ser Thr Ala
145 150 155 160

Arg Val His Cys Phe Glu Glu Ala Cys Val Met Val Ala Glu Phe Ile
165 170 175

Pro Ala Asp Arg Lys Leu Ser Glu Ala Gly Phe Lys Ala Ser Asn Asn
180 185 190

Arg Leu Phe Gln Leu Val Met Lys Gly Leu Leu Tyr Glu Cys Cys Val
195 200 205

Glu Phe Cys Gln Ser Lys Ala Thr Gly Glu Glu Ile Thr Glu Ser Glu
 210 215 220
 Val Leu Leu Gly Ile Asp Leu Leu Cys Gly Asn Gly Cys Asp Asp Leu
 225 230 235 240
 Asp Leu Ser Leu Leu Ser Trp Leu Gln Asn Leu Pro Ser Ser Val Phe
 245 250 255
 Ser Cys Ala Phe Glu Gln Lys Met Leu Asn Ile His Val Asp Lys Leu
 260 265 270
 Leu Lys Pro Thr Lys Ala Ala Tyr Ala Asp Leu Leu Thr Pro Leu Ile
 275 280 285
 Ser Lys Leu Ser Pro Tyr Pro Ser Ser Pro Met Arg Arg Pro Gln Ser
 290 295 300
 Ala Asp Ala Tyr Met Thr Arg Ser Leu Asn Pro Ala Leu Asp Gly Leu
 305 310 315 320
 Thr Cys Gly Leu Thr Ser His Asp Lys Arg Ile Ser Asp Leu Gly Asn
 325 330 335
 Lys Thr Ser Pro Met Ser His Ser Phe Ala Asn Phe His Tyr Pro Gly
 340 345 350
 Val Gln Asn Leu Ser Arg Ser Leu Met Leu Glu Asn Thr Glu Cys His
 355 360 365
 Ser Ile Tyr Glu Glu Ser Pro Glu Arg Ser Asp Thr Pro Val Asp Ala
 370 375 380
 Gln Arg Pro Ile Gly Ser Glu Ile Leu Gly Gln Ser Ser Val Ser Glu
 385 390 395 400
 Lys Glu Pro Ala Asn Gly Ala Gln Asn Pro Gly Pro Ala Lys Gln Glu
 405 410 415
 Lys Asn Glu Leu Arg Asp Ser Thr Glu Gln Phe Gln Glu Tyr Tyr Arg
 420 425 430
 Gln Arg Leu Arg Tyr Gln Gln His Leu Glu Gln Lys Glu Gln Gln Arg
 435 440 445
 Gln Ile Tyr Gln Gln Met Leu Leu Glu Gly Gly Val Asn Gln Glu Asp
 450 455 460
 Gly Pro Asp Gln Gln Gln Asn Leu Thr Glu Gln Phe Leu Asn Arg Ser
 465 470 475 480

Ile Gln Lys Leu Gly Glu Leu Asn Ile Gly Met Asp Gly Leu Gly Asn
 485 490 495
 Glu Val Ser Ala Leu Asn Gln Gln Cys Asn Gly Ser Lys Gly Asn Gly
 500 505 510
 Ser Asn Gly Ser Ser Val Thr Ser Phe Thr Thr Pro Pro Gln Asp Ser
 515 520 525
 Ser Gln Arg Leu Thr His Asp Ala Ser Asn Ile His Thr Ser Thr Pro
 530 535 540
 Arg Asn Pro Gly Ser Thr Asn His Ile Pro Phe Leu Glu Glu Ser Pro
 545 550 555 560
 Cys Gly Ser Gln Ile Ser Ser Glu His Ser Val Ile Lys Pro Pro Leu
 565 570 575
 Gly Asp Ser Pro Gly Ser Leu Ser Arg Ser Lys Gly Glu Glu Asp Asp
 580 585 590
 Lys Ser Lys Lys Gln Phe Val Cys Ile Asn Ile Leu Glu Asp Thr Gln
 595 600 605
 Ala Val Arg Ala Val Ala Phe His Pro Ala Gly Gly Leu Tyr Ala Val
 610 615 620
 Gly Ser Asn Ser Lys Thr Leu Arg Val Cys Ala Tyr Pro Asp Val Ile
 625 630 635 640
 Asp Pro Ser Ala His Glu Thr Pro Lys Gln Pro Val Val Arg Phe Lys
 645 650 655
 Arg Asn Lys His His Lys Gly Ser Ile Tyr Cys Val Ala Trp Ser Pro
 660 665 670
 Cys Gly Gln Leu Leu Ala Thr Gly Ser Asn Asp Lys Tyr Val Lys Val
 675 680 685
 Leu Pro Phe Asn Ala Glu Thr Cys Asn Ala Thr Gly Pro Asp Leu Glu
 690 695 700
 Phe Ser Met His Asp Gly Thr Ile Arg Asp Leu Ala Phe Met Glu Gly
 705 710 715 720
 Pro Glu Ser Gly Gly Ala Ile Leu Ile Ser Ala Gly Ala Gly Asp Cys
 725 730 735
 Asn Ile Tyr Thr Thr Asp Cys Gln Arg Gly Gln Gly Leu His Ala Leu
 740 745 750

Ser Gly His Thr Gly His Ile Leu Ala Leu Tyr Thr Trp Ser Gly Trp
755 760 765

Met Ile Ala Ser Gly Ser Gln Asp Lys Thr Val Arg Phe Trp Asp Leu
770 775 780

Arg Val Pro Ser Cys Val Arg Val Val Gly Thr Thr Phe His Gly Thr
785 790 795 800

Gly Ser Ala Val Ala Ser Val Ala Val Asp Pro Ser Gly Arg Leu Leu
805 810 815

Ala Thr Gly Gln Glu Asp Ser Ser Cys Met Leu Tyr Asp Ile Arg Gly
820 825 830

Gly Arg Met Val Gln Ser Tyr His Pro His Ser Ser Asp Val Arg Ser
835 840 845

Val Arg Phe Ser Pro Gly Ala His Tyr Leu Leu Thr Gly Ser Tyr Asp
850 855 860

Met Lys Ile Lys Val Thr Asp Leu Gln Gly Asp Leu Thr Lys Gln Leu
865 870 875 880

Pro Ile Met Val Val Gly Glu His Lys Asp Lys Val Ile Gln Cys Arg
885 890 895

Trp His Thr Gln Asp Leu Ser Phe Leu Ser Ser Ser Ala Asp Arg Thr
900 905 910

Val Thr Leu Trp Thr Tyr Asn Gly
915 920

<210> 806
<211> 301
<212> PRT
<213> Homo sapiens

<400> 806

Met Glu Gly Asp Phe Ser Val Cys Arg Asn Cys Lys Arg His Val Val
1 5 10 15

Ser Ala Asn Phe Thr Leu His Glu Ala Tyr Cys Leu Arg Phe Leu Val
20 25 30

Leu Cys Pro Glu Cys Glu Glu Pro Val Pro Lys Glu Thr Met Glu Glu
35 40 45

His Cys Lys Leu Glu His Gln Gln Val Gly Cys Thr Met Cys Gln Gln
50 55 60

Ser Met Gln Lys Ser Ser Leu Glu Phe His Lys Ala Asn Glu Cys Gln
65 70 75 80

Glu Arg Pro Val Glu Cys Lys Phe Cys Lys Leu Asp Met Gln Leu Ser
85 90 95

Lys Leu Glu Leu His Glu Ser Tyr Cys Gly Ser Arg Thr Glu Leu Cys
100 105 110

Gln Gly Cys Gly Gln Phe Ile Met His Arg Met Leu Ala Gln His Arg
115 120 125

Asp Val Cys Arg Ser Glu Gln Ala Gln Leu Gly Lys Gly Glu Arg Ile
130 135 140

Ser Ala Pro Glu Arg Glu Ile Tyr Cys His Tyr Cys Asn Gln Met Ile
145 150 155 160

Pro Glu Asn Lys Tyr Phe His His Met Gly Lys Cys Cys Pro Asp Ser
165 170 175

Glu Phe Lys Lys His Phe Pro Val Gly Asn Pro Glu Ile Leu Pro Ser
180 185 190

Ser Leu Pro Ser Gln Ala Ala Glu Asn Gln Thr Ser Thr Met Glu Lys
195 200 205

Asp Val Arg Pro Lys Thr Arg Ser Ile Asn Arg Phe Pro Leu His Ser
210 215 220

Glu Ser Ser Ser Lys Lys Ala Pro Arg Ser Lys Asn Lys Thr Leu Asp
225 230 235 240

Pro Leu Leu Met Ser Glu Pro Lys Pro Arg Thr Ser Ser Pro Arg Gly
245 250 255

Asp Lys Ala Ala Tyr Asp Ile Leu Arg Arg Cys Ser Gln Cys Gly Ile
260 265 270

Leu Leu Pro Leu Pro Ile Leu Asn Gln His Gln Glu Lys Cys Arg Trp
275 280 285

Leu Ala Ser Ser Lys Gly Lys Gln Val Arg Asn Phe Ser
290 295 300

<210> 807
<211> 940
<212> PRT
<213> Homo sapiens

<400> 807

Met Ala Arg Lys Arg Ala Ala Gly Gly Glu Pro Arg Gly Arg Glu Leu
Page 1406

1 5 10 15
 Arg Ser Gln Lys Ser Lys Ala Lys Ser Lys Ala Arg Arg Glu Glu Glu
 20 25 30
 Glu Glu Asp Ala Phe Glu Asp Glu Lys Pro Pro Lys Lys Ser Leu Leu
 35 40 45
 Ser Lys Val Ser Gln Gly Lys Arg Lys Arg Gly Cys Ser His Pro Gly
 50 55 60
 Gly Ser Ala Asp Gly Pro Ala Lys Lys Lys Val Ala Lys Val Thr Val
 65 70 75 80
 Lys Ser Glu Asn Leu Lys Val Ile Lys Asp Glu Ala Leu Ser Asp Gly
 85 90 95
 Asp Asp Leu Arg Asp Phe Pro Ser Asp Leu Lys Lys Ala His His Leu
 100 105 110
 Lys Arg Gly Ala Thr Met Asn Glu Asp Ser Asn Glu Glu Glu Glu Glu
 115 120 125
 Ser Glu Asn Asp Trp Glu Glu Val Glu Glu Leu Ser Glu Pro Val Leu
 130 135 140
 Gly Asp Val Arg Glu Ser Thr Ala Phe Ser Arg Ser Leu Leu Pro Val
 145 150 155 160
 Lys Pro Val Glu Ile Glu Ile Glu Thr Pro Glu Gln Ala Lys Thr Arg
 165 170 175
 Glu Arg Ser Glu Lys Ile Lys Leu Glu Phe Glu Thr Tyr Leu Arg Arg
 180 185 190
 Ala Met Lys Arg Phe Asn Lys Gly Val His Glu Asp Thr His Lys Val
 195 200 205
 His Leu Leu Cys Leu Leu Ala Asn Gly Phe Tyr Arg Asn Asn Ile Cys
 210 215 220
 Ser Gln Pro Asp Leu His Ala Ile Gly Leu Ser Ile Ile Pro Ala Arg
 225 230 235 240
 Phe Thr Arg Val Leu Pro Arg Asp Val Asp Thr Tyr Tyr Leu Ser Asn
 245 250 255
 Leu Val Lys Trp Phe Ile Gly Thr Phe Thr Val Asn Ala Glu Leu Ser
 260 265 270
 Ala Ser Glu Gln Asp Asn Leu Gln Thr Thr Leu Glu Arg Arg Phe Ala

275

280

285

Ile Tyr Ser Ala Arg Asp Asp Glu Glu Leu Val His Ile Phe Leu Leu
 290 295 300

Ile Leu Arg Ala Leu Gln Leu Leu Thr Arg Leu Val Leu Ser Leu Gln
 305 310 315 320

Pro Ile Pro Leu Lys Ser Ala Thr Ala Lys Gly Lys Lys Pro Ser Lys
 325 330 335

Glu Arg Leu Thr Ala Asp Pro Gly Gly Ser Ser Glu Thr Ser Ser Gln
 340 345 350

Val Leu Glu Asn His Thr Lys Pro Lys Thr Ser Lys Gly Thr Lys Gln
 355 360 365

Glu Glu Thr Phe Ala Lys Gly Thr Cys Arg Pro Ser Ala Lys Gly Lys
 370 375 380

Arg Asn Lys Gly Gly Arg Lys Lys Arg Ser Lys Pro Ser Ser Ser Glu
 385 390 395 400

Glu Asp Glu Gly Pro Gly Asp Lys Gln Glu Lys Ala Thr Gln Arg Arg
 405 410 415

Pro His Gly Arg Glu Arg Arg Val Ala Ser Arg Val Ser Tyr Lys Glu
 420 425 430

Glu Ser Gly Ser Asp Glu Ala Gly Ser Gly Ser Asp Phe Glu Leu Ser
 435 440 445

Ser Gly Glu Ala Ser Asp Pro Ser Asp Glu Asp Ser Glu Pro Gly Pro
 450 455 460

Pro Lys Gln Arg Lys Ala Pro Ala Pro Gln Arg Thr Lys Ala Gly Ser
 465 470 475 480

Lys Ser Ala Ser Arg Thr His Arg Gly Ser His Arg Lys Asp Pro Ser
 485 490 495

Leu Pro Ala Ala Ser Ser Ser Ser Ser Ser Lys Arg Gly Lys Lys
 500 505 510

Met Cys Ser Asp Gly Glu Lys Ala Glu Lys Arg Ser Ile Ala Gly Ile
 515 520 525

Asp Gln Trp Leu Glu Val Phe Cys Glu Gln Glu Glu Lys Trp Val Cys
 530 535 540

Val Asp Cys Val His Gly Val Val Gly Gln Pro Leu Thr Cys Tyr Lys

545 550 555 560
 Tyr Ala Thr Lys Pro Met Thr Tyr Val Val Gly Ile Asp Ser Asp Gly
 565 570 575
 Trp Val Arg Asp Val Thr Gln Arg Tyr Asp Pro Val Trp Met Thr Val
 580 585 590
 Thr Arg Lys Cys Arg Val Asp Ala Glu Trp Trp Ala Glu Thr Leu Arg
 595 600 605
 Pro Tyr Gln Ser Pro Phe Met Asp Arg Glu Lys Lys Glu Asp Leu Glu
 610 615 620
 Phe Gln Ala Lys His Met Asp Gln Pro Leu Pro Thr Ala Ile Gly Leu
 625 630 635 640
 Tyr Lys Asn His Pro Leu Tyr Ala Leu Lys Arg His Leu Leu Lys Tyr
 645 650 655
 Glu Ala Ile Tyr Pro Glu Thr Ala Ala Ile Leu Gly Tyr Cys Arg Gly
 660 665 670
 Glu Ala Val Tyr Ser Arg Asp Cys Val His Thr Leu His Ser Arg Asp
 675 680 685
 Thr Trp Leu Lys Lys Ala Arg Val Val Arg Leu Gly Glu Val Pro Tyr
 690 695 700
 Lys Met Val Lys Gly Phe Ser Asn Arg Ala Arg Lys Ala Arg Leu Ala
 705 710 715 720
 Glu Pro Gln Leu Arg Glu Glu Asn Asp Leu Gly Leu Phe Gly Tyr Trp
 725 730 735
 Gln Thr Glu Glu Tyr Gln Pro Pro Val Ala Val Asp Gly Lys Val Pro
 740 745 750
 Arg Asn Glu Phe Gly Asn Val Tyr Leu Phe Leu Pro Ser Met Met Pro
 755 760 765
 Ile Gly Cys Val Gln Leu Asn Leu Pro Asn Leu His Arg Val Ala Arg
 770 775 780
 Lys Leu Asp Ile Asp Cys Val Gln Ala Ile Thr Gly Phe Asp Phe His
 785 790 795 800
 Gly Gly Tyr Ser His Pro Val Thr Asp Gly Tyr Ile Val Cys Glu Glu
 805 810 815
 Phe Lys Asp Val Leu Leu Thr Ala Trp Glu Asn Glu Gln Ala Val Ile
 Page 1409

820

825

830

Glu Arg Lys Glu Lys Glu Lys Lys Glu Lys Arg Ala Leu Gly Asn Trp
835 840 845

Lys Leu Leu Ala Lys Gly Leu Leu Ile Arg Glu Arg Leu Lys Arg Arg
850 855 860

Tyr Gly Pro Lys Ser Glu Ala Ala Ala Pro His Thr Asp Ala Gly Gly
865 870 875 880

Gly Leu Ser Ser Asp Glu Glu Glu Gly Thr Ser Ser Gln Ala Glu Ala
885 890 895

Ala Arg Ile Leu Ala Ala Ser Trp Pro Gln Asn Arg Glu Asp Glu Glu
900 905 910

Lys Gln Lys Leu Lys Gly Gly Pro Lys Lys Thr Lys Arg Glu Lys Lys
915 920 925

Ala Ala Ala Ser His Leu Phe Pro Phe Glu Gln Leu
930 935 940

<210>	808
<211>	1125
<212>	PRT
<213>	Homo sapiens

<400> 808

Met Ala Ser Glu Glu Ala Ser Leu Arg Ala Leu Glu Ser Leu Met Thr
1 5 10 15

Glu Phe Phe His Asp Cys Thr Thr Asn Glu Arg Lys Arg Glu Ile Glu
20 25 30

Glu Leu Leu Asn Asn Phe Ala Gln Gln Ile Gly Ala Trp Arg Phe Cys
35 40 45

Leu Tyr Phe Leu Ser Ser Thr Arg Asn Asp Tyr Val Met Met Tyr Ser
50 55 60

Leu Thr Val Phe Glu Asn Leu Ile Asn Lys Met Trp Leu Gly Val Pro
65 70 75 80

Ser Gln Asp Lys Met Glu Ile Arg Ser Cys Leu Pro Lys Leu Leu Leu
85 90 95

Ala His His Lys Thr Leu Pro Tyr Phe Ile Arg Asn Lys Leu Cys Lys
100 105 110

Val Ile Val Asp Ile Gly Arg Gln Asp Trp Pro Met Phe Tyr His Asp
115 120 125

Phe Phe Thr Asn Ile Leu Gln Leu Ile Gln Ser Pro Val Thr Thr Pro
 130 135 140
 Leu Gly Leu Ile Met Leu Lys Thr Thr Ser Glu Glu Leu Ala Cys Pro
 145 150 155 160
 Arg Glu Asp Leu Ser Val Ala Arg Lys Glu Glu Leu Arg Lys Leu Leu
 165 170 175
 Leu Asp Gln Val Gln Thr Val Leu Gly Leu Leu Thr Gly Ile Leu Glu
 180 185 190
 Thr Val Trp Asp Lys His Ser Val Thr Ala Ala Thr Pro Pro Pro Ser
 195 200 205
 Pro Thr Ser Gly Glu Ser Gly Asp Leu Leu Ser Asn Leu Leu Gln Ser
 210 215 220
 Pro Ser Ser Ala Lys Leu Leu Asn Gln Pro Ile Pro Ile Leu Asp Val
 225 230 235 240
 Glu Ser Glu Tyr Ile Cys Ser Leu Ala Leu Glu Cys Leu Ala His Leu
 245 250 255
 Phe Ser Trp Ile Pro Leu Ser Ala Ser Ile Thr Pro Ser Leu Leu Thr
 260 265 270
 Thr Ile Phe His Phe Ala Arg Phe Gly Cys Asp Ile Arg Ala Arg Lys
 275 280 285
 Met Ala Ser Val Asn Gly Ser Ser Gln Asn Cys Val Ser Gly Gln Glu
 290 295 300
 Arg Gly Arg Leu Gly Val Leu Ala Met Ser Cys Ile Asn Glu Leu Met
 305 310 315 320
 Ser Lys Asn Cys Val Pro Met Glu Phe Glu Glu Tyr Leu Leu Arg Met
 325 330 335
 Phe Gln Gln Thr Phe Tyr Leu Leu Gln Lys Ile Thr Lys Asp Asn Asn
 340 345 350
 Ala His Thr Val Lys Ser Arg Leu Glu Glu Leu Asp Glu Ser Tyr Ile
 355 360 365
 Glu Lys Phe Thr Asp Phe Leu Arg Leu Phe Val Ser Val His Leu Arg
 370 375 380
 Arg Ile Glu Ser Tyr Ser Gln Phe Pro Val Val Glu Phe Leu Thr Leu
 385 390 395 400

Leu Phe Lys Tyr Thr Phe His Gln Pro Thr His Glu Gly Tyr Phe Ser
 405 410 415
 Cys Leu Asp Ile Trp Thr Leu Phe Leu Asp Tyr Leu Thr Ser Lys Ile
 420 425 430
 Lys Ser Arg Leu Gly Asp Lys Glu Ala Val Leu Asn Arg Tyr Glu Asp
 435 440 445
 Ala Leu Val Leu Leu Leu Thr Glu Val Leu Asn Arg Ile Gln Phe Arg
 450 455 460
 Tyr Asn Gln Ala Gln Leu Glu Glu Leu Asp Asp Glu Thr Leu Asp Asp
 465 470 475 480
 Asp Gln Gln Thr Glu Trp Gln Arg Tyr Leu Arg Gln Ser Leu Glu Val
 485 490 495
 Val Ala Lys Val Met Glu Leu Leu Pro Thr His Ala Phe Ser Thr Leu
 500 505 510
 Phe Pro Val Leu Gln Asp Asn Leu Glu Val Tyr Leu Gly Leu Gln Gln
 515 520 525
 Phe Ile Val Thr Ser Gly Ser Gly His Arg Leu Asn Ile Thr Ala Glu
 530 535 540
 Asn Asp Cys Arg Arg Leu His Cys Ser Leu Arg Asp Leu Ser Ser Leu
 545 550 555 560
 Leu Gln Ala Val Gly Arg Leu Ala Glu Tyr Phe Ile Gly Asp Val Phe
 565 570 575
 Ala Ala Arg Phe Asn Asp Ala Leu Thr Val Val Glu Arg Leu Val Lys
 580 585 590
 Val Thr Leu Tyr Gly Ser Gln Ile Lys Leu Tyr Asn Ile Glu Thr Ala
 595 600 605
 Val Pro Ser Val Leu Lys Pro Asp Leu Ile Asp Val His Ala Gln Ser
 610 615 620
 Leu Ala Ala Leu Gln Ala Tyr Ser His Trp Leu Ala Gln Tyr Cys Ser
 625 630 635 640
 Glu Val His Arg Gln Asn Thr Gln Gln Phe Val Thr Leu Ile Ser Thr
 645 650 655
 Thr Met Asp Ala Ile Thr Pro Leu Ile Ser Thr Lys Val Gln Asp Lys
 660 665 670

