(19) 대한민국특허청(KR)
(12) 공개특허공보(A)

(11) 공개번호 10-2022-0160053
(43) 공개일자 2022년12월05일

(51) 국제특허분류(Int. Cl.)
G01N 33/574 (2006.01) *A61K 39/00* (2006.01)
A61P 35/00 (2006.01) *C07K 14/725* (2006.01)
C07K 16/00 (2006.01) *C12Q 1/6886* (2018.01)
(52) CPC특허분류
G01N 33/57426 (2013.01)
A61K 39/0011 (2021.08)
(21) 출원번호 10-2022-7037268
(22) 출원일자(국제) 2021년03월26일
심사청구일자 없음
(85) 번역문제출일자 2022년10월25일
(86) 국제출원번호 PCT/US2021/024431
(87) 국제공개번호 WO 2021/195536
국제공개일자 2021년09월30일
(30) 우선권주장
63/000,694 2020년03월27일 미국(US)

(71) 출원인
더 트러스티즈 오브 인디애나 유니버시티
미국 인디애나 47405 블루밍턴 인디애나 애비뉴 107 에스
(72) 발명자
페르나 파비아나
미국 46204 인디애나주 인디애나폴리스 이스트 마켓 스트리트 360 아파트먼트 #808
(74) 대리인
김진희, 김태홍

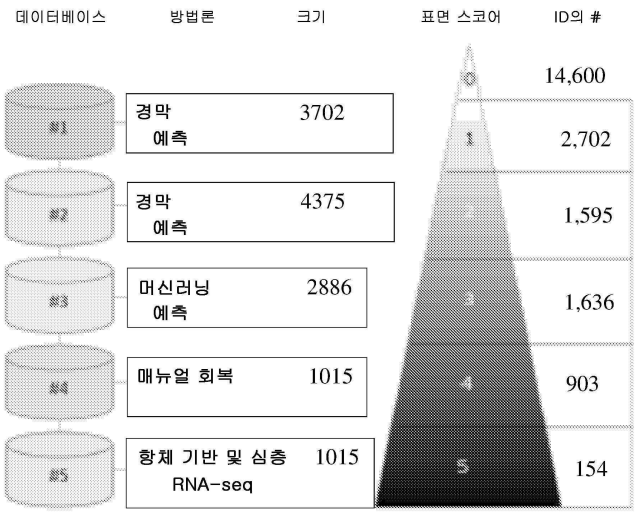
전체 청구항 수 : 총 39 항

(54) 발명의 명칭 **다발성 골수종에서의 면역요법 표적 및 그의 식별 방법**

(57) 요 약

주로 다발성 골수종과 관련된 표면 단백질은 항-다발성 골수종 치료법의 개발에 있어서 잠재적인 표적으로서 식별된다. 한 실시양태에 따르면, 다발성 골수종 세포와 관련되는 식별된 단백질의 에피토프에 특이적으로 결합하는 항체가 생성된다. 이어서, 이들 항체는 환자에서 다발성 골수종 세포로 세포독성제를 전달하기 위한 목표로 사용되거나, 또는 다발성 골수종 환자의 치료를 위한 CAR T 세포를 제조하는 데 사용될 수 있다.

대 표 도 - 도1b



(52) CPC특허분류
A61P 35/00 (2018.01)
C07K 14/7051 (2013.01)
C07K 16/00 (2013.01)
C12Q 1/6886 (2022.01)
A61K 2039/5156 (2013.01)
C07K 2317/622 (2013.01)
C12Q 2600/158 (2013.01)

명 세 서

청구범위

청구항 1

표적 다발성 골수종 관련 표면 항원을 식별하는 방법으로서,

제1 다발성 골수종 샘플 및 제2 다발성 골수종 샘플에서 세포 표면 단백질을 발현하는 복수의 유전자를 식별하는 단계;

조혈 세포와 무관한 대조군 유전자보다 높은 발현 수준을 갖는 상기 제1 다발성 골수종 샘플로부터의 핵산을 선택하고, 검출되는 상승 발현된 핵산에 상응하는 단백질을 식별하여, 선택된 단백질의 제1 풀을 지정하는 단계;

상기 제2 골수종 샘플로부터 단리된 단백질에 대해 질량 분광 분석을 수행하여, 정상 조직에 비해 상기 제2 다발성 골수종에서 더 높은 농도로 존재하는 단백질을 식별하는 단계로서, 이러한 단백질은 선택된 단백질의 제2 풀을 나타내는 것인 단계;

뇌, 척수, 장, 간 및 신장에서 높은 발현을 갖는 단백질을 상기 제1 풀 및 제2 풀로부터 배제하여, 단백질의 변형된 제1 풀 또는 제2 풀을 생성하는 단계; 및

상기 단백질의 변형된 제1 풀 및 제2 풀에 공통적인 단백질을 표적 다발성 골수종 관련 표면 항원으로서 식별하는 단계

를 포함하는, 표적 다발성 골수종 관련 표면 항원을 식별하는 방법.

청구항 2

제1항에 있어서, 상기 제1 다발성 골수종 샘플 및 상기 제2 다발성 골수종 샘플은 동일한 조직 공급원으로부터 채취되는 것인 방법.

청구항 3

제1항에 있어서, 상기 제1 다발성 골수종 샘플은 다발성 골수종(MM) 환자로부터의 발현된 유전자의 핵산 풀이고, 상기 제2 다발성 골수종 샘플은 MM 세포주에서 발현된 단백질을 나타내는 것인 방법.

청구항 4

제1항에 있어서, 표적 다발성 골수종 관련 표면 항원은, 정상 조직 샘플의 단백질 발현 수준 분포의 정상 피크 아래에서 약 1 초과의 표준편차인, 정상 조직 샘플에서의 발현 수준을 갖는 것인 방법.

청구항 5

제1항에 있어서, mRNA는, 선택된 단백질의 제1 풀에 대한 단백질을 식별하기 위해 사용되는 핵산의 발현 수준을 결정하기 위해 측정되는 것인 방법.

청구항 6

서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 대해 적어도 90% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 단일클론 항체.

청구항 7

서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 단일클론 항체.

청구항 8

제6항에 있어서, 항체는 서열번호 19, 서열번호 20, 서열번호 37, 서열번호 42, 서열번호 54, 서열번호 56, 서열번호 57, 서열번호 79, 서열번호 112 및 서열번호 104로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으

로 결합하는 것인 단일클론 항체.

청구항 9

제6항 내지 제8항 중 어느 한 항에 있어서, 항체는 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체.

청구항 10

제6항 내지 제8항 중 어느 한 항에 있어서, 항체는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체.

청구항 11

제6항 내지 제8항 중 어느 한 항에 있어서, 항체는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체.

청구항 12

제6항 내지 제11항 중 어느 한 항에 있어서, 항체에 공유결합된 검출가능한 표지를 추가로 포함하는 단일클론 항체.

청구항 13

제6항 내지 제11항 중 어느 한 항에 있어서, 항체에 결합된 세포독성제를 추가로 포함하는 단일클론 항체.

청구항 14

키메라 항원 수용체(CAR)로서,

서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 폴리펩티드의 하나 이상의 에피토프에 결합하는 항체 또는 그의 항원 결합 단편;

경막 도메인; 및

면역세포 항원 수용체 사슬

을 포함하며, 경막 도메인은 항체 또는 그의 항원 결합 단편을 면역세포 항원 수용체 사슬에 결합시키는 것인 키메라 항원 수용체(CAR).

청구항 15

제14항에 있어서, 항체 또는 그의 항원 결합 단편은, 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수용체.

청구항 16

제14항에 있어서, 항체 또는 그의 항원 결합 단편은 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수용체.

청구항 17

제14항에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 상동성을 갖는 폴리펩티드의 하나 이상의 에피토프에 결합하는 것인 키메라 항원 수용체.

청구항 18

제17항에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 상동성을 갖는 폴리펩티드의 하나 이상의 에피토프에 결합하는 것인 키메라 항원 수용체.

청구항 19

제15항에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 19, 서열번호 20, 서열번호 37, 서열번호 42, 서열번호 54, 서열번호 56, 서열번호 57, 서열번호 79, 서열번호 112 및 서열번호 104로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수용체.

청구항 20

제15항 내지 제19항 중 어느 한 항에 있어서, 상기 항체 또는 항원 결합 단편은 항체 단일사슬 가변 단편을 포함하는 것인 키메라 항원 수용체.

청구항 21

제20항에 있어서, 항체 단일사슬 가변 단편과 경막 도메인 사이에 위치하는 힌지 영역을 추가로 포함하는 키메라 항원 수용체.

청구항 22

제20항 또는 제21항의 키메라 항원 수용체를 발현하도록 변형된 T 세포.

청구항 23

제22항에 있어서, 종양 침윤 백혈구인 T 세포.

청구항 24

제15항 내지 제21항 중 어느 한 항의 키메라 항원 수용체를 발현하도록 변형된 NK 세포.

청구항 25

제15항 내지 제21항 중 어느 한 항의 키메라 항원 수용체를 발현하도록 변형된 골수 세포.

청구항 26

제15항 내지 제21항 중 어느 한 항의 키메라 항원 수용체를 발현하도록 변형된 대식세포.

청구항 27

제22항에 있어서, T 세포 항원 수용체 사슬은 CD3ζ 사슬(제타 사슬)인 T 세포.

청구항 28

제6항 내지 제12항 중 어느 한 항의 항체, 제15항 내지 제21항 중 어느 한 항의 키메라 항원 수용체, 제22항 또는 제23항의 T 세포, 제24항의 NK 세포, 제25항의 골수 세포 또는 제26항의 대식세포를 포함하는 약학 조성물.

청구항 29

다발성 골수종을 치료하는 방법으로서, 이러한 치료를 필요로 하는 환자에게 제24항의 약학 조성물을 투여하는 것을 포함하는 방법.

청구항 30

CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택된 항원에 결합하는 항원 인식 수용체를 포함하는 것인 단리된 면역반응성 세포.

청구항 31

제30항에 있어서, 항원은 IL12RB1(서열번호 19), LILRB4(서열번호 20), SLAMF6(서열번호 37), CCR1(서열번호 60) 및 CD320(서열번호 56)으로 이루어진 군으로부터 선택되는 것인 단리된 면역반응성 세포.

청구항 32

제30항 또는 제31항에 있어서, 상기 항원 인식 수용체는 T 세포 수용체(TCR) 또는 키메라 항원 수용체(CAR)인 단리된 면역반응성 세포.

청구항 33

제32항에 있어서, 상기 항원 인식 수용체는 CAR인 단리된 면역반응성 세포.

청구항 34

제33항에 있어서, 상기 CAR의 세포내 신호전달 도메인은 CD3C-사슬, CD97, CD1 1a-CD 18, CD2, ICOS, CD27, CD 154, CD8, OX40, 4-IBB, CD28 신호전달 도메인, 또는 이들의 조합인 단리된 면역반응성 세포.

청구항 35

제30항 내지 제34항 중 어느 한 항에 있어서, 세포는 T 세포, 자연 살해(NK) 세포, 세포독성 T 림프구(CTL), 조절성 T 세포, 자연 살해 T(NKT) 세포, 인간 배아 줄기 세포, 및 림프계 세포가 분화될 수 있는 만능 줄기 세포로 이루어진 군으로부터 선택되는 것인 단리된 면역반응성 세포.

청구항 36

단리된 면역반응성 세포로서,

(a) 제1 항원에 결합하는 제1 항원 인식 수용체, 및

(b) 제2 항원에 결합하는 제2 항원 인식 수용체

를 포함하며, 제1 항원 및 제2 항원은 각각 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택되고, 제1 항원과 상기 제2 항원은 상이한 것인 단리된 면역반응성 세포.

청구항 37

제36항에 있어서, 상기 항원 인식 수용체는 각각 T 세포 수용체(TCR) 또는 키메라 항원 수용체(CAR)인 단리된 면역반응성 세포.

청구항 38

제36항에 있어서, 상기 항원 인식 수용체는 각각 CAR인 단리된 면역반응성 세포.

청구항 39

유효량의 제30항 내지 제38항 중 어느 한 항의 면역반응성 세포를 대상체에게 투여하는 것을 포함하는, 대상체에서 종양 부담(tumor burden)을 감소시키는 방법.

발명의 설명

기 술 분 야

[0001] **관련 출원에 대한 상호 참조**

[0002] 본 출원은 2020년 3월 27일에 제출된 미국 가특허 출원 제 63/000,694호를 우선권으로 주장하며, 상기 가특허 출원의 개시내용은 본원에 명확하게 포함되어 있다.

[0003] **전자적으로 제출된 자료의 참조 인용**

[0004] 본원과 동시에 제출되었고 2021년 3월 22일에 "335022_ST25"의 명칭으로 생성된 1,490 킬로바이트의 ASCII(텍스트) 파일로서 식별되는 컴퓨터 판독가능한 뉴클레오티드/아미노산 서열 목록이, 그 전체가 참조로 인용된다.

배 경 기 술

[0005] 형질 세포 골수종으로도 공지된 다발성 골수종(MM)은, 정상적으로 항체를 생산하는 백혈구의 유형인 형질 세포의 암이다. 전세계적으로, 다발성 골수종은 2015년에 488,000명의 사람들을 발병시켰고 101,100명의 사망을 초래하였다. 미국에서, 다발성 골수종은 연간 100,000명당 6.5명으로 발병하고, 0.7%의 사람들이 그들의 삶의 어느 시점에서 그의 영향을 받는다. 치료가 없다면, 일반적인 생존은 7개월이다. 현행 치료의 경우, 생존은 통상적으로 4~5년이다.

[0006] 면역요법으로 종양 항원을 표적화하는 것은, 암 치료를 위한 유망한 접근법으로서 급속히 부상하고 있다. 이는 항체-매개 체크포인트 차단 및 조작된 T 세포의 성공에 기초한 것이다. MM에서, BCMA(B 세포 성숙 항원)를 표적화하는 단일클론 항체, 항체-약물 접합체, 이중특이적 항체 구축물, 및 키메라 항원 수용체(CAR) T 세포 요법은 MM을 갖는 환자에서 생존을 유의하게 개선시킨다. 항-BCMA CAR T 세포를 포함하는 >20 임상 시험으로부터의 데이터는 재발성 및/또는 불응성 MM을 갖는 환자가 실증적 반응을 달성할 수 있다는 것을 입증하였다.

[0007] 다발성 골수종(MM)의 치료에 있어서 지난 25년에 걸쳐 엄청난 진전이 이루어졌지만, 골수종은 불응성의 재발성 MM(RRMM) 또는 고위험 세포유전학(cytogenetics)을 갖는 환자에 대해 특히 불량한 예후를 갖는 불치의 질환으로 남아있다. 림프성 악성종양을 갖는 환자에서 CD19-키메라 항원 수용체(CAR) T 세포의 현저한 성공은, MM을 치료하기 위한 CAR T 세포의 발생을 촉진하였다. BCMA(TNFRSF17로도 공지됨)는 프로테아솜 억제제 및 면역조절제에 의한 치료를 포함하는, 적어도 3회의 선행 치료를 받은 RRMM 환자를 위한 CAR T 세포를 생성하기 위해 이용되는 첫 번째 표면 표적이다. 항체 접합체 및 이중특이적 T 세포 인게이저(BiTE; 2개의 결합된 단일사슬 가변 단편을 갖고 1 + 1 항원-결합 원자가를 갖는 특유한 인공의 이중특이적 단일클론 항체)로 BCMA를 표적화하는 것은, MM을 치료하는 데 효능을 갖는 것으로 입증되었다. 2가지 BCMA 표적화 면역요법은, FDA로부터 RRMM을 갖는 환자에 대해 획기적인 지위를 승인받았다. 이들 모든 시험은, 고도로 사전 치료된 RRMM에서 깊은 반응을 유도하는 항-BCMA CAR T 세포의 능력에 의해 인상적인 결과를 입증하지만, 그럼에도 불구하고, 완화는 지속되지 않고 대부분의 환자는 결국 재발한다. 내성의 메카니즘 중 하나는, 낮은 BCMA 또는 BCMA-음성 서브클론의 출현에 수반된 항원 손실 또는 하향조절에 있다. 대안적인 표적을 식별하는 것은 BCMA CAR 요법에 실패한 환자에게 치료 옵션을 제공하고/하거나 항원 탈출의 위험을 제한하는 조합 전략을 설계하는 데 중요하다. CAR T 세포 요법의 성공의 가장 중요한 결정인자 중 하나는 표적 항원의 선택이고; 이상적인 표적은 대부분의 환자에서 모든 종양 세포, 암 줄기 세포에서 고도로 발현되어야 하고, 정상 대응물 및 전신의 대부분의 기관에 부재해야 한다. 따라서, 골수종 표면 프로테옴을 연구하는 것은 추가의 면역요법 표적을 식별하고 질환 생물학에서 변경된 표면체의 역할을 이해하는 데 중요하다. 실제로, 표면 단백질은 골수 미세환경의 골수종 조작을 뒷받침하는 조절 메카니즘을 매개할 수 있다.

[0008] 이러한 목적으로, 본 개시내용의 한 양태는, 별개의 유전적 배경을 갖는 MM 세포주 및 1차 MM 환자 샘플의 세포 표면을 편향되지 않고 정확하게 맵핑하기 위한 고품질 질량 분광법 방법론 및 생성된 통합적 생물정보학 도구의 사용에 관한 것이다. 이들은 세포내 단백질과 비교하여 낮은 존재비, 높은 소수도 및 강한 번역후 변형을 나타내는 표면 단백질을 연구하는 과제를 극복하는 데 도움을 주었다. 본 개시내용에 따르면, BCMA를 넘어서는 대안적인 CAR T 세포 치료제를 설계하는 데 사용될 수 있는 추가의 표적을 식별하기 위한 방법이 제공된다.

발명의 내용

[0009] 본 개시내용은 다발성 골수종을 갖는 환자를 진단 및 치료하기 위한 항체 및 CAR T 세포를 포함하는 신규한 약물을 개발하기 위한 면역요법 표적으로서 이용될 수 있는 후보 세포 표면 항원의 식별에 관한 것이다. 본 발명의 항체는 또한 유동 세포측정과 같은 진단 목적을 위한 질환 마커를 식별하는 데에도 사용될 수 있다. 한 실시양태에 따르면, 본원에 개시되어 있는 식별된 표적은 불량한 예후의 특징과 유의하게 관련된(즉, 고위험 MM과 관련된) 표면 표적을 나타내는 다발성 골수종(MM) 환자를 식별하고 치료하기 위한 마커로서 작용할 잠재력을 갖는다.