Leu Leu Leu Ser Ala Cys His Leu Leu Val Ser Leu Ala Thr Thr Val
 675 680 685
 Arg Pro Val Phe Leu Ile Ser Ile Pro Ala Val Gln Lys Val Phe Asn
 690 695 700
 Arg Ile Thr Asp Ala Ser Ala Leu Arg Leu Val Asp Lys Ala Gln Val
 705 710 715 720
 Leu Val Cys Arg Ala Leu Ser Asn Ile Leu Leu Leu Pro Trp Pro Asn
 725 730 735
 Leu Pro Glu Asn Glu Gln Gln Trp Pro Val Arg Ser Ile Asn His Ala
 740 745 750
 Ser Leu Ile Ser Ala Leu Ser Arg Asp Tyr Arg Asn Leu Lys Pro Ser
 755 760 765
 Ala Val Ala Pro Gln Arg Lys Met Pro Leu Asp Asp Thr Lys Leu Ile
 770 775 780
 Ile His Gln Thr Leu Ser Val Leu Glu Asp Ile Val Glu Asn Ile Ser
 785 790 795 800
 Gly Glu Ser Thr Lys Ser Arg Gln Ile Cys Tyr Gln Ser Leu Gln Glu
 805 810 815
 Ser Val Gln Val Ser Leu Ala Leu Phe Pro Ala Phe Ile His Gln Ser
 820 825 830
 Asp Val Thr Asp Glu Met Leu Ser Phe Phe Leu Thr Leu Phe Arg Gly
 835 840 845
 Leu Arg Val Gln Met Gly Val Pro Phe Thr Glu Gln Ile Ile Gln Thr
 850 855 860
 Phe Leu Asn Met Phe Thr Arg Glu Gln Leu Ala Glu Ser Ile Leu His
 865 870 875 880
 Glu Gly Ser Thr Gly Cys Arg Val Val Glu Lys Phe Leu Lys Ile Leu
 885 890 895
 Gln Val Val Val Gln Glu Pro Gly Gln Val Phe Lys Pro Phe Leu Pro
 900 905 910
 Ser Ile Ile Ala Leu Cys Met Glu Gln Val Tyr Pro Ile Ile Ala Glu
 915 920 925
 Arg Pro Ser Pro Asp Val Lys Ala Glu Leu Phe Glu Leu Leu Phe Arg
 930 935 940

Thr Leu His His Asn Trp Arg Tyr Phe Phe Lys Ser Thr Val Leu Ala
 945 950 955 960
 Ser Val Gln Arg Gly Ile Ala Glu Glu Gln Met Glu Asn Glu Pro Gln
 965 970 975
 Phe Ser Ala Ile Met Gln Ala Phe Gly Gln Ser Phe Leu Gln Pro Asp
 980 985 990
 Ile His Leu Phe Lys Gln Asn Leu Phe Tyr Leu Glu Thr Leu Asn Thr
 995 1000 1005
 Lys Gln Lys Leu Tyr His Lys Lys Ile Phe Arg Thr Ala Met Leu
 1010 1015 1020
 Phe Gln Phe Val Asn Val Leu Leu Gln Val Leu Val His Lys Ser
 1025 1030 1035
 His Asp Leu Leu Gln Glu Glu Ile Gly Ile Ala Ile Tyr Asn Met
 1040 1045 1050
 Ala Ser Val Asp Phe Asp Gly Phe Phe Ala Ala Phe Leu Pro Glu
 1055 1060 1065
 Phe Leu Thr Ser Cys Asp Gly Val Asp Ala Asn Gln Lys Ser Val
 1070 1075 1080
 Leu Gly Arg Asn Phe Lys Met Asp Arg Asp Leu Pro Ser Phe Thr
 1085 1090 1095
 Gln Asn Val His Arg Leu Val Asn Asp Leu Arg Tyr Tyr Arg Leu
 1100 1105 1110
 Cys Asn Asp Ser Leu Pro Pro Gly Thr Val Lys Leu
 1115 1120 1125
 <210> 809
 <211> 121
 <212> PRT
 <213> Homo sapiens
 <400> 809
 Met Gly Arg Ile Phe Leu Asp His Ile Gly Gly Thr Arg Leu Phe Ser
 1 5 10 15
 Cys Ala Asn Cys Asp Thr Ile Leu Thr Asn Arg Ser Glu Leu Ile Ser
 20 25 30
 Thr Arg Phe Thr Gly Ala Thr Gly Arg Ala Phe Leu Phe Asn Lys Val
 35 40 45

Val Asn Leu Gln Tyr Ser Glu Val Gln Asp Arg Val Met Leu Thr Gly
50 55 60

Arg His Met Val Arg Asp Val Ser Cys Lys Asn Cys Asn Ser Lys Leu
65 70 75 80

Gly Trp Ile Tyr Glu Phe Ala Thr Glu Asp Ser Gln Arg Tyr Lys Glu
85 90 95

Gly Arg Val Ile Leu Glu Arg Ala Leu Val Arg Glu Ser Glu Gly Phe
100 105 110

Glu Glu His Val Pro Ser Asp Asn Ser
115 120

<210> 810
<211> 585
<212> PRT
<213> Homo sapiens

<400> 810

Met Ser Ala Thr Ser Val Asp Gln Arg Pro Lys Gly Gln Gly Asn Lys
1 5 10 15

Val Ser Val Gln Asn Gly Ser Ile His Gln Lys Asp Ala Val Asn Asp
20 25 30

Asp Asp Phe Glu Pro Tyr Leu Ser Ser Gln Thr Asn Gln Ser Asn Ser
35 40 45

Tyr Pro Pro Met Ser Asp Pro Tyr Met Pro Ser Tyr Tyr Ala Pro Ser
50 55 60

Ile Gly Phe Pro Tyr Ser Leu Gly Glu Ala Ala Trp Ser Thr Ala Gly
65 70 75 80

Asp Gln Pro Met Pro Tyr Leu Thr Thr Tyr Gly Gln Met Ser Asn Gly
85 90 95

Glu His His Tyr Ile Pro Asp Gly Val Phe Ser Gln Pro Gly Ala Leu
100 105 110

Gly Asn Thr Pro Pro Phe Leu Gly Gln His Gly Phe Asn Phe Phe Pro
115 120 125

Gly Asn Ala Asp Phe Ser Thr Trp Gly Thr Ser Gly Ser Gln Gly Gln
130 135 140

Ser Thr Gln Ser Ser Ala Tyr Ser Ser Ser Tyr Gly Tyr Pro Pro Ser
145 150 155 160

Ser Leu Gly Arg Ala Ile Thr Asp Gly Gln Ala Gly Phe Gly Asn Asp
 165 170 175

Thr Leu Ser Lys Val Pro Gly Ile Ser Ser Ile Glu Gln Gly Met Thr
 180 185 190

Gly Leu Lys Ile Gly Gly Asp Leu Thr Ala Ala Val Thr Lys Thr Val
 195 200 205

Gly Thr Ala Leu Ser Ser Ser Gly Met Thr Ser Ile Ala Thr Asn Ser
 210 215 220

Val Pro Pro Val Ser Ser Ala Ala Pro Lys Pro Thr Ser Trp Ala Ala
 225 230 235 240

Ile Ala Arg Lys Pro Ala Lys Pro Gln Pro Lys Leu Lys Pro Lys Gly
 245 250 255

Asn Val Gly Ile Gly Gly Ser Ala Val Pro Pro Pro Pro Ile Lys His
 260 265 270

Asn Met Asn Ile Gly Thr Trp Asp Glu Lys Gly Ser Val Val Lys Ala
 275 280 285

Pro Pro Thr Gln Pro Val Leu Pro Pro Gln Thr Ile Ile Gln Gln Pro
 290 295 300

Gln Pro Leu Ile Gln Pro Pro Pro Leu Val Gln Ser Gln Leu Pro Gln
 305 310 315 320

Gln Gln Pro Gln Pro Pro Gln Pro Gln Gln Gln Gly Pro Gln Pro
 325 330 335

Gln Ala Gln Pro His Gln Val Gln Pro Gln Gln Gln Gln Leu Gln Asn
 340 345 350

Arg Trp Val Ala Pro Arg Asn Arg Gly Ala Gly Phe Asn Gln Asn Asn
 355 360 365

Gly Ala Gly Ser Glu Asn Phe Gly Leu Gly Val Val Pro Val Ser Ala
 370 375 380

Ser Pro Ser Ser Val Glu Val His Pro Val Leu Glu Lys Leu Lys Ala
 385 390 395 400

Ile Asn Asn Tyr Asn Pro Lys Asp Phe Asp Trp Asn Leu Lys Asn Gly
 405 410 415

Arg Val Phe Ile Ile Lys Ser Tyr Ser Glu Asp Asp Ile His Arg Ser
 420 425 430

Ile Lys Tyr Ser Ile Trp Cys Ser Thr Glu His Gly Asn Lys Arg Leu
 435 440 445

Asp Ala Ala Tyr Arg Ser Leu Asn Gly Lys Gly Pro Leu Tyr Leu Leu
 450 455 460

Phe Ser Val Asn Gly Ser Gly His Phe Cys Gly Val Ala Glu Met Lys
 465 470 475 480

Ser Val Val Asp Tyr Asn Ala Tyr Ala Gly Val Trp Ser Gln Asp Lys
 485 490 495

Trp Lys Gly Lys Phe Glu Val Lys Trp Ile Phe Val Lys Asp Val Pro
 500 505 510

Asn Asn Gln Leu Arg His Ile Arg Leu Glu Asn Asn Asp Asn Lys Pro
 515 520 525

Val Thr Asn Ser Arg Asp Thr Gln Glu Val Pro Leu Glu Lys Ala Lys
 530 535 540

Gln Val Leu Lys Ile Ile Ala Thr Phe Lys His Thr Thr Ser Ile Phe
 545 550 555 560

Asp Asp Phe Ala His Tyr Glu Lys Arg Gln Glu Glu Glu Glu Ala Met
 565 570 575

Arg Arg Glu Arg Asn Arg Asn Lys Gln
 580 585

<210> 811
 <211> 429
 <212> PRT
 <213> Homo sapiens

<400> 811

Met Ala Gln Ala Pro Ala Asp Pro Gly Arg Glu Gly His Leu Glu Gln
 1 5 10 15

Arg Ile Leu Gln Val Leu Thr Glu Ala Gly Ser Pro Val Lys Leu Ala
 20 25 30

Gln Leu Val Lys Glu Cys Gln Ala Pro Lys Arg Glu Leu Asn Gln Val
 35 40 45

Leu Tyr Arg Met Lys Lys Glu Leu Lys Val Ser Leu Thr Ser Pro Ala
 50 55 60

Thr Trp Cys Leu Gly Gly Thr Asp Pro Glu Gly Glu Gly Pro Ala Glu
 65 70 75 80

Leu Ala Leu Ser Ser Pro Ala Glu Arg Pro Gln Gln His Ala Ala Thr
 Page 1417

Ile Pro Glu Thr Pro Gly Pro Gln Phe Ser Gln Gln Arg Glu Glu Asp
 100 105 110

Ile Tyr Arg Phe Leu Lys Asp Asn Gly Pro Gln Arg Ala Leu Val Ile
 115 120 125

Ala Gln Ala Leu Gly Met Arg Thr Ala Lys Asp Val Asn Arg Asp Leu
 130 135 140

Tyr Arg Met Lys Ser Arg His Leu Leu Asp Met Asp Glu Gln Ser Lys
 145 150 155 160

Ala Trp Thr Ile Tyr Arg Pro Glu Asp Ser Gly Arg Arg Ala Lys Ser
 165 170 175

Ala Ser Ile Ile Tyr Gln His Asn Pro Ile Asn Met Ile Cys Gln Asn
 180 185 190

Gly Pro Asn Ser Trp Ile Ser Ile Ala Asn Ser Glu Ala Ile Gln Ile
 195 200 205

Gly His Gly Asn Ile Ile Thr Arg Gln Thr Val Ser Arg Glu Asp Gly
 210 215 220

Ser Ala Gly Pro Arg His Leu Pro Ser Met Ala Pro Gly Asp Ser Ser
 225 230 235 240

Thr Trp Gly Thr Leu Val Asp Pro Trp Gly Pro Gln Asp Ile His Met
 245 250 255

Glu Gln Ser Ile Leu Arg Arg Val Gln Leu Gly His Ser Asn Glu Met
 260 265 270

Arg Leu His Gly Val Pro Ser Glu Gly Pro Ala His Ile Pro Pro Gly
 275 280 285

Ser Pro Pro Val Ser Ala Thr Ala Ala Gly Pro Glu Ala Ser Phe Glu
 290 295 300

Ala Arg Ile Pro Ser Pro Gly Thr His Pro Glu Gly Glu Ala Ala Gln
 305 310 315 320

Arg Ile His Met Lys Ser Cys Phe Leu Glu Asp Ala Thr Ile Gly Asn
 325 330 335

Ser Asn Lys Met Ser Ile Ser Pro Gly Val Ala Gly Pro Gly Gly Val
 340 345 350

Ala Gly Ser Gly Glu Gly Glu Pro Gly Glu Asp Ala Gly Arg Arg Pro

355

360

365

Ala Asp Thr Gln Ser Arg Ser His Phe Pro Arg Asp Ile Gly Gln Pro
 370 375 380

Ile Thr Pro Ser His Ser Lys Leu Thr Pro Lys Leu Glu Thr Met Thr
 385 390 395 400

Leu Gly Asn Arg Ser His Lys Ala Ala Glu Gly Ser His Tyr Val Asp
 405 410 415

Glu Ala Ser His Glu Gly Ser Trp Trp Gly Gly Gly Ile
 420 425

<210> 812
 <211> 522
 <212> PRT
 <213> Homo sapiens

<400> 812

Met Glu Phe Pro Asp His Ser Arg His Leu Leu Gln Cys Leu Ser Glu
 1 5 10 15

Gln Arg His Gln Gly Phe Leu Cys Asp Cys Thr Val Leu Val Gly Asp
 20 25 30

Ala Gln Phe Arg Ala His Arg Ala Val Leu Ala Ser Cys Ser Met Tyr
 35 40 45

Phe His Leu Phe Tyr Lys Asp Gln Leu Asp Lys Arg Asp Ile Val His
 50 55 60

Leu Asn Ser Asp Ile Val Thr Ala Pro Ala Phe Ala Leu Leu Leu Glu
 65 70 75 80

Phe Met Tyr Glu Gly Lys Leu Gln Phe Lys Asp Leu Pro Ile Glu Asp
 85 90 95

Val Leu Ala Ala Ala Ser Tyr Leu His Met Tyr Asp Ile Val Lys Val
 100 105 110

Cys Lys Lys Lys Leu Lys Glu Lys Ala Thr Thr Glu Ala Asp Ser Thr
 115 120 125

Lys Lys Glu Glu Asp Ala Ser Ser Cys Ser Asp Lys Val Glu Ser Leu
 130 135 140

Ser Asp Gly Ser Ser His Ile Ala Gly Asp Leu Pro Ser Asp Glu Asp
 145 150 155 160

Glu Gly Glu Asp Glu Lys Leu Asn Ile Leu Pro Ser Lys Arg Asp Leu
 165 170 175

Ala Ala Glu Pro Gly Asn Met Trp Met Arg Leu Pro Ser Asp Ser Ala
 180 185 190
 Gly Ile Pro Gln Ala Gly Gly Glu Ala Glu Pro His Ala Thr Ala Ala
 195 200 205
 Gly Lys Thr Val Ala Ser Pro Cys Ser Ser Thr Glu Ser Leu Ser Gln
 210 215 220
 Arg Ser Val Thr Ser Val Arg Asp Ser Ala Asp Val Asp Cys Val Leu
 225 230 235 240
 Asp Leu Ser Val Lys Ser Ser Leu Ser Gly Val Glu Asn Leu Asn Ser
 245 250 255
 Ser Tyr Phe Ser Ser Gln Asp Val Leu Arg Ser Asn Leu Val Gln Val
 260 265 270
 Lys Val Glu Lys Glu Ala Ser Cys Asp Glu Ser Asp Val Gly Thr Asn
 275 280 285
 Asp Tyr Asp Met Glu His Ser Thr Val Lys Glu Ser Val Ser Thr Asn
 290 295 300
 Asn Arg Val Gln Tyr Glu Pro Ala His Leu Ala Pro Leu Arg Glu Asp
 305 310 315 320
 Ser Val Leu Arg Glu Leu Asp Arg Glu Asp Lys Ala Ser Asp Asp Glu
 325 330 335
 Met Met Thr Pro Glu Ser Glu Arg Val Gln Val Glu Gly Gly Met Glu
 340 345 350
 Ser Ser Leu Leu Pro Tyr Val Ser Asn Ile Leu Ser Pro Ala Gly Gln
 355 360 365
 Ile Phe Met Cys Pro Leu Cys Asn Lys Val Phe Pro Ser Pro His Ile
 370 375 380
 Leu Gln Ile His Leu Ser Thr His Phe Arg Glu Gln Asp Gly Ile Arg
 385 390 395 400
 Ser Lys Pro Ala Ala Asp Val Asn Val Pro Thr Cys Ser Leu Cys Gly
 405 410 415
 Lys Thr Phe Ser Cys Met Tyr Thr Leu Lys Arg His Glu Arg Thr His
 420 425 430
 Ser Gly Glu Lys Pro Tyr Thr Cys Thr Gln Cys Gly Lys Ser Phe Gln
 435 440 445

Tyr Ser His Asn Leu Ser Arg His Ala Val Val His Thr Arg Glu Lys
 450 455 460

Pro His Ala Cys Lys Trp Cys Glu Arg Arg Phe Thr Gln Ser Gly Asp
 465 470 475 480

Leu Tyr Arg His Ile Arg Lys Phe His Cys Glu Leu Val Asn Ser Leu
 485 490 495

Ser Val Lys Ser Glu Ala Leu Ser Leu Pro Thr Val Arg Asp Trp Thr
 500 505 510

Leu Glu Asp Ser Ser Gln Glu Leu Trp Lys
 515 520

<210> 813
 <211> 902
 <212> PRT
 <213> Homo sapiens

<400> 813

Met Ala Asp Pro Glu Val Cys Cys Phe Ile Thr Lys Ile Leu Cys Ala
 1 5 10 15

His Gly Gly Arg Met Ala Leu Asp Ala Leu Leu Gln Glu Ile Ala Leu
 20 25 30

Ser Glu Pro Gln Leu Cys Glu Val Leu Gln Val Ala Gly Pro Asp Arg
 35 40 45

Phe Val Val Leu Glu Thr Gly Gly Glu Ala Gly Ile Thr Arg Ser Val
 50 55 60

Val Ala Thr Thr Arg Ala Arg Val Cys Arg Arg Lys Tyr Cys Gln Arg
 65 70 75 80

Pro Cys Asp Asn Leu His Leu Cys Lys Leu Asn Leu Leu Gly Arg Cys
 85 90 95

Asn Tyr Ser Gln Ser Glu Arg Asn Leu Cys Lys Tyr Ser His Glu Val
 100 105 110

Leu Ser Glu Glu Asn Phe Lys Val Leu Lys Asn His Glu Leu Ser Gly
 115 120 125

Leu Asn Lys Glu Glu Leu Ala Val Leu Leu Leu Gln Ser Asp Pro Phe
 130 135 140

Phe Met Pro Glu Ile Cys Lys Ser Tyr Lys Gly Glu Gly Arg Gln Gln
 145 150 155 160

Ile Cys Asn Gln Gln Pro Pro Cys Ser Arg Leu His Ile Cys Asp His
 165 170 175
 Phe Thr Arg Gly Asn Cys Arg Phe Pro Asn Cys Leu Arg Ser His Asn
 180 185 190
 Leu Met Asp Arg Lys Val Leu Ala Ile Met Arg Glu His Gly Leu Asn
 195 200 205
 Pro Asp Val Val Gln Asn Ile Gln Asp Ile Cys Asn Ser Lys His Met
 210 215 220
 Gln Lys Asn Pro Pro Gly Pro Arg Ala Pro Ser Ser His Arg Arg Asn
 225 230 235 240
 Met Ala Tyr Arg Ala Arg Ser Lys Ser Arg Asp Arg Phe Phe Gln Gly
 245 250 255
 Ser Gln Glu Phe Leu Ala Ser Ala Ser Ala Glu Arg Ser Cys
 260 265 270
 Thr Pro Ser Pro Asp Gln Ile Ser His Arg Ala Ser Leu Glu Asp Ala
 275 280 285
 Pro Val Asp Asp Leu Thr Arg Lys Phe Thr Tyr Leu Gly Ser Gln Asp
 290 295 300
 Arg Ala Arg Pro Pro Ser Gly Ser Ser Lys Ala Thr Asp Leu Gly Gly
 305 310 315 320
 Thr Ser Gln Ala Gly Thr Ser Gln Arg Phe Leu Glu Asn Gly Ser Gln
 325 330 335
 Glu Asp Leu Leu His Gly Asn Pro Gly Ser Thr Tyr Leu Ala Ser Asn
 340 345 350
 Ser Thr Ser Ala Pro Asn Trp Lys Ser Leu Thr Ser Trp Thr Asn Asp
 355 360 365
 Gln Gly Ala Arg Arg Lys Thr Val Phe Ser Pro Thr Leu Pro Ala Ala
 370 375 380
 Arg Ser Ser Leu Gly Ser Leu Gln Thr Pro Glu Ala Val Thr Thr Arg
 385 390 395 400
 Lys Gly Thr Gly Leu Leu Ser Ser Asp Tyr Arg Ile Ile Asn Gly Lys
 405 410 415
 Ser Gly Thr Gln Asp Ile Gln Pro Gly Pro Leu Phe Asn Asn Asn Ala
 420 425 430

Asp Gly Val Ala Thr Asp Ile Thr Ser Thr Arg Ser Leu Asn Tyr Lys
 435 440 445
 Ser Thr Ser Ser Gly His Arg Glu Ile Ser Ser Pro Arg Ile Gln Asp
 450 455 460
 Ala Gly Pro Ala Ser Arg Asp Val Gln Ala Thr Gly Arg Ile Ala Asp
 465 470 475 480
 Asp Ala Asp Pro Arg Val Ala Leu Val Asn Asp Ser Leu Ser Asp Val
 485 490 495
 Thr Ser Thr Thr Ser Ser Arg Val Asp Asp His Asp Ser Glu Glu Ile
 500 505 510
 Cys Leu Asp His Leu Cys Lys Gly Cys Pro Leu Asn Gly Ser Cys Ser
 515 520 525
 Lys Val His Phe His Leu Pro Tyr Arg Trp Gln Met Leu Ile Gly Lys
 530 535 540
 Thr Trp Thr Asp Phe Glu His Met Glu Thr Ile Glu Lys Gly Tyr Cys
 545 550 555 560
 Asn Pro Gly Ile His Leu Cys Ser Val Gly Ser Tyr Thr Ile Asn Phe
 565 570 575
 Arg Val Met Ser Cys Asp Ser Phe Pro Ile Arg Arg Leu Ser Thr Pro
 580 585 590
 Ser Ser Val Thr Lys Pro Ala Asn Ser Val Phe Thr Thr Lys Trp Ile
 595 600 605
 Trp Tyr Trp Lys Asn Glu Ser Gly Thr Trp Ile Gln Tyr Gly Glu Glu
 610 615 620
 Lys Asp Lys Arg Lys Asn Ser Asn Val Asp Ser Ser Tyr Leu Glu Ser
 625 630 635 640
 Leu Tyr Gln Ser Cys Pro Arg Gly Val Val Pro Phe Gln Ala Gly Ser
 645 650 655
 Arg Asn Tyr Glu Leu Ser Phe Gln Gly Met Ile Gln Thr Asn Ile Ala
 660 665 670
 Ser Lys Thr Gln Lys Asp Val Ile Arg Arg Pro Thr Phe Val Pro Gln
 675 680 685
 Trp Tyr Val Gln Gln Met Lys Arg Gly Pro Asp His Gln Pro Ala Lys
 690 695 700

Thr Ser Ser Val Ser Leu Thr Ala Thr Phe Arg Pro Gln Glu Asp Phe
705 710 715 720

Cys Phe Leu Ser Ser Lys Lys Tyr Lys Leu Ser Glu Ile His His Leu
725 730 735

His Pro Glu Tyr Val Arg Val Ser Glu His Phe Lys Ala Ser Met Lys
740 745 750

Asn Phe Lys Ile Glu Lys Ile Lys Lys Ile Glu Asn Ser Glu Leu Leu
755 760 765

Asp Lys Phe Thr Trp Lys Lys Ser Gln Met Lys Glu Glu Gly Lys Leu
770 775 780

Leu Phe Tyr Ala Thr Ser Arg Ala Tyr Val Glu Ser Ile Cys Ser Asn
785 790 795 800

Asn Phe Asp Ser Phe Leu His Glu Thr His Glu Asn Lys Tyr Gly Lys
805 810 815

Gly Ile Tyr Phe Ala Lys Asp Ala Ile Tyr Ser His Lys Asn Cys Pro
820 825 830

Tyr Asp Ala Lys Asn Val Val Met Phe Val Ala Gln Val Leu Val Gly
835 840 845

Lys Phe Thr Glu Gly Asn Ile Thr Tyr Thr Ser Pro Pro Pro Gln Phe
850 855 860

Asp Ser Cys Val Asp Thr Arg Ser Asn Pro Ser Val Phe Val Ile Phe
865 870 875 880

Gln Lys Asp Gln Val Tyr Pro Gln Tyr Val Ile Glu Tyr Thr Glu Asp
885 890 895

Lys Ala Cys Val Ile Ser
900

<210> 814
<211> 632
<212> PRT
<213> Homo sapiens

<400> 814

Met Gln Arg Glu Glu Gly Phe Asn Thr Lys Met Ala Asp Gly Pro Asp
1 5 10 15

Glu Tyr Asp Thr Glu Ala Gly Cys Val Pro Leu Leu His Pro Glu Glu
20 25 30

Ile Lys Pro Gln Ser His Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly
 35 40 45
 Arg Lys Thr His Ile Asp Asp Tyr Ser Thr Trp Asp Ile Val Lys Ala
 50 55 60
 Thr Gln Tyr Gly Ile Tyr Glu Arg Cys Arg Glu Leu Val Glu Ala Gly
 65 70 75 80
 Tyr Asp Val Arg Gln Pro Asp Lys Glu Asn Val Thr Leu Leu His Trp
 85 90 95
 Ala Ala Ile Asn Asn Arg Ile Asp Leu Val Lys Tyr Tyr Ile Ser Lys
 100 105 110
 Gly Ala Ile Val Asp Gln Leu Gly Gly Asp Leu Asn Ser Thr Pro Leu
 115 120 125
 His Trp Ala Thr Arg Gln Gly His Leu Ser Met Val Val Gln Leu Met
 130 135 140
 Lys Tyr Gly Ala Asp Pro Ser Leu Ile Asp Gly Glu Gly Cys Ser Cys
 145 150 155 160
 Ile His Leu Ala Ala Gln Phe Gly His Thr Ser Ile Val Ala Tyr Leu
 165 170 175
 Ile Ala Lys Gly Gln Asp Val Asp Met Met Asp Gln Asn Gly Met Thr
 180 185 190
 Pro Leu Met Trp Ala Ala Tyr Arg Thr His Ser Val Asp Pro Thr Arg
 195 200 205
 Leu Leu Leu Thr Phe Asn Val Ser Val Asn Leu Gly Asp Lys Tyr His
 210 215 220
 Lys Asn Thr Ala Leu His Trp Ala Val Leu Ala Gly Asn Thr Thr Val
 225 230 235 240
 Ile Ser Leu Leu Leu Glu Ala Gly Ala Asn Val Asp Ala Gln Asn Ile
 245 250 255
 Lys Gly Glu Ser Ala Leu Asp Leu Ala Lys Gln Arg Lys Asn Val Trp
 260 265 270
 Met Ile Asn His Leu Gln Glu Ala Arg Gln Ala Lys Gly Tyr Asp Asn
 275 280 285
 Pro Ser Phe Leu Arg Lys Leu Lys Ala Asp Lys Glu Phe Arg Gln Lys
 290 295 300

Val Met Leu Gly Thr Pro Phe Leu Val Ile Trp Leu Val Gly Phe Ile
 305 310 315 320
 Ala Asp Leu Asn Ile Asp Ser Trp Leu Ile Lys Gly Leu Met Tyr Gly
 325 330 335
 Gly Val Trp Ala Thr Val Gln Phe Leu Ser Lys Ser Phe Phe Asp His
 340 345 350
 Ser Met His Ser Ala Leu Pro Leu Gly Ile Tyr Leu Ala Thr Lys Phe
 355 360 365
 Trp Met Tyr Val Thr Trp Phe Phe Trp Phe Trp Asn Asp Leu Asn Phe
 370 375 380
 Leu Phe Ile His Leu Pro Phe Leu Ala Asn Ser Val Ala Leu Phe Tyr
 385 390 395 400
 Asn Phe Gly Lys Ser Trp Lys Ser Asp Pro Gly Ile Ile Lys Ala Thr
 405 410 415
 Glu Glu Gln Lys Lys Lys Thr Ile Val Glu Leu Ala Glu Thr Gly Ser
 420 425 430
 Leu Asp Leu Ser Ile Phe Cys Ser Thr Cys Leu Ile Arg Lys Pro Val
 435 440 445
 Arg Ser Lys His Cys Gly Val Cys Asn Arg Cys Ile Ala Lys Phe Asp
 450 455 460
 His His Cys Pro Trp Val Gly Asn Cys Val Gly Ala Gly Asn His Arg
 465 470 475 480
 Tyr Phe Met Gly Tyr Leu Phe Phe Leu Leu Phe Met Ile Cys Trp Met
 485 490 495
 Ile Tyr Gly Cys Ile Ser Tyr Trp Gly Leu His Cys Glu Thr Thr Tyr
 500 505 510
 Thr Lys Asp Gly Phe Trp Thr Tyr Ile Thr Gln Ile Ala Thr Cys Ser
 515 520 525
 Pro Trp Met Phe Trp Met Phe Leu Asn Ser Val Phe His Phe Met Trp
 530 535 540
 Val Ala Val Leu Leu Met Cys Gln Met Tyr Gln Ile Ser Cys Leu Gly
 545 550 555 560
 Ile Thr Thr Asn Glu Arg Met Asn Ala Arg Arg Tyr Lys His Phe Lys
 565 570 575

Val Thr Thr Thr Ser Ile Glu Ser Pro Phe Asn His Gly Cys Val Arg
580 585 590

Asn Ile Ile Asp Phe Phe Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro
595 600 605

Val Ile Val Asp Trp Thr Arg Gln Tyr Thr Ile Glu Tyr Asp Gln Ile
610 615 620

Ser Gly Ser Gly Tyr Gln Leu Val
625 630

<210> 815
<211> 388
<212> PRT
<213> Homo sapiens
<400> 815

Met Lys Asp Cys Glu Tyr Gln Gln Ile Ser Pro Gly Ala Ala Pro Leu
1 5 10 15

Pro Ala Ser Pro Gly Ala Arg Arg Pro Gly Pro Ala Ala Ser Pro Thr
20 25 30

Pro Gly Pro Gly Pro Ala Pro Pro Ala Ala Pro Ala Pro Pro Arg Trp
35 40 45

Ser Ser Ser Gly Ser Gly Ser Gly Ser Gly Ser Gly Ser Leu Gly Arg
50 55 60

Arg Pro Arg Arg Lys Trp Glu Val Phe Pro Gly Arg Asn Arg Phe Tyr
65 70 75 80

Cys Gly Gly Arg Leu Met Leu Ala Gly His Gly Gly Val Phe Ala Leu
85 90 95

Thr Leu Leu Leu Ile Leu Thr Thr Thr Gly Leu Phe Phe Val Phe Asp
100 105 110

Cys Pro Tyr Leu Ala Arg Lys Leu Thr Leu Ala Ile Pro Ile Ile Ala
115 120 125

Ala Ile Leu Phe Phe Phe Val Met Ser Cys Leu Leu Gln Thr Ser Phe
130 135 140

Thr Asp Pro Gly Ile Leu Pro Arg Ala Thr Val Cys Glu Ala Ala Ala
145 150 155 160

Leu Glu Lys Gln Ile Asp Asn Thr Gly Ser Ser Thr Tyr Arg Pro Pro
165 170 175

Pro Arg Thr Arg Glu Val Leu Ile Asn Gly Gln Met Val Lys Leu Lys
Page 1427

180

185

190

Tyr Cys Phe Thr Cys Lys Met Phe Arg Pro Pro Arg Thr Ser His Cys
195 200 205

Ser Val Cys Asp Asn Cys Val Glu Arg Phe Asp His His Cys Pro Trp
210 215 220

Val Gly Asn Cys Val Gly Arg Arg Asn Tyr Arg Phe Phe Tyr Ala Phe
225 230 235 240

Ile Leu Ser Leu Ser Phe Leu Thr Ala Phe Ile Phe Ala Cys Val Val
245 250 255

Thr His Leu Thr Leu Arg Ala Gln Gly Ser Asn Phe Leu Ser Thr Leu
260 265 270

Lys Glu Thr Pro Ala Ser Val Leu Glu Leu Val Ile Cys Phe Phe Ser
275 280 285

Ile Trp Ser Ile Leu Gly Leu Ser Gly Phe His Thr Tyr Leu Val Ala
290 295 300

Ser Asn Leu Thr Thr Asn Glu Asp Ile Lys Gly Ser Trp Ser Ser Lys
305 310 315 320

Arg Gly Gly Glu Ala Ser Val Asn Pro Tyr Ser His Lys Ser Ile Ile
325 330 335

Thr Asn Cys Cys Ala Val Leu Cys Gly Pro Leu Pro Pro Ser Leu Ile
340 345 350

Asp Arg Arg Gly Phe Val Gln Ser Asp Thr Val Leu Pro Ser Pro Ile
355 360 365

Arg Ser Asp Glu Pro Ala Cys Arg Ala Lys Pro Asp Ala Ser Met Val
370 375 380

Gly Gly His Pro
385

```
<210> 816
<211> 213
<212> PRT
<213> Homo sapiens
```

<400> 816

Met Ala Gln Glu Thr Asn Gln Thr Pro Gly Pro Met Leu Cys Ser Thr
1 5 10 15

Gly Cys Gly Phe Tyr Gly Asn Pro Arg Thr Asn Gly Met Cys Ser Val
20 25 30

Cys Tyr Lys Glu His Leu Gln Arg Gln Gln Asn Ser Gly Arg Met Ser
35 40 45

Pro Met Gly Thr Ala Ser Gly Ser Asn Ser Pro Thr Ser Asp Ser Ala
50 55 60

Ser Val Gln Arg Ala Asp Thr Ser Leu Asn Asn Cys Glu Gly Ala Ala
65 70 75 80

Gly Ser Thr Ser Glu Lys Ser Arg Asn Val Pro Val Ala Ala Leu Pro
85 90 95

Val Thr Gln Gln Met Thr Glu Met Ser Ile Ser Arg Glu Asp Lys Ile
100 105 110

Thr Thr Pro Lys Thr Glu Val Ser Glu Pro Val Val Thr Gln Pro Ser
115 120 125

Pro Ser Val Ser Gln Pro Ser Thr Ser Gln Ser Glu Glu Lys Ala Pro
130 135 140

Glu Leu Pro Lys Pro Lys Lys Asn Arg Cys Phe Met Cys Arg Lys Lys
145 150 155 160

Val Gly Leu Thr Gly Phe Asp Cys Arg Cys Gly Asn Leu Phe Cys Gly
165 170 175

Leu His Arg Tyr Ser Asp Lys His Asn Cys Pro Tyr Asp Tyr Lys Ala
180 185 190

Glu Ala Ala Ala Lys Ile Arg Lys Glu Asn Pro Val Val Val Ala Glu
195 200 205

Lys Ile Gln Arg Ile
210

<210> 817
<211> 1989
<212> PRT
<213> Homo sapiens

<400> 817

Met Ala Thr Ala Asp Thr Pro Ala Pro Ala Ser Ser Gly Leu Ser Pro
1 5 10 15

Lys Glu Glu Gly Glu Leu Glu Asp Gly Glu Ile Ser Asp Asp Asp Asn
20 25 30

Asn Ser Gln Ile Arg Ser Arg Ser Ser Ser Ser Ser Gly Gly Gly
35 40 45

Leu Leu Pro Tyr Pro Arg Arg Arg Pro Pro His Ser Ala Arg Gly Gly
 50 55 60
 Gly Ser Gly Gly Gly Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Gln
 65 70 75 80
 Gln Gln Leu Arg Asn Phe Ser Arg Ser Arg His Ala Ser Glu Arg Gly
 85 90 95
 His Leu Arg Gly Pro Ser Ser Tyr Arg Pro Lys Glu Pro Phe Arg Ser
 100 105 110
 His Pro Pro Ser Val Arg Met Pro Ser Ser Ser Leu Ser Glu Ser Ser
 115 120 125
 Pro Arg Pro Ser Phe Trp Glu Arg Ser His Leu Ala Leu Asp Arg Phe
 130 135 140
 Arg Phe Arg Gly Arg Pro Tyr Arg Gly Gly Ser Arg Trp Ser Arg Gly
 145 150 155 160
 Arg Gly Val Gly Glu Arg Gly Gly Lys Pro Gly Cys Arg Pro Pro Leu
 165 170 175
 Gly Gly Gly Ala Gly Ser Gly Phe Ser Ser Ser Gln Ser Trp Arg Glu
 180 185 190
 Pro Ser Pro Pro Arg Lys Ser Ser Lys Ser Phe Gly Arg Ser Pro Ser
 195 200 205
 Arg Lys Gln Asn Tyr Ser Ser Lys Asn Glu Asn Cys Val Glu Glu Thr
 210 215 220
 Phe Glu Asp Leu Leu Leu Lys Tyr Lys Gln Ile Gln Leu Glu Leu Glu
 225 230 235 240
 Cys Ile Asn Lys Asp Glu Lys Leu Ala Leu Ser Ser Lys Glu Glu Asn
 245 250 255
 Val Gln Glu Asp Pro Lys Thr Leu Asn Phe Glu Asp Gln Thr Ser Thr
 260 265 270
 Asp Asn Val Ser Ile Thr Lys Asp Ser Ser Lys Glu Val Ala Pro Glu
 275 280 285
 Glu Lys Thr Gln Val Lys Thr Phe Gln Ala Phe Glu Leu Lys Pro Leu
 290 295 300
 Arg Gln Lys Leu Thr Leu Pro Gly Asp Lys Asn Arg Leu Lys Lys Val
 305 310 315 320

Lys Asp Gly Ala Lys Pro Leu Ser Leu Lys Ser Asp Thr Thr Asp Ser
 325 330 335
 Ser Gln Gly Leu Gln Asp Lys Glu Gln Asn Leu Thr Arg Arg Ile Ser
 340 345 350
 Thr Ser Asp Ile Leu Ser Glu Lys Lys Leu Gly Glu Asp Glu Glu Glu
 355 360 365
 Leu Ser Glu Leu Gln Leu Arg Leu Leu Ala Leu Gln Ser Ala Ser Lys
 370 375 380
 Lys Trp Gln Gln Lys Glu Gln Gln Val Met Lys Glu Ser Lys Glu Lys
 385 390 395 400
 Leu Thr Lys Thr Lys Thr Val Gln Gln Lys Val Lys Thr Ser Thr Lys
 405 410 415
 Thr His Ser Ala Lys Lys Val Ser Thr Thr Ala Lys Gln Ala Leu Arg
 420 425 430
 Lys Gln Gln Thr Lys Ala Trp Lys Lys Leu Gln Gln Gln Lys Glu Gln
 435 440 445
 Glu Arg Gln Lys Glu Glu Asp Gln Arg Lys Gln Ala Glu Glu Glu Glu
 450 455 460
 Arg Arg Lys Arg Glu Glu Glu Ile Arg Lys Ile Arg Asp Leu Ser Asn
 465 470 475 480
 Gln Glu Glu Gln Tyr Asn Arg Phe Met Lys Leu Val Gly Gly Lys Arg
 485 490 495
 Arg Ser Arg Ser Lys Ser Ser Asp Pro Asp Leu Arg Arg Ser Leu Asp
 500 505 510
 Lys Gln Pro Thr Asp Ser Gly Gly Gly Ile Tyr Gln Tyr Asp Asn Tyr
 515 520 525
 Glu Glu Val Ala Met Asp Thr Asp Ser Glu Thr Ser Ser Pro Ala Pro
 530 535 540
 Ser Pro Val Gln Pro Pro Phe Phe Ser Glu Cys Ser Leu Gly Tyr Phe
 545 550 555 560
 Ser Pro Ala Pro Ser Leu Ser Leu Pro Pro Pro Pro Gln Val Ser Ser
 565 570 575
 Leu Pro Pro Leu Ser Gln Pro Tyr Val Glu Gly Leu Cys Val Ser Leu
 580 585 590

Glu Pro Leu Pro Pro Leu Pro Pro Leu Pro Pro Leu Pro Pro Glu Asp
 595 600 605
 Pro Glu Gln Pro Pro Lys Pro Pro Phe Ala Asp Glu Glu Glu Glu Glu
 610 615 620
 Glu Met Leu Leu Arg Glu Glu Leu Leu Lys Ser Leu Ala Asn Lys Arg
 625 630 635 640
 Ala Phe Lys Pro Glu Glu Thr Ser Ser Asn Ser Asp Pro Pro Ser Pro
 645 650 655
 Pro Val Leu Asn Asn Ser His Pro Val Pro Arg Ser Asn Leu Ser Ile
 660 665 670
 Val Ser Ile Asn Thr Val Ser Gln Pro Arg Ile Gln Asn Pro Lys Phe
 675 680 685
 His Arg Gly Pro Arg Leu Pro Arg Thr Val Ile Ser Leu Pro Lys His
 690 695 700
 Lys Ser Val Val Val Thr Leu Asn Asp Ser Asp Asp Ser Glu Ser Asp
 705 710 715 720
 Gly Glu Ala Ser Lys Ser Thr Asn Ser Val Phe Gly Gly Leu Glu Ser
 725 730 735
 Met Ile Lys Glu Ala Arg Arg Thr Ala Glu Gln Ala Ser Lys Pro Lys
 740 745 750
 Val Pro Pro Lys Ser Glu Lys Glu Asn Asp Pro Leu Arg Thr Pro Glu
 755 760 765
 Ala Leu Pro Glu Glu Lys Lys Ile Glu Tyr Arg Leu Leu Lys Glu Glu
 770 775 780
 Ile Ala Asn Arg Glu Lys Gln Arg Leu Ile Lys Ser Asp Gln Leu Lys
 785 790 795 800
 Thr Ser Ser Ser Ser Pro Ala Asn Ser Asp Val Glu Ile Asp Gly Ile
 805 810 815
 Gly Arg Ile Ala Met Val Thr Lys Gln Val Thr Asp Ala Glu Ser Lys
 820 825 830
 Leu Lys Lys His Arg Ile Leu Leu Met Lys Asp Glu Ser Val Leu Lys
 835 840 845
 Asn Leu Val Gln Gln Glu Ala Lys Lys Lys Glu Ser Val Arg Asn Ala
 850 855 860