[0010] 한 실시양태에 따르면, 다발성 골수종 세포에 특이적이고 면역요법 표적으로서 사용될 수 있는 표적 세포 표면 항원을 식별하는 방법이 제공된다. 한 실시양태에서, 상기 방법은 비오틴 표지에 이어서 질량 분광 분석(MS)을 사용하여 별개의 유전자 이상을 보유하는 다발성 골수종 세포주의 표면 특이적 단백질체 분석을 수행하는 것을 포함한다. 추가의 실시양태에서, MM 환자의 RNA-seq 데이터세트는 정상 조직에 비해 MM 환자에서 유전자 발현이

상승된 표면 단백질을 식별하기 위해 조사된다. 한 실시양태에서, 다발성 골수종 세포에 특이적인 표적 세포 표면 항원을 식별하기 위한 방법이 제공되며, 상기 방법은 표면 표지된 단백질의 질량 분광 분석 및 MM 환자의 RNA-seq 데이터세트의 분석을 포함하여, 두 분석에 공통적인 단백질을 표적 세포 표면의 항원으로서 식별한다.

[0011] 한 실시양태에 따르면, 서열번호 1 내지 서열번호 155의 서열을 갖는 세포 표면 폴리펩티드는 MM 세포와 관련된 것으로 확인되었다. 따라서, 서열번호 1-155의 펩티드는 MM을 치료하기 위한 면역-기반 치료 전략에 대한 표적을 나타낸다. 한 실시양태에 따르면, 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 항체가 제공된다. 한 실시양태에 따르면, 항체는 단일클론 항체이다. 또한, 단편이 전체 항체와 동일한 에피토프에 결합하는 능력을 보유하는 것인 항체 단편이 본 발명에 포함된다.

[0012] 한 실시양태에 따르면, 세포 표면 폴리펩티드 IL12RB1, SLC5A3, CCR1, ANKH, IL27RA, S1PR4, TLR1, KCNA3, PSEN2, BCMA, IL2RG, LILRB4, IL6R, ITGB7, LRP10, FCRL3, IFNGR1, SLAMF6, SLCO3A1, LILRB1, PLXNA3, SLC17A5, CD28, LAX1, NEMP1, TMEM154, SEMA4A, C10orf54, ITM2C, LY9, SLAMF7, ITGA4, LRRC8A, LRRC8D, CD320, KCNN4, PLXNC1, CD37, SELPLG, DAGLB, ABCC4, ADAM9, CD4, CD180, CD48, CD40, MCUR1, ABCC5, IL6ST, LRP8, SLC5A6, SLC7A6, HLA-F, ICAM2, LEPROT, ITGAL, TMEM63A, CMTM7, IL10RB, NDC1, PTPRCAP, ANTXR2, ABCA7, FCGR2B, ACVR1B, STS, ABHD12, TNFRSF10A, HVCN1, SLC39A10, EMP3, ABCC1, SLC26A6, SLC6A6, CCR10, SLC30A1, SLC231A1, ADCY3, IFNAR1, PTPRJ, CLDND1, SLC30A5, SLC6A9, ADAM15, IGF2R, INSR, NOTCH2, CD53, SLC12A9, SLC15A4, CEMIP2, ADAM17, MPZL1 및 TACI는 MM 세포와 관련된 것으로 확인되었다. 따라서, 이들 펩티드는 MM을 치료하기 위한 면역-기반 치료 전략에 대한 표적을 나타낸다. 한 실시양태에 따르면, 이들 폴리펩티드 중 하나에 특이적으로 결합하는 항체가 제공된다. 한 실시양태에 따르면, 항체는 단일클론 항체이다. 또한, 단편이 전체 항체와 동일한 에피토프에 결합하는 능력을 보유하는 것인 항체 단편이 본 발명에 포함된다.

[0013] 한 실시양태에 따르면, 세포 표면 폴리펩티드 IL12RB1, CCR1, LILRB4, FCRL3, IFNGR1, SLAMF6, LAX1, SEMA4A, ITGA4, LRRC8D 및 CD320은 MM 세포와 관련된 것으로 확인되었다. 따라서, 이들 펩티드는 MM을 치료하기 위한 면역-기반 치료 전략에 대한 표적을 나타낸다. 한 실시양태에 따르면, 이들 폴리펩티드 중 하나에 특이적으로 결합하는 항체가 제공된다. 한 실시양태에 따르면, 항체는 단일클론 항체이다. 또한, 단편이 전체 항체와 동일한 에피토프에 결합하는 능력을 보유하는 것인 항체 단편이 본 발명에 포함된다.

[0014] 한 실시양태에 따르면, 서열번호 1-115로 이루어진 군으로부터 선택된 폴리펩티드에 결합하는 항체 또는 항체 단편이 제공된다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 1-10으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 11-20으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 21-30으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 31-40으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 41-50으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 51-60으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 61-70으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 71-80으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 81-90으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 91-100으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 101-110으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 111-120으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 121-130으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 131-140으로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다. 한 실시양태에 따르면, 항체 또는 항체 단편은 서열번호 141-147로 이루어진 군으로부터 선택된 폴리펩티드에 결합한다.

[0015] 한 실시양태에 따르면, 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 단일클론 항체가 제공된다. 한 실시양태에 따르면, 단일클론 항체가 제공되며, 여기서 항체는 서열번호 19, 서열번호 20, 서열번호 37, 서열번호 42, 서열번호; 54, 서열번호. 56, 서열 57, 서열번호 79, 서열번호 112 및 서열 번호 104로 이루어진 군으로부터 선택된 폴리펩티드와 적어도 90, 95 또는 99% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합한다.

[0016] 한 실시양태에 따르면, 단일클론 항체가 제공되며, 여기서 항체는 CCR1(서열번호 60), CD320(서열번호 56),

FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104), SLAMF6(서열번호 37) 및 TNFRSF17(서열번호 167)로 이루어진 군으로부터 선택된 폴리펩티드에 대해 적어도 90, 95 또는 99% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합한다.

[0017] 한 실시양태에 따르면, 단일클론 항체가 제공되며, 여기서 항체는 IL12RB1, CCR1(서열번호 60), LILRB4(서열번호 20), FCRL3(서열번호 57), IFNGR1(서열번호 79), SLAMF6(서열번호 37), SEMA4A(서열번호 104), ITGA4(서열번호 42), LRRC8D(서열번호 112) 및 CD320(서열번호 56)으로 이루어진 군으로부터 선택된 폴리펩티드에 대해 적어도 90, 95 또는 99% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합한다.

[0018] 한 실시양태에 따르면, 단일클론 항체가 제공되고, 여기서 항체는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 대해 적어도 90%, 95% 또는 99% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하고, 임의로, 폴리펩티드는 서열번호 156-106으로 이루어진 군으로부터 선택된다.

[0019] 한 실시양태에 따르면, 본원에 개시된 임의의 항체는 임의로, 항체에 결합된 검출가능한 마커 및/또는 세포독성제를 추가로 포함한다.

[0020] 한 실시양태에 따르면, 본원에 개시된 임의의 항체 중 2, 3, 4, 5, 6, 7, 8, 9 개 또는 그 초과를 포함하는 조성물이 제공되며, 여기서 복수의 항체는 각각 서열번호 1 내지 서열번호 155의 폴리펩티드에 의해 전시되는 상이한 에피토프에 결합한다.

[0021] 한 실시양태에 따르면, 본원에 개시된 임의의 항체는 고체 지지체에 결합된다. 한 실시양태에서 본원에 개시된 임의의 항체는 검출가능한 표지에 공유결합된다. 한 실시양태에서, 본원에 개시된 임의의 항체는 세포독성제와 공유결합된다.

[0022] 한 실시양태에 따르면, 키메라 항원 수용체(CAR)로서,

[0023] 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드의 하나 이상의 에피토프에 결합하는 항체 또는 그의 항원 결합 단편;

[0024] 경막 도메인; 및

[0025] T 세포 항원 수용체 사슬

[0026] 을 포함하며, 경막 도메인은 항체 또는 그의 항원 결합 단편을 T 세포 항원 수용체 사슬에 결합시키는 것인 키메라 항원 수용체(CAR)가 제공된다.

[0027] 한 실시양태에 따르면, 키메라 항원 수용체(CAR)로서,

[0028] 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드의 하나 이상의 에피토프에 특이적으로 결합하는 항체 단일사슬 가변 단편; 경막 도메인; 및 T 세포 항원 수용체 사슬을 포함하며, 경막 도메인은 항체 단일사슬 가변 단편을 T 세포 항원 수용체 사슬을 결합시키는 것인 하는 것인 키메라 항원 수용체(CAR)이 제공된다. 한 실시양태에서 키메라 항원 수용체의 T 세포 항원 수용체 사슬은 CD3ζ 사슬(제타-사슬)을 포함한다. 한 실시양태에서 키메라 항원 수용체는 서열번호 1-25로 이루어진 군으로부터 선택된 폴리펩티드, 또는 서열 25-50으로 이루어진 군으로부터 선택되는 폴리펩티드, 및 서열 50-75로 이루어진 군으로부터 선택된 폴리펩티드, 또는 서열번호 75-100으로 이루어진 군으로부터 선택되는 폴리펩티드, 및 서열번호 100-125으로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합한다. 한 실시양태에 따르면, 키메라 항원 수용체는 항체 단일사슬 가변 단편과 경막 도메인 사이에 위치하는 힌지 영역을 추가로 포함한다.

[0029] 한 실시양태에 따르면, 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 본 개시내용의 키메라 항원 수용체를 발현하도록 형질전환된 변형된 T 세포(CAR T 세포)가 제공된다. 한 실시양태에서, 키메라 항원 수용체의 T 세포 항원 수용체 사슬은 CD3ζ 사슬(제타-사슬)이다.

[0030] 한 실시양태에서, 임의로 약학적으로 허용되는 담체를 포함하는, 본원에 개시된 바와 같은 임의의 항체, 키메라 항원 수용체 또는 CAR T 세포를 포함하는 약학 조성물이 제공된다. 약학 조성물은 정맥내 또는 복강내를 비롯한 임의의 적합한 투여 경로를 위한 표준 기술을 사용하여 제제화될 수 있다.

[0031] 한 실시양태에 따르면, 다발성 골수종의 치료 방법이 제공된다. 한 실시양태에서, 방법은 그러한 치료를 필요로 하는 환자에게 치료량의 본 개시내용의 임의의 항체, 키메라 항원 수용체 또는 CAR T 세포를 투여하는 것을 포

함한다. 한 실시양태에서, 조성물은 본원에 개시된 바와 같은 임의의 항체, 키메라 항원 수용체 또는 CAR T 세포 및 약학적으로 허용되는 담체를 포함하는 약학 조성물로서 투여된다.

[0032] 한 실시양태에 따르면, MM을 치료하는 방법은 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 키메라 항원 수용체를 발현하는 CAR T 세포를 투여하는 것을 포함한다. 한 실시양태에서, 상기 치료는 항원 SLAMF7, CD38, GPRC5D, ITGB7, CD229, CD56, TACI, CD19 및 CD70을 포함하는 MM에서의 BCMA 또는 다른 공지된 표면 후보 표적에 대해 유도되는 CAR T 세포의 공동 투여를 포함한, 당업자에게 공지된 다른 공지의 치료법과 함께 수행된다.

도면의 간단한 설명

[0033] 도 1a 내지 1d는 표적 MM 유전자를 식별하기 위한 단계를 나타내고, 도 1a는 7개의 상이한 MM 세포주의 표면 단백질의 비오틴화와 그에 후속되는 분광 분석의 개략도이다. 각각의 세포주는 도시된 바와 같이 염색체 재배열과 p53 돌연변이의 특유한 조합을 보유한다. 이 분석은 4761 단백질에 해당하는 5,454 Uniprot ID의 식별을 유도한다. 도 1b는 세포 표면 분자 주석(annotation)을 위해 생성되는 데 사용되는 통합 데이터베이스의 개략적 표시이다. 각각의 리포지토리에 대해, 본 발명자들은 세포 표면 분자 주석 및 상대적 크기에 대해 사용된 방법론을 나타내었다. 이는 또한, 0이 세포 표면 위치에 있지 않은 단백질을 나타내고 5가 모든 5개의 리포지토리에서 검출된 단백질을 나타내는 스코어화 시스템의 역할을 하였다. 스코어당 ID의 수가 또한 표시된다. 다발성 골수종을 갖는 904명의 환자로부터 유래된 16,462개의 전사체는 세포 표면 분자에 대해 주석을 달았다. 도 1c는 1차 환자 샘플에서 세포주 및 RNA-seq에서 질량 분광 분석에 의해 검출된 바와 같이 3 이상의 스코어를 갖는 세포 표면 분자들 사이의 중첩을 보여주는 벤 다이어그램을 제시한다. 도 1d에 도시된 바와 같이, 세포 표면 분자의 발현 수준을 분석하고, 평균 환자 유전자 발현으로부터 1 SD 미만의 발현을 갖는 분자를 배제함으로써 326개의 표면 단백질이 추가의 분석을 위해 선택되었다.

도 2a-2c: 후보 표적의 강화 분석. 도 1d에서 선택된 326개의 표면 단백질을 STRING에 의해 분석하였다. 0.326의 평균 국소 기능적 및/또는 물리적 국소 클러스터링 계수, 및 <1.0e-16의 PPI 강화 p 값으로, 예상된 것(109)보다 더 높은 유의한 수의 엣지가 확인되었다(490). 황색이 가장 큰 클러스터이다. 가장 큰 클러스터(227/326 단백질)는 면역 경로와 관련된 기능적 강화를 갖는 단백질을 포함한다(도 2a). 다른 2개의 클러스터는 수송체 및 부착 분자를 포함한다(도 2b). KEGG 수집에 의한 가장 큰 클러스터의 추가적인 강화 분석은 도 2c에 도시되어 있다. Reactome 수집에 의한 가장 큰 클러스터의 추가의 강화 분석이 도시된다.

도 3은 잠재적인 생물학적 관련성(면역 관련 경로에 관여하는 227개 분자) 및 치료 관련성(정상 조직에서 최소 발현을 갖는 94개 분자)을 갖는 표적들을 중첩하는 벤 다이어그램을 제공한다. 67개의 공통 표적이 공통이다. 이들 67개의 표적 중 24개는 1차 환자에서 가장 유리한 발현 프로파일을 나타냈고, CCR1, CD28, CD320, FCRL3, IFNGR1, IL12RB1. IL27RA. IL2RG, IL6R, ITGA4, KCNN4, LAX1, LILRB1, LILRB4, LRRC8A, LRRC8D, PLXNA3, PLXNC1, S1PR4, SELPLG, SEMA4A, SLAMF6, TLR1 및 BCMA를 포함하는 환자 샘플에서 검증을 위해 사용되었다.

발명을 실시하기 위한 구체적인 내용

[0034] 정의

[0035] 달리 정의되지 않는 한, 본원에 사용된 모든 기술 및 과학 용어는 본 발명이 속하는 관련 기술분야의 통상의 기술자에 의해 통상적으로 이해되는 것과 동일한 의미를 갖는다.

[0036] 본원에 사용된 용어 "약"은 언급된 값 또는 값들의 범위보다 10%만큼 크거나 작은 것을 의미하지만, 임의의 값 또는 값들의 범위를 이러한 더 넓은 정의로만 나타내고자 한 것은 아니다. 용어 "약"이 선행되어 있는 각각의 값 또는 값들의 범위는 또한 언급된 절대 값 또는 값들의 범위의 실시양태를 포괄하고자 한 것이다.

[0037] 본원에서 사용될 때, 용어 "천연" 또는 "자연"은 자연에서 발견되는 조건을 정의한다. "천연 DNA 서열"은 천연 수단에 의해 생성되었지만 유전자 조작(예를 들어, 분자 생물학/형질전환 기술을 이용하는 것)에 의해 생성되지 않은, 자연에 존재하는 DNA 서열이다.

[0038] 본원에서 사용될 때, 용어 "고체 지지체"는 가용성 분자와 결합(바람직하게는 공유결합)을 형성할 수 있는 용매 불용성 기질에 관한 것이다. 지지체는 제한 없이 세포 또는 박테리오파지 입자와 같이 성질상 생물학적이거나, 또는 제한 없이 아크릴아미드 유도체, 유리, 플라스틱, 아가로스, 셀룰로스, 나일론, 실리카 또는 자화된 입자와 같은 합성적일 수 있다. 지지체는 입자 형태 또는 단일선 스트립 또는 시트일 수 있다. 이러한 지지체의 표

면은 고체 또는 다공성이고 임의의 편리한 형상일 수 있다.

[0039] 용어 "결합된" 또는 유사 용어는 2개의 기 사이의 연결을 지칭한다. 결합은 공유, 이온 또는 수소 결합, 또는 2개의 화합물 또는 물질을 서로 결합시키는 다른 상호작용을 포함할 수 있다.

[0040] 본원에서 사용될 때, 용어 "정제된" 및 유사 용어는 자연 환경에서 분자 또는 화합물과 정상적으로 회합된 다른 성분에 대비한, 분자 또는 화합물의 농후화에 관한 것이다. 용어 "정제된"은, 특정 분자의 완전한 순도가 공정 동안에 달성되었음을 반드시 나타내는 것은 아니다. 본원에 사용된 "고도로 정제된" 화합물은 90% 초과의 순도를 갖는 화합물을 지칭한다.

[0041] "치료제", "약학 제제" 또는 "약물"은 환자에서 질병, 통증, 질환 또는 부상의 치료(예방, 진단, 완화 또는 치유를 포함함)에 사용될 수 있는 임의의 치료제 또는 예방제를 지칭한다.

[0042] 본원에서 사용될 때, 용어 "약학적으로 허용되는 담체"는 임의의 표준 약학 담체, 예컨대 포스페이트 완충 염수 용액, 물, 에멀젼, 예컨대 오일/물 또는 물/오일 에멀젼, 및 다양한 유형의 습윤제를 포함한다. 상기 용어는 또한, 인간을 비롯한 동물에서 사용하도록, 미국 연방 정부의 규제 기관에 의해 승인되거나 미국 약전에 열거된 임의의 작용제를 포함한다.

[0043] 본원에서 사용될 때, 용어 "치료하는"은 특정 장애 또는 병태와 관련된 증상을 완화시키는 것 및/또는 상기 증상을 예방 또는 제거하는 것을 포함한다. 예를 들어, 암을 치료하는 것은, 암 세포의 성장 및/또는 분열을 예방하거나 느리게 하는 것뿐만 아니라 암 세포를 사멸시키는 것도 포함한다.

[0044] 본원에서 사용될 때, 용어 "항체"는 다중클론 또는 단일클론 항체 또는 그의 결합 단편, 예컨대 Fab, $F(ab')_2$ 및 Fv 단편을 지칭한다. 본원에 개시된 바와 같은 항체는 단일클론, 다중특이적, 인간 또는 키메라 항체, 단일사슬 항체, Fab 단편, F(ab') 단편, 항-이디오타입(항-Id) 항체(예컨대, 본 발명의 항체에 대한 항-Id 항체를 포함), 세포내로 제조된 항체(즉, 인트라바디), 및 이들 중 임의 것의 에피토프-결합 단편을 포함하나, 이들로 한정되지는 않는다. 본 발명의 면역글로불린 분자는 면역글로불린 분자의 임의의 유형(예컨대, IgG, IgE, IgM, IgD, IgA 및 IgY), 클래스(예컨대, IgG1, IgG2, IgG3, IgG4, IgA1 및 IgA2) 또는 서브클래스일 수 있다.

[0045] 본원에서 사용될 때, 본원에 기재된 항체의 용어 "생물학적 활성 단편"은 표적 에피토프에 대한 특이적 결합 능력을 보유하는 각각의 전장 항체의 천연 또는 합성 부분을 포함한다.

[0046] 본원에서 사용될 때, 용어 "비경구"는 피하, 정맥내 또는 근육내 투여를 포함한다.

[0047] 본원에서 사용될 때, "고발현"과 같은 발현 수준의 특성화는 문헌[Perna et al., Cancer Cell 32, 506-519. October 9, 2017]에서 확립된 파라미터를 기초로 하며, 상기 문헌의 교시내용은 본원에 명백하게 포함되어 있다. 3개의 단백질체 데이터베이스를 병합함으로써, 낮은 배지 및 고발현에 대한 컷오프가 확립되어 본 발명의 맥락에서 사용되었다.

[0048] **실시양태**

[0049] 본 개시내용은 MM에서의 세포 표면 후보 표적의 발현에 대한 출원인의 분석에 기초한다. 7개의 상이한 MM 세포주의 표면 단백질의 비오틴화와 그 후속의 분광 분석은 4761개의 단백질에 해당하는 5,454 Uniprot ID의 식별을 유도하였다. 도 1b에 상세히 나타낸 바와 같이, 통합된 데이터베이스를 이용하여 세포 표면 분자 주석을 생성하였다. 발현 수준에 기초한 세포 표면 분자 주석과 배제의 조합(도 1c 및 1d 참조)은 STRING에 의한 추가의 분석을 위해 326개의 표면 단백질을 식별하였다.

[0050] 히트맵은 전신의 여러 정상 조직 및 기관에서의 94개의 선택된 표적의 단백질 주석을 나타낸다. 이들 분자는 이전에 보고된 바와 같이 Human Protein Atlas, Human Protein Map 및 Proteomics 데이터베이스를 병합함으로써 선택되었다(Perna F et al., Cancer Cell 2017). 조혈 조직을 제외한 임의의 정상 조직에서 높은 발현을 갖는 분자는 제외하였다. 3개의 프로테오믹 데이터베이스 중 2개 미만에서 이용가능한 주석을 갖는 분자는 제외하였다. 94개의 표적은 세포 표면 폴리펩티드 IL12RB1, SLC5A3, CCR1, ANKH, IL27RA, S1PR4, TLR1, KCNA3, PSEN2, BCMA, IL2RG, LILRB4, IL6R, ITGB7, LRP10, FCRL3, IFNGR1, SLAMF6, SLCO3A1, LILRB1, PLXNA3, SLC17A5, CD28, LAX1, NEMP1, TMEM154, SEMA4A, C10orf54, ITM2C, LY9, SLAMF7, ITGA4, LRRC8A, LRRC8D, CD320, KCNN4, PLXNC1, CD37, SELPLG, DAGLB, ABCC4, ADAM9, CD4, CD180, CD48, CD40, MCUR1, ABCC5, IL6ST, LRP8, SLC5A6, SLC7A6, HLA-F, ICAM2, LEPROT, ITGAL, TMEM63A, CMTM7, IL10RB, NDC1, PTPRCAP, ANTXR2, ABCA7, FCGR2B, ACVR1B, STS, ABHD12, TNFRSF10A, HVCN1, SLC39A10, EMP3, ABCC1, SLC26A6, SLC6A6, CCR10, SLC30A1,

SLC231A1, ADCY3, IFNAR1, PTPRJ, CLDND1, SLC30A5, SLC6A9, ADAM15, IGF2R, INSR, NOTCH2, CD53, SLC12A9, SLC15A4, CEMIP2, ADAM17, MPZL1 및 TACI를 포함한다.

[0051] 잠재적인 생물학적 관련성(면역-관련 경로에 관여하는 227개의 분자) 및 치료 관련성(정상 조직에서 최소 발현을 갖는 94개의 분자)을 갖는 표적들을 중첩시킨 벤 다이어그램은 67개의 공통 표적을 밝혀냈다(도 3 참조). 이들 67개의 표적 중 24개는 1차 환자에서 가장 유리한 발현 프로파일을 나타냈고, CCR1, CD28, CD320, FCRL3, IFNGR1, IL12RB1. IL27RA. IL2RG, IL6R, ITGA4, KCNN4, LAX1, LILRB1, LILRB4, LRRC8A, LRRC8D, PLXNA3, PLXNC1, S1PR4, SELPLG, SEMA4A, SLAMF6, TLR1 및 BCMA을 포함하는 환자 샘플에서 검증을 위해 사용되었다.

[0052] 실시예 2에 기재된 바와 같은 추가의 분석은 일부 측면에서 면역요법제의 생성을 위한 표적인 생성물을 코딩하는 하기 12개의 유전자를 추가로 식별하였다: CCR1(서열목록 156), CD320(서열목록 157), FCRL3(서열목록 158), IFNGR1(서열목록 159), IL12RB1(서열목록 160), ITGA4(서열목록 161), LAX1(서열목록 162), LILRB4(서열목록 163), LRRC8D(서열목록 164), SEMA4A(서열목록 165), SLAMF6(서열목록 166) 및 TNFRSF17(서열목록 167).

[0053] 웨스턴 블롯 분석은 정상 제대혈 CD34+ 세포에 비해 25명의 MM 환자에서 11개의 선택된 표적의 발현을 식별하였으며, 이는 이들 단백질이 표적으로서 특히 관심 대상임을 보여준다. BCMA를 대조군으로서 사용하였다. VCP를 로딩 대조군으로서 사용하였다. 구체적으로, 식별된 단백질은 웨스턴 블롯 분석에 의한 IL12RB1, CCR1, LILRB4, FCRL3, IFNGR1, SLAMF6, LAX1, SEMA4A, ITGA4, LRRC8D 및 CD320을 포함한다.

[0054] 하나 이상의 실시양태에 따르면, 질량 분광 분석은 5,454 Uniprot ID를 밝혀내고, MMRF Compass는 16,462개의 전사체를 밝혀내었다. 이러한 분석의 공통적인 표적은 3 이상(=>3)의 표면 스코어를 갖는 총 401개의 단백질을 보여주었다. 1차 환자 샘플(MMRF)에서 고발현자(평균 발현이 중앙값보다 큼(>))와의 중첩을 결정하고, 각각의 유전자의 평균 발현을 계산하고; 저발현 유전자(평균보다 1 SD 미만)를 제거하고, 컷오프에 걸쳐 발현을 갖는 유전자를 선택하여 326개의 표면 단백질을 식별하였다.

[0055] 3개의 데이터베이스(HPA, HPM 및 PDB) 중 적어도 2개로부터의 정상 조직에서의 주석화, 및 조혈 조직을 제외한 임의의 조직에서의 높은 발현을 갖는 단백질의 배제는 326개의 표적 중에서 94개를 식별하였다. 면역-관련 + 치료 값의 분석은 이 수치를 67개의 표적으로 감소시켰다. 1차 MM 샘플에서 표준 위험 대 고위험 및 검증에서 감소된 발현을 갖는 고위험 세포유전학 제외 표적에서의 분석은, CCR1(서열목록 156), CD320(서열목록 157), FCRL3(서열목록 158), IFNGR1(서열목록 159), IL12RB1(서열목록 160), ITGA4(서열목록 161), LAX1(서열목록 162), LILRB4(서열목록 163), LRRC8D(서열목록 164), SEMA4A(서열목록 165), 및 SLAMF6(서열목록 166)로 식별된 11개의 표적을 생성한다.

[0056] 적어도 하나의 실시양태에 따르면, 서열번호 1-155로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드에 특이적으로 결합하는 항체가 제공된다. 일부 실시양태에서, (서열번호 156), (서열번호 157), (서열번호 158), (서열번호 159), (서열번호 160), (서열번호 161), (서열번호 162), (서열번호 163), (서열번호 164), (서열번호 165) 및 (서열번호 166)로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드에 특이적으로 결합하는 항체가 제공된다. 이러한 항체는 진단 목적을 위해 검출가능한 마커에 결합될 수 있다. 대안적으로, 항체는 세포독성제에 결합될 수 있고, 접합된 항체는 세포독소의 MM 세포로의 표적화된 전달을 위해 환자에게 투여될 수 있다.

[0057] 적어도 하나의 실시양태에서, 표 1에 개시된 펩타이드(서열번호 1-155)에 대해 생성된 항체, 또는 (서열목록 156), (서열목록 157), (서열목록 158), (서열목록 159), (서열목록 160), (서열목록 161), (서열목록 162), (서열목록 163), (서열목록 164), (서열목록 165) 및 (서열목록 166)으로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드는, 이후 키메라 항원 수용체(CAR)를 제조하기 위해 사용될 수 있는 항체 단일사슬 가변 단편을 생성하는 데 사용될 수 있다. 항체 단일사슬 가변 단편은 짧은 링커 펩티드와 연결된, 면역글로빈의 경쇄(VL) 및 중쇄(VH)로 구성된 키메라 단백질이다. 본 개시내용에 따르면, VL 및 VH 영역은 서열번호 1-155의 폴리펩티드, 또는 (서열목록 156), (서열목록 157), (서열목록 158), (서열목록 159), (서열목록 160), (서열목록 161), (서열목록 162), (서열목록 163), (서열목록 164), (서열목록 165), 및 (서열목록 166)로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드로부터 선택된 표적 항원에 대한 그의 결합능에 대해 미리 선택된다. 일부 실시양태에서, VL 및 VH 영역 사이의 링커는 가요성을 위해 그 내부에 글리신 및 세린의 스트레치(stretch)뿐만 아니라 부가된 용해도를 위해 글루타메이트 및 리신의 스트레치도 갖는 친수성 잔기로 이루어진다.

[0058] 일부 측면에서, 항체 단일사슬 가변 단편은, 이어서 일반적으로 경막 도메인을 통해 세포내 면역세포 신호전달

도메인에 공유결합되어 키메라 항원 수용체(CAR)를 생성할 수 있다. 일부 측면에서, 면역세포 신호전달 도메인은 T 세포, NK 세포, 대식세포 및/또는 골수 세포일 수 있다. 예를 들어, 일부 측면에서, 항체 단일사슬 가변 단편은 이어서 일반적으로 경막 도메인을 통해 세포내 T 세포 신호전달 도메인에 공유결합되어 키메라 항원 수용체(CAR)를 생성할 수 있다. 이러한 CAR은 면역세포, 예컨대 T 세포, NK 세포, 대식세포 및/또는 골수 세포에서 발현될 때, 면역세포에 특이적 단백질을 표적화하는 새로운 능력을 제공할 수 있다. 따라서, 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드, 또는 (서열목록 156), (서열목록 157), (서열목록 158), (서열목록 159), (서열목록 160), (서열목록 161), (서열목록 162), (서열목록 163), (서열목록 164), (서열목록 165) 및 (서열목록 166)으로 이루어진 군으로부터 선택되는 서열을 포함하는 폴리펩티드에 특이적으로 결합하는 CAR을 포함하는 CAR T 세포, NK 세포, 대식세포 및/또는 골수 세포를 사용하여 MM 환자를 치료할 수 있다. 특히, 일부 실시양태에서, CAR T 세포는 환자 자신의 세포를 단리하고, T 세포를 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드에 대한 특이성을 갖는 CAR을 코딩하는 핵산 서열로 형질전환시킴으로써 제조된다. 특히, 일부 실시양태에서, CAR T 세포는, 동종이계 T 세포를 제공하고 T 세포를 서열번호 1-155, 156-167 및 168-208로 이루어진 군으로부터 선택되는, 임의로 (서열목록 156), (서열목록 157), (서열목록 158), (서열목록 159), (서열목록 160), (서열목록 161), (서열목록 162), (서열목록 163), (서열목록 164), (서열목록 165) 및 (서열목록 166)으로 이루어진 군으로부터 선택되는 폴리펩티드에 특이성을 갖는 CAR을 인코딩하는 핵산 서열로 형질전환시킴으로써 제조된다. 임의의 상기 세포 유형에 대해, 자가 또는 동종이계 접근법이 이용될 수 있는 것으로 이해된다. 실시양태에 따르면, MM을 갖는 환자를 치료하는 방법은, 치료를 필요로 하는 MM 환자에게 1, 2, 3, 4, 5 이상의 CAR T 세포, CAR NK 세포, CAR 대식세포 및/또는 CAR 골수 세포를 투여하는 것을 포함하며, 여기서 CAR T 세포 각각은 서열번호 1-155로 이루어진 군으로부터 선택된 폴리펩티드, 또는 (서열목록 156), (서열목록 157), (서열목록 158), (서열목록 159), (서열목록 160), (서열목록 161), (서열목록 162), (서열목록 163), (서열목록 164), (서열목록 165), 및 (서열목록 166)로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드 상에 존재하는 상이한 항원을 표적화한다.

[0059] 적어도 하나의 실시양태에 따르면, CCR1(서열목록 156), CD320(서열목록 157), FCRL3(서열목록 158), IFNGR1(서열목록 159), IL12RB1(서열목록 160), ITGA4(서열목록 161), LAX1(서열목록 162), LILRB4(서열목록 163), LRRC8D(서열목록 164), SEMA4A(서열목록 165), SLAMF6(서열목록 166) 및 TNFRSF17(서열목록 167)의 유전자 생성물에 특이적으로 결합하는 항체가 제공된다. 한 실시양태에서, 서열번호 168-208로 이루어진 군으로부터 선택된 서열을 포함하는 폴리펩티드에 특이적으로 결합하는 항체가 제공된다. 이러한 항체는 진단 목적을 위해 검출 가능한 마커에 결합될 수 있다. 대안적으로, 항체는 세포독성제에 연결될 수 있고, 접합된 항체는 세포독소의 MM 세포로의 표적화된 전달을 위해 환자에게 투여될 수 있다.

[0060] 일부 실시양태에서, 표 1에 개시된 펩티드(서열번호 168-208)에 대해 생성된 항체는 항체 단일사슬 가변 단편을 생성하는 데 사용될 수 있고, 상기 단편은 이어서 키메라 항원 수용체(CAR)를 제조하는 데 사용될 수 있다. 항체 단일사슬 가변 단편은 짧은 링커 펩티드와 연결된 면역글로빈의 경쇄(VL) 및 중쇄(VH)로 구성된 키메라 단백질이다. 본 개시내용에 따르면, VL 및 VH 영역은 서열번호 168-208의 폴리펩티드로부터 선택된 표적 항원에 대한 그의 결합능에 대해 미리 선택된다. 한 실시양태에서, VL 및 VH 영역 사이의 링커는 가요성을 위해 그 내부에 글리신 및 세린의 스트레치뿐만 아니라 부가된 용해도를 위해 글루타메이트 및 리신의 스트레치도 갖는 친수성 잔기로 이루어진다.

[0061] 이어서, 항체 단일사슬 가변 단편은 일반적으로 경막 도메인을 통해 세포내 T 세포 신호전달 도메인에 공유결합되어 키메라 항원 수용체(CAR)를 생성할 수 있다. 이러한 CAR은 T 세포에서 발현될 때, T 세포에 특이적 단백질을 표적화하는 새로운 능력을 제공할 수 있다. 따라서, 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 CAR을 포함하는 CAR T 세포는 MM 환자를 치료하는 데 사용될 수 있다. 특히, 일부 실시양태에서, CAR T 세포는, 환자 자신의 세포를 단리하고 T 세포를 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 대한 특이성을 갖는 CAR을 코딩하는 핵산 서열로 형질전환시킴으로써 제조된다. 한 실시양태에 따르면, MM을 갖는 환자를 치료하는 방법은, 치료가 필요한 MM 환자에게 1, 2, 3, 4, 5 또는 그 초과의 CAR T 세포를 투여하는 것을 포함하며, 여기서 각각의 CART 세포는 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드 상에 존재하는 상이한 항원을 표적화한다.

[0062] 한 실시양태에 따르면, 본 개시내용의 CAR의 경막 도메인은 세포막에 걸쳐 있는 소수성 알파 나선을 포함한다. 이것은 CAR을 원형질막에 고정시켜, 세포외 항원 인식 도메인(즉, 항체 단일사슬 가변 단편)을 세포내 신호전달 영역과 가교시킨다. 한 실시양태에서, CAR은 항원 인식 도메인과 경막 도메인 사이에 위치하는 힌지 영역을 추가로 포함한다. 이상적인 힌지는 scFv 수용체 헤드의 가요성을 향상시켜, CAR과 그의 표적 항원 사이의 공간적

제약을 감소시킨다. 이는 CAR-T 세포와 표적 세포 사이의 항원 결합 및 시냅스 형성을 촉진한다. 한 실시양태에서, 힌지 서열은 IgG, CD8 및 CD28을 포함한 다른 면역 분자로부터의 막 근위 영역을 기초로 한다.