Glu Ala Lys Ile Thr Lys Leu Thr Glu Gln Leu Gln Ala Thr Glu Lys
 865 870 875 880

Ile Leu Asn Val Asn Arg Met Phe Leu Lys Lys Leu Gln Glu Gln Ile
 885 890 895

His Arg Val Gln Gln Arg Val Thr Ile Lys Lys Ala Leu Thr Leu Lys
 900 905 910

Tyr Gly Glu Glu Leu Ala Arg Ala Lys Ala Val Ala Ser Lys Glu Ile
 915 920 925

Gly Lys Arg Lys Leu Glu Gln Asp Arg Phe Gly Pro Asn Lys Met Met
 930 935 940

Arg Leu Asp Ser Ser Pro Val Ser Ser Pro Arg Lys His Ser Ala Glu
 945 950 955 960

Leu Ile Ala Met Glu Lys Arg Arg Leu Gln Lys Leu Glu Tyr Glu Tyr
 965 970 975

Ala Leu Lys Ile Gln Lys Leu Lys Glu Ala Arg Ala Leu Lys Ala Lys
 980 985 990

Glu Gln Gln Asn Ile Ser Pro Val Val Glu Glu Glu Pro Glu Phe Ser
 995 1000 1005

Leu Pro Gln Pro Ser Leu His Asp Leu Thr Gln Asp Lys Leu Thr
 1010 1015 1020

Leu Asp Thr Glu Glu Asn Asp Val Asp Asp Glu Ile Leu Ser Gly
 1025 1030 1035

Ser Ser Arg Glu Arg Arg Arg Ser Phe Leu Glu Ser Asn Tyr Phe
 1040 1045 1050

Thr Lys Pro Asn Leu Lys His Thr Asp Thr Ala Asn Lys Glu Cys
 1055 1060 1065

Ile Asn Lys Leu Asn Lys Asn Thr Val Glu Lys Pro Glu Leu Phe
 1070 1075 1080

Leu Gly Leu Lys Ile Gly Glu Leu Gln Lys Leu Tyr Ser Lys Ala
 1085 1090 1095

Asp Ser Leu Lys Gln Leu Ile Leu Lys Thr Thr Thr Gly Ile Thr
 1100 1105 1110

Glu Lys Val Leu His Gly Gln Glu Ile Ser Val Asp Val Asp Phe
 1115 1120 1125

Val	Thr	Ala	Gln	Ser	Lys	Thr	Met	Glu	Val	Lys	Pro	Cys	Pro	Phe
	1130					1135					1140			
Arg	Pro	Tyr	His	Ser	Pro	Leu	Leu	Val	Phe	Lys	Ser	Tyr	Arg	Phe
	1145					1150					1155			
Ser	Pro	Tyr	Tyr	Arg	Thr	Lys	Glu	Lys	Leu	Pro	Leu	Ser	Ser	Val
	1160					1165					1170			
Ser	Tyr	Ser	Asn	Met	Ile	Glu	Pro	Asp	Gln	Cys	Phe	Cys	Arg	Phe
	1175					1180					1185			
Asp	Leu	Thr	Gly	Thr	Cys	Asn	Asp	Asp	Asp	Cys	Gln	Trp	Gln	His
	1190					1195					1200			
Ile	Gln	Asp	Tyr	Thr	Leu	Ser	Arg	Lys	Gln	Leu	Phe	Gln	Asp	Ile
	1205					1210					1215			
Leu	Ser	Tyr	Asn	Leu	Ser	Leu	Ile	Gly	Cys	Ala	Glu	Thr	Ser	Thr
	1220					1225					1230			
Asn	Glu	Glu	Ile	Thr	Ala	Ser	Ala	Glu	Lys	Tyr	Val	Glu	Lys	Leu
	1235					1240					1245			
Phe	Gly	Val	Asn	Lys	Asp	Arg	Met	Ser	Met	Asp	Gln	Met	Ala	Val
	1250					1255					1260			
Leu	Leu	Val	Ser	Asn	Ile	Asn	Glu	Ser	Lys	Gly	His	Thr	Pro	Pro
	1265					1270					1275			
Phe	Thr	Thr	Tyr	Lys	Asp	Lys	Arg	Lys	Trp	Lys	Pro	Lys	Phe	Trp
	1280					1285					1290			
Arg	Lys	Pro	Ile	Ser	Asp	Asn	Ser	Phe	Ser	Ser	Asp	Glu	Glu	Gln
	1295					1300					1305			
Ser	Thr	Gly	Pro	Ile	Lys	Tyr	Ala	Phe	Gln	Pro	Glu	Asn	Gln	Ile
	1310					1315					1320			
Asn	Val	Pro	Ala	Leu	Asp	Thr	Val	Val	Thr	Pro	Asp	Asp	Val	Arg
	1325					1330					1335			
Tyr	Phe	Thr	Asn	Glu	Thr	Asp	Asp	Ile	Ala	Asn	Leu	Glu	Ala	Ser
	1340					1345					1350			
Val	Leu	Glu	Asn	Pro	Ser	His	Val	Gln	Leu	Trp	Leu	Lys	Leu	Ala
	1355					1360					1365			
Tyr	Lys	Tyr	Leu	Asn	Gln	Asn	Glu	Gly	Glu	Cys	Ser	Glu	Ser	Leu
	1370					1375					1380			

Asp	Ser	Ala	Leu	Asn	Val	Leu	Ala	Arg	Ala	Leu	Glu	Asn	Asn	Lys
	1385					1390					1395			
Asp	Asn	Pro	Glu	Ile	Trp	Cys	His	Tyr	Leu	Arg	Leu	Phe	Ser	Lys
	1400					1405					1410			
Arg	Gly	Thr	Lys	Asp	Glu	Val	Gln	Glu	Met	Cys	Glu	Thr	Ala	Val
	1415					1420					1425			
Glu	Tyr	Ala	Pro	Asp	Tyr	Gln	Ser	Phe	Trp	Thr	Phe	Leu	His	Leu
	1430					1435					1440			
Glu	Ser	Thr	Phe	Glu	Glu	Lys	Asp	Tyr	Val	Cys	Glu	Arg	Met	Leu
	1445					1450					1455			
Glu	Phe	Leu	Met	Gly	Ala	Ala	Lys	Gln	Glu	Thr	Ser	Asn	Ile	Leu
	1460					1465					1470			
Ser	Phe	Gln	Leu	Leu	Glu	Ala	Leu	Leu	Phe	Arg	Val	Gln	Leu	His
	1475					1480					1485			
Ile	Phe	Thr	Gly	Arg	Cys	Gln	Ser	Ala	Leu	Ala	Ile	Leu	Gln	Asn
	1490					1495					1500			
Ala	Leu	Lys	Ser	Ala	Asn	Asp	Gly	Ile	Val	Ala	Glu	Tyr	Leu	Lys
	1505					1510					1515			
Thr	Ser	Asp	Arg	Cys	Leu	Ala	Trp	Leu	Ala	Tyr	Ile	His	Leu	Ile
	1520					1525					1530			
Glu	Phe	Asn	Ile	Leu	Pro	Ser	Lys	Phe	Tyr	Asp	Pro	Ser	Asn	Asp
	1535					1540					1545			
Asn	Pro	Ser	Arg	Ile	Val	Asn	Thr	Glu	Ser	Phe	Val	Met	Pro	Trp
	1550					1555					1560			
Gln	Ala	Val	Gln	Asp	Val	Lys	Thr	Asn	Pro	Asp	Met	Leu	Leu	Ala
	1565					1570					1575			
Val	Phe	Glu	Asp	Ala	Val	Lys	Ala	Cys	Thr	Asp	Glu	Ser	Leu	Ala
	1580					1585					1590			
Val	Glu	Glu	Arg	Ile	Glu	Ala	Cys	Leu	Pro	Leu	Tyr	Thr	Asn	Met
	1595					1600					1605			
Ile	Ala	Leu	His	Gln	Leu	Leu	Glu	Arg	Tyr	Glu	Ala	Ala	Met	Glu
	1610					1615					1620			
Leu	Cys	Lys	Ser	Leu	Leu	Glu	Ser	Cys	Pro	Ile	Asn	Cys	Gln	Leu
	1625					1630					1635			

Leu	Glu	Ala	Leu	Val	Ala	Leu	Tyr	Leu	Gln	Thr	Asn	Gln	His	Asp
	1640					1645					1650			
Lys	Ala	Arg	Ala	Val	Trp	Leu	Thr	Ala	Phe	Glu	Lys	Asn	Pro	Gln
	1655					1660					1665			
Asn	Ala	Glu	Val	Phe	Tyr	His	Met	Cys	Lys	Phe	Phe	Ile	Leu	Gln
	1670					1675					1680			
Asn	Arg	Gly	Asp	Asn	Leu	Leu	Pro	Phe	Leu	Arg	Lys	Phe	Ile	Ala
	1685					1690					1695			
Ser	Phe	Phe	Lys	Pro	Gly	Phe	Glu	Lys	Tyr	Asn	Asn	Leu	Asp	Leu
	1700					1705					1710			
Phe	Arg	Tyr	Leu	Leu	Asn	Ile	Pro	Gly	Pro	Ile	Asp	Ile	Pro	Ser
	1715					1720					1725			
Arg	Leu	Cys	Lys	Gly	Asn	Phe	Asp	Asp	Asp	Met	Phe	Asn	His	Gln
	1730					1735					1740			
Val	Pro	Tyr	Leu	Trp	Leu	Ile	Tyr	Cys	Leu	Cys	His	Pro	Leu	Gln
	1745					1750					1755			
Ser	Ser	Ile	Lys	Glu	Thr	Val	Glu	Ala	Tyr	Glu	Ala	Ala	Leu	Gly
	1760					1765					1770			
Val	Ala	Met	Arg	Cys	Asp	Ile	Val	Gln	Lys	Ile	Trp	Met	Asp	Tyr
	1775					1780					1785			
Leu	Val	Phe	Ala	Asn	Asn	Arg	Ala	Ala	Gly	Ser	Arg	Asn	Lys	Val
	1790					1795					1800			
Gln	Glu	Phe	Lys	Phe	Phe	Thr	Asp	Leu	Val	Asn	Arg	Cys	Leu	Val
	1805					1810					1815			
Thr	Val	Pro	Ala	Arg	Tyr	Pro	Ile	Pro	Phe	Ser	Ser	Ala	Asp	Tyr
	1820					1825					1830			
Trp	Ser	Asn	Tyr	Glu	Phe	His	Asn	Arg	Val	Ile	Phe	Phe	Tyr	Leu
	1835					1840					1845			
Ser	Cys	Val	Pro	Lys	Thr	Gln	His	Ser	Lys	Thr	Leu	Glu	Arg	Phe
	1850					1855					1860			
Cys	Ser	Val	Met	Pro	Ala	Asn	Ser	Gly	Leu	Ala	Leu	Arg	Leu	Leu
	1865					1870					1875			
Gln	His	Glu	Trp	Glu	Glu	Ser	Asn	Val	Gln	Ile	Leu	Lys	Leu	Gln
	1880					1885					1890			

Ala Lys Met Phe Thr Tyr Asn Ile Pro Thr Cys Leu Ala Thr Trp
1895 1900 1905

Lys Ile Ala Ile Ala Ala Glu Ile Val Leu Lys Gly Gln Arg Glu
1910 1915 1920

Val His Arg Leu Tyr Gln Arg Ala Leu Gln Lys Leu Pro Leu Cys
1925 1930 1935

Ala Ser Leu Trp Lys Asp Gln Leu Leu Phe Glu Ala Ser Glu Gly
1940 1945 1950

Gly Lys Thr Asp Asn Leu Arg Lys Leu Val Ser Lys Cys Gln Glu
1955 1960 1965

Ile Gly Val Ser Leu Asn Glu Leu Leu Asn Leu Asn Ser Asn Lys
1970 1975 1980

Thr Glu Ser Lys Asn His
1985

<210> 818
<211> 1539
<212> PRT
<213> Homo sapiens

<400> 818

Met Asp Ser Tyr Phe Lys Ala Ala Val Ser Asp Leu Asp Lys Leu Leu
1 5 10 15

Asp Asp Phe Glu Gln Asn Pro Asp Glu Gln Asp Tyr Leu Gln Asp Val
20 25 30

Gln Asn Ala Tyr Asp Ser Asn His Cys Ser Val Ser Ser Glu Leu Ala
35 40 45

Ser Ser Gln Arg Thr Ser Leu Leu Pro Lys Asp Gln Glu Cys Val Asn
50 55 60

Ser Cys Ala Ser Ser Glu Thr Ser Tyr Gly Thr Asn Glu Ser Ser Leu
65 70 75 80

Asn Glu Lys Thr Leu Lys Gly Leu Thr Ser Ile Gln Asn Glu Lys Asn
85 90 95

Val Thr Gly Leu Asp Leu Leu Ser Ser Val Asp Gly Gly Thr Ser Asp
100 105 110

Glu Ile Gln Pro Leu Tyr Met Gly Arg Cys Ser Lys Pro Ile Cys Asp
115 120 125

Leu Ile Ser Asp Met Gly Asn Leu Val His Ala Thr Asn Ser Glu Glu
 130 135 140
 Asp Ile Lys Lys Leu Leu Pro Asp Asp Phe Lys Ser Asn Ala Asp Ser
 145 150 155 160
 Leu Ile Gly Leu Asp Leu Ser Ser Val Ser Asp Thr Pro Cys Val Ser
 165 170 175
 Ser Thr Asp His Asp Ser Asp Thr Val Arg Glu Gln Gln Asn Asp Ile
 180 185 190
 Ser Ser Glu Leu Gln Asn Arg Glu Ile Gly Gly Ile Lys Glu Leu Gly
 195 200 205
 Ile Lys Val Asp Thr Thr Leu Ser Asp Ser Tyr Asn Tyr Ser Gly Thr
 210 215 220
 Glu Asn Leu Lys Asp Lys Lys Ile Phe Asn Gln Leu Glu Ser Ile Val
 225 230 235 240
 Asp Phe Asn Met Ser Ser Ala Leu Thr Arg Gln Ser Ser Lys Met Phe
 245 250 255
 His Ala Lys Asp Lys Leu Gln His Lys Ser Gln Pro Cys Gly Leu Leu
 260 265 270
 Lys Asp Val Gly Leu Val Lys Glu Glu Val Asp Val Ala Val Ile Thr
 275 280 285
 Ala Ala Glu Cys Leu Lys Glu Glu Gly Lys Thr Ser Ala Leu Thr Cys
 290 295 300
 Ser Leu Pro Lys Asn Glu Asp Leu Cys Leu Asn Asp Ser Asn Ser Arg
 305 310 315 320
 Asp Glu Asn Phe Lys Leu Pro Asp Phe Ser Phe Gln Glu Asp Lys Thr
 325 330 335
 Val Ile Lys Gln Ser Ala Gln Glu Asp Ser Lys Ser Leu Asp Leu Lys
 340 345 350
 Asp Asn Asp Val Ile Gln Asp Ser Ser Ser Ala Leu His Val Ser Ser
 355 360 365
 Lys Asp Val Pro Ser Ser Leu Ser Cys Leu Pro Ala Ser Gly Ser Met
 370 375 380
 Cys Gly Ser Leu Ile Glu Ser Lys Ala Arg Gly Asp Phe Leu Pro Gln
 385 390 395 400

His Glu His Lys Asp Asn Ile Gln Asp Ala Val Thr Ile His Glu Glu
 405 410 415
 Ile Gln Asn Ser Val Val Leu Gly Gly Glu Pro Phe Lys Glu Asn Asp
 420 425 430
 Leu Leu Lys Gln Glu Lys Cys Lys Ser Ile Leu Leu Gln Ser Leu Ile
 435 440 445
 Glu Gly Met Glu Asp Arg Lys Ile Asp Pro Asp Gln Thr Val Ile Arg
 450 455 460
 Ala Glu Ser Leu Asp Gly Gly Asp Thr Ser Ser Thr Val Val Glu Ser
 465 470 475 480
 Gln Glu Gly Leu Ser Gly Thr His Val Pro Glu Ser Ser Asp Cys Cys
 485 490 495
 Glu Gly Phe Ile Asn Thr Phe Ser Ser Asn Asp Met Asp Gly Gln Asp
 500 505 510
 Leu Asp Tyr Phe Asn Ile Asp Glu Gly Ala Lys Ser Gly Pro Leu Ile
 515 520 525
 Ser Asp Ala Glu Leu Asp Ala Phe Leu Thr Glu Gln Tyr Leu Gln Thr
 530 535 540
 Thr Asn Ile Lys Ser Phe Glu Glu Asn Val Asn Asp Ser Lys Ser Gln
 545 550 555 560
 Met Asn Gln Ile Asp Met Lys Gly Leu Asp Asp Gly Asn Ile Asn Asn
 565 570 575
 Ile Tyr Phe Asn Ala Glu Ala Gly Ala Ile Gly Glu Ser His Gly Ile
 580 585 590
 Asn Ile Ile Cys Glu Ile Val Asp Lys Gln Asn Thr Ile Glu Asn Gly
 595 600 605
 Leu Ser Leu Gly Glu Lys Ser Thr Ile Pro Val Gln Gln Gly Leu Pro
 610 615 620
 Thr Ser Lys Ser Glu Ile Thr Asn Gln Leu Ser Val Ser Asp Ile Asn
 625 630 635 640
 Ser Gln Ser Val Gly Gly Ala Arg Pro Lys Gln Leu Phe Ser Leu Pro
 645 650 655
 Ser Arg Thr Arg Ser Ser Lys Asp Leu Asn Lys Pro Asp Val Pro Asp
 660 665 670

Thr Ile Glu Ser Glu Pro Ser Thr Ala Asp Thr Val Val Pro Ile Thr
 675 680 685

Cys Ala Ile Asp Ser Thr Ala Asp Pro Gln Val Ser Phe Asn Ser Asn
 690 695 700

Tyr Ile Asp Ile Glu Ser Asn Ser Glu Gly Gly Ser Ser Phe Val Thr
 705 710 715 720

Ala Asn Glu Asp Ser Val Pro Glu Asn Thr Cys Lys Glu Gly Leu Val
 725 730 735

Leu Gly Gln Lys Gln Pro Thr Trp Val Pro Asp Ser Glu Ala Pro Asn
 740 745 750

Cys Met Asn Cys Gln Val Lys Phe Thr Phe Thr Lys Arg Arg His His
 755 760 765

Cys Arg Ala Cys Gly Lys Val Phe Cys Gly Val Cys Cys Asn Arg Lys
 770 775 780

Cys Lys Leu Gln Tyr Leu Glu Lys Glu Ala Arg Val Cys Val Val Cys
 785 790 795 800

Tyr Glu Thr Ile Ser Lys Ala Gln Ala Phe Glu Arg Met Met Ser Pro
 805 810 815

Thr Gly Ser Asn Leu Lys Ser Asn His Ser Asp Glu Cys Thr Thr Val
 820 825 830

Gln Pro Pro Gln Glu Asn Gln Thr Ser Ser Ile Pro Ser Pro Ala Thr
 835 840 845

Leu Pro Val Ser Ala Leu Lys Gln Pro Gly Val Glu Gly Leu Cys Ser
 850 855 860

Lys Glu Gln Lys Arg Val Trp Phe Ala Asp Gly Ile Leu Pro Asn Gly
 865 870 875 880

Glu Val Ala Asp Thr Thr Lys Leu Ser Ser Gly Ser Lys Arg Cys Ser
 885 890 895

Glu Asp Phe Ser Pro Leu Ser Pro Asp Val Pro Met Thr Val Asn Thr
 900 905 910

Val Asp His Ser His Ser Thr Thr Val Glu Lys Pro Asn Asn Glu Thr
 915 920 925

Gly Asp Ile Thr Arg Asn Glu Ile Ile Gln Ser Pro Ile Ser Gln Val
 930 935 940

Pro Ser Val Glu Lys Leu Ser Met Asn Thr Gly Asn Glu Gly Leu Pro
 945 950 955 960

Thr Ser Gly Ser Phe Thr Leu Asp Asp Asp Val Phe Ala Glu Thr Glu
 965 970 975

Glu Pro Ser Ser Pro Thr Gly Val Leu Val Asn Ser Asn Leu Pro Ile
 980 985 990

Ala Ser Ile Ser Asp Tyr Arg Leu Leu Cys Asp Ile Asn Lys Tyr Val
 995 1000 1005

Cys Asn Lys Ile Ser Leu Leu Pro Asn Asp Glu Asp Ser Leu Pro
 1010 1015 1020

Pro Leu Leu Val Ala Ser Gly Glu Lys Gly Ser Val Pro Val Val
 1025 1030 1035

Glu Glu His Pro Ser His Glu Gln Ile Ile Leu Leu Leu Glu Gly
 1040 1045 1050

Glu Ser Phe His Pro Val Thr Phe Val Leu Asn Ala Asn Leu Leu
 1055 1060 1065

Val Asn Val Lys Phe Ile Phe Tyr Ser Ser Asp Lys Tyr Trp Tyr
 1070 1075 1080

Phe Ser Thr Asn Gly Leu His Gly Leu Gly Gln Ala Glu Ile Ile
 1085 1090 1095

Ile Leu Leu Leu Cys Leu Pro Asn Glu Asp Thr Ile Pro Lys Asp
 1100 1105 1110

Ile Phe Arg Leu Phe Ile Thr Ile Tyr Lys Asp Ala Leu Lys Gly
 1115 1120 1125

Lys Tyr Ile Glu Asn Leu Asp Asn Ile Thr Phe Thr Glu Ser Phe
 1130 1135 1140

Leu Ser Ser Lys Asp His Gly Gly Phe Leu Phe Ile Thr Pro Thr
 1145 1150 1155

Phe Gln Lys Leu Asp Asp Leu Ser Leu Pro Ser Asn Pro Phe Leu
 1160 1165 1170

Cys Gly Ile Leu Ile Gln Lys Leu Glu Ile Pro Trp Ala Lys Val
 1175 1180 1185

Phe Pro Met Arg Leu Met Leu Arg Leu Gly Ala Glu Tyr Lys Ala
 1190 1195 1200

Tyr	Pro	Ala	Pro	Leu	Thr	Ser	Ile	Arg	Gly	Arg	Lys	Pro	Leu	Phe
	1205					1210					1215			
Gly	Glu	Ile	Gly	His	Thr	Ile	Met	Asn	Leu	Leu	Val	Asp	Leu	Arg
	1220					1225					1230			
Asn	Tyr	Gln	Tyr	Thr	Leu	His	Asn	Ile	Asp	Gln	Leu	Leu	Ile	His
	1235					1240					1245			
Met	Glu	Met	Gly	Lys	Ser	Cys	Ile	Lys	Ile	Pro	Arg	Lys	Lys	Tyr
	1250					1255					1260			
Ser	Asp	Val	Met	Lys	Val	Leu	Asn	Ser	Ser	Asn	Glu	His	Val	Ile
	1265					1270					1275			
Ser	Ile	Gly	Ala	Ser	Phe	Ser	Thr	Glu	Ala	Asp	Ser	His	Leu	Val
	1280					1285					1290			
Cys	Ile	Gln	Asn	Asp	Gly	Ile	Tyr	Glu	Thr	Gln	Ala	Asn	Ser	Ala
	1295					1300					1305			
Thr	Gly	His	Pro	Arg	Lys	Val	Thr	Gly	Ala	Ser	Phe	Val	Val	Phe
	1310					1315					1320			
Asn	Gly	Ala	Leu	Lys	Thr	Ser	Ser	Gly	Phe	Leu	Ala	Lys	Ser	Ser
	1325					1330					1335			
Ile	Val	Glu	Asp	Gly	Leu	Met	Val	Gln	Ile	Thr	Pro	Glu	Thr	Met
	1340					1345					1350			
Asn	Gly	Leu	Arg	Leu	Ala	Leu	Arg	Glu	Gln	Lys	Asp	Phe	Lys	Ile
	1355					1360					1365			
Thr	Cys	Gly	Lys	Val	Asp	Ala	Val	Asp	Leu	Arg	Glu	Tyr	Val	Asp
	1370					1375					1380			
Ile	Cys	Trp	Val	Asp	Ala	Glu	Glu	Lys	Gly	Asn	Lys	Gly	Val	Ile
	1385					1390					1395			
Ser	Ser	Val	Asp	Gly	Ile	Ser	Leu	Gln	Gly	Phe	Pro	Ser	Glu	Lys
	1400					1405					1410			
Ile	Lys	Leu	Glu	Ala	Asp	Phe	Glu	Thr	Asp	Glu	Lys	Ile	Val	Lys
	1415					1420					1425			
Cys	Thr	Glu	Val	Phe	Tyr	Phe	Leu	Lys	Asp	Gln	Asp	Leu	Ser	Ile
	1430					1435					1440			
Leu	Ser	Thr	Ser	Tyr	Gln	Phe	Ala	Lys	Glu	Ile	Ala	Met	Ala	Cys
	1445					1450					1455			