[0063] CAR의 세포내 T 세포 신호전달 도메인은, 세포가 발현될 때, 세포 내부에 남잔류할 것이다. 항원이 외부 항원 인식 도메인에 결합된 후, CAR 수용체는 함께 클러스터링되고 활성화 신호를 전달한다. 이어서, 수용체의 내부 세포질 말단은 T 세포 내부에서 신호전달을 지속한다. 정상 T 세포 활성화는 CD3-제타의 세포질 도메인에 존재하는 면역수용체 티로신-기반 활성화 모티프(ITAM)의 인산화에 의존한다. 이 과정을 모방하기 위해, 한 실시양태에서 본 개시내용의 CAR은 주요 CAR 엔도도메인 성분으로서 CD3-제타의 세포질 도메인을 포함한다.

[0064] T 세포는 또한, 활성화 후에 지속되기 위해서 CD3 신호전달 이외에 공동-자극 분자를 필요로 한다. 추가의 실시양태에서, CAR 수용체의 엔도도메인은 또한 당업자에게 공지된 공동-자극 단백질로부터의 하나 이상의 키메라 도메인을 포함한다. CD28, CD27, CD134(OX40) 및 CD 137을 포함한, 매우 다양한 공동-자극 분자로부터의 신호전달 도메인이 성공적으로 시험되었다. 추가의 실시양태에서, CD28 또는 4-1BB, CD28-41BB 또는 CD28-OX40과 같은 공동-자극 도메인, 및 사이토카인, 예컨대 IL-2, IL-5 및 IL-12가 CAR 수용체의 엔도도메인에 첨가되어 T 세포 활성을 증대시킬 수 있다.

[0065] 실시양태 1에 따르면, 표적 다발성 골수종 관련 표면 항원을 식별하는 방법이 제공되며, 상기 방법은

[0066] 제1 다발성 골수종 샘플 및 제2 다발성 골수종 샘플에서 세포 표면 단백질을 발현하는 복수의 유전자를 식별하는 단계;

[0067] 조혈 세포와 무관한 대조군 유전자보다 높은 발현 수준을 갖는 상기 제1 다발성 골수종 샘플로부터의 핵산을 선택하고, 검출되는 상승 발현된 핵산에 상응하는 단백질을 식별하여, 선택된 단백질의 제1 풀을 지정하는 단계;

[0068] 상기 제2 골수종 샘플로부터 단리된 단백질에 대해 질량 분광 분석을 수행하여, 정상 조직에 비해 상기 제2 다발성 골수종에서 더 높은 농도로 존재하는 단백질을 식별하는 단계로서, 이러한 단백질은 선택된 단백질의 제2 풀을 나타내는 것인 단계;

[0069] 뇌, 척수, 장, 간 및 신장에서 높은 발현을 갖는 단백질을 상기 제1 풀 및 제2 풀로부터 배제하여, 단백질의 변형된 제1 풀 또는 제2 풀을 생성하는 단계; 및

[0070] 상기 단백질의 변형된 제1 풀 및 제2 풀에 공통적인 단백질을 표적 다발성 골수종 관련 표면 항원으로서 식별하는 단계

[0071] 를 포함한다.

[0072] 실시양태 2에 따르면, 실시양태 1에 있어서, 상기 제1 다발성 골수종 샘플 및 상기 제2 다발성 골수종 샘플은 동일한 조직 공급원으로부터 채취되는 것인 방법이 제공된다.

[0073] 실시양태 3에 따르면, 실시양태 1에 있어서, 상기 제1 다발성 골수종 샘플은 다발성 골수종(MM) 환자로부터의 발현된 유전자의 핵산 풀이고, 상기 제2 다발성 골수종 샘플은 MM 세포주에서 발현된 단백질을 나타내는 것인 방법이 제공된다.

[0074] 실시양태 4에 따르면, 실시양태 1 내지 3 중 어느 하나에 있어서, 표적 다발성 골수종 관련 표면 항원은, 정상 조직 샘플의 단백질 발현 수준 분포의 정상 피크 아래에서 약 1 초과의 표준편차인, 정상 조직 샘플에서의 발현 수준을 갖는 것인 방법이 제공된다.

[0075] 실시양태 5에 따르면, 실시양태 1-4 중 어느 하나에 있어서, mRNA는, 선택된 단백질의 제1 풀에 대한 단백질을 식별하기 위해 사용되는 핵산의 발현 수준을 결정하기 위해 측정되는 것인 방법이 제공된다.

[0076] 실시양태 6에 따르면, 실시양태 1-5 중 어느 하나에 있어서, 단백질은 실시예 2에 개시된 5개의 공개된 데이터베이스에 대해 스코어를 배정하는 통합적 계산 도구의 사용에 기초하여 세포 표면 단백질로서 식별되는 것인 방법이 제공된다.

[0077] 실시양태 7에 따르면, 실시양태 1-5 중 어느 하나에 있어서, 상기 단백질의 제1 풀은,

[0078] 다발성 골수종 환자로부터의 RNA-seq 데이터세트를 분석하여, 실시예 2에 개시된 5개의 공개된 데이터베이스에 대한 스코어를 배정하는 통합 계산 도구의 사용에 기초하여 표면 표적을 식별하는 단계;

[0079] 저발현 유전자(평균의 1 SD 미만)를 회수하는 단계; 및

[0080] 조혈 조직을 제외한 임의의 정상 조직에서 높은 발현을 갖는 단백질을 제외하는 단계

[0081] 에 의해 식별되며; 나머지 단백질은 상기 단백질의 제1 풀을 구성하는 것인 방법이 제공된다.

[0082] 실시양태 8에 따르면, 표적 다발성 골수종 관련 표면 항원을 식별하는 방법이 제공되며, 상기 방법은

[0083] 다발성 골수종 환자로부터의 RNA-seq 데이터세트를 분석하여, 실시예 2에 개시된 5개의 공개된 데이터베이스에 대한 스코어를 배정하는 통합 계산 도구의 사용에 기초하여 표면 표적을 식별하는 단계;

[0084] 저발현 유전자(평균의 1 SD 미만)를 회수하는 단계; 및

[0085] 조혈 조직을 제외한 임의의 정상 조직에서 높은 발현을 갖는 단백질을 제외하는 단계

[0086] 를 포함하며; 나머지 단백질은 표적 다발성 골수종 관련 표면 항원을 구성한다.

[0087] 실시양태 9에 따르면, 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 단일클론 항체, 또는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 폴리펩티드와 적어도 90, 95 또는 99% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 단일클론 항체가 제공된다.

[0088] 실시양태 10에 따르면, 실시양태 9에 있어서, 항체는 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체가 제공된다.

[0089] 실시양태, 11에 따르면, 실시양태 9에 있어서, 항체는 서열번호 19, 서열번호 20, 서열번호 37, 서열번호 42, 서열번호 54, 서열번호 56, 서열번호 57, 서열번호 79, 서열번호 112 및 서열번호 104로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체가 제공된다.

[0090] 실시양태 12에 따르면, 실시양태 9-11 중 어느 하나에 있어서, 항체는 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체가 제공된다.

[0091] 실시양태 13에 따르면, 실시양태 9-12 중 어느 하나에 있어서, 항체는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체가 제공된다.

[0092] 실시양태 14에 따르면, 실시양태 9-12 중 어느 하나에 있어서, 항체는 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 단일클론 항체가 제공된다.

[0093] 실시양태 15에 따르면, 실시양태 9-14 중 어느 하나에 있어서, 상기 항체는 항체에 공유결합된 검출가능한 표지를 추가로 포함하는 것인 단일클론 항체가 제공된다.

[0094] 실시양태 16에 따르면, 실시양태 9-14 중 어느 하나에 있어서, 상기 항체는 항체에 결합된 세포독성제를 추가로 포함하는 것인 단일클론 항체가 제공된다.

[0095] 실시양태 17에 따르면, 키메라 항원 수용체(CAR)로서,

[0096] 실시양태 9-15 중 어느 하나의 항체 또는 그의 항원 결합 단편;

[0097] 경막 도메인; 및

[0098] 면역세포 항원 수용체 사슬

[0099] 을 포함하며, 경막 도메인은 항체 또는 그의 항원 결합 단편을 면역세포 항원 수용체 사슬에 결합시키는 것인 키메라 항원 수용체(CAR)가 제공된다.

[0100] 실시양태 18에 따르면, 실시양태 17에 있어서, 항체 또는 그의 항원 결합 단편은, 서열번호 168-208로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수용체가 제공된다.

[0101] 실시양태 19에 따르면, 실시양태 17에 있어서, 항체 또는 그의 항원 결합 단편은 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 서열 동일성을 갖는 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수

용체가 제공된다.

[0102] 실시양태 20에 따르면, 실시양태 17에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 90% 상동성을 갖는 폴리펩티드의 하나 이상의 에피토프에 결합하는 것인 키메라 항원 수용체가 제공된다.

[0103] 실시양태 21에 따르면, 실시양태 17에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 1-155 또는 168-208로 이루어진 군으로부터 선택된 서열에 대해 적어도 95% 상동성을 갖는 폴리펩티드의 하나 이상의 에피토프에 결합하는 것인 키메라 항원 수용체가 제공된다.

[0104] 실시양태 22에 따르면, 실시양태 17에 있어서, 항체 또는 그의 항원 결합 단편은 서열번호 19, 서열번호 20, 서열번호 37, 서열번호 42, 서열번호 54, 서열번호 56, 서열번호 57, 서열번호 79, 서열번호 112 및 서열번호 104로 이루어진 군으로부터 선택된 폴리펩티드에 특이적으로 결합하는 것인 키메라 항원 수용체가 제공된다.

[0105] 실시양태 23에 따르면, 실시양태 17-22 중 어느 하나에 있어서, 상기 항체 또는 항원 결합 단편은 항체 단일사슬 가변 단편을 포함하는 것인 키메라 항원 수용체가 제공된다.

[0106] 실시양태 24에 따르면, 실시양태 23에 있어서, 항체 단일사슬 가변 단편과 경막 도메인 사이에 위치하는 힌지 영역을 추가로 포함하는 키메라 항원 수용체가 제공된다.

[0107] 실시양태 25에 따르면, 실시양태 16-23 중 어느 하나의 키메라 항원 수용체를 발현하도록 변형된 T 세포가 제공된다.

[0108] 실시양태 26에 따르면, 실시양태 25에 있어서, T 세포는 종양 침윤 백혈구인 T 세포가 제공된다.

[0109] 실시양태 27에 따르면, 실시양태 17-24 중 어느 하나의 키메라 항원 수용체를 발현하도록 변형된 NK 세포가 제공된다.

[0110] 실시양태 28에 따르면, 실시양태 17-24 중 어느 하나의 키메라 항원 수용체를 발현하도록 변형된 골수 세포가 제공된다.

[0111] 실시양태 29에 따르면, 실시양태 17-24 중 어느 하나의 키메라 항원 수용체를 발현하도록 변형된 대식세포가 제공된다.

[0112] 실시양태 30에 따르면, 실시양태 25 또는 26에 있어서, T 세포 항원 수용체 사슬은 CD3ζ 사슬(제타 사슬)인 T 세포가 제공된다.

[0113] 실시양태 31에 따르면, 실시양태 9-16 중 어느 하나의 항체, 실시양태 17-24 중 어느 하나의 키메라 항원 수용체, 실시양태 25 또는 26의 T 세포, 실시양태 27의 NK 세포, 실시양태 28의 골수 세포 또는 실시양태 29의 대식세포를 포함하는 약학 조성물이 제공된다.

[0114] 실시양태 32에 따르면, 다발성 골수종을 치료하는 방법이 제공되며, 상기 방법은, 이러한 치료를 필요로 하는 환자에게 실시양태 31의 약학 조성물을 투여하는 것을 포함한다.

[0115] 실시양태 33에 따르면, 단리된 면역반응성 세포가 제공되며, 여기서 세포는 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)로 이루어진 군으로부터 선택된 폴리펩티드, 또는 임의의 상기 단백질에 대해 90, 95 또는 99%의 서열 동일성을 갖는 폴리펩티드 상에 존재하는 항원에 결합하는 항원 인식 수용체를 포함한다.

[0116] 실시양태 34에 따르면, 실시양태 33에 있어서, 항원은 IL12RB1(서열번호 19), LILRB4(서열번호 20), SLAMF6(서열번호 37), CCR1(서열번호 60) 및 CD320(서열번호 56)으로 이루어진 군으로부터 선택되는 것인 단리된 면역반응성 세포가 제공된다.

[0117] 실시양태 35에 따르면, 실시양태 33 또는 34에 있어서, 상기 항원 인식 수용체는 T 세포 수용체(TCR) 또는 키메라 항원 수용체(CAR)인 단리된 면역반응성 세포가 제공된다.

[0118] 실시양태 36에 따르면, 실시양태 35에 있어서, 상기 항원 인식 수용체는 CAR인 단리된 면역반응성 세포가 제공된다.

[0119] 실시양태 37에 따르면, 실시양태 36에 있어서, 상기 CAR의 세포내 신호전달 도메인이 CD3C-사슬, CD97, CD1 1a-

CD 18, CD2, ICOS, CD27, CD 154, CD8, OX40, 4-IBB, CD28 신호전달 도메인, 또는 이들의 조합인 단리된 면역반응성 세포가 제공된다.

[0120] 실시양태 38에 따르면, 실시양태 33-37에 있어서, 세포는 T 세포, 자연 살해(NK) 세포, 세포독성 T 림프구(CTL), 조절성 T 세포, 자연 살해 T(NKT) 세포, 인간 배아 줄기 세포, 및 림프계 세포가 분화될 수 있는 만능 줄기 세포로 이루어진 군으로부터 선택되는 것인 단리된 면역반응성 세포가 제공된다.

[0121] 실시양태 39에 따르면, 단리된 면역반응성 세포로서,

[0122] (a) 제1 항원에 결합하는 제1 항원 인식 수용체, 및

[0123] (b) 제2 항원에 결합하는 제2 항원 인식 수용체

[0124] 를 포함하며, 제1 항원 및 제2 항원은 각각 CCR1(서열번호 60), CD320(서열번호 56), FCRL3(서열번호 57), IFNGR1(서열번호 79), IL12RB1(서열번호 19), ITGA4(서열번호 42), LILRB4(서열번호 20), LRRC8D(서열번호 112), SEMA4A(서열번호 104) 및 SLAMF6(서열번호 37)으로 이루어진 군으로부터 선택되고, 제1 항원과 상기 제2 항원은 상이한 것인 단리된 면역반응성 세포가 제공된다.

[0125] 실시양태 40에 따르면, 실시양태 37에 있어서, 상기 항원 인식 수용체는 각각 T 세포 수용체(TCR) 또는 키메라 항원 수용체(CAR)이고, 임의로 상기 항원 인식 수용체는 각각 CAR인 단리된 면역반응성 세포가 제공된다.

[0126] 실시양태 41에 따르면, 유효량의 실시양태 33-40 중 어느 하나의 면역반응성 세포를 대상체에게 투여하는 것을 포함하는, 대상체에서 종양 부담(tumor burden)을 감소시키는 방법이 제공된다.

[0127] 실시예 1

[0128] <표면 비오틴화 및 MS 분석>

[0129] 다발성 골수종이 현저한 분자 이질성을 특징으로 하기 때문에, 7개의 공지된 별개의 MM 세포주를 추가의 분석을 위해 선택하였다. 7개의 세포주는 하기 표 1에 개시된 바와 같이, p53 돌연변이 및 t(4;14)를 보유하는 OPM-2, t(4;14) 및 8q+를 갖는 NCI-H929, t(14;16) 및 t(8;14)를 갖는 JJN3, p53 null과 t(4;14), t(14;16) 및 t(8;14)을 갖는 KMS11, U266 p53 mut 및 t(11;14), p53 WT 및 t(12;14)를 갖는 AMO-1, 및 p53 mut, t(16;22), t(8;22) 및 KRas mut를 갖는 RPMI-8226이다.

표 1

표 1. 질량 스펙트럼 분석에 사용된 MM 세포주

[0130]

	세포주	분자 유전학	BCMA 발현 수준 (유세포 분석)	TP53 상태
1	OPM-2	t(4;14)	+++	Mut
2	NCI-H929	t(4;14) + 8q+	+++	WT
3	JJN3	t(14;16) + t(8;14)	++ (60%)	+/-
4	KMS11	t(4;14) + t(14;16) + t(8;14)	+++	Null
5	U266	t(11;14)	+++	Mut
6	AMO-1	t(12;14)	+++	WT
7	RPMI-8226	t(16;22) + t(8;22)	+++	Mut

[0131] 특유한 유전적 이상을 보유하는 이들 7종의 다발성 골수종 세포주의 표면 특이적 단백질체 분석을, 비오틴 표지와 그 후속의 질량 분광 분석(MS)을 이용하여 수행하였다. 세포 표면 단백질을 살아있는 세포 상에서 비오틴으로 표지하고; 이어서 비오틴 태그된 단백질을 아비딘 비드 상에 포획하고, 트립신으로 소화시키고, 질량 분광법 및 데이터 독립적 주석(DIA)에 의해 분석하였다.

[0132] 보다 특히는, 비오틴에 의한 표지는, 표면 단백질만이 비오틴화 시약에 노출되는 것을 보장하는 절차를 이용하여 수행하였다. Pierce® 세포 표면 단백질 비오틴화 및 단리 키트(Thermo Fisher, A44390)를, 표면 단백질의 표지 및 단리에 사용하였다. 간략하게는, 세포를 막-불투과성 술포-NHS-SS-비오틴 시약과 함께 실온에서 10분 동안 인큐베이션하고, 인큐베이션 후에 과량의 표지 시약을 제거하고, 세포를 수회 세정하여, 임의의 미결합 표

지 시약을 제거한 후에 용해시켰다. 비오틴화된 단백질을 뉴트라비딘 수지 상에 포획하고, 임의의 비특이적 결합된 비오틴화되지 않은 단백질을 수지의 반복적인 세정에 의해 제거하였다. MS 분석 전에, 뉴트라비딘 수지 상의 결합된 비오틴화 단백질을, 트립신 절단에 의해 수지로부터 밤새 방출시켰다. 소화된 펩티드를 탈염시키고, StageTip를 사용하여 정제하고, 탈염된 펩티드는 170분 LC 구배를 이용하는 LC-MS/MS 및 Orbitrap Fusion 상의 DIA 방법에 의해 분석하였다. 샘플 특이적 라이브러리(SSL)를, 각각의 샘플로부터 동일한 양의 소화된 단백질을 사용하여 생성하였다. MS 미가공 데이터를 Spectronaut 소프트웨어를 사용하여 SSL로 검색하였다. 표지 유리 정량화(LFQ)를 이용하여 단백질 발현 정량화를 수행하였다. 이는 4,761 단백질에 해당하는 5,454 Uniprot ID의 편향되지 않은 풀을 생성시켰다.

표 2

표 2. 질량 분광 분석에 의해 식별된 155개의 단백질.

[0133]

단백질 명칭	유전자 명칭	단백질 서열
탄저균 독소 수용체 2(모세혈관 형태형성 유전자 2 단백질)(CMG-2)	ANTXR2 CMG2	서열번호 1
C형 렉틴 도메인 패밀리 1 구성원 A(C형 렉틴 유사 수용체 1)(CLEC-1)	CLEC1A CLEC1 UNQ569/PRO1131	서열번호 2
T 세포 특이적 표면 당단백질 CD28(TP44)(CD 항원 CD28)	CD28	서열번호 3
보체 수용체 유형 2(Cr2)(보체 C3d 수용체)(엡스타인-바 바이러스 수용체)(EBV 수용체)(CD 항원 CD21)	CR2 C3DR	서열번호 4
T 세포 표면 당단백질 CD8 베타 사슬(CD 항원 CD8b)	CD8B CD8B1	서열번호 5

Y+L 아미노산 수송체 2 (양이온성 아미노산 수송체, y+ 시스템) (용질 운반체 패밀리 7 구성원 6) (y(+)L형 아미노산 수송체 2) (Y+LAT 2) (y+LAT-2)	SLC7A6 KIAA0245	서열번호 6
용질 운반체 패밀리 52, 리보플라빈 수송체, 구성원 2(돼지 내인성 레트로바이러스 A 수용체 1)(PERV-A 수용체 1)(단백질 GPR172A)(리보플라빈 수송체 3)(hRFT3)	SLC52A2 GPR172A PAR1 RFT3	서열번호 7
종양 괴사 인자 수용체 슈퍼패밀리 구성원 5(B-세포 표면 항원 CD40)(Bp50)(CD40L 수용체)(CDw40)(CD 항원 CD40)	CD40 TNFRSF5	서열번호 8
나트륨 결합 중성 아미노산 수송체 1(아미노산 수송체 A1) (N-시스템 아미노산 수송체 2) (용질 운반체 패밀리 38 구성원 1) (시스템 A 아미노산 수송체 1) (시스템 N 아미노산 수송체 1)	SLC38A1 ATA1 NAT2 SAT1 SNAT1	서열번호 9
T 세포 표면 당단백질 CD4(T 세포 표면 항원 T4/Leu-3)(CD 항원 CD4)	CD4	서열번호 10
백혈구 항원 CD37(테트라스파닌-26)(Tspan-26)(CD 항원 CD37)	CD37 TSPAN26	서열번호 11
CD180 항원(림프구 항원 64)(방사선 보호 105 kDa 단백질)(CD 항원 CD180)	CD180 LY64 RP105	서열번호 12
부착 G 단백질 결합 수용체 E2(EGF-유사 모듈 수용체 2)(EGF-유사 모듈-함유 뮤신-유사 호르몬 수용체-유사 2)(CD 항원 CD312)	ADGRE2 EMR2	서열번호 13
골수 세포 표면 항원 CD33(시알산 결합 Ig 유사 렉틴 3)(Siglec-3)(gp67)(CD 항원 CD33)	CD33 SIGLEC3	서열번호 14
인지질 수송 ATPase ABCA7 (EC 7.6.2.1) (ABC A-SSN) (ATP-결합 카세트 서브패밀리 A 구성원 7) (자가항원 SS-N) (대식세포 ABC 수송체)	ABCA7	서열번호 15
나트륨 의존형 종합비타민 수송체(Na(+) 의존형 종합비타민 수송체) (용질 운반체 패밀리 5 구성원 6)	SLC5A6 SMVT	서열번호 16

[0134]

류코시알린(GPL115)(갈락토당단백질)(GALGP)(백혈구 시알로당단백질)(시알로포린)(CD 항원 CD43) [CD43 세포질 꼬리(CD43-ct)(CD43ct)로 절단]	SPN CD43	서열번호 17
인테그린 알파-L(CD11 항원 유사 패밀리 구성원 A)(백혈구 부착 당단백질 LFA-1 알파 사슬)(LFA-1A)(백혈구 기능 관련 분자 1 알파 사슬)(CD 항원 CD11a)	ITGAL CD11A	서열번호 18
인터루킨-12 수용체 서브유닛 베타-1(IL-12 수용체 서브유닛 베타-1) (IL-12R 서브유닛 베타-1) (IL-12R-베타-1) (IL-12RB1) (IL-12 수용체 베타 성분) (CD 항원 CD212)	IL12RB1 IL12R IL12RB	서열번호 19
백혈구 면역글로불린 유사 수용체 서브패밀리 B 구성원 1(LIR-1) (백혈구 면역글로불린 유사 수용체 1) (CD85 항원 유사 패밀리 구성원 J) (면역글로불린 유사 전사체 2) (ILT-2) (단핵구/대식세포 면역글로불린 유사 수용체 7) (MIR-7) (CD 항원 CD85j)	LILRB1 ILT2 LIR1 MIR7	서열번호 20
T-림프구 표면 항원 Ly-9(세포 표면 분자 Ly-9)(림프구 항원 9)(SLAM 패밀리 구성원 3)(SLAM F3)(신호 림프구 활성화 분자 3)(CD 항원 CD229)	LY9 CDABP0070	서열번호 21
디스인테그린 및 메탈로프로테이나제 도메인 함유 단백질 28(ADAM 28)(EC 3.4.24.-)(부고환 메탈로프로테이나제 유사, 디스인테그린 유사 및 시스테인이 풍부한 단백질 II)(eMDC II)(메탈로프로테이나제 유사, 디스인테그린 유사, 및 시스테인이 풍부한 단백질 L)(MDC-L)	ADAM28 ADAM23 MDCL	서열번호 22
상피막 단백질 3(EMP-3)(조혈 신경막 단백질 1)(HNMP-1)(단백질 YMP)	EMP3 YMP	서열번호 23
저밀도 지단백질 수용체 관련 단백질 10(LRP-10)	LRP10 MSTP087 SP220 UNQ389/PRO724	서열번호 24
수용체형 티로신-단백질 포스파타제 C(EC 3.1.3.48)(백혈구 공통 항원)(L-CA)(T200)(CD 항원 CD45)	PTPRC CD45	서열번호 25
사이토카인 수용체 공통 서브유닛 감마(인터류킨-2 수용체 서브유닛 감마) (IL-2 수용체 서브유닛 감마) (IL-2R 서브유닛 감마) (IL-2RG) (감마C) (p64) (CD 항원 CD132)	IL2RG	서열번호 26

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종양 괴사 인자 수용체 슈퍼패밀리 구성원 17(B-세포 성숙 단백질)(CD 항원 CD269)	TNFRSF17 BCM BCMA	서열번호 27
종양 괴사 인자 수용체 슈퍼패밀리 구성원 10A(사망 수용체 4)(TNF 관련 세포자멸사 유도 리간드 수용체 1)(TRAIL 수용체 1)(TRAIL-R1)(CD 항원 CD261)	TNFRSF10A APO2 DR4 TRAILR1	서열번호 28
SLAM 계열 구성원 7(CD2 서브세트 1)(CD2 유사 수용체 활성화 세포독성 세포)(CRACC)(막 단백질 FOAP-12)(Novel Ly9)(단백질 19A)(CD 항원 CD319)	SLAMF7 CS1 UNQ576/PRO1138	서열번호 29
종양 괴사 인자 수용체 슈퍼패밀리 구성원 1B(종양 괴사 인자 수용체 2)(TNF-R2)(종양 괴사 인자 수용체 유형 II)(TNF-RII)(TNFR-II)(p75)(p80 TNF-알파 수용체)(CD 항원 CD120b) (Etanercept) [종양 괴사 인자 수용체 슈퍼패밀리 구성원 1b, 막 형태; 종양 괴사 인자 결합 단백질 2(TBP-2)(TBPII)로 절단]	TNFRSF1B TNFBR TNFR2	서열번호 30
백혈구 관련 면역글로불린 유사 수용체 1(LAIR-1)(hLAIR1)(CD 항원 CD305)	LAIR1 CD305	서열번호 31
Toll-유사 수용체 1(EC 3.2.2.6)(Toll/인터루킨-1 수용체-유사 단백질)(TIL)(CD 항원 CD281)	TLR1 KIAA0012	서열번호 32
톨 유사 수용체 7	TLR7 UNQ248/PRO285	서열번호 33
종양 괴사 인자 수용체 슈퍼패밀리 구성원 18(활성화 유도성 TNFR 패밀리 수용체)(글루코코르티코이드 유도 TNFR 관련 단백질)(CD 항원 CD357)	TNFRSF18 AITR GITR UNQ319/PRO364	서열번호 34
종양 괴사 인자 수용체 슈퍼패밀리 구성원 8(CD30L 수용체)(Ki-1 항원)(림프구 활성화 항원 CD30)(CD 항원 CD30)	TNFRSF8 CD30 D1S166E	서열번호 35
인터페론 알파/베타 수용체 2(IFN-R-2)(IFN-알파 결합 단백질)(IFN-알파/베타 수용체 2)(인터페론 알파 결합 단백질)(I형 인터페론 수용체 2)	IFNAR2 IFNABR IFNARB	서열번호 36
SLAM 패밀리 구성원 6(NK 수용체 활성화)(NK-TB-항원)(NTB-A)(CD 항원 CD352)	SLAMF6 KALI UNQ6123/PRO20080	서열번호 37

종양 괴사 인자 수용체 슈퍼패밀리 구성원 10D(디코이 수용체 2)(DcR2)(TNF 관련 세포자살 유도 리간드 수용체 4)(TRAIL 수용체 4)(TRAIL-R4)(절단된 사멸 도메인을 갖는 TRAIL 수용체)(CD 항원 CD264)	TNFRSF10D DCR2 TRAILR4 TRUNDD UNQ251/PRO288	서열번호 38
P-셀렉틴 당단백질 리간드 1(PSGL-1)(셀렉틴 P 리간드)(CD 항원 CD162)	SELPLG	서열번호 39
T-세포 표면 단백질 촉각(세포 표면 항원 CD96)(T 세포 활성화 증가된 후기 발현 단백질)(CD 항원 CD96)	CD96	서열번호 40
포리민 (각막세포 관련 막간단백질 3) (KCT-3) (전-종양증 수용체 유도 막손상) (막간단백 123)	TMEM123 KCT3 PSEC0111 UNQ641/PRO1271	서열번호 41
인테그린 알파-4(CD49 항원 유사 패밀리 구성원 D)(인테그린 알파-IV)(VLA-4 서브유닛 알파)(CD 항원 CD49d)	ITGA4 CD49D	서열번호 42
G-단백질 결합 수용체 15(Bonzo의 형제)(BoB)	GPR15	서열번호 43
다제 내성 관련 단백질 1(EC 7.6.2.2)(ATP-결합 카세트 서브패밀리 C 구성원 1)(글루타티온-S-접합체-전위 ATPase ABCC1)(EC 7.6.2.3)(류코트리엔 C(4) 수송체)(LTC4 수송체)	ABCC1 MRP MRP1	서열번호 44
CX3C 케모카인 수용체 1(C-X3-C CKR-1)(CX3CR1)(베타 케모카인 수용체-유사 1)(CMK-BRL-1)(CMK-BRL1)(프랙트알킨 수용체)(G-단백질 결합 수용체 13)(V28)	CX3CR1 CMKBRL1 GPR13	서열번호 45
B-림프구 항원 CD20(B-림프구 표면 항원 B1)(Bp35)(백혈구 표면 항원 Leu-16)(막 관통 4-도메인 서브패밀리 A 구성원 1)(CD 항원 CD20)	MS4A1 CD20	서열번호 46
HLA 클래스 II 조직적합성 항원, DM 베타 사슬(MHC 클래스 II 항원 DMB) (정말 흥미로운 신규한 유전자 7 단백질)	HLA-DMB DMB RING7	서열번호 47
저친화성 면역글로불린 감마 Fc 영역 수용체 II-b(IgG Fc 수용체 II-b)(CDw32)(Fc-감마 RII-b)(Fc-감마-RIIb)(FcRII-b)(CD 항원 CD32)	FCGR2B CD32 FCG2 IGFR2	서열번호 48
HLA 클래스 I 조직적합 항원, 알파 사슬 F(CDA12)(HLA F 항원)(백혈구 항원 F)(MHC 클래스 I 항원 F)	HLA-F HLA-5.4 HLAF	서열번호 49

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붕해 및 메탈로프로테이나제 도메인 함유 단백질 9(ADAM 9) (EC 3.4.24.-) (세포 붕해 관련 단백질) (멜트린-감마) (메탈로프로테아제/디스인테그린/시스테인이 풍부한 단백질 9) (골수종 세포 메탈로프로테이나제)	ADAM9 KIAA0021 MCMP MDC9 MLTNG	서열번호 50
IgG 수용체 FcRn 대형 서브유닛 p51(FcRn)(IgG Fc 단편 수용체 수송체 알파 사슬)(신생아 Fc 수용체)	FCGRT FCRN	서열번호 51
인터루킨-6 수용체 서브유닛 베타(IL-6 수용체 서브유닛 베타) (IL-6R 서브유닛 베타) (IL-6R-베타) (IL-6RB) (CDw130) (인터루킨-6 신호 변환체) (Membrane glycoprotein 130) (gp130) (온코스타틴-M 수용체 서브유닛 알파) (CD 항원 CD130)	IL6ST	서열번호 52
림프구 기능 관련 항원 3(Ag3)(표면 당단백질 LFA-3)(CD 항원 CD58)	CD58 LFA3	서열번호 53
CC 케모카인 수용체 유형 10(CC CKR-10)(CC-CKR-10)(CCR-10)(G-단백질 결합 수용체 2)	CCR10 GPR2	서열번호 54
C형 렉틴 도메인 패밀리 7 멤버 A(베타-글루칸 수용체)(C형 렉틴 슈퍼패밀리 멤버 12)(수지상 세포 관련 C형 렉틴 1)(DC 관련 C형 렉틴 1)(Dectin-1) (CD 항원 CD369)	CLEC7A BGR CLECSF12 DECTIN1 UNQ539/PRO1082	서열번호 55
CD320 항원(8D6 항원)(FDC-신호전달 분자 8D6)(FDC-SM-8D6)(트랜스코발라민 수용체)(TCblR)(CD 항원 CD320)	CD320 8D6A UNQ198/PRO224	서열번호 56
Fc 수용체 유사 단백질 3 (FcR 유사 단백질 3) (FcRL3) (Fc 수용체 상동체 3) (FcRH3) (IFGP 패밀리 단백질 3) (hIFGP3) (면역 수용체 변위 관련 단백질 3) (SH2 도메인 함유 포스파타아제 앵커 단백질 2) (CD 항원 CD307c)	FCRL3 FCRH3 IFGP3 IRTA3 SPAP2	서열번호 57
Plexin-C1(바이러스 인코딩 세마포린 단백질 수용체)(CD 항원 CD232)	PLXNC1 VESPR	서열번호 58
인터루킨-17 수용체 A(IL-17 수용체 A)(IL-17RA)(CDw217)(CD 항원 CD217)	IL17RA IL17R	서열번호 59
CC 케모카인 수용체 유형 1(CC CKR-1)(CC-CKR-1)(CCR-1)(CCR1)(HM145)(LD78 수용체)(대식세포 염증 단백질 1-알파 수용체)(MIP-1 알파-R) (RANTES-R) (CD 항원 CD191)	CCR1 CMKBR1 CMKR1 SCYAR1	서열번호 60

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T-림프구 활성화 항원 CD80(활성화 B7-1 항원)(BB1)(CTLA-4 카운터-수용체 B7.1)(B7)(CD 항원 CD80)	CD80 CD28LG CD28LG1 LAB7	서열번호 61
프로테이나제 활성화 수용체 4(PAR-4)(응고인자 II 수용체 유사 3)(트롬빈 수용체 유사 3)	F2RL3 PAR4	서열번호 62
인터루킨-6 수용체 서브유닛 알파(IL-6 수용체 서브유닛 알파)(IL-6R 서브유닛 알파)(IL-6R-알파)(IL-6RA)(IL-6R 1)(막 당단백질 80)(gp80)(CD 항원 CD126)	IL6R	서열번호 63
A형 간염 바이러스 세포 수용체 2(HAVcr-2) (T-세포 면역글로불린 및 뮤신 도메인 함유 단백질 3) (TIMD-3) (T-세포 면역글로불린 뮤신 수용체 3) (TIM-3) (T-세포막 단백질 3) (CD 항원 CD366)	HAVCR2 TIM3 TIMD3	서열번호 64
인터루킨-27 수용체 서브유닛 알파(IL-27 수용체 서브유닛 알파)(IL-27R 서브유닛 알파)(IL-27R-알파)(IL-27RA)(사이토카인 수용체 WSX-1)(사이토카인 수용체 유사 1)(유형 I T-세포 사이토카인 수용체) (TCCR) (ZcytoR1)	IL27RA CRL1 TCCR WSX1 UNQ296/PRO336	서열번호 65
인터루킨-13 수용체 서브유닛 알파-2(IL-13 수용체 서브유닛 알파-2)(IL-13R 서브유닛 알파-2)(IL-13R-알파-2)(IL-13RA2)(인터루킨-13 결합 단백질)(CD 항원 CD213a2)	IL13RA2 IL13R	서열번호 66
인테그린 베타-7(장 귀소 수용체 베타 서브유닛)	ITGB7	서열번호 67
Fc 수용체 유사 단백질 2 (FcR 유사 단백질 2) (FcRL2) (Fc 수용체 상동체 2) (FcRH2) (IFGP 패밀리 단백질 4) (면역글로불린 수용체 전위 관련 단백질 4) (SH2 도메인 함유 포스파타아제 앵커 단백질 1) (CD 항원 CD307b)	FCRL2 FCRH2 IFGP4 IRTA4 SPAP1 UNQ9236/PRO31998	서열번호 68
L-셀렉틴(CD62 항원 유사 패밀리 구성원 L)(백혈구 부착 분자 1)(LAM-1)(백혈구 표면 항원 Leu-8)(백혈구-내피 세포 부착 분자 1)(LECAM 1)(림프절 귀소 수용체)(TQ1) (gp90-MEL) (CD 항원 CD62L)	SELL LNHR LYAM1	서열번호 69
세포간 부착 분자 2(ICAM-2)(CD 항원 CD102)	ICAM2	서열번호 70