Ser Ala Ala Leu Cys Pro His Leu Lys Thr Leu Lys Ser Asn Gly
 1460 1465 1470

Met Asn Lys Ile Gly Leu Arg Val Ser Ile Asp Thr Asp Met Val
 1475 1480 1485

Glu Phe Gln Ala Gly Ser Glu Gly Gln Leu Leu Pro Gln His Tyr
 1490 1495 1500

Leu Asn Asp Leu Asp Ser Ala Leu Ile Pro Val Ile His Gly Gly
 1505 1510 1515

Thr Ser Asn Ser Ser Leu Pro Leu Glu Ile Glu Leu Val Phe Phe
 1520 1525 1530

Ile Ile Glu His Leu Phe
 1535

<210> 819
 <211> 1067
 <212> PRT
 <213> Homo sapiens

<400> 819

Met Asn Ser Met Asp Arg His Ile Gln Gln Thr Asn Asp Arg Leu Gln
 1 5 10 15

Cys Ile Lys Gln His Leu Gln Asn Pro Ala Asn Phe His Asn Ala Ala
 20 25 30

Thr Glu Leu Leu Asp Trp Cys Gly Asp Pro Arg Ala Phe Gln Arg Pro
 35 40 45

Phe Glu Gln Ser Leu Met Gly Cys Leu Thr Val Val Ser Arg Val Ala
 50 55 60

Ala Gln Gln Gly Phe Asp Leu Asp Leu Gly Tyr Arg Leu Leu Ala Val
 65 70 75 80

Cys Ala Ala Asn Arg Asp Lys Phe Thr Pro Lys Ser Ala Ala Leu Leu
 85 90 95

Ser Ser Trp Cys Glu Glu Leu Gly Arg Leu Leu Leu Leu Arg His Gln
 100 105 110

Lys Ser Arg Gln Ser Asp Pro Pro Gly Lys Leu Pro Met Gln Pro Pro
 115 120 125

Leu Ser Ser Met Ser Ser Met Lys Pro Thr Leu Ser His Ser Asp Gly
 130 135 140

Ser Phe Pro Tyr Asp Ser Val Pro Trp Gln Gln Asn Thr Asn Gln Pro
 Page 1443

145 150 155 160
 Pro Gly Ser Leu Ser Val Val Thr Thr Val Trp Gly Val Thr Asn Thr
 165 170 175
 Ser Gln Ser Gln Val Leu Gly Asn Pro Met Ala Asn Ala Asn Asn Pro
 180 185 190
 Met Asn Pro Gly Gly Asn Pro Met Ala Ser Gly Met Thr Thr Ser Asn
 195 200 205
 Pro Gly Leu Asn Ser Pro Gln Phe Ala Gly Gln Gln Gln Gln Phe Ser
 210 215 220
 Ala Lys Ala Gly Pro Ala Gln Pro Tyr Ile Gln Gln Ser Met Tyr Gly
 225 230 235 240
 Arg Pro Asn Tyr Pro Gly Ser Gly Gly Phe Gly Ala Ser Tyr Pro Gly
 245 250 255
 Gly Pro Asn Ala Pro Ala Gly Met Gly Ile Pro Pro His Thr Arg Pro
 260 265 270
 Pro Ala Asp Phe Thr Gln Pro Ala Ala Ala Ala Ala Ala Ala Val
 275 280 285
 Ala Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Thr Val Ala
 290 295 300
 Ala Leu Gln Glu Thr Gln Asn Lys Asp Ile Asn Gln Tyr Gly Pro Met
 305 310 315 320
 Gly Pro Thr Gln Ala Tyr Asn Ser Gln Phe Met Asn Gln Pro Gly Pro
 325 330 335
 Arg Gly Pro Ala Ser Met Gly Gly Ser Met Asn Pro Ala Ser Met Ala
 340 345 350
 Ala Gly Met Thr Pro Ser Gly Met Ser Gly Pro Pro Met Gly Met Asn
 355 360 365
 Gln Pro Arg Pro Pro Gly Ile Ser Pro Phe Gly Thr His Gly Gln Arg
 370 375 380
 Met Pro Gln Gln Thr Tyr Pro Gly Pro Arg Pro Gln Ser Leu Pro Ile
 385 390 395 400
 Gln Asn Ile Lys Arg Pro Tyr Pro Gly Glu Pro Asn Tyr Gly Asn Gln
 405 410 415
 Gln Tyr Gly Pro Asn Ser Gln Phe Pro Thr Gln Pro Gly Gln Tyr Pro
 Page 1444

420

425

430

Ala Pro Asn Pro Pro Arg Pro Leu Thr Ser Pro Asn Tyr Pro Gly Gln
435 440 445

Arg Met Pro Ser Gln Pro Ser Ser Gly Gln Tyr Pro Pro Pro Thr Val
450 455 460

Asn Met Gly Gln Tyr Tyr Lys Pro Glu Gln Phe Asn Gly Gln Asn Asn
465 470 475 480

Thr Phe Ser Gly Ser Ser Tyr Ser Asn Tyr Ser Gln Gly Asn Val Asn
485 490 495

Arg Pro Pro Arg Pro Val Pro Val Ala Asn Tyr Pro His Ser Pro Val
500 505 510

Pro Gly Asn Pro Thr Pro Pro Met Thr Pro Gly Ser Ser Ile Pro Pro
515 520 525

Tyr Leu Ser Pro Ser Gln Asp Val Lys Pro Pro Phe Pro Pro Asp Ile
530 535 540

Lys Pro Asn Met Ser Ala Leu Pro Pro Pro Pro Ala Asn His Asn Asp
545 550 555 560

Glu Leu Arg Leu Thr Phe Pro Val Arg Asp Gly Val Val Leu Glu Pro
565 570 575

Phe Arg Leu Glu His Asn Leu Ala Val Ser Asn His Val Phe His Leu
580 585 590

Arg Pro Thr Val His Gln Thr Leu Met Trp Arg Ser Asp Leu Glu Leu
595 600 605

Gln Phe Lys Cys Tyr His His Glu Asp Arg Gln Met Asn Thr Asn Trp
610 615 620

Pro Ala Ser Val Gln Val Ser Val Asn Ala Thr Pro Leu Thr Ile Glu
625 630 635 640

Arg Gly Asp Asn Lys Thr Ser His Lys Pro Leu His Leu Lys His Val
645 650 655

Cys Gln Pro Gly Arg Asn Thr Ile Gln Ile Thr Val Thr Ala Cys Cys
660 665 670

Cys Ser His Leu Phe Val Leu Gln Leu Val His Arg Pro Ser Val Arg
675 680 685

Ser Val Leu Gln Gly Leu Leu Lys Lys Arg Leu Leu Pro Ala Glu His

690

695

700

Cys Ile Thr Lys Ile Lys Arg Asn Phe Ser Ser Val Ala Ala Ser Ser
705 710 715 720

Gly Asn Thr Thr Leu Asn Gly Glu Asp Gly Val Glu Gln Thr Ala Ile
725 730 735

Lys Val Ser Leu Lys Cys Pro Ile Thr Phe Arg Arg Ile Gln Leu Pro
740 745 750

Ala Arg Gly His Asp Cys Lys His Val Gln Cys Phe Asp Leu Glu Ser
755 760 765

Tyr Leu Gln Leu Asn Cys Glu Arg Gly Thr Trp Arg Cys Pro Val Cys
770 775 780

Asn Lys Thr Ala Leu Leu Glu Gly Leu Glu Val Asp Gln Tyr Met Trp
785 790 795 800

Gly Ile Leu Asn Ala Ile Gln His Ser Glu Phe Glu Glu Val Thr Ile
805 810 815

Asp Pro Thr Cys Ser Trp Arg Pro Val Pro Ile Lys Ser Asp Leu His
820 825 830

Ile Lys Asp Asp Pro Asp Gly Ile Pro Ser Lys Arg Phe Lys Thr Met
835 840 845

Ser Pro Ser Gln Met Ile Met Pro Asn Val Met Glu Met Ile Ala Ala
850 855 860

Leu Gly Pro Gly Pro Ser Pro Tyr Pro Leu Pro Pro Pro Gly Gly
865 870 875 880

Thr Asn Ser Asn Asp Tyr Ser Ser Gln Gly Asn Asn Tyr Gln Gly His
885 890 895

Gly Asn Phe Asp Phe Pro His Gly Asn Pro Gly Gly Thr Ser Met Asn
900 905 910

Asp Phe Met His Gly Pro Pro Gln Leu Ser His Pro Pro Asp Met Pro
915 920 925

Asn Asn Met Ala Ala Leu Glu Lys Pro Leu Ser His Pro Met Gln Glu
930 935 940

Thr Met Pro His Ala Gly Ser Ser Asp Gln Pro His Pro Ser Ile Gln
945 950 955 960

Gln Gly Leu His Val Pro His Pro Ser Ser Gln Ser Gly Pro Pro Leu

His His Ser Gly Ala Pro Pro Pro Pro Pro Ser Gln Pro Pro Arg Gln
980 985 990

Pro Pro Gln Ala Ala Pro Ser Ser His Pro His Ser Asp Leu Thr Phe
995 1000 1005

Asn Pro Ser Ser Ala Leu Glu Gly Gln Ala Gly Ala Gln Gly Ala
1010 1015 1020

Ser Asp Met Pro Glu Pro Ser Leu Asp Leu Leu Pro Glu Leu Thr
1025 1030 1035

Asn Pro Asp Glu Leu Leu Ser Tyr Leu Asp Pro Pro Asp Leu Pro
1040 1045 1050

Ser Asn Ser Asn Asp Asp Leu Leu Ser Leu Phe Glu Asn Asn
1055 1060 1065

<210> 820
<211> 638
<212> PRT
<213> Homo sapiens

<400> 820

Met Leu Leu Ala Gln Ile Asn Arg Asp Ser Gln Gly Met Thr Glu Phe
1 5 10 15

Pro Gly Gly Gly Met Glu Ala Gln His Val Thr Leu Cys Leu Thr Glu
20 25 30

Ala Val Thr Val Ala Asp Gly Asp Asn Leu Glu Asn Met Glu Gly Val
35 40 45

Ser Leu Gln Ala Val Thr Leu Ala Asp Gly Ser Thr Ala Tyr Ile Gln
50 55 60

His Asn Ser Lys Asp Ala Lys Leu Ile Asp Gly Gln Val Ile Gln Leu
65 70 75 80

Glu Asp Gly Ser Ala Ala Tyr Val Gln His Val Pro Ile Pro Lys Ser
85 90 95

Thr Gly Asp Ser Leu Arg Leu Glu Asp Gly Gln Ala Val Gln Leu Glu
100 105 110

Asp Gly Thr Thr Ala Phe Ile His His Thr Ser Lys Asp Ser Tyr Asp
115 120 125

Gln Ser Ala Leu Gln Ala Val Gln Leu Glu Asp Gly Thr Thr Ala Tyr
130 135 140

Ile His His Ala Val Gln Val Pro Gln Ser Asp Thr Ile Leu Ala Ile
 145 150 155 160
 Gln Ala Asp Gly Thr Val Ala Gly Leu His Thr Gly Asp Ala Thr Ile
 165 170 175
 Asp Pro Asp Thr Ile Ser Ala Leu Glu Gln Tyr Ala Ala Lys Val Ser
 180 185 190
 Ile Asp Gly Ser Glu Ser Val Ala Gly Thr Gly Met Ile Gly Glu Asn
 195 200 205
 Glu Gln Glu Lys Lys Met Gln Ile Val Leu Gln Gly His Ala Thr Arg
 210 215 220
 Val Thr Ala Lys Ser Gln Gln Ser Gly Glu Lys Ala Phe Arg Cys Glu
 225 230 235 240
 Tyr Asp Gly Cys Gly Lys Leu Tyr Thr Thr Ala His His Leu Lys Val
 245 250 255
 His Glu Arg Ser His Thr Gly Asp Arg Pro Tyr Gln Cys Glu His Ala
 260 265 270
 Gly Cys Gly Lys Ala Phe Ala Thr Gly Tyr Gly Leu Lys Ser His Val
 275 280 285
 Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Ser Glu Asp Asn Cys
 290 295 300
 Thr Lys Ser Phe Lys Thr Ser Gly Asp Leu Gln Lys His Ile Arg Thr
 305 310 315 320
 His Thr Gly Glu Arg Pro Phe Lys Cys Pro Phe Glu Gly Cys Gly Arg
 325 330 335
 Ser Phe Thr Thr Ser Asn Ile Arg Lys Val His Val Arg Thr His Thr
 340 345 350
 Gly Glu Arg Pro Tyr Tyr Cys Thr Glu Pro Gly Cys Gly Arg Ala Phe
 355 360 365
 Ala Ser Ala Thr Asn Tyr Lys Asn His Val Arg Ile His Thr Gly Glu
 370 375 380
 Lys Pro Tyr Val Cys Thr Val Pro Gly Cys Asp Lys Arg Phe Thr Glu
 385 390 395 400
 Tyr Ser Ser Leu Tyr Lys His His Val Val His Thr His Ser Lys Pro
 405 410 415

Tyr Asn Cys Asn His Cys Gly Lys Thr Tyr Lys Gln Ile Ser Thr Leu
 420 425 430

Ala Met His Lys Arg Thr Ala His Asn Asp Thr Glu Pro Ile Glu Glu
 435 440 445

Glu Gln Glu Ala Phe Phe Glu Pro Pro Pro Gly Gln Gly Glu Asp Val
 450 455 460

Leu Lys Gly Ser Gln Ile Thr Tyr Val Thr Gly Val Glu Gly Asp Asp
 465 470 475 480

Val Val Ser Thr Gln Val Ala Thr Val Thr Gln Ser Gly Leu Ser Gln
 485 490 495

Gln Val Thr Leu Ile Ser Gln Asp Gly Thr Gln His Val Asn Ile Ser
 500 505 510

Gln Ala Asp Met Gln Ala Ile Gly Asn Thr Ile Thr Met Val Thr Gln
 515 520 525

Asp Gly Thr Pro Ile Thr Val Pro Ala His Asp Ala Val Ile Ser Ser
 530 535 540

Ala Gly Thr His Ser Val Ala Met Val Thr Ala Glu Gly Thr Glu Gly
 545 550 555 560

Glu Gln Val Ala Ile Val Ala Gln Asp Leu Ala Ala Phe His Thr Ala
 565 570 575

Ser Ser Glu Met Gly His Gln Gln His Ser His His Leu Val Thr Thr
 580 585 590

Glu Thr Arg Pro Leu Thr Leu Val Ala Thr Ser Asn Gly Thr Gln Ile
 595 600 605

Ala Val Gln Leu Gly Glu Gln Pro Ser Leu Glu Glu Ala Ile Arg Ile
 610 615 620

Ala Ser Arg Ile Gln Gln Gly Glu Thr Pro Gly Leu Asp Asp
 625 630 635

<210> 821
 <211> 794
 <212> PRT
 <213> Homo sapiens

<400> 821

Met Asn Ile Asp Asp Lys Leu Glu Gly Leu Phe Leu Lys Cys Gly Gly
 1 5 10 15

Ile Asp Glu Met Gln Ser Ser Arg Thr Met Val Val Met Gly Gly Val
 20 25 30
 Ser Gly Gln Ser Thr Val Ser Gly Glu Leu Gln Asp Ser Val Leu Gln
 35 40 45
 Asp Arg Ser Met Pro His Gln Glu Ile Leu Ala Ala Asp Glu Val Leu
 50 55 60
 Gln Glu Ser Glu Met Arg Gln Gln Asp Met Ile Ser His Asp Glu Leu
 65 70 75 80
 Met Val His Glu Glu Thr Val Lys Asn Asp Glu Glu Gln Met Glu Thr
 85 90 95
 His Glu Arg Leu Pro Gln Gly Leu Gln Tyr Ala Leu Asn Val Pro Ile
 100 105 110
 Ser Val Lys Gln Glu Ile Thr Phe Thr Asp Val Ser Glu Gln Leu Met
 115 120 125
 Arg Asp Lys Lys Gln Ile Arg Glu Pro Val Asp Leu Gln Lys Lys Lys
 130 135 140
 Lys Arg Lys Gln Arg Ser Pro Ala Lys Ile Leu Thr Ile Asn Glu Asp
 145 150 155 160
 Gly Ser Leu Gly Leu Lys Thr Pro Lys Ser His Val Cys Glu His Cys
 165 170 175
 Asn Ala Ala Phe Arg Thr Asn Tyr His Leu Gln Arg His Val Phe Ile
 180 185 190
 His Thr Gly Glu Lys Pro Phe Gln Cys Ser Gln Cys Asp Met Arg Phe
 195 200 205
 Ile Gln Lys Tyr Leu Leu Gln Arg His Glu Lys Ile His Thr Gly Glu
 210 215 220
 Lys Pro Phe Arg Cys Asp Glu Cys Gly Met Arg Phe Ile Gln Lys Tyr
 225 230 235 240
 His Met Glu Arg His Lys Arg Thr His Ser Gly Glu Lys Pro Tyr Gln
 245 250 255
 Cys Glu Tyr Cys Leu Gln Tyr Phe Ser Arg Thr Asp Arg Val Leu Lys
 260 265 270
 His Lys Arg Met Cys His Glu Asn His Asp Lys Lys Leu Asn Arg Cys
 275 280 285

Ala Ile Lys Gly Gly Leu Leu Thr Ser Glu Glu Asp Ser Gly Phe Ser
 290 295 300
 Thr Ser Pro Lys Asp Asn Ser Leu Pro Lys Lys Lys Arg Gln Lys Thr
 305 310 315 320
 Glu Lys Lys Ser Ser Gly Met Asp Lys Glu Ser Ala Leu Asp Lys Ser
 325 330 335
 Asp Leu Lys Lys Asp Lys Asn Asp Tyr Leu Pro Leu Tyr Ser Ser Ser
 340 345 350
 Thr Lys Val Lys Asp Glu Tyr Met Val Ala Glu Tyr Ala Val Glu Met
 355 360 365
 Pro His Ser Ser Val Gly Gly Ser His Leu Glu Asp Ala Ser Gly Glu
 370 375 380
 Ile His Pro Pro Lys Leu Val Leu Lys Lys Ile Asn Ser Lys Arg Ser
 385 390 395 400
 Leu Lys Gln Pro Leu Glu Gln Asn Gln Thr Ile Ser Pro Leu Ser Thr
 405 410 415
 Tyr Glu Glu Ser Lys Val Ser Lys Tyr Ala Phe Glu Leu Val Asp Lys
 420 425 430
 Gln Ala Leu Leu Asp Ser Glu Gly Asn Ala Asp Ile Asp Gln Val Asp
 435 440 445
 Asn Leu Gln Glu Gly Pro Ser Lys Pro Val His Ser Ser Thr Asn Tyr
 450 455 460
 Asp Asp Ala Met Gln Phe Leu Lys Lys Lys Arg Tyr Leu Gln Ala Ala
 465 470 475 480
 Ser Asn Asn Ser Arg Glu Tyr Ala Leu Asn Val Gly Thr Ile Ala Ser
 485 490 495
 Gln Pro Ser Val Thr Gln Ala Ala Val Ala Ser Val Ile Asp Glu Ser
 500 505 510
 Thr Thr Ala Ser Ile Leu Glu Ser Gln Ala Leu Asn Val Glu Ile Lys
 515 520 525
 Ser Asn His Asp Lys Asn Val Ile Pro Asp Glu Val Leu Gln Thr Leu
 530 535 540
 Leu Asp His Tyr Ser His Lys Ala Asn Gly Gln His Glu Ile Ser Phe
 545 550 555 560

Ser Val Ala Asp Thr Glu Val Thr Ser Ser Ile Ser Ile Asn Ser Ser
565 570 575

Glu Val Pro Glu Val Thr Pro Ser Glu Asn Val Gly Ser Ser Ser Gln
580 585 590

Ala Ser Ser Ser Asp Lys Ala Asn Met Leu Gln Glu Tyr Ser Lys Phe
595 600 605

Leu Gln Gln Ala Leu Asp Arg Thr Ser Gln Asn Asp Ala Tyr Leu Asn
610 615 620

Ser Pro Ser Leu Asn Phe Val Thr Asp Asn Gln Thr Leu Pro Asn Gln
625 630 635 640

Pro Ala Phe Ser Ser Ile Asp Lys Gln Val Tyr Ala Thr Met Pro Ile
645 650 655

Asn Ser Phe Arg Ser Gly Met Asn Ser Pro Leu Arg Thr Thr Pro Asp
660 665 670

Lys Ser His Phe Gly Leu Ile Val Gly Asp Ser Gln His Ser Phe Pro
675 680 685

Phe Ser Gly Asp Glu Thr Asn His Ala Ser Ala Thr Ser Thr Gln Asp
690 695 700

Phe Leu Asp Gln Val Thr Ser Gln Lys Lys Ala Glu Ala Gln Pro Val
705 710 715 720

His Gln Ala Tyr Gln Met Ser Ser Phe Glu Gln Pro Phe Arg Ala Pro
725 730 735

Tyr His Gly Ser Arg Ala Gly Ile Ala Thr Gln Phe Ser Thr Ala Asn
740 745 750

Gly Gln Val Asn Leu Arg Gly Pro Gly Thr Ser Ala Glu Phe Ser Glu
755 760 765

Phe Pro Leu Val Asn Val Asn Asp Asn Arg Ala Gly Met Thr Ser Ser
770 775 780

Pro Asp Ala Thr Thr Gly Gln Thr Phe Gly
785 790

<210> 822
<211> 548
<212> PRT
<213> Homo sapiens

<400> 822

Met Asn Ile Glu Val Val Glu Val Leu Thr Leu Asn Gln Glu Val Ala
 1 5 10 15
 Gly Pro Arg Asn Ala Gln Ile Gln Ala Leu Tyr Ala Glu Asp Gly Ser
 20 25 30
 Leu Ser Ala Asp Ala Pro Ser Glu Gln Val Gln Gln Gln Gly Lys His
 35 40 45
 Pro Gly Asp Pro Glu Ala Ala Arg Gln Arg Phe Arg Gln Phe Arg Tyr
 50 55 60
 Lys Asp Met Thr Gly Pro Arg Glu Ala Leu Asp Gln Leu Arg Glu Leu
 65 70 75 80
 Cys His Gln Trp Leu Gln Pro Lys Ala Arg Ser Lys Glu Gln Ile Leu
 85 90 95
 Glu Leu Leu Val Leu Glu Gln Phe Leu Gly Ala Leu Pro Val Lys Leu
 100 105 110
 Arg Thr Trp Val Glu Ser Gln His Pro Glu Asn Cys Gln Glu Val Val
 115 120 125
 Ala Leu Val Glu Gly Val Thr Trp Met Ser Glu Glu Glu Val Leu Pro
 130 135 140
 Ala Gly Gln Pro Ala Glu Gly Thr Thr Cys Cys Leu Glu Val Thr Ala
 145 150 155 160
 Gln Gln Glu Glu Lys Gln Glu Asp Ala Ala Ile Cys Pro Val Thr Val
 165 170 175
 Leu Pro Glu Glu Pro Val Thr Phe Gln Asp Val Ala Val Asp Phe Ser
 180 185 190
 Arg Glu Glu Trp Gly Leu Leu Gly Pro Thr Gln Arg Thr Glu Tyr Arg
 195 200 205
 Asp Val Met Leu Glu Thr Phe Gly His Leu Val Ser Val Gly Trp Glu
 210 215 220
 Thr Thr Leu Glu Asn Lys Glu Leu Ala Pro Asn Ser Asp Ile Pro Glu
 225 230 235 240
 Glu Glu Pro Ala Pro Ser Leu Lys Val Gln Glu Ser Ser Arg Asp Cys
 245 250 255
 Ala Leu Ser Ser Thr Leu Glu Asp Thr Leu Gln Gly Gly Val Gln Glu
 260 265 270

Val Gln Asp Thr Val Leu Lys Gln Met Glu Ser Ala Gln Glu Lys Asp
 275 280 285

Leu Pro Gln Lys Lys His Phe Asp Asn Arg Glu Ser Gln Ala Asn Ser
 290 295 300

Gly Ala Leu Asp Thr Asn Gln Val Ser Leu Gln Lys Ile Asp Asn Pro
 305 310 315 320

Glu Ser Gln Ala Asn Ser Gly Ala Leu Asp Thr Asn Gln Val Leu Leu
 325 330 335

His Lys Ile Pro Pro Arg Lys Arg Leu Arg Lys Arg Asp Ser Gln Val
 340 345 350

Lys Ser Met Lys His Asn Ser Arg Val Lys Ile His Gln Lys Ser Cys
 355 360 365

Glu Arg Gln Lys Ala Lys Glu Gly Asn Gly Cys Arg Lys Thr Phe Ser
 370 375 380

Arg Ser Thr Lys Gln Ile Thr Phe Ile Arg Ile His Lys Gly Ser Gln
 385 390 395 400

Val Cys Arg Cys Ser Glu Cys Gly Lys Ile Phe Arg Asn Pro Arg Tyr
 405 410 415

Phe Ser Val His Lys Lys Ile His Thr Gly Glu Arg Pro Tyr Val Cys
 420 425 430

Gln Asp Cys Gly Lys Gly Phe Val Gln Ser Ser Ser Leu Thr Gln His
 435 440 445

Gln Arg Val His Ser Gly Glu Arg Pro Phe Glu Cys Gln Glu Cys Gly
 450 455 460

Arg Thr Phe Asn Asp Arg Ser Ala Ile Ser Gln His Leu Arg Thr His
 465 470 475 480

Thr Gly Ala Lys Pro Tyr Lys Cys Gln Asp Cys Gly Lys Ala Phe Arg
 485 490 495

Gln Ser Ser His Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Arg
 500 505 510

Pro Tyr Ala Cys Asn Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser His
 515 520 525

Leu Ile Gly His Gln Arg Thr His Asn Arg Thr Lys Arg Lys Lys Lys
 530 535 540

Gln Pro Thr Ser
545

<210> 823
<211> 2723
<212> PRT
<213> Homo sapiens

<400> 823

Met Ala Asp Glu Glu Ala Glu Gln Glu Arg Leu Ser Cys Gly Glu Gly
1 5 10 15

Gly Cys Val Ala Glu Leu Gln Arg Leu Gly Glu Arg Leu Gln Glu Leu
20 25 30

Glu Leu Gln Leu Arg Glu Ser Arg Val Pro Ala Val Glu Ala Ala Thr
35 40 45

Asp Tyr Cys Gln Gln Leu Cys Gln Thr Leu Leu Glu Tyr Ala Glu Lys
50 55 60

Trp Lys Thr Ser Glu Asp Pro Leu Pro Leu Leu Glu Val Tyr Thr Val
65 70 75 80

Ala Ile Gln Ser Tyr Val Lys Ala Arg Pro Tyr Leu Thr Ser Glu Cys
85 90 95

Glu Asn Val Ala Leu Val Leu Glu Arg Leu Ala Leu Ser Cys Val Glu
100 105 110

Leu Leu Leu Cys Leu Pro Val Glu Leu Ser Asp Lys Gln Trp Glu Gln
115 120 125

Phe Gln Thr Leu Val Gln Val Ala His Glu Lys Leu Met Glu Asn Gly
130 135 140

Ser Cys Glu Leu His Phe Leu Ala Thr Leu Ala Gln Glu Thr Gly Val
145 150 155 160

Trp Lys Asn Pro Val Leu Cys Thr Ile Leu Ser Gln Glu Pro Leu Asp
165 170 175

Lys Asp Lys Val Asn Glu Phe Leu Ala Phe Glu Gly Pro Ile Leu Leu
180 185 190

Asp Met Arg Ile Lys His Leu Ile Lys Thr Asn Gln Leu Ser Gln Ala
195 200 205

Thr Ala Leu Ala Lys Leu Cys Ser Asp His Pro Glu Ile Gly Ile Lys
210 215 220

Gly Ser Phe Lys Gln Thr Tyr Leu Val Cys Leu Cys Thr Ser Ser Pro

225 230 235 240
 Asn Gly Lys Leu Ile Glu Glu Ile Ser Glu Val Asp Cys Lys Asp Ala
 245 250 255
 Leu Glu Met Ile Cys Asn Leu Glu Ser Glu Gly Asp Glu Lys Ser Ala
 260 265 270
 Leu Val Leu Cys Thr Ala Phe Leu Ser Arg Gln Leu Gln Gln Gly Asp
 275 280 285
 Met Tyr Cys Ala Trp Glu Leu Thr Leu Phe Trp Ser Lys Leu Gln Gln
 290 295 300
 Arg Val Glu Pro Ser Ile Gln Val Tyr Leu Glu Arg Cys Arg Gln Leu
 305 310 315 320
 Ser Leu Leu Thr Lys Thr Val Tyr His Ile Phe Phe Leu Ile Lys Val
 325 330 335
 Ile Asn Ser Glu Thr Glu Gly Ala Gly Leu Ala Thr Cys Ile Glu Leu
 340 345 350
 Cys Val Lys Ala Leu Arg Leu Glu Ser Thr Glu Asn Thr Glu Val Lys
 355 360 365
 Ile Ser Ile Cys Lys Thr Ile Ser Cys Leu Leu Pro Asp Asp Leu Glu
 370 375 380
 Val Lys Arg Ala Cys Gln Leu Ser Glu Phe Leu Ile Glu Pro Thr Val
 385 390 395 400
 Asp Ala Tyr Tyr Ala Val Glu Met Leu Tyr Asn Gln Pro Asp Gln Lys
 405 410 415
 Tyr Asp Glu Glu Asn Leu Pro Ile Pro Asn Ser Leu Arg Cys Glu Leu
 420 425 430
 Leu Leu Val Leu Lys Thr Gln Trp Pro Phe Asp Pro Glu Phe Trp Asp
 435 440 445
 Trp Lys Thr Leu Lys Arg Gln Cys Leu Ala Leu Met Gly Glu Glu Ala
 450 455 460
 Ser Ile Val Ser Ser Ile Asp Glu Leu Asn Asp Ser Glu Val Tyr Glu
 465 470 475 480
 Lys Val Val Asp Tyr Gln Glu Glu Ser Lys Glu Thr Ser Met Asn Gly
 485 490 495
 Leu Ser Gly Gly Val Gly Ala Asn Ser Gly Leu Leu Lys Asp Ile Gly

500

505

510

Asp Glu Lys Gln Lys Lys Arg Glu Ile Lys Gln Leu Arg Glu Arg Gly
 515 520 525

Phe Ile Ser Ala Arg Phe Arg Asn Trp Gln Ala Tyr Met Gln Tyr Cys
 530 535 540

Val Leu Cys Asp Lys Glu Phe Leu Gly His Arg Ile Val Arg His Ala
 545 550 555 560

Gln Lys His Tyr Lys Asp Gly Ile Tyr Ser Cys Pro Ile Cys Ala Lys
 565 570 575

Asn Phe Asn Ser Lys Glu Thr Phe Val Pro His Val Thr Leu His Val
 580 585 590

Lys Gln Ser Ser Lys Glu Arg Leu Ala Ala Met Lys Pro Leu Arg Arg
 595 600 605

Leu Gly Arg Pro Pro Lys Ile Thr Thr Thr Asn Glu Asn Gln Lys Thr
 610 615 620

Asn Thr Val Ala Lys Gln Glu Gln Arg Pro Ile Lys Lys Asn Ser Leu
 625 630 635 640

Tyr Ser Thr Asp Phe Ile Val Phe Asn Asp Asn Asp Gly Ser Asp Asp
 645 650 655

Glu Asn Asp Asp Lys Asp Lys Ser Tyr Glu Pro Glu Val Ile Pro Val
 660 665 670

Gln Lys Pro Val Pro Val Asn Glu Phe Asn Cys Pro Val Thr Phe Cys
 675 680 685

Lys Lys Gly Phe Lys Tyr Phe Lys Asn Leu Ile Ala His Val Lys Gly
 690 695 700

His Lys Asp Asn Glu Asp Ala Lys Arg Phe Leu Glu Met Gln Ser Lys
 705 710 715 720

Lys Val Ile Cys Gln Tyr Cys Arg Arg His Phe Val Ser Val Thr His
 725 730 735

Leu Asn Asp His Leu Gln Met His Cys Gly Ser Lys Pro Tyr Ile Cys
 740 745 750

Ile Gln Met Lys Cys Lys Ala Gly Phe Asn Ser Tyr Ala Glu Leu Leu
 755 760 765

Thr His Arg Lys Glu His Gln Val Phe Arg Ala Lys Cys Met Phe Pro

770

775

780

Lys Cys Gly Arg Ile Phe Ser Glu Ala Tyr Leu Leu Tyr Asp His Glu
 785 790 795 800

Ala Gln His Tyr Asn Thr Tyr Thr Cys Lys Phe Thr Gly Cys Gly Lys
 805 810 815

Val Tyr Arg Ser Gln Gly Glu Leu Glu Lys His Leu Asp Asp His Ser
 820 825 830

Thr Pro Pro Glu Lys Val Leu Pro Pro Glu Ala Gln Leu Asn Ser Ser
 835 840 845

Gly Asp Ser Ile Gln Pro Ser Glu Val Asn Gln Asn Thr Ala Glu Asn
 850 855 860

Ile Glu Lys Glu Arg Ser Met Leu Pro Ser Glu Asn Asn Ile Glu Asn
 865 870 875 880

Ser Leu Leu Ala Asp Arg Ser Asp Ala Trp Asp Lys Ser Lys Ala Glu
 885 890 895

Ser Ala Val Thr Lys Gln Asp Gln Ile Ser Ala Ser Glu Leu Arg Gln
 900 905 910

Ala Asn Gly Pro Leu Ser Asn Gly Leu Glu Asn Pro Ala Thr Thr Pro
 915 920 925

Leu Leu Gln Ser Ser Glu Val Ala Val Ser Ile Lys Val Ser Leu Asn
 930 935 940

Gln Gly Ile Glu Asp Asn Phe Gly Lys Gln Glu Asn Ser Thr Val Glu
 945 950 955 960

Gly Ser Gly Glu Ala Leu Val Thr Asp Leu His Thr Pro Val Glu Asp
 965 970 975

Thr Cys Asn Asp Leu Cys His Pro Gly Phe Gln Glu Arg Lys Glu Gln
 980 985 990

Asp Cys Phe Asn Asp Ala His Val Thr Gln Asn Ser Leu Val Asn Ser
 995 1000 1005

Glu Thr Leu Lys Ile Gly Asp Leu Thr Pro Gln Asn Leu Glu Arg
 1010 1015 1020

Gln Val Asn Asn Leu Met Thr Phe Ser Val Gln Asn Gln Ala Ala
 1025 1030 1035

Phe Gln Asn Asn Leu Pro Thr Ser Lys Phe Glu Cys Gly Asp Asn

1040

1045

1050

Val	Lys	Thr	Ser	Ser	Asn	Leu	Tyr	Asn	Leu	Pro	Leu	Lys	Thr	Leu
	1055					1060					1065			
Glu	Ser	Ile	Ala	Phe	Val	Pro	Pro	Gln	Ser	Asp	Leu	Ser	Asn	Ser
	1070					1075					1080			
Leu	Gly	Thr	Pro	Ser	Val	Pro	Pro	Lys	Ala	Pro	Val	Gln	Lys	Phe
	1085					1090					1095			
Ser	Cys	Gln	Val	Glu	Gly	Cys	Thr	Arg	Thr	Tyr	Asn	Ser	Ser	Gln
	1100					1105					1110			
Ser	Ile	Gly	Lys	His	Met	Lys	Thr	Ala	His	Pro	Asp	Gln	Tyr	Ala
	1115					1120					1125			
Ala	Phe	Lys	Met	Gln	Arg	Lys	Ser	Lys	Lys	Gly	Gln	Lys	Ala	Asn
	1130					1135					1140			
Asn	Leu	Asn	Thr	Pro	Asn	Asn	Gly	Lys	Phe	Val	Tyr	Phe	Leu	Pro
	1145					1150					1155			
Ser	Pro	Val	Asn	Ser	Ser	Asn	Pro	Phe	Phe	Thr	Ser	Gln	Thr	Lys
	1160					1165					1170			
Ala	Asn	Gly	Asn	Pro	Ala	Cys	Ser	Ala	Gln	Leu	Gln	His	Val	Ser
	1175					1180					1185			
Pro	Pro	Ile	Phe	Pro	Ala	His	Leu	Ala	Ser	Val	Ser	Thr	Pro	Leu
	1190					1195					1200			
Leu	Ser	Ser	Met	Glu	Ser	Val	Ile	Asn	Pro	Asn	Ile	Thr	Ser	Gln
	1205					1210					1215			
Asp	Lys	Asn	Glu	Gln	Gly	Gly	Met	Leu	Cys	Ser	Gln	Met	Glu	Asn
	1220					1225					1230			
Leu	Pro	Ser	Thr	Ala	Leu	Pro	Ala	Gln	Met	Glu	Asp	Leu	Thr	Lys
	1235					1240					1245			
Thr	Val	Leu	Pro	Leu	Asn	Ile	Asp	Ser	Gly	Ser	Asp	Pro	Phe	Leu
	1250					1255					1260			
Pro	Leu	Pro	Ala	Glu	Ser	Ser	Ser	Met	Ser	Leu	Phe	Pro	Ser	Pro
	1265					1270					1275			
Ala	Asp	Ser	Gly	Thr	Asn	Ser	Val	Phe	Ser	Gln	Leu	Glu	Asn	Asn
	1280					1285					1290			
Thr	Asn	His	Tyr	Ser	Ser	Gln	Ile	Glu	Gly	Asn	Thr	Asn	Ser	Ser

1295

1300

1305

Phe	Leu	Lys	Gly	Gly	Asn	Gly	Glu	Asn	Ala	Val	Phe	Pro	Ser	Gln
1310						1315					1320			
Val	Asn	Val	Ala	Asn	Asn	Phe	Ser	Ser	Thr	Asn	Ala	Gln	Gln	Ser
1325						1330					1335			
Ala	Pro	Glu	Lys	Val	Lys	Lys	Asp	Arg	Gly	Arg	Gly	Pro	Asn	Gly
1340						1345					1350			
Lys	Glu	Arg	Lys	Pro	Lys	His	Asn	Lys	Arg	Ala	Lys	Trp	Pro	Ala
1355						1360					1365			
Ile	Ile	Arg	Asp	Gly	Lys	Phe	Ile	Cys	Ser	Arg	Cys	Tyr	Arg	Ala
1370						1375					1380			
Phe	Thr	Asn	Pro	Arg	Ser	Leu	Gly	Gly	His	Leu	Ser	Lys	Arg	Ser
1385						1390					1395			
Tyr	Cys	Lys	Pro	Leu	Asp	Gly	Ala	Glu	Ile	Ala	Gln	Glu	Leu	Leu
1400						1405					1410			
Gln	Ser	Asn	Gly	Gln	Pro	Ser	Leu	Leu	Ala	Ser	Met	Ile	Leu	Ser
1415						1420					1425			
Thr	Asn	Ala	Val	Asn	Leu	Gln	Gln	Pro	Gln	Gln	Ser	Thr	Phe	Asn
1430						1435					1440			
Pro	Glu	Ala	Cys	Phe	Lys	Asp	Pro	Ser	Phe	Leu	Gln	Leu	Leu	Ala
1445						1450					1455			
Glu	Asn	Arg	Ser	Pro	Ala	Phe	Leu	Pro	Asn	Thr	Phe	Pro	Arg	Ser
1460						1465					1470			
Gly	Val	Thr	Asn	Phe	Asn	Thr	Ser	Val	Ser	Gln	Glu	Gly	Ser	Glu
1475						1480					1485			
Ile	Ile	Lys	Gln	Ala	Leu	Glu	Thr	Ala	Gly	Ile	Pro	Ser	Thr	Phe
1490						1495					1500			
Glu	Gly	Ala	Glu	Met	Leu	Ser	His	Val	Ser	Thr	Gly	Cys	Val	Ser
1505						1510					1515			
Asp	Ala	Ser	Gln	Val	Asn	Ala	Thr	Val	Met	Pro	Asn	Pro	Thr	Val
1520						1525					1530			
Pro	Pro	Leu	Leu	His	Thr	Val	Cys	His	Pro	Asn	Thr	Leu	Leu	Thr
1535						1540					1545			
Asn	Gln	Asn	Arg	Thr	Ser	Asn	Ser	Lys	Thr	Ser	Ser	Ile	Glu	Glu