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CD82 항원(C33 항원) (IA4) (유도성 막 단백질 R2) (전이 억제인자 Kangai-1) (종양형성 6 단백질의 억제인자) (테트라스파닌-27) (Tspan-27) (CD 항원 CD82)	CD82 KAI1 SAR2 ST6 TSPAN27	서열번호 71
CD83 항원(hCD83)(B-세포 활성화 단백질)(세포 표면 단백질 HB15)(CD 항원 CD83)	CD83	서열번호 72
액티빈 수용체 유형-1B(EC 2.7.11.30)(액티빈 수용체 유형 IB)(ACTR-IB)(액티빈 수용체-유사 키나아제 4)(ALK-4)(세린/트레오닌-단백질 키나아제 수용체 R2)(SKR2)	ACVR1B ACVRLK4 ALK4	서열번호 73
림프구 항원 75(Ly-75)(C형 렉틴 도메인 패밀리 13 구성원 B)(DEC-205)(gp200-MR6)(CD 항원 CD205)	LY75 CD205 CLEC13B	서열번호 74
접합부 부착 분자 B(JAM-B)(접합부 부착 분자 2)(JAM-2)(혈관 내피 접합부 관련 분자)(VE-JAM)(CD 항원 CD322)	JAM2 C21orf43 VEJAM UNQ219/PRO245	서열번호 75
저밀도 지단백 수용체 관련 단백질 8(LRP-8)(아포지단백 E 수용체 2)	LRP8 APOER2	서열번호 76
사이토카인 수용체 공통 서브유닛 베타(CDw131)(GM-CSF/IL-3/IL-5 수용체 공통 베타 서브유닛)(CD 항원 CD131)	CSF2RB IL3RB IL5RB	서열번호 77
인터루킨-10 수용체 서브유닛 베타(IL-10 수용체 서브유닛 베타) (IL-10R 서브유닛 베타) (IL-10RB) (사이토카인 수용체 클래스 II 구성원 4) (사이토카인 수용체 패밀리 2 구성원 4) (CRF2-4) (인터루킨-10 수용체 서브유닛 2) (IL-10R 서브유닛 2) (IL-10R2) (CD 항원 CDw210b)	IL10RB CRFB4 D21S58 D21S66	서열번호 78
인터페론 감마 수용체 1(IFN-감마 수용체 1)(IFN-감마-R1)(CDw119)(인터페론 감마 수용체 알파-사슬)(IFN-감마-R-알파)(CD 항원 CD119)	IFNGR1	서열번호 79
부착 G-단백질 결합 수용체 G6(발달적으로 조절되는 G-단백질 결합 수용체)(G-단백질 결합 수용체 126)(혈관 유도성 G 단백질 결합 수용체) [ADGRG6 N-말단 단편(ADGRG6-NTF); ADGRG6 C-말단 단편(ADGRG6-CTF)으로 절단됨]	ADGRG6 DREG GPR126 VIGR	서열번호 80
아데노신 수용체 A2a	ADORA2A ADORA2	서열번호 81

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진행성 강직증 단백질 상동체 (ANK)	ANKH KIAA1581 UNQ241/PRO274	서열번호 82
세포 부착 분자 관련/종양 유전자에 의해 하향 조절됨	CDON CDO	서열번호 83
CSC1 유사 단백질 1(경막 단백질 63A)	TMEM63A KIAA0489 KIAA0792	서열번호 84
톨 유사 수용체 9(CD 항원 CD289)	TLR9 UNQ5798/PRO19605	서열번호 85
나트륨 및 염화물 의존성 타우린 수송체(용질 운반체 패밀리 6 구성원 6)	SLC6A6	서열번호 86
CD48 항원(B-림프구 활성화 마커 BLAST-1)(BCM1 표면 항원)(백혈구 항원 MEM-102)(SLAM 패밀리 구성원 2)(SLAMF2)(신호전달 림프구 활성화 분자 2)(TCT.1)(CD 항원 CD48)	CD48 BCM1 BLAST1	서열번호 87
ADP-리보실 사이클라제/사이클릭 ADP-리보스 가수분해효소 1(EC 3.2.2.6) (2'-포스포-ADP-리보실 사이클라제) (2'-포스포-ADP-리보실 사이클라제/2'-포스포-사이클릭-ADP-리보스 트랜스퍼라제) (EC 2.4.99.20) (2'-포스포-사이클릭-ADP-리보스 트랜스퍼라제) (ADP-리보실 사이클라제 1) (ADPRC 1) (사이클릭 ADP-리보스 하이드롤라제 1) (cADPr 하이드롤라제 1) (T10) (CD 항원 CD38)	CD38	서열번호 88
무스카린성 아세틸콜린 수용체 M3	CHRM3	서열번호 89
대식세포 집락자극인자 1(CSF-1)(M-CSF)(MCSF)(라니모스팀) [처리된 대식세포 집락자극인자 1로 절단됨]	CSF1	서열번호 90
다약물 내성 관련 단백질 4(ATP-결합 카세트 서브패밀리 C 구성원 4)(MRP/cMOAT 관련 ABC 수송체)(다중 특이적 유기 음이온 수송체 B)(MOAT-B).	ABCC4 MRP4	서열번호 91
칼륨 전압 개폐 채널 서브패밀리 A 구성원 3(HGK5)(HLK3)(HPCN3)(전압 개폐 K(+) 채널 HuKIII)(전압 개폐 칼륨 채널 서브유닛 Kv1.3)	KCNA3 HGK5	서열번호 92
시알산 결합 Ig-유사 렉틴 7(Siglec-7)(부착 억제 수용체 분자 1)(AIRM-1)(CDw328)(D-siglec)(QA79 막 단백질)(p75)(CD 항원 CD328)	SIGLEC7 AIRM1	서열번호 93
스핑고신 1-포스페이트 수용체 4(S1P 수용체 4) (S1P4) (내피 분화 G-단백질 결합 수용체 6) (스핑고신 1-포스페이트 수용체 Edg-6) (S1P 수용체 Edg-6)	S1PR4 EDG6	서열번호 94

경막 단백질 106B	TMEM106B	서열번호 95
양성자 결합 엽산 운반체(G21)(Heme 운반체 단백질 1)(PCFT/HCP1)(용질 운반체 패밀리 46 구성원 1)	SLC46A1 HCP1 PCFT	서열번호 96
Allergin-1 (알레르기 억제 수용체 1) (비만 세포 항원 32) (MCA-32) (비만 세포 면역글로불린 유사 수용체 1)	MILR1 C17orf60 MCA 32	서열번호 97
스테릴-설파타제(EC 3.1.6.2)(아릴설파타제 C)(ASC)(에스트론 설파타제)(스테로이드 설파타제)(스테릴-술페이트 술포히드롤라제)	STS ARSC1	서열번호 98
종양 괴사 인자 수용체 슈퍼패밀리 구성원 6(Apo-1 항원)(아폽토시스 매개 표면 항원 FAS)(FASLG 수용체)(CD 항원 CD95)	FAS APT1 FAS1 TNFRSF6	서열번호 99
프레세닐린-2(PS-2)(EC 3.4.23.-)(AD3LP)(AD5)(E5-1)(STM-2) [프레세닐린-2 NTF 서브유닛; 프레세닐린-2 CTF 서브유닛으로 절단됨]	PSEN2 AD4 PS2 PSNL2 STM2	서열번호 100
용질 운반체 유기 음이온 운반체 패밀리 구성원 4A1(OATP4A1)(결장 유기 음이온 운반체)(유기 음이온 운반체 폴리펩티드 관련 단백질 1)(OATP-RP1)(OATPRP1)(POAT)(유기 음이온 운반 폴리펩티드 E)(OATP-E) (나트륨 비의존성형 유기 음이온 운반체 E) (용질 운반체 패밀리 21 구성원 12)	SLCO4A1 OATP1 OATP4A1 OATPE SLC21A12	서열번호 101
용질 운반체 유기 음이온 운반체 패밀리 구성원 3A1(OATP3A1)(유기 음이온 운반체 폴리펩티드 관련 단백질 3)(OATP-RP3)(OATPRP3)(유기 음이온 운반체 폴리펩티드 D)(OATP-D)(PGE1 운반체)(나트륨 비의존성 유기 음이온 수송체 D) (용질 캐리어 패밀리 21 구성원 11)	SLCO3A1 OATP3A1 OATPD SLC21A11	서열번호 102
경막 단백질 154	TMEM154	서열번호 103
세마포린-4A(세마포린-B)(세마 B)	SEMA4A SEMAB SEMB UNQ783/PRO1317	서열번호 104
다제 내성 관련 단백질 5(ATP-결합 카세트 서브패밀리 C 구성원 5)(다중 특이적 유기 음이온 수송체 C)(MOAT-C)(SMRP)(pABC11)	ABCC5 MRP5	서열번호 105

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경막 단백질 132E	TMEM132E	서열번호 106
Netrin 수용체 UNC5C(단백질 unc-5 상동체 3)(단백질 unc-5 상동체 C)	UNC5C UNC5H3	서열번호 107
스캐빈저 수용체 클래스 B 구성원 1(SRB1)(CD36 및 LIMPII 유사 1)(CLA-1)(CD36 항원 유사 1)(콜라겐 유형 I 수용체, 트롬보스폰딘 수용체 유사 1)(SR-BI)(CD 항원 CD36)	SCARB1 CD36L1 CLA1	서열번호 108
아연 수송체 ZIP6(에스트로겐 조절 단백질 LIV-1) (용질 운반체 패밀리 39 구성원 6) (Zrt- 및 Irt-유사 단백질 6) (ZIP-6)	SLC39A6 LIV1 ZIP6	서열번호 109
비활성 티로신-단백질 키나아제 경막 수용체 ROR1(신경영양성 티로신 키나아제, 수용체 관련 1)	ROR1 NTRKR1	서열번호 110
용질 운반체 패밀리 26 구성원 6(음이온 교환 수송체)(펜드린 유사 단백질 1)(펜드린-L1)	SLC26A6	서열번호 111
SLIT 및 NTRK 유사 단백질 5(류신이 풍부한 반복부 함유 단백질 11)	SLITRK5 KIAA0918 LRRC11	서열번호 112
세포 표면 당단백질 CD200 수용체 1(CD200 세포 표면 당단백질 수용체) (세포 표면 당단백질 OX2 수용체 1)	CD200R1 CD200R CRTR2 MOX2R OX2R UNQ2522/PRO6015	서열번호 113
디스코이딘, CUB 및 LCCL 도메인 함유 단백질 1	DCBLD1	서열번호 114
CD109 항원(150kDa TGF-베타-1-결합 단백질)(C3 및 PZP-유사 알파-2-마크로글로불린 도메인 함유 단백질 7)(혈소판 특이적 Gov 항원)(p180)(r150)(CD 항원 CD109)	CD109 CPAMD7	서열번호 115
C3a 아나필라톡신 화학주성 수용체(C3AR)(C3a-R)	C3AR1 AZ3B C3R1 HNFAG09	서열번호 116
CD70 항원(CD27 리간드)(CD27-L)(종양 괴사 인자 리간드 슈퍼패밀리 구성원 7)(CD 항원 CD70)	CD70 CD27L CD27LG TNFSF7	서열번호 117
대형 중성 아미노산 수송체 소형 서브유닛체 4(L형 아미노산 수송체 4) (용질 담체 패밀리 43 구성원 2)	SLC43A2 LAT4 PP7664	서열번호 118
HLA 클래스 II 조직적합성 항원, DR 베타 5 사슬(DR 베타-5) (DR2-베타-2) (Dw2) (MHC 클래스 II 항원 DRB5)	HLA-DRB5	서열번호 119
에프린 A형 수용체 5(EC 2.7.10.1)(뇌 특이적 키나아제)(EPH 상동성 키나아제 1)(EHK-1)(EPH-유사 키나아제 7)(EK7)(hEK7)	EPHA5 BSK EHK1 HEK7 TYRO4	서열번호 120
모노카르복실레이트 수송체 2(MCT 2)(용질 담체 패밀리 16 구성원 7)	SLC16A7 MCT2	서열번호 121

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시스테인이 풍부한 운동 뉴런 1 단백질 (CRIM-1) (시스테인이 풍부한 반복부 함유 단백질 S52) [처리된 시스테인이 풍부한 운동 뉴런 1 단백질로 절단됨]	CRIM1 S52 UNQ1886/PRO4330	서열번호 122
핵막 내재성 막 단백질 1	NEMP1 KIAA0286 TMEM194 TMEM194A	서열번호 123
HLA 클래스 II 조직적합성 항원, DR 베타 4 사슬(MHC 클래스 II 항원 DRB4)	HLA-DRB4	서열번호 124
양이온성 아미노산 운반체 2(CAT-2)(CAT2) (저친화성 양이온성 아미노산 운반체 2) (용질 운반체 패밀리 7 구성원 2)	SLC7A2 ATRC2 CAT2	서열번호 125
내재성 막 단백질 2C (뇌단백질 14) (경막 단백질 BRI3) [CT-BRI3로 절단됨]	ITM2C BRI3 hucep-14 NPD018 PSEC0047	서열번호 126
에프린 A형 수용체 3(EC 2.7.10.1)(EPH-유사 키나아제 4)(EK4)(hEK4)(HEK)(인간 배아 키나아제)(티로신-단백질 키나아제 TYRO4)(티로신-단백질 키나아제 수용체 ETK1)(Eph-유사 티로신 키나아제 1)	EPHA3 ETK ETK1 HEK TYRO4	서열번호 127
리소좀 관련 막 당단백질 5(뇌 및 수지상 세포 관련 LAMP)(뇌 관련 LAMP 유사 단백질)(BAD-LAMP)(리소좀 관련 막 단백질 5)(LAMP-5)	LAMP5 C20orf103	서열번호 128
금속 수송체 CNNM2(고대 보존 도메인 함유 단백질 2)(Cyclin-M2)	CNNM2 ACDP2	서열번호 129
CD177 항원(인간 호중구 동종항원 2a)(HNA-2a)(NB1 당단백질)(NB1 GP)(진성 적혈구증가증 1)(PRV-1)(CD 항원 CD177)	CD177 NB1 PRV1 UNQ595/PRO1181	서열번호 130
아연 운반체 ZIP10(용질 운반체 패밀리 39 구성원 10)(Zrt- 및 Irt-유사 단백질 10)(ZIP-10)	SLC39A10 KIAA1265 ZIP10	서열번호 131
Plexin-A3(Plexin-4)(세마포린 수용체 SEX)	PLXNA3 PLXN4 SEX	서열번호 132
인지질 인산 가수분해효소 2(EC 3.1.3.-) (EC 3.1.3.4) (지질 인산 가수분해효소 2) (PAP2-감마) (PAP2-G) (포스파티데이트 인산 가수분해효소 유형 2c) (포스파티딘산 인산 가수분해효소 2c) (PAP-2) (PAP2c)	PLPP2 LPP2 PPAP2C	서열번호 133
세린 통합자 3(종양 차등 발현 단백질 1)	SERINC3 DIFF33 TDE1 SBBI99	서열번호 134

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나트륨/미오-이노시톨 공동수송체(Na(+)/미오-이노시톨 공동수송체) (나트륨/미오-이노시톨 수송체 1) (SMIT1) (용질 운반체 패밀리 5 구성원 3)	SLC5A3	서열번호 135
테뉴린-3(Ten-3)(단백질 Odd Oz/ten-m 상동체 3)(테나신-M3)(Ten-m3)(테뉴린 경막 단백질 3).	TENM3 KIAA1455 ODZ3 TNM3	서열번호 136
나트륨 결합 중성 아미노산 운반체 5(용질 운반체 패밀리 38 구성원 5)(시스템 N 운반체 2)	SLC38A5 JM24 SN2 SNAT5 PP7194	서열번호 137
용질 운반체 패밀리 23 구성원 2(Na(+)/L-아스코르빈산 운반체 2) (핵염기 수송체 유사 1 단백질) (나트륨 의존성 비타민 C 수송체 2) (hSVCT2) (난황낭 투과효소 유사 분자 2)	SLC23A2 KIAA0238 NBTL1 SLC23A1 SVCT2 YSPL2	서열번호 138
시알린(H(+)/질산염 공동수송체) (H(+)/시알산 공동수송체) (AST) (막 당단백질 HP59) (용질 운반체 패밀리 17 구성원 5) (소포 H(+)/아스파테이트-글루타메이트 공동수송체)	SLC17A5	서열번호 139
우로키나아제 플라스미노겐 활성인자 표면 수용체(U-PAR)(uPAR)(단핵구 활성화 항원 Mo 3)(CD 항원 CD87)	PLAUR MO3 UPAR	서열번호 140
Sn1 특이적 디아실글리세롤 리파제 베타(DGL-베타)(EC 3.1.1.-)(KCCR13L)	DAGLB	서열번호 141
엠비긴(Embigin)	EMB	서열번호 142
단백질 HEG 상동체 1	HEG1 KIAA1237	서열번호 143
플렉신-A4	PLXNA4 KIAA1550 PLXNA4A PLXNA4B UNQ2820/PRO34003	서열번호 144
단백질 ELFN1(세포외 류신이 풍부한 반복부 및 피브로넥틴 유형 III 도메인 함유 단백질 1)(단백질 포스파타제 1 조절 서브유닛 28)	ELFN1 PPP1R28	서열번호 145
부착 G-단백질 결합 수용체 G5(G-단백질 결합 수용체 114)(G-단백질 결합 수용체 PGR27)	ADGRG5 GPR114 PGR27 UNQ2524/PRO6017	서열번호 146
류신이 풍부한 반복부 및 피브로넥틴 유형 III 도메인 함유 단백질 1(시냅스 부착 유사 분자 2)	LRFN1 KIAA1484 SALM2	서열번호 147
CD160 항원(자연살해세포 수용체 BY55) (CD 항원 CD160) [CD160 항원, 가용성 형태로 절단됨]	CD160 BY55	서열번호 148
바테닌(바텐병 단백질) (단백질 CLN3)	CLN3 BTS	서열번호 149
경막 단백질 178B	TMEM178B	서열번호 150
RGM 도메인 패밀리 구성원 B(신경돌기의 DRG11 반응성 축삭 유도 및 파생물)(DRAGON)	RGMB	서열번호 151

[0145]

Kazal 모티프가 있는 복귀 유도 시스테인이 풍부한 단백질(hRECK)(종양 형성 억제 15 단백질)	RECK ST15	서열번호 152
천연 세포독성 유발 수용체 3 리간드 1(B7 상동체 6)(B7-H6)	NCR3LG1 B7H6	서열번호 153
테스티신(EC 3.4.21.-)(호산구 세린 프로테아제 1)(ESP-1)(세린 프로테아제 21)	PRSS21 ESP1 TEST1 UNQ266/PRO303	서열번호 154
UL16-결합 단백질 3(ALCAN-감마)(NKG2D 리간드 3)(N2DL-3)(NKG2DL3)(레티노산 초기 전사체 1N)	ULBP3 N2DL3 RAET1N	서열번호 155

[0146]

[0147] 실시예 2

[0148] <추가의 MM 표면 단백질 분석>

[0149] 실시예 1에 기재된 바와 같이 7개의 다발성 골수종 세포주의 표면 특이적 단백질체 분석에서 식별된 4,761 단백질에 해당하는 5,454 Uniprot ID의 편향되지 않은 풀을 추가로 분석하였다.