1550

1555

1560

Cys	Ser	Ser	Leu	Pro	Val	Phe	Pro	Thr	Asn	Asp	Leu	Leu	Leu	Lys
1565						1570					1575			
Thr	Val	Glu	Asn	Gly	Leu	Cys	Ser	Ser	Ser	Phe	Pro	Asn	Ser	Gly
1580						1585					1590			
Gly	Pro	Ser	Gln	Asn	Phe	Thr	Ser	Asn	Ser	Ser	Arg	Val	Ser	Val
1595						1600					1605			
Ile	Ser	Gly	Pro	Gln	Asn	Thr	Arg	Ser	Ser	His	Leu	Asn	Lys	Lys
1610						1615					1620			
Gly	Asn	Ser	Ala	Ser	Lys	Arg	Arg	Lys	Lys	Val	Ala	Pro	Pro	Leu
1625						1630					1635			
Ile	Ala	Pro	Asn	Ala	Ser	Gln	Asn	Leu	Val	Thr	Ser	Asp	Leu	Thr
1640						1645					1650			
Thr	Met	Gly	Leu	Ile	Ala	Lys	Ser	Val	Glu	Ile	Pro	Thr	Thr	Asn
1655						1660					1665			
Leu	His	Ser	Asn	Val	Ile	Pro	Thr	Cys	Glu	Pro	Gln	Ser	Leu	Val
1670						1675					1680			
Glu	Asn	Leu	Thr	Gln	Lys	Leu	Asn	Asn	Val	Asn	Asn	Gln	Leu	Phe
1685						1690					1695			
Met	Thr	Asp	Val	Lys	Glu	Asn	Phe	Lys	Thr	Ser	Leu	Glu	Ser	His
1700						1705					1710			
Thr	Val	Leu	Ala	Pro	Leu	Thr	Leu	Lys	Thr	Glu	Asn	Gly	Asp	Ser
1715						1720					1725			
Gln	Met	Met	Ala	Leu	Asn	Ser	Cys	Thr	Thr	Ser	Ile	Asn	Ser	Asp
1730						1735					1740			
Leu	Gln	Ile	Ser	Glu	Asp	Asn	Val	Ile	Gln	Asn	Phe	Glu	Lys	Thr
1745						1750					1755			
Leu	Glu	Ile	Ile	Lys	Thr	Ala	Met	Asn	Ser	Gln	Ile	Leu	Glu	Val
1760						1765					1770			
Lys	Ser	Gly	Ser	Gln	Gly	Ala	Gly	Glu	Thr	Ser	Gln	Asn	Ala	Gln
1775						1780					1785			
Ile	Asn	Tyr	Asn	Ile	Gln	Leu	Pro	Ser	Val	Asn	Thr	Val	Gln	Asn
1790						1795					1800			
Asn	Lys	Leu	Pro	Asp	Ser	Ser	Pro	Phe	Ser	Ser	Phe	Ile	Ser	Val

1805

1810

1815

Met	Pro	Thr	Lys	Ser	Asn	Ile	Pro	Gln	Ser	Glu	Val	Ser	His	Lys
	1820					1825					1830			
Glu	Asp	Gln	Ile	Gln	Glu	Ile	Leu	Glu	Gly	Leu	Gln	Lys	Leu	Lys
	1835					1840					1845			
Leu	Glu	Asn	Asp	Leu	Ser	Thr	Pro	Ala	Ser	Gln	Cys	Val	Leu	Ile
	1850					1855					1860			
Asn	Thr	Ser	Val	Thr	Leu	Thr	Pro	Thr	Pro	Val	Lys	Ser	Thr	Ala
	1865					1870					1875			
Asp	Ile	Thr	Val	Ile	Gln	Pro	Val	Ser	Glu	Met	Ile	Asn	Ile	Gln
	1880					1885					1890			
Phe	Asn	Asp	Lys	Val	Asn	Lys	Pro	Phe	Val	Cys	Gln	Asn	Gln	Gly
	1895					1900					1905			
Cys	Asn	Tyr	Ser	Ala	Met	Thr	Lys	Asp	Ala	Leu	Phe	Lys	His	Tyr
	1910					1915					1920			
Gly	Lys	Ile	His	Gln	Tyr	Thr	Pro	Glu	Met	Ile	Leu	Glu	Ile	Lys
	1925					1930					1935			
Lys	Asn	Gln	Leu	Lys	Phe	Ala	Pro	Phe	Lys	Cys	Val	Val	Pro	Thr
	1940					1945					1950			
Cys	Thr	Lys	Thr	Phe	Thr	Arg	Asn	Ser	Asn	Leu	Arg	Ala	His	Cys
	1955					1960					1965			
Gln	Leu	Val	His	His	Phe	Thr	Thr	Glu	Glu	Met	Val	Lys	Leu	Lys
	1970					1975					1980			
Ile	Lys	Arg	Pro	Tyr	Gly	Arg	Lys	Ser	Gln	Ser	Glu	Asn	Val	Pro
	1985					1990					1995			
Ala	Ser	Arg	Ser	Thr	Gln	Val	Lys	Lys	Gln	Leu	Ala	Met	Thr	Glu
	2000					2005					2010			
Glu	Asn	Lys	Lys	Glu	Ser	Gln	Pro	Ala	Leu	Glu	Leu	Arg	Ala	Glu
	2015					2020					2025			
Thr	Gln	Asn	Thr	His	Ser	Asn	Val	Ala	Val	Ile	Pro	Glu	Lys	Gln
	2030					2035					2040			
Leu	Val	Glu	Lys	Lys	Ser	Pro	Asp	Lys	Thr	Glu	Ser	Ser	Leu	Gln
	2045					2050					2055			
Val	Ile	Thr	Val	Thr	Ser	Glu	Gln	Cys	Asn	Thr	Asn	Ala	Leu	Thr

2060

2065

2070

Asn	Thr	Gln	Thr	Lys	Gly	Arg	Lys	Ile	Arg	Arg	His	Lys	Lys	Glu
2075						2080					2085			
Lys	Glu	Glu	Lys	Lys	Arg	Lys	Lys	Pro	Val	Ser	Gln	Ser	Leu	Glu
2090						2095					2100			
Phe	Pro	Thr	Arg	Tyr	Ser	Pro	Tyr	Arg	Pro	Tyr	Arg	Cys	Val	His
2105						2110					2115			
Gln	Gly	Cys	Phe	Ala	Ala	Phe	Thr	Ile	Gln	Gln	Asn	Leu	Ile	Leu
2120						2125					2130			
His	Tyr	Gln	Ala	Val	His	Lys	Ser	Asp	Leu	Pro	Ala	Phe	Ser	Ala
2135						2140					2145			
Glu	Val	Glu	Glu	Glu	Ser	Glu	Ala	Gly	Lys	Glu	Ser	Glu	Glu	Thr
2150						2155					2160			
Glu	Thr	Lys	Gln	Thr	Leu	Lys	Glu	Phe	Arg	Cys	Gln	Val	Ser	Asp
2165						2170					2175			
Cys	Ser	Arg	Ile	Phe	Gln	Ala	Ile	Thr	Gly	Leu	Ile	Gln	His	Tyr
2180						2185					2190			
Met	Lys	Leu	His	Glu	Met	Thr	Pro	Glu	Glu	Ile	Glu	Ser	Met	Thr
2195						2200					2205			
Ala	Ser	Val	Asp	Val	Gly	Lys	Phe	Pro	Cys	Asp	Gln	Leu	Glu	Cys
2210						2215					2220			
Lys	Ser	Ser	Phe	Thr	Thr	Tyr	Leu	Asn	Tyr	Val	Val	His	Leu	Glu
2225						2230					2235			
Ala	Asp	His	Gly	Ile	Gly	Leu	Arg	Ala	Ser	Lys	Thr	Glu	Glu	Asp
2240						2245					2250			
Gly	Val	Tyr	Lys	Cys	Asp	Cys	Glu	Gly	Cys	Asp	Arg	Ile	Tyr	Ala
2255						2260					2265			
Thr	Arg	Ser	Asn	Leu	Leu	Arg	His	Ile	Phe	Asn	Lys	His	Asn	Asp
2270						2275					2280			
Lys	His	Lys	Ala	His	Leu	Ile	Arg	Pro	Arg	Arg	Leu	Thr	Pro	Gly
2285						2290					2295			
Gln	Glu	Asn	Met	Ser	Ser	Lys	Ala	Asn	Gln	Glu	Lys	Ser	Lys	Ser
2300						2305					2310			
Lys	His	Arg	Gly	Thr	Lys	His	Ser	Arg	Cys	Gly	Lys	Glu	Gly	Ile

2315

2320

2325

Lys Met Pro Lys Thr Lys Arg Lys Lys Lys Asn Asn Leu Glu Asn
2330 2335 2340

Lys Asn Ala Lys Ile Val Gln Ile Glu Glu Asn Lys Pro Tyr Ser
2345 2350 2355

Leu Lys Arg Gly Lys His Val Tyr Ser Ile Lys Ala Arg Asn Asp
2360 2365 2370

Ala Leu Ser Glu Cys Thr Ser Arg Phe Val Thr Gln Tyr Pro Cys
2375 2380 2385

Met Ile Lys Gly Cys Thr Ser Val Val Thr Ser Glu Ser Asn Ile
2390 2395 2400

Ile Arg His Tyr Lys Cys His Lys Leu Ser Lys Ala Phe Thr Ser
2405 2410 2415

Gln His Arg Asn Leu Leu Ile Val Phe Lys Arg Cys Cys Asn Ser
2420 2425 2430

Gln Val Lys Glu Thr Ser Glu Gln Glu Gly Ala Lys Asn Asp Val
2435 2440 2445

Lys Asp Ser Asp Thr Cys Val Ser Glu Ser Asn Asp Asn Ser Arg
2450 2455 2460

Thr Thr Ala Thr Val Ser Gln Lys Glu Val Glu Lys Asn Glu Lys
2465 2470 2475

Asp Glu Met Asp Glu Leu Thr Glu Leu Phe Ile Thr Lys Leu Ile
2480 2485 2490

Asn Glu Asp Ser Thr Ser Val Glu Thr Gln Ala Asn Thr Ser Ser
2495 2500 2505

Asn Val Ser Asn Asp Phe Gln Glu Asp Asn Leu Cys Gln Ser Glu
2510 2515 2520

Arg Gln Lys Ala Ser Asn Leu Lys Arg Val Asn Lys Glu Lys Asn
2525 2530 2535

Val Ser Gln Asn Lys Lys Arg Lys Val Glu Lys Ala Glu Pro Ala
2540 2545 2550

Ser Ala Ala Glu Leu Ser Ser Val Arg Lys Glu Glu Glu Thr Ala
2555 2560 2565

Val Ala Ile Gln Thr Ile Glu Glu His Pro Ala Ser Phe Asp Trp

2570

2575

2580

Ser Ser Phe Lys Pro Met Gly Phe Glu Val Ser Phe Leu Lys Phe
2585 2590 2595

Leu Glu Glu Ser Ala Val Lys Gln Lys Lys Asn Thr Asp Lys Asp
2600 2605 2610

His Pro Asn Thr Gly Asn Lys Lys Gly Ser His Ser Asn Ser Arg
2615 2620 2625

Lys Asn Ile Asp Lys Thr Ala Val Thr Ser Gly Asn His Val Cys
2630 2635 2640

Pro Cys Lys Glu Ser Glu Thr Phe Val Gln Phe Ala Asn Pro Ser
2645 2650 2655

Gln Leu Gln Cys Ser Asp Asn Val Lys Ile Val Leu Asp Lys Asn
2660 2665 2670

Leu Lys Asp Cys Thr Glu Leu Val Leu Lys Gln Leu Gln Glu Met
2675 2680 2685

Lys Pro Thr Val Ser Leu Lys Lys Leu Glu Val His Ser Asn Asp
2690 2695 2700

Pro Asp Met Ser Val Met Lys Asp Ile Ser Ile Gly Lys Ala Thr
2705 2710 2715

Gly Arg Gly Gln Tyr
2720

<210> 824
<211> 858
<212> PRT
<213> Homo sapiens

<400> 824

Met Asp Leu Pro Ala Leu Leu Pro Ala Pro Thr Ala Arg Gly Gly Gln
1 5 10 15

His Gly Gly Gly Pro Gly Pro Leu Arg Arg Ala Pro Ala Pro Leu Gly
20 25 30

Ala Ser Pro Ala Arg Arg Arg Leu Leu Leu Val Arg Gly Pro Glu Asp
35 40 45

Gly Gly Pro Gly Ala Arg Pro Gly Glu Ala Ser Gly Pro Ser Pro Pro
50 55 60

Pro Ala Glu Asp Asp Ser Asp Gly Asp Ser Phe Leu Val Leu Leu Glu
65 70 75 80

Val Pro His Gly Gly Ala Ala Ala Glu Ala Ala Gly Ser Gln Glu Ala
 85 90 95
 Glu Pro Gly Ser Arg Val Asn Leu Ala Ser Arg Pro Glu Gln Gly Pro
 100 105 110
 Ser Gly Pro Ala Ala Pro Pro Gly Pro Gly Val Ala Pro Ala Gly Ala
 115 120 125
 Val Thr Ile Ser Ser Gln Asp Leu Leu Val Arg Leu Asp Arg Gly Val
 130 135 140
 Leu Ala Leu Ser Ala Pro Pro Gly Pro Ala Thr Ala Gly Ala Ala Ala
 145 150 155 160
 Pro Arg Arg Ala Pro Gln Ala Ser Gly Pro Ser Thr Pro Gly Tyr Arg
 165 170 175
 Cys Pro Glu Pro Gln Cys Ala Leu Ala Phe Ala Lys Lys His Gln Leu
 180 185 190
 Lys Val His Leu Leu Thr His Gly Gly Gly Gln Gly Arg Arg Pro Phe
 195 200 205
 Lys Cys Pro Leu Glu Gly Cys Gly Trp Ala Phe Thr Thr Ser Tyr Lys
 210 215 220
 Leu Lys Arg His Leu Gln Ser His Asp Lys Leu Arg Pro Phe Gly Cys
 225 230 235 240
 Pro Val Gly Gly Cys Gly Lys Lys Phe Thr Thr Val Tyr Asn Leu Lys
 245 250 255
 Ala His Met Lys Gly His Glu Gln Glu Ser Leu Phe Lys Cys Glu Val
 260 265 270
 Cys Ala Glu Arg Phe Pro Thr His Ala Lys Leu Ser Ser His Gln Arg
 275 280 285
 Ser His Phe Glu Pro Glu Arg Pro Tyr Lys Cys Asp Phe Pro Gly Cys
 290 295 300
 Glu Lys Thr Phe Ile Thr Val Ser Ala Leu Phe Ser His Asn Arg Ala
 305 310 315 320
 His Phe Arg Glu Gln Glu Leu Phe Ser Cys Ser Phe Pro Gly Cys Ser
 325 330 335
 Lys Gln Tyr Asp Lys Ala Cys Arg Leu Lys Ile His Leu Arg Ser His
 340 345 350

Thr Gly Glu Arg Pro Phe Ile Cys Asp Ser Asp Ser Cys Gly Trp Thr
 355 360 365
 Phe Thr Ser Met Ser Lys Leu Leu Arg His Arg Arg Lys His Asp Asp
 370 375 380
 Asp Arg Arg Phe Thr Cys Pro Val Glu Gly Cys Gly Lys Ser Phe Thr
 385 390 395 400
 Arg Ala Glu His Leu Lys Gly His Ser Ile Thr His Leu Gly Thr Lys
 405 410 415
 Pro Phe Glu Cys Pro Val Glu Gly Cys Cys Ala Arg Phe Ser Ala Arg
 420 425 430
 Ser Ser Leu Tyr Ile His Ser Lys Lys His Val Gln Asp Val Gly Ala
 435 440 445
 Pro Lys Ser Arg Cys Pro Val Ser Thr Cys Asn Arg Leu Phe Thr Ser
 450 455 460
 Lys His Ser Met Lys Ala His Met Val Arg Gln His Ser Arg Arg Gln
 465 470 475 480
 Asp Leu Leu Pro Gln Leu Glu Ala Pro Ser Ser Leu Thr Pro Ser Ser
 485 490 495
 Glu Leu Ser Ser Pro Gly Gln Ser Glu Leu Thr Asn Met Asp Leu Ala
 500 505 510
 Ala Leu Phe Ser Asp Thr Pro Ala Asn Ala Ser Gly Ser Ala Gly Gly
 515 520 525
 Ser Asp Glu Ala Leu Asn Ser Gly Ile Leu Thr Ile Asp Val Thr Ser
 530 535 540
 Val Ser Ser Ser Leu Gly Gly Asn Leu Pro Ala Asn Asn Ser Ser Leu
 545 550 555 560
 Gly Pro Met Glu Pro Leu Val Leu Val Ala His Ser Asp Ile Pro Pro
 565 570 575
 Ser Leu Asp Ser Pro Leu Val Leu Gly Thr Ala Ala Thr Val Leu Gln
 580 585 590
 Gln Gly Ser Phe Ser Val Asp Asp Val Gln Thr Val Ser Ala Gly Ala
 595 600 605
 Leu Gly Cys Leu Val Ala Leu Pro Met Lys Asn Leu Ser Asp Asp Pro
 610 615 620

Leu Ala Leu Thr Ser Asn Ser Asn Leu Ala Ala His Ile Thr Thr Pro
 625 630 635 640
 Thr Ser Ser Ser Thr Pro Arg Glu Asn Ala Ser Val Pro Glu Leu Leu
 645 650 655
 Ala Pro Ile Lys Val Glu Pro Asp Ser Pro Ser Arg Pro Gly Ala Val
 660 665 670
 Gly Gln Gln Glu Gly Ser His Gly Leu Pro Gln Ser Thr Leu Pro Ser
 675 680 685
 Pro Ala Glu Gln His Gly Ala Gln Asp Thr Glu Leu Ser Ala Gly Thr
 690 695 700
 Gly Asn Phe Tyr Leu Glu Ser Gly Gly Ser Ala Arg Thr Asp Tyr Arg
 705 710 715 720
 Ala Ile Gln Leu Ala Lys Glu Lys Lys Gln Arg Gly Ala Gly Ser Asn
 725 730 735
 Ala Gly Ala Ser Gln Ser Thr Gln Arg Lys Ile Lys Glu Gly Lys Met
 740 745 750
 Ser Pro Pro His Phe His Ala Ser Gln Asn Ser Trp Leu Cys Gly Ser
 755 760 765
 Leu Val Val Pro Ser Gly Gly Arg Pro Gly Pro Ala Pro Ala Ala Gly
 770 775 780
 Val Gln Cys Gly Ala Gln Gly Val Gln Val Gln Leu Val Gln Asp Asp
 785 790 795 800
 Pro Ser Gly Glu Gly Val Leu Pro Ser Ala Arg Gly Pro Ala Thr Phe
 805 810 815
 Leu Pro Phe Leu Thr Val Asp Leu Pro Val Tyr Val Leu Gln Glu Val
 820 825 830
 Leu Pro Ser Ser Gly Gly Pro Ala Gly Pro Glu Ala Thr Gln Phe Pro
 835 840 845
 Gly Ser Thr Ile Asn Leu Gln Asp Leu Gln
 850 855

<210> 825
 <211> 572
 <212> PRT
 <213> Homo sapiens

<400> 825

Met Ala Ala Pro Arg Pro Ser Pro Ala Ile Ser Val Ser Val Ser Ala
 1 5 10 15
 Pro Ala Phe Tyr Ala Pro Gln Lys Lys Phe Gly Pro Val Val Ala Pro
 20 25 30
 Lys Pro Lys Val Asn Pro Phe Arg Pro Gly Asp Ser Glu Pro Pro Pro
 35 40 45
 Ala Pro Gly Ala Gln Arg Ala Gln Met Gly Arg Val Gly Glu Ile Pro
 50 55 60
 Pro Pro Pro Pro Glu Asp Phe Pro Leu Pro Pro Pro Pro Leu Ala Gly
 65 70 75 80
 Asp Gly Asp Asp Ala Glu Gly Ala Leu Gly Gly Ala Phe Pro Pro Pro
 85 90 95
 Pro Pro Pro Ile Glu Glu Ser Phe Pro Pro Ala Pro Leu Glu Glu Glu
 100 105 110
 Ile Phe Pro Ser Pro Pro Pro Pro Glu Glu Glu Gly Gly Pro Glu
 115 120 125
 Ala Pro Ile Pro Pro Pro Pro Gln Pro Arg Glu Lys Val Ser Ser Ile
 130 135 140
 Asp Leu Glu Ile Asp Ser Leu Ser Ser Leu Leu Asp Asp Met Thr Lys
 145 150 155 160
 Asn Asp Pro Phe Lys Ala Arg Val Ser Ser Gly Tyr Val Pro Pro Pro
 165 170 175
 Val Ala Thr Pro Phe Ser Ser Lys Ser Ser Thr Lys Pro Ala Ala Gly
 180 185 190
 Gly Thr Ala Pro Leu Pro Pro Trp Lys Ser Pro Ser Ser Ser Gln Pro
 195 200 205
 Leu Pro Gln Val Pro Ala Pro Ala Gln Ser Gln Thr Gln Phe His Val
 210 215 220
 Gln Pro Gln Pro Gln Pro Lys Pro Gln Val Gln Leu His Val Gln Ser
 225 230 235 240
 Gln Thr Gln Pro Val Ser Leu Ala Asn Thr Gln Pro Arg Gly Pro Pro
 245 250 255
 Ala Ser Ser Pro Ala Pro Ala Pro Lys Phe Ser Pro Val Thr Pro Lys
 260 265 270