[0150] 세포 표면 위치에서 단백질의 정확한 검출을 가능하게 하는 생물정보학 도구가 없음을 감안하여, 본 발명자들은 표면 단백질 주석을 위한 통합된 점수화 데이터베이스를 개발하였다. 이를 위해, 본 발명자들은 원형질막에 국소화된 분자를 식별하는 데 있어서 상이한 방법론을 이용하는 5개의 공개된 데이터베이스를 병합하였다: #1(Diaz-Ramos et al., Immunol Lett 2011, 134, 183-187, doi:10.1016/j.imlet.2010.09.016)은 문헌에서 수동으로 선별하였고, #2(Baush-Fluck et al. Proc Natl Acad Sci U S A 2018, 115, E10988-E10997, doi:10.1073/pnas.1808790115.)는 도메인 특이적 단백질 특징에 대해 훈련된 무작위 포레스트 분류기를 사용하여 컴퓨터로 컴파일링하였으며 α-나선형 경막 단백질 세트에 대해 테스트하였고; #3(Town et al. Proc Natl Acad Sci U S A 2016, 113, 3603-3608, doi:10.1073/pnas.1521251113)은 GO 및 Uniprot 주석과 그 후속의 경막 도메인 예측 및 신호 펩티드 예측을 이용하여 컴퓨터로 컴파일링하였으며; #4(da Cunha et al. Proc Natl Acad Sci U S A 2009, 106, 16752-16757, doi:10.1073/pnas.0907939106)는 경막 도메인 예측에 의해 컴퓨터로 컴파일링하였고, #5(Thule et al.)는 항체 기반 면역형광 현미경으로 실험적으로 결정하였다. 본 발명자들의 통합 계산 데이터베이스에서, 각각의 Uniprot ID는 그것이 식별된 데이터베이스의 수에 기초하여 점수화되며, 0은 단백질이 전혀 발견되지 않았음을 나타내고, 5는 단백질이 5개 모두에서 발견되었음을 나타낸다. 이러한 통합 계산 도구에 기초하여, 컷오프 1은 1229개의 Uniprot ID, 컷오프 2는 699개의 Uniprot ID, 컷오프 3은 448개의 Uniprot ID, 컷 오프 4는 260개의 Uniprot ID, 컷오프 5는 63개의 Uniprot ID를 포함한다. 추가의 분석을 위해, 본 발명자들은 세포 표면 위치에 대한 높은 수준의 신뢰도를 나타내는 3 이상의 표면 스코어를 갖는 단백질을 선택하였다.

[0151] 본 발명자들은 904명의 MM 환자로부터의 유전자 발현 데이터를 제공하는 CoMMpass RNA-seq 데이터세트를 통합하였다. 이러한 통합적 접근법은 환자 집단에 관련된 표면 표적을 식별하는 역할을 하였다. 본 발명자들은 본 발명자들의 표면 점수화 시스템을 MM 환자로부터의 16,462개의 전사체에 적용하였고, 3 초과의 표면 스코어를 갖는 402개의 표적을 식별하였으며, MS에 의해 검출하였다(도 1c). 본 발명자들은, 환자들에서 평균 유전자 발현으로부터 1SD를 계산함으로써 환자 중 고 발현자와 중첩되는 326개의 상부 표면 단백질을 추가로 선택하였다. 본 발명자들은 각각의 유전자의 평균 발현을 계산하고, 저발현 유전자(평균의 1 SD 미만)를 제거하고, 컷오프(유지된 326개의 전사체)에 걸쳐 발현을 갖는 유전자를 선택하였다(도 1d). 주목할 것은, 환자 유전자 발현은 비-단일 모드 발현을 나타내는 7개의 전사체(NCAM1, TPBG, ROB1, LAMP5, APP, PTRCAP, PLXAN2)를 제외하고는 단일 모드였다는 것이다.

[0152] 326개의 표면 단백질의 이러한 군은 공지된 MM-관련 표면 단백질을 포함하며, 이들 중 일부, 예컨대 BCMA, SLAMF7, TACI, LY9, CD38. GPCR5D 및 FCRL5는 임상 및 전임상 연구에서 표적화되고, MM을 갖는 환자에 대한 임상 시험에서 또한 현재 조사된 이들은, 환자에서 전사체 분석에 의해 식별되었기 때문에 이러한 목록을 생성되지 않았으나, MS 분석에 의해 그들의 단백질 발현을 검출하지 않았다.

[0153] **MM 서피솜(surfaceome)은 주로 면역 관련 단백질로 구성된다.**

[0154] 이들 후보 표면 단백질의 기능에 대한 통찰을 얻기 위해, 본 발명자들은 기능적 강화 분석을 수행하였고, 이들이 3개의 주요 기능적 클러스터: 1) 면역 매개 경로에 관여된 단백질, 2) 수송체, 3) 기질에 대한 부착을 매개하는 단백질로 나뉠 수 있음을 발견하였다. 면역 매개 경로(상부 클러스터)와 관련된 표면 단백질은 326개 분자 중 227개를 포함하며, 따라서 면역세포와 골수종 세포 사이의 상호작용을 매개할 수 있다.

[0155] Kegg 및 Reactome 콜렉션을 이용하여 이러한 표면 단백질 군을 더 파고들어, 본 발명자들은 사이토카인 의존성 기전 및 NK 매개 세포독성이 강화된 기전을 나타낸다는 것을 발견하였다. 이러한 발견은 MM의 면역생물학에서의 이전의 연구와 일치하지만, 이러한 메카니즘을 매개하는 표면 단백질의 상세한 프로파일은 알려지지 않거나 또는 지금까지 부분적으로만 알려져 있었다.

[0156] **정상 조직 주석은 표적화 가능한 항원을 식별한다.**

[0157] 치료적 관련 표적을 식별하기 위해, 본 발명자들은 본 발명자들이 백혈병에 대해 이전에 확립했던 파이프라인을 사용하였다. 이것은 인간 프로테옴 주석에 대한 3개의 공개된 단백질체 데이터베이스(Human Protein Atlas,

Human Protein Map 및 Proteomics DataBase)를 조합하고, 42개의 정상 조직 및 기관의 패널에서 각각의 후보 단백질의 주석을 허용하였다. 이를 고려하여, 본 발명자들은 조혈 조직을 제외한 임의의 정상 조직에서 높은 발현을 갖고 3개의 데이터베이스 중 2개 미만에서 이용가능한 주석을 갖는 단백질을 배제하였다. 이를 통해, 본 발명자들은 정상 조직에서 최소 발현을 갖는, 326개의 표적 중 94개를 식별하였다. 이 목록은 BCMA, SLAMF7, ITGB7, TACI 및 Ly9를 포함한다. 본 발명자들은 또한, 정상 조직에서의 그들의 발현을 기초로 하여 94개의 표적의 각각 하나를 등급화하였고, 따라서 온-표적 오프-종양 독성(on-target off-tumor toxicity)을 예상하였다.

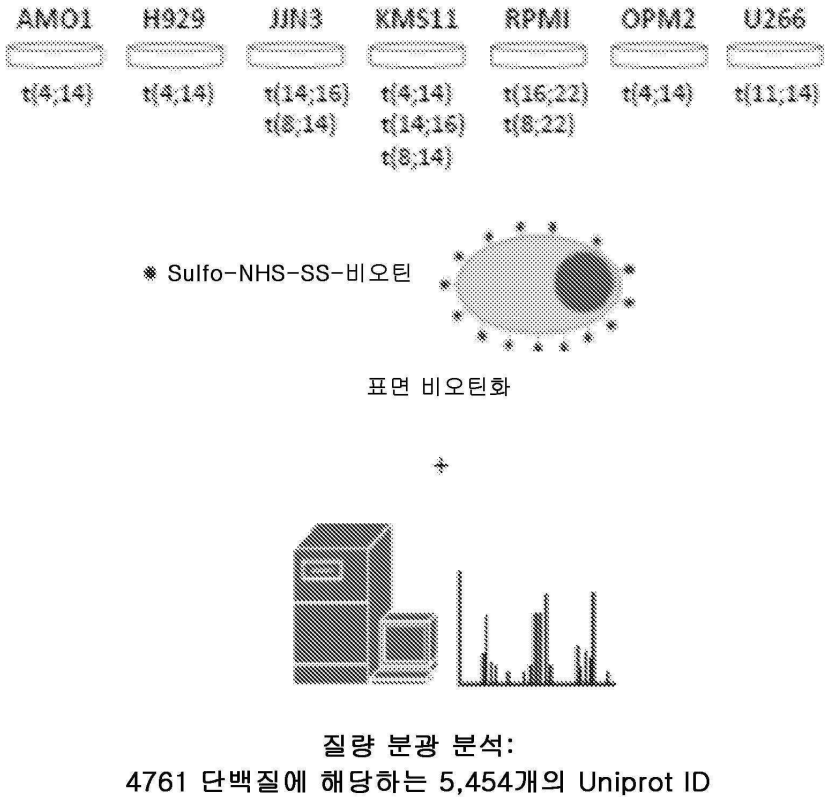
[0158] 면역 관련 단백질(227)의 목록을, 정상 조직에서 유리한 프로파일을 갖는 단백질의 목록과 중첩시킴으로써, 본 발명자들은 기능적 및 치료적 관련성 둘 다를 갖는 67개의 표적을 얻었다(도 3). 이러한 후자의 목록은 MM의 면역요법을 위한 현재의 전임상 시험에서 표적화되는 BCMA, CD229, SLAMF7, ITGB7, TACI를 여전히 포함한다.

[0159] **1차 환자 샘플에서의 검증은 11개의 표적을 식별한다.**

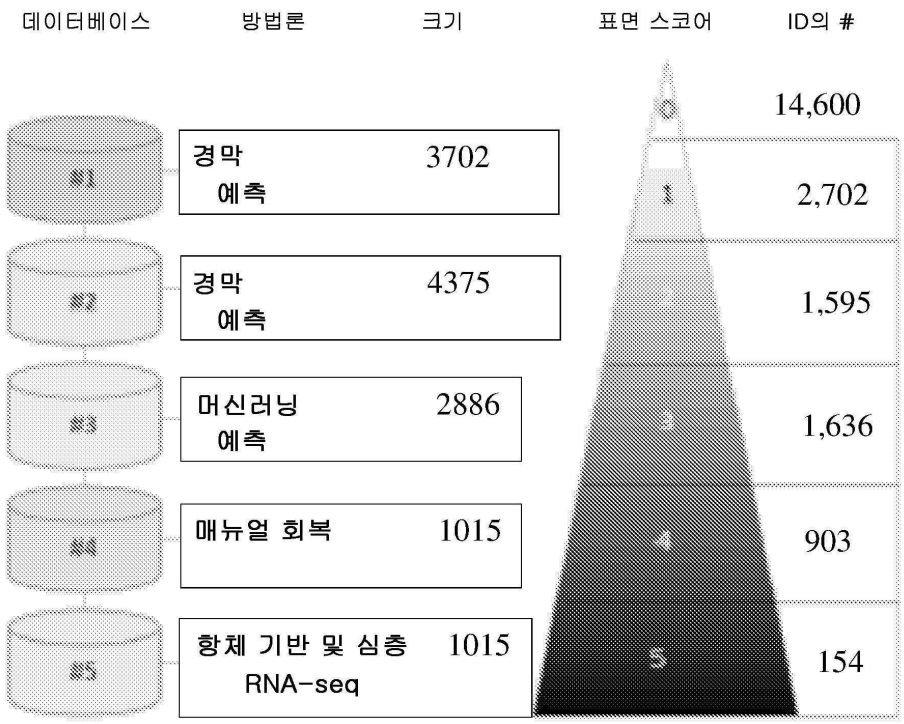
[0160] 정상 조직에서의 발현에 기초하여, 본 발명자들은 1차 MM 환자 샘플에서 추가의 검증을 위한 24개의 표적을 선택하였다. 이들 표적 중 11개는 CCR1(서열목록 60), CD320(서열목록 56), FCRL3(서열목록 57), IFNGR1(서열목록 79), IL12RB1(서열목록 19), ITGA4(서열목록 42), LILRB4(서열목록 20), LRRC8D(서열목록 112), SEMA4A(서열목록 104), 및 SLAMF6(서열목록 37) 및 BCMA를 포함하고, 일부 측면에서, 이들 표적은 변형 또는 합성된 키메라 항원 수용체, 항체 또는 그의 항체 결합 단편, 및 이들을 함유하거나 발현하는 T 세포를 포함하는 면역세포내로 통합될 수 있다.