Phe Thr Pro Val Ala Ser Lys Phe Ser Pro Gly Ala Pro Gly Gly Ser
 275 280 285

Gly Ser Gln Pro Asn Gln Lys Leu Gly His Pro Glu Ala Leu Ser Ala
 290 295 300

Gly Thr Gly Ser Pro Gln Pro Pro Ser Phe Thr Tyr Ala Gln Gln Arg
 305 310 315 320

Glu Lys Pro Arg Val Gln Glu Lys Gln His Pro Val Pro Pro Pro Ala
 325 330 335

Gln Asn Gln Asn Gln Val Arg Ser Pro Gly Ala Pro Gly Pro Leu Thr
 340 345 350

Leu Lys Glu Val Glu Glu Leu Glu Gln Leu Thr Gln Gln Leu Met Gln
 355 360 365

Asp Met Glu His Pro Gln Arg Gln Asn Val Ala Val Asn Glu Leu Cys
 370 375 380

Gly Arg Cys His Gln Pro Leu Ala Arg Ala Gln Pro Ala Val Arg Ala
 385 390 395 400

Leu Gly Gln Leu Phe His Ile Ala Cys Phe Thr Cys His Gln Cys Ala
 405 410 415

Gln Gln Leu Gln Gly Gln Gln Phe Tyr Ser Leu Glu Gly Ala Pro Tyr
 420 425 430

Cys Glu Gly Cys Tyr Thr Asp Thr Leu Glu Lys Cys Asn Thr Cys Gly
 435 440 445

Glu Pro Ile Thr Asp Arg Met Leu Arg Ala Thr Gly Lys Ala Tyr His
 450 455 460

Pro His Cys Phe Thr Cys Val Val Cys Ala Arg Pro Leu Glu Gly Thr
 465 470 475 480

Ser Phe Ile Val Asp Gln Ala Asn Arg Pro His Cys Val Pro Asp Tyr
 485 490 495

His Lys Gln Tyr Ala Pro Arg Cys Ser Val Cys Ser Glu Pro Ile Met
 500 505 510

Pro Glu Pro Gly Arg Asp Glu Thr Val Arg Val Val Ala Leu Asp Lys
 515 520 525

Asn Phe His Met Lys Cys Tyr Lys Cys Glu Asp Cys Gly Lys Pro Leu
 530 535 540

Ser Ile Glu Ala Asp Asp Asn Gly Cys Phe Pro Leu Asp Gly His Val
 545 550 555 560

Leu Cys Arg Lys Cys His Thr Ala Arg Ala Gln Thr
 565 570

<210> 826
 <211> 643
 <212> PRT
 <213> Homo sapiens
 <400> 826

Met Ala Ala Val Leu Ala Leu Arg Val Val Ala Gly Leu Ala Ala Ala
 1 5 10 15

Ala Leu Val Ala Met Leu Leu Glu His Tyr Gly Leu Ala Gly Gln Pro
 20 25 30

Ser Pro Leu Pro Arg Pro Ala Pro Pro Arg Arg Pro His Pro Ala Pro
 35 40 45

Gly Pro Gly Asp Ser Asn Ile Phe Trp Gly Leu Gln Ile Ser Asp Ile
 50 55 60

His Leu Ser Arg Phe Arg Asp Pro Gly Arg Ala Val Asp Leu Glu Lys
 65 70 75 80

Phe Cys Ser Glu Thr Ile Asp Ile Ile Gln Pro Ala Leu Val Leu Ala
 85 90 95

Thr Gly Asp Leu Thr Asp Ala Lys Thr Lys Glu Gln Leu Gly Ser Arg
 100 105 110

Gln His Glu Val Glu Trp Gln Thr Tyr Gln Gly Ile Leu Lys Lys Thr
 115 120 125

Arg Val Met Glu Lys Thr Lys Trp Leu Asp Ile Lys Gly Asn His Asp
 130 135 140

Ala Phe Asn Ile Pro Ser Leu Asp Ser Ile Lys Asn Tyr Tyr Arg Lys
 145 150 155 160

Tyr Ser Ala Val Arg Arg Asp Gly Ser Phe His Tyr Val His Ser Thr
 165 170 175

Pro Phe Gly Asn Tyr Ser Phe Ile Cys Val Asp Ala Thr Val Asn Pro
 180 185 190

Gly Pro Lys Arg Pro Tyr Asn Phe Phe Gly Ile Leu Asp Lys Lys Lys
 195 200 205

Met Glu Glu Leu Leu Leu Leu Ala Lys Glu Ser Ser Arg Ser Asn His
 210 215 220

Thr Ile Trp Phe Gly His Phe Thr Thr Ser Thr Ile Leu Ser Pro Ser
 225 230 235 240

Pro Gly Ile Arg Ser Ile Met Ser Ser Ala Ile Ala Tyr Leu Cys Gly
 245 250 255

His Leu His Thr Leu Gly Gly Leu Met Pro Val Leu His Thr Arg His
 260 265 270

Phe Gln Gly Thr Leu Glu Leu Glu Val Gly Asp Trp Lys Asp Asn Arg
 275 280 285

Arg Tyr Arg Ile Phe Ala Phe Asp His Asp Leu Phe Ser Phe Ala Asp
 290 295 300

Leu Ile Phe Gly Lys Trp Pro Val Val Leu Ile Thr Asn Pro Lys Ser
 305 310 315 320

Leu Leu Tyr Ser Cys Gly Glu His Glu Pro Leu Glu Arg Leu Leu His
 325 330 335

Ser Thr His Ile Arg Val Leu Ala Phe Ser Leu Ser Ser Ile Thr Ser
 340 345 350

Val Thr Val Lys Ile Asp Gly Val His Leu Gly Gln Ala Val His Val
 355 360 365

Ser Gly Pro Ile Phe Val Leu Lys Trp Asn Pro Arg Asn Tyr Ser Ser
 370 375 380

Gly Thr His Asn Ile Glu Val Ile Val Gln Asp Ser Ala Gly Arg Ser
 385 390 395 400

Lys Ser Val His His Ile Phe Ser Val Gln Glu Asn Asn His Leu Ser
 405 410 415

Phe Asp Pro Leu Ala Ser Phe Ile Leu Arg Thr Asp His Tyr Ile Met
 420 425 430

Ala Arg Val Leu Phe Val Leu Ile Val Leu Ser Gln Leu Thr Ile Leu
 435 440 445

Ile Ile Phe Arg Tyr Arg Gly Tyr Pro Glu Leu Lys Glu Pro Ser Gly
 450 455 460

Phe Ile Asn Leu Thr Ser Phe Ser Leu His Val Leu Ser Lys Ile Asn
 465 470 475 480

Ile Phe Tyr Tyr Ser Val Leu Leu Leu Thr Leu Tyr Thr Val Leu Gly
485 490 495

Pro Trp Phe Phe Gly Glu Ile Ile Asp Gly Lys Phe Gly Cys Cys Phe
500 505 510

Ser Phe Gly Ile Phe Val Asn Gly His Phe Leu Gln Gly Ser Ile Thr
515 520 525

Phe Ile Ile Gly Ile Leu Gln Leu Ala Phe Phe Asn Ile Pro Leu Met
530 535 540

Ala Tyr Met Cys Trp Ser Leu Leu Gln Arg Cys Phe Gly His Asn Phe
545 550 555 560

Arg Ser His Leu His Gln Arg Lys Tyr Leu Lys Ile Met Pro Val His
565 570 575

Leu Leu Met Leu Leu Leu Tyr Ile Trp Gln Val Tyr Ser Cys Tyr Phe
580 585 590

Leu Tyr Ala Thr Tyr Gly Thr Leu Ala Phe Leu Phe Ser Pro Leu Arg
595 600 605

Thr Trp Leu Thr Leu Leu Thr Pro Val Leu Ile Arg Tyr Val Trp Thr
610 615 620

Leu Asn Ser Thr Lys Phe Gly Ile Phe Met Val Gln Leu Lys Ser His
625 630 635 640

Leu Ser Ser

<210> 827
<211> 300
<212> PRT
<213> Homo sapiens

<400> 827

Met Ala Asn Cys Glu Phe Ser Pro Val Ser Gly Asp Lys Pro Cys Cys
1 5 10 15

Arg Leu Ser Arg Arg Ala Gln Leu Cys Leu Gly Val Ser Ile Leu Val
20 25 30

Leu Ile Leu Val Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln
35 40 45

Gln Trp Ser Gly Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu
50 55 60

Ala Arg Cys Val Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val

65 70 75 80
 Asp Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys
 85 90 95
 His Pro Cys Asn Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu
 100 105 110
 Gly Thr Gln Thr Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile
 115 120 125
 Lys Asp Leu Ala His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr
 130 135 140
 Leu Glu Asp Thr Leu Leu Gly Tyr Leu Ala Asp Asp Leu Thr Trp Cys
 145 150 155 160
 Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp
 165 170 175
 Arg Lys Asp Cys Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val
 180 185 190
 Ser Arg Arg Phe Ala Glu Ala Ala Cys Asp Val Val His Val Met Leu
 195 200 205
 Asn Gly Ser Arg Ser Lys Ile Phe Asp Lys Asn Ser Thr Phe Gly Ser
 210 215 220
 Val Glu Val His Asn Leu Gln Pro Glu Lys Val Gln Thr Leu Glu Ala
 225 230 235 240
 Trp Val Ile His Gly Gly Arg Glu Asp Ser Arg Asp Leu Cys Gln Asp
 245 250 255
 Pro Thr Ile Lys Glu Leu Glu Ser Ile Ile Ser Lys Arg Asn Ile Gln
 260 265 270
 Phe Ser Cys Lys Asn Ile Tyr Arg Pro Asp Lys Phe Leu Gln Cys Val
 275 280 285
 Lys Asn Pro Glu Asp Ser Ser Cys Thr Ser Glu Ile
 290 295 300

<210> 828
 <211> 778
 <212> PRT
 <213> Homo sapiens

<400> 828

Met Pro Ala Phe Leu Gly Leu Lys Cys Leu Gly Lys Leu Cys Ser Ser
 1 5 10 15

Glu Lys Ser Lys Val Thr Ser Ser Glu Arg Thr Ser Ala Arg Gly Ser
 20 25 30
 Asn Arg Lys Arg Leu Ile Val Glu Asp Arg Arg Val Ser Gly Thr Ser
 35 40 45
 Phe Thr Ala His Arg Arg Ala Thr Ile Thr His Leu Leu Tyr Leu Cys
 50 55 60
 Pro Lys Asp Tyr Cys Pro Arg Gly Arg Val Cys Asn Ser Val Asp Pro
 65 70 75 80
 Phe Val Ala His Pro Gln Asp Pro His His Pro Ser Glu Lys Pro Val
 85 90 95
 Ile His Cys His Lys Cys Gly Glu Pro Cys Lys Gly Glu Val Leu Arg
 100 105 110
 Val Gln Thr Lys His Phe His Ile Lys Cys Phe Thr Cys Lys Val Cys
 115 120 125
 Gly Cys Asp Leu Ala Gln Gly Gly Phe Phe Ile Lys Asn Gly Glu Tyr
 130 135 140
 Leu Cys Thr Leu Asp Tyr Gln Arg Met Tyr Gly Thr Arg Cys His Gly
 145 150 155 160
 Cys Gly Glu Phe Val Glu Gly Glu Val Val Thr Ala Leu Gly Lys Thr
 165 170 175
 Tyr His Pro Asn Cys Phe Ala Cys Thr Ile Cys Lys Arg Pro Phe Pro
 180 185 190
 Pro Gly Asp Arg Val Thr Phe Asn Gly Arg Asp Cys Leu Cys Gln Leu
 195 200 205
 Cys Ala Gln Pro Met Ser Ser Ser Pro Lys Glu Thr Thr Phe Ser Ser
 210 215 220
 Asn Cys Ala Gly Cys Gly Arg Asp Ile Lys Asn Gly Gln Ala Leu Leu
 225 230 235 240
 Ala Leu Asp Lys Gln Trp His Leu Gly Cys Phe Lys Cys Lys Ser Cys
 245 250 255
 Gly Lys Val Leu Thr Gly Glu Tyr Ile Ser Lys Asp Gly Ala Pro Tyr
 260 265 270
 Cys Glu Lys Asp Tyr Gln Gly Leu Phe Gly Val Lys Cys Glu Ala Cys
 275 280 285

His Gln Phe Ile Thr Gly Lys Val Leu Glu Ala Gly Asp Lys His Tyr
 290 295 300

His Pro Ser Cys Ala Arg Cys Ser Arg Cys Asn Gln Met Phe Thr Glu
 305 310 315 320

Gly Glu Glu Met Tyr Leu Gln Gly Ser Thr Val Trp His Pro Asp Cys
 325 330 335

Lys Gln Ser Thr Lys Thr Glu Glu Lys Leu Arg Pro Thr Arg Thr Ser
 340 345 350

Ser Glu Ser Ile Tyr Ser Arg Pro Gly Ser Ser Ile Pro Gly Ser Pro
 355 360 365

Gly His Thr Ile Tyr Ala Lys Val Asp Asn Glu Ile Leu Asp Tyr Lys
 370 375 380

Asp Leu Ala Ala Ile Pro Lys Val Lys Ala Ile Tyr Asp Ile Glu Arg
 385 390 395 400

Pro Asp Leu Ile Thr Tyr Glu Pro Phe Tyr Thr Ser Gly Tyr Asp Asp
 405 410 415

Lys Gln Glu Arg Gln Ser Leu Gly Glu Ser Pro Arg Thr Leu Ser Pro
 420 425 430

Thr Pro Ser Ala Glu Gly Tyr Gln Asp Val Arg Asp Arg Met Ile His
 435 440 445

Arg Ser Thr Ser Gln Gly Ser Ile Asn Ser Pro Val Tyr Ser Arg His
 450 455 460

Ser Tyr Thr Pro Thr Thr Ser Arg Ser Pro Gln His Phe His Arg Pro
 465 470 475 480

Gly Asn Glu Pro Ser Ser Gly Arg Asn Ser Pro Leu Pro Tyr Arg Pro
 485 490 495

Asp Ser Arg Pro Leu Thr Pro Thr Tyr Ala Gln Ala Pro Lys His Phe
 500 505 510

His Val Pro Asp Gln Gly Ile Asn Ile Tyr Arg Lys Pro Pro Ile Tyr
 515 520 525

Lys Gln His Ala Ala Leu Ala Ala Gln Ser Lys Ser Ser Glu Asp Ile
 530 535 540

Ile Lys Phe Ser Lys Phe Pro Ala Ala Gln Ala Pro Asp Pro Ser Glu
 545 550 555 560

Thr Pro Lys Ile Glu Thr Asp His Trp Pro Gly Pro Pro Ser Phe Ala
565 570 575

Val Val Gly Pro Asp Met Lys Arg Arg Ser Ser Gly Arg Glu Glu Asp
580 585 590

Asp Glu Glu Leu Leu Arg Arg Arg Gln Leu Gln Glu Glu Gln Leu Met
595 600 605

Lys Leu Asn Ser Gly Leu Gly Gln Leu Ile Leu Lys Glu Glu Met Glu
610 615 620

Lys Glu Ser Arg Glu Arg Ser Ser Leu Leu Ala Ser Arg Tyr Asp Ser
625 630 635 640

Pro Ile Asn Ser Ala Ser His Ile Pro Ser Ser Lys Thr Ala Ser Leu
645 650 655

Pro Gly Tyr Gly Arg Asn Gly Leu His Arg Pro Val Ser Thr Asp Phe
660 665 670

Ala Gln Tyr Asn Ser Tyr Gly Asp Val Ser Gly Gly Val Arg Asp Tyr
675 680 685

Gln Thr Leu Pro Asp Gly His Met Pro Ala Met Arg Met Asp Arg Gly
690 695 700

Val Ser Met Pro Asn Met Leu Glu Pro Lys Ile Phe Pro Tyr Glu Met
705 710 715 720

Leu Met Val Thr Asn Arg Gly Arg Asn Lys Ile Leu Arg Glu Val Asp
725 730 735

Arg Thr Arg Leu Glu Arg His Leu Ala Pro Glu Val Phe Arg Glu Ile
740 745 750

Phe Gly Met Ser Ile Gln Glu Phe Asp Arg Leu Pro Leu Trp Arg Arg
755 760 765

Asn Asp Met Lys Lys Lys Ala Lys Leu Phe
770 775

<210> 829
<211> 147
<212> PRT
<213> Homo sapiens

<400> 829

Met Ser Gln Thr Arg Asp Leu Gln Gly Gly Lys Ala Phe Gly Leu Leu
1 5 10 15

Lys Ala Gln Glu Glu Arg Leu Asp Glu Ile Asn Lys Gln Phe Leu
20 25 30

Asp Asp Pro Lys Tyr Ser Ser Asp Glu Asp Leu Pro Ser Lys Leu Glu
35 40 45

Gly Phe Lys Glu Lys Tyr Met Glu Phe Asp Leu Asn Gly Asn Gly Asp
50 55 60

Ile Asp Ile Met Ser Leu Lys Arg Met Leu Glu Lys Leu Gly Val Pro
65 70 75 80

Lys Thr His Leu Glu Leu Lys Lys Leu Ile Gly Glu Val Ser Ser Gly
85 90 95

Ser Gly Glu Thr Phe Ser Tyr Pro Asp Phe Leu Arg Met Met Leu Gly
100 105 110

Lys Arg Ser Ala Ile Leu Lys Met Ile Leu Met Tyr Glu Glu Lys Ala
115 120 125

Arg Glu Lys Glu Lys Pro Thr Gly Pro Pro Ala Lys Lys Ala Ile Ser
130 135 140

Glu Leu Pro
145

<210> 830
<211> 666
<212> PRT
<213> Homo sapiens

<400> 830

Met Gly Glu Ser Ser Glu Asp Ile Asp Gln Met Phe Ser Thr Leu Leu
1 5 10 15

Gly Glu Met Asp Leu Leu Thr Gln Ser Leu Gly Val Asp Thr Leu Pro
20 25 30

Pro Pro Asp Pro Asn Pro Pro Arg Ala Glu Phe Asn Tyr Ser Val Gly
35 40 45

Phe Lys Asp Leu Asn Glu Ser Leu Asn Ala Leu Glu Asp Gln Asp Leu
50 55 60

Asp Ala Leu Met Ala Asp Leu Val Ala Asp Ile Ser Glu Ala Glu Gln
65 70 75 80

Arg Thr Ile Gln Ala Gln Lys Glu Ser Leu Gln Asn Gln His His Ser
85 90 95

Ala Ser Leu Gln Ala Ser Ile Phe Ser Gly Ala Ala Ser Leu Gly Tyr
 100 105 110
 Gly Thr Asn Val Ala Ala Thr Gly Ile Ser Gln Tyr Glu Asp Asp Leu
 115 120 125
 Pro Pro Pro Pro Ala Asp Pro Val Leu Asp Leu Pro Leu Pro Pro Pro
 130 135 140
 Pro Pro Glu Pro Leu Ser Gln Glu Glu Glu Glu Ala Gln Ala Lys Ala
 145 150 155 160
 Asp Lys Ile Lys Leu Ala Leu Glu Lys Leu Lys Glu Ala Lys Val Lys
 165 170 175
 Lys Leu Val Val Lys Val His Met Asn Asp Asn Ser Thr Lys Ser Leu
 180 185 190
 Met Val Asp Glu Arg Gln Leu Ala Arg Asp Val Leu Asp Asn Leu Phe
 195 200 205
 Glu Lys Thr His Cys Asp Cys Asn Val Asp Trp Cys Leu Tyr Glu Ile
 210 215 220
 Tyr Pro Glu Leu Gln Ile Glu Arg Phe Phe Glu Asp His Glu Asn Val
 225 230 235 240
 Val Glu Val Leu Ser Asp Trp Thr Arg Asp Thr Glu Asn Lys Ile Leu
 245 250 255
 Phe Leu Glu Lys Glu Glu Lys Tyr Ala Val Phe Lys Asn Pro Gln Asn
 260 265 270
 Phe Tyr Leu Asp Asn Arg Gly Lys Lys Glu Ser Lys Glu Thr Asn Glu
 275 280 285
 Lys Met Asn Ala Lys Asn Lys Glu Ser Leu Leu Glu Glu Ser Phe Cys
 290 295 300
 Gly Thr Ser Ile Ile Val Pro Glu Leu Glu Gly Ala Leu Tyr Leu Lys
 305 310 315 320
 Glu Asp Gly Lys Lys Ser Trp Lys Arg Arg Tyr Phe Leu Leu Arg Ala
 325 330 335
 Ser Gly Ile Tyr Tyr Val Pro Lys Gly Lys Thr Lys Thr Ser Arg Asp
 340 345 350
 Leu Ala Cys Phe Ile Gln Phe Glu Asn Val Asn Ile Tyr Tyr Gly Thr
 355 360 365

Gln His Lys Met Lys Tyr Lys Ala Pro Thr Asp Tyr Cys Phe Val Leu
 370 375 380
 Lys His Pro Gln Ile Gln Lys Glu Ser Gln Tyr Ile Lys Tyr Leu Cys
 385 390 395 400
 Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile Arg Ile
 405 410 415
 Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala Val Ala
 420 425 430
 Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val Asn Ala
 435 440 445
 Ala Ala Pro Ala Gln Pro Ser Thr Gly Pro Lys Thr Gly Thr Thr Gln
 450 455 460
 Pro Asn Gly Gln Ile Pro Gln Ala Thr His Ser Val Ser Ala Val Leu
 465 470 475 480
 Gln Glu Ala Gln Arg His Ala Glu Thr Ser Lys Asp Lys Lys Pro Ala
 485 490 495
 Leu Gly Asn His His Asp Pro Ala Val Pro Arg Ala Pro His Ala Pro
 500 505 510
 Lys Ser Ser Leu Pro Pro Pro Pro Val Arg Arg Ser Ser Asp Thr
 515 520 525
 Ser Gly Ser Pro Ala Thr Pro Leu Lys Ala Lys Gly Thr Gly Gly Gly
 530 535 540
 Gly Leu Pro Ala Pro Pro Asp Asp Phe Leu Pro Pro Pro Pro Pro Pro
 545 550 555 560
 Pro Pro Leu Asp Asp Pro Glu Leu Pro Pro Pro Pro Pro Asp Phe Met
 565 570 575
 Glu Pro Pro Pro Asp Phe Val Pro Pro Pro Pro Pro Ser Tyr Ala Gly
 580 585 590
 Ile Ala Gly Ser Glu Leu Pro Pro Pro Pro Pro Pro Pro Pro Ala Pro
 595 600 605
 Ala Pro Ala Pro Val Pro Asp Ser Ala Arg Pro Pro Pro Ala Val Ala
 610 615 620
 Lys Arg Pro Pro Val Pro Pro Lys Arg Gln Glu Asn Pro Gly His Pro
 625 630 635 640

PCTAU2016050927-seql-000001-EN-20161013

Gly	Gly	Ala	Gly	Gly	Gly	Glu	Gln	Asp	Phe	Met	Ser	Asp	Leu	Met	Lys
				645					650					655	

Ala	Leu	Gln	Lys	Lys	Arg	Gly	Asn	Val	Ser
			660					665	