도면

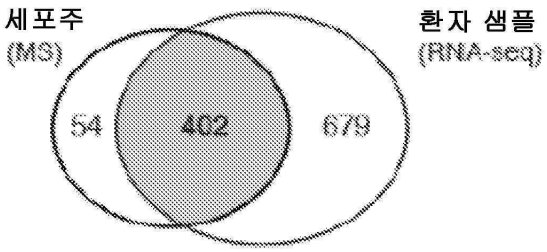
도면1a



도면1b

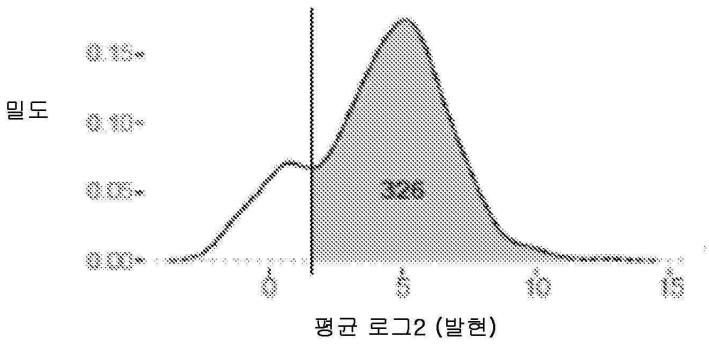


도면1c



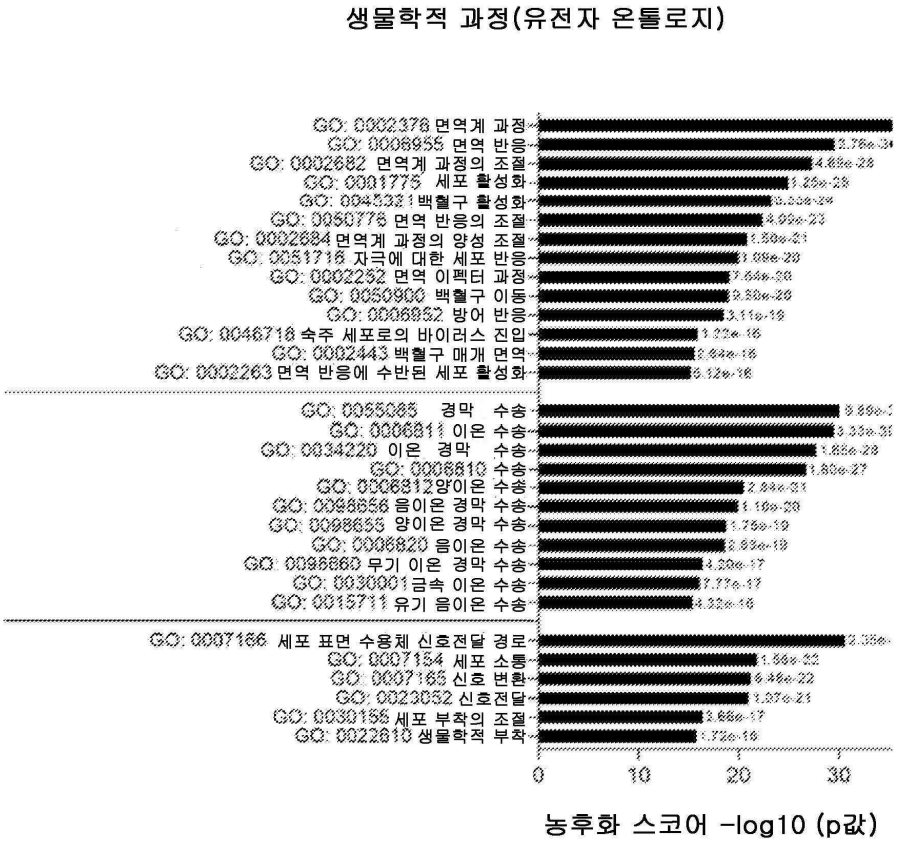
3 이상의 표면 스코어를 갖는 단백질

도면1d

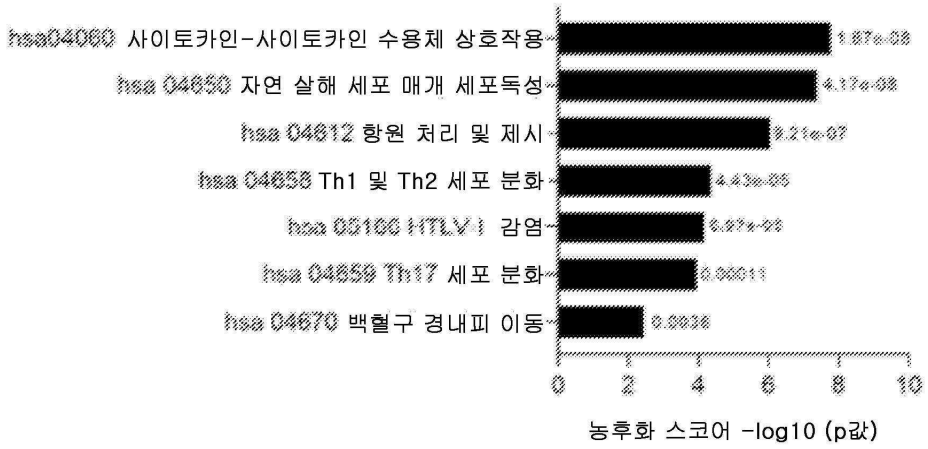


MM 환자에서 고발현된 세포 표면 단백질

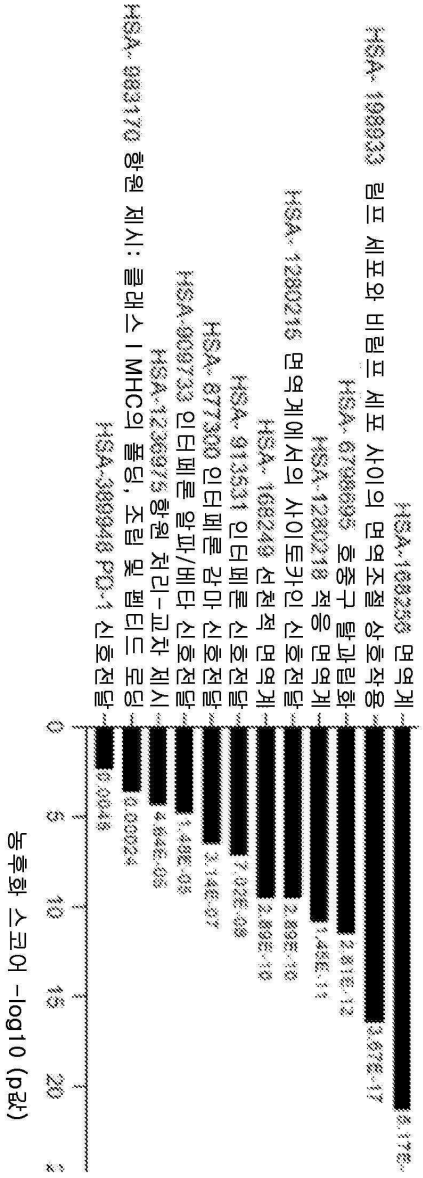
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GO: 0006955 면역 반응
GO: 0002682 면역계 과정의 조절
GO: 0001775 세포 활성화
GO: 0045321 백혈구 활성화
GO: 0050776 면역 반응의 조절
GO: 0002684 면역계 과정의 양성 조절
GO: 0051716 자극에 대한 세포 반응
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GO: 0050900 백혈구 이동
GO: 0006952 방어 반응
GO: 0046718 숙주 세포로의 바이러스 진입
GO: 0002443 백혈구 매개 면역
GO: 0002263 면역 반응에 수반된 세포 활성화
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GO: 0015711 유기 음이온 수송
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0
10
20
30
농후화 스코어 −log10 (p값)

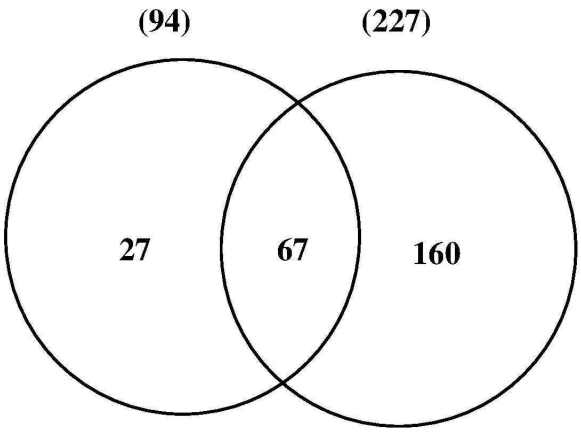
도면2b


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hsa 04612 항원 처리 및 제시
hsa 04658 Th1 및 Th2 세포 분화
hsa 05166 HTLV I 감염
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0
2
4
6
8
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도면2c



도면3



서 열 목 록

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Ser Gly Ser Leu Ile Val Thr Ala Thr Glu Cys Ser Asn Gly Ile Ala
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Ala Ile Ile Val Ile Leu Val Leu Leu Leu Leu Leu Gly Ile Gly Leu
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Met Trp Trp Phe Trp Pro Leu Cys Cys Lys Val Val Ile Lys Asp Pro
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Pro Pro Pro Pro Ala Pro Ala Pro Lys Glu Glu Glu Glu Glu Pro Leu
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Pro Thr Lys Lys Trp Pro Thr Val Asp Ala Ser Tyr Tyr Gly Gly Arg
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Gly Val Gly Gly Ile Lys Arg Met Glu Val Arg Trp Gly Asp Lys Gly
385 390 395 400

Ser Thr Glu Glu Gly Ala Arg Leu Glu Lys Ala Lys Asn Ala Val Val
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Lys Ile Pro Glu Glu Thr Glu Glu Pro Ile Arg Pro Arg Pro Pro Arg
420 425 430

Pro Lys Pro Thr His Gln Pro Pro Gln Thr Lys Trp Tyr Thr Pro Ile
435 440 445

Lys Gly Arg Leu Asp Ala Leu Trp Ala Leu Leu Arg Arg Gln Tyr Asp
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Glu Cys Ile Glu Lys Glu Leu Thr Ala
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Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly
50 55 60

Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn
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Ala Gly Ala His Arg Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His
130 135 140
Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp
145 150 155 160
Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn
165 170 175

Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe
180 185 190
Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala
195 200 205
Trp Leu Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile
210 215 220
Ile Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
225 230 235 240

Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val
245 250 255
Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His Val Pro
260 265 270
Pro Glu Thr Leu Gly Glu Gly Asp
275 280

<210> 3
<211> 220
<212> PRT
<213> Homo sapiens
<400> 3

Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val
1 5 10 15

Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
20 25 30
Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser

35 40 45

Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu

50 55 60

Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser

65 70 75 80

Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr

85 90 95

Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys

100 105 110

Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser

115 120 125

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro

130 135 140

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly

145 150 155 160

Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile

165 170 175

Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met

180 185 190

Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro

195 200 205

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser

210 215 220

<210> 4

<211> 1033

<212> PRT

<213> Homo sapiens

<400> 4

Met Gly Ala Ala Gly Leu Leu Gly Val Phe Leu Ala Leu Val Ala Pro

1 5 10 15

Gly Val Leu Gly Ile Ser Cys Gly Ser Pro Pro Pro Ile Leu Asn Gly

20 25 30

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Arg Ile Ser Tyr Tyr Ser Thr Pro Ile Ala Val Gly Thr Val Ile Arg
        35                  40                  45

Tyr Ser Cys Ser Gly Thr Phe Arg Leu Ile Gly Glu Lys Ser Leu Leu
    50                  55                  60
Cys Ile Thr Lys Asp Lys Val Asp Gly Thr Trp Asp Lys Pro Ala Pro
65                  70                  75                  80
Lys Cys Glu Tyr Phe Asn Lys Tyr Ser Ser Cys Pro Glu Pro Ile Val
                85                  90                  95
Pro Gly Gly Tyr Lys Ile Arg Gly Ser Thr Pro Tyr Arg His Gly Asp
            100                 105                 110

Ser Val Thr Phe Ala Cys Lys Thr Asn Phe Ser Met Asn Gly Asn Lys
        115                 120                 125
Ser Val Trp Cys Gln Ala Asn Asn Met Trp Gly Pro Thr Arg Leu Pro
    130                 135                 140
Thr Cys Val Ser Val Phe Pro Leu Glu Cys Pro Ala Leu Pro Met Ile
145                 150                 155                 160
His Asn Gly His His Thr Ser Glu Asn Val Gly Ser Ile Ala Pro Gly
                165                 170                 175

Leu Ser Val Thr Tyr Ser Cys Glu Ser Gly Tyr Leu Leu Val Gly Glu
            180                 185                 190
Lys Ile Ile Asn Cys Leu Ser Ser Gly Lys Trp Ser Ala Val Pro Pro
        195                 200                 205
Thr Cys Glu Glu Ala Arg Cys Lys Ser Leu Gly Arg Phe Pro Asn Gly
    210                 215                 220
Lys Val Lys Glu Pro Pro Ile Leu Arg Val Gly Val Thr Ala Asn Phe
225                 230                 235                 240

Phe Cys Asp Glu Gly Tyr Arg Leu Gln Gly Pro Pro Ser Ser Arg Cys
                245                 250                 255
Val Ile Ala Gly Gln Gly Val Ala Trp Thr Lys Met Pro Val Cys Glu
            260                 265                 270
Glu Ile Phe Cys Pro Ser Pro Pro Pro Ile Leu Asn Gly Arg His Ile
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275 280 285

Gly Asn Ser Leu Ala Asn Val Ser Tyr Gly Ser Ile Val Thr Tyr Thr

290 295 300

Cys Asp Pro Asp Pro Glu Glu Gly Val Asn Phe Ile Leu Ile Gly Glu

305 310 315 320

Ser Thr Leu Arg Cys Thr Val Asp Ser Gln Lys Thr Gly Thr Trp Ser

325 330 335

Gly Pro Ala Pro Arg Cys Glu Leu Ser Thr Ser Ala Val Gln Cys Pro

340 345 350

His Pro Gln Ile Leu Arg Gly Arg Met Val Ser Gly Gln Lys Asp Arg

355 360 365

Tyr Thr Tyr Asn Asp Thr Val Ile Phe Ala Cys Met Phe Gly Phe Thr

370 375 380

Leu Lys Gly Ser Lys Gln Ile Arg Cys Asn Ala Gln Gly Thr Trp Glu

385 390 395 400

Pro Ser Ala Pro Val Cys Glu Lys Glu Cys Gln Ala Pro Pro Asn Ile

405 410 415

Leu Asn Gly Gln Lys Glu Asp Arg His Met Val Arg Phe Asp Pro Gly

420 425 430

Thr Ser Ile Lys Tyr Ser Cys Asn Pro Gly Tyr Val Leu Val Gly Glu

435 440 445

Glu Ser Ile Gln Cys Thr Ser Glu Gly Val Trp Thr Pro Pro Val Pro

450 455 460

Gln Cys Lys Val Ala Ala Cys Glu Ala Thr Gly Arg Gln Leu Leu Thr

465 470 475 480

Lys Pro Gln His Gln Phe Val Arg Pro Asp Val Asn Ser Ser Cys Gly

485 490 495

Glu Gly Tyr Lys Leu Ser Gly Ser Val Tyr Gln Glu Cys Gln Gly Thr

500 505 510

Ile Pro Trp Phe Met Glu Ile Arg Leu Cys Lys Glu Ile Thr Cys Pro

515 520 525

Pro Pro Pro Val Ile Tyr Asn Gly Ala His Thr Gly Ser Ser Leu Glu
530 535 540
Asp Phe Pro Tyr Gly Thr Thr Val Thr Tyr Thr Cys Asn Pro Gly Pro
545 550 555 560

Glu Arg Gly Val Glu Phe Ser Leu Ile Gly Glu Ser Thr Ile Arg Cys
565 570 575
Thr Ser Asn Asp Gln Glu Arg Gly Thr Trp Ser Gly Pro Ala Pro Leu
580 585 590
Cys Lys Leu Ser Leu Leu Ala Val Gln Cys Ser His Val His Ile Ala
595 600 605
Asn Gly Tyr Lys Ile Ser Gly Lys Glu Ala Pro Tyr Phe Tyr Asn Asp
610 615 620

Thr Val Thr Phe Lys Cys Tyr Ser Gly Phe Thr Leu Lys Gly Ser Ser
625 630 635 640
Gln Ile Arg Cys Lys Ala Asp Asn Thr Trp Asp Pro Glu Ile Pro Val
645 650 655
Cys Glu Lys Glu Thr Cys Gln His Val Arg Gln Ser Leu Gln Glu Leu
660 665 670
Pro Ala Gly Ser Arg Val Glu Leu Val Asn Thr Ser Cys Gln Asp Gly
675 680 685

Tyr Gln Leu Thr Gly His Ala Tyr Gln Met Cys Gln Asp Ala Glu Asn
690 695 700
Gly Ile Trp Phe Lys Lys Ile Pro Leu Cys Lys Val Ile His Cys His
705 710 715 720
Pro Pro Pro Val Ile Val Asn Gly Lys His Thr Gly Met Met Ala Glu
725 730 735
Asn Phe Leu Tyr Gly Asn Glu Val Ser Tyr Glu Cys Asp Gln Gly Phe
740 745 750

Tyr Leu Leu Gly Glu Lys Lys Leu Gln Cys Arg Ser Asp Ser Lys Gly
755 760 765
His Gly Ser Trp Ser Gly Pro Ser Pro Gln Cys Leu Arg Ser Pro Pro

770 775 780

Val Thr Arg Cys Pro Asn Pro Glu Val Lys His Gly Tyr Lys Leu Asn

785 790 795 800

Lys Thr His Ser Ala Tyr Ser His Asn Asp Ile Val Tyr Val Asp Cys

805 810 815

Asn Pro Gly Phe Ile Met Asn Gly Ser Arg Val Ile Arg Cys His Thr

820 825 830

Asp Asn Thr Trp Val Pro Gly Val Pro Thr Cys Ile Lys Lys Ala Phe

835 840 845

Ile Gly Cys Pro Pro Pro Pro Lys Thr Pro Asn Gly Asn His Thr Gly

850 855 860

Gly Asn Ile Ala Arg Phe Ser Pro Gly Met Ser Ile Leu Tyr Ser Cys

865 870 875 880

Asp Gln Gly Tyr Leu Leu Val Gly Glu Ala Leu Leu Leu Cys Thr His

885 890 895

Glu Gly Thr Trp Ser Gln Pro Ala Pro His Cys Lys Glu Val Asn Cys

900 905 910

Ser Ser Pro Ala Asp Met Asp Gly Ile Gln Lys Gly Leu Glu Pro Arg

915 920 925

Lys Met Tyr Gln Tyr Gly Ala Val Val Thr Leu Glu Cys Glu Asp Gly

930 935 940

Tyr Met Leu Glu Gly Ser Pro Gln Ser Gln Cys Gln Ser Asp His Gln

945 950 955 960

Trp Asn Pro Pro Leu Ala Val Cys Arg Ser Arg Ser Leu Ala Pro Val

965 970 975

Leu Cys Gly Ile Ala Ala Gly Leu Ile Leu Leu Thr Phe Leu Ile Val

980 985 990

Ile Thr Leu Tyr Val Ile Ser Lys His Arg Ala Arg Asn Tyr Tyr Thr

995 1000 1005

Asp Thr Ser Gln Lys Glu Ala Phe His Leu Glu Ala Arg Glu Val

1010 1015 1020

Tyr Ser Val Asp Pro Tyr Asn Pro Ala Ser

1025 1030

<210> 5

<211> 210

<212> PRT

<213> Homo sapiens

<400> 5

Met Arg Pro Arg Leu Trp Leu Leu Leu Ala Ala Gln Leu Thr Val Leu

1 5 10 15

His Gly Asn Ser Val Leu Gln Gln Thr Pro Ala Tyr Ile Lys Val Gln

20 25 30

Thr Asn Lys Met Val Met Leu Ser Cys Glu Ala Lys Ile Ser Leu Ser

35 40 45

Asn Met Arg Ile Tyr Trp Leu Arg Gln Arg Gln Ala Pro Ser Ser Asp

50 55 60

Ser His His Glu Phe Leu Ala Leu Trp Asp Ser Ala Lys Gly Thr Ile

65 70 75 80

His Gly Glu Glu Val Glu Gln Glu Lys Ile Ala Val Phe Arg Asp Ala

85 90 95

Ser Arg Phe Ile Leu Asn Leu Thr Ser Val Lys Pro Glu Asp Ser Gly

100 105 110

Ile Tyr Phe Cys Met Ile Val Gly Ser Pro Glu Leu Thr Phe Gly Lys

115 120 125

Gly Thr Gln Leu Ser Val Val Asp Phe Leu Pro Thr Thr Ala Gln Pro

130 135 140

Thr Lys Lys Ser Thr Leu Lys Lys Arg Val Cys Arg Leu Pro Arg Pro

145 150 155 160

Glu Thr Gln Lys Gly Pro Leu Cys Ser Pro Ile Thr Leu Gly Leu Leu

165 170 175

Val Ala Gly Val Leu Val Leu Leu Val Ser Leu Gly Val Ala Ile His

180 185 190

Leu Cys Cys Arg Arg Arg Arg Ala Arg Leu Arg Phe Met Lys Gln Phe

195 200 205

Tyr Lys

210

<210> 6

<211> 515

<212> PRT

<213> Homo sapiens

<400> 6

Met Glu Ala Arg Glu Pro Gly Arg Pro Thr Pro Thr Tyr His Leu Val

1 5 10 15

Pro Asn Thr Ser Gln Ser Gln Val Glu Glu Asp Val Ser Ser Pro Pro

20 25 30

Gln Arg Ser Ser Glu Thr Met Gln Leu Lys Lys Glu Ile Ser Leu Leu

35 40 45

Asn Gly Val Ser Leu Val Val Gly Asn Met Ile Gly Ser Gly Ile Phe

50 55 60

Val Ser Pro Lys Gly Val Leu Val His Thr Ala Ser Tyr Gly Met Ser

65 70 75 80

Leu Ile Val Trp Ala Ile Gly Gly Leu Phe Ser Val Val Gly Ala Leu

85 90 95

Cys Tyr Ala Glu Leu Gly Thr Thr Ile Thr Lys Ser Gly Ala Ser Tyr

100 105 110

Ala Tyr Ile Leu Glu Ala Phe Gly Gly Phe Ile Ala Phe Ile Arg Leu

115 120 125

Trp Val Ser Leu Leu Val Val Glu Pro Thr Gly Gln Ala Ile Ile Ala

130 135 140

Ile Thr Phe Ala Asn Tyr Ile Ile Gln Pro Ser Phe Pro Ser Cys Asp

145 150 155 160

Pro Pro Tyr Leu Ala Cys Arg Leu Leu Ala Ala Ala Cys Ile Cys Leu

165 170 175

Leu Thr Phe Val Asn Cys Ala Tyr Val Lys Trp Gly Thr Arg Val Gln

180 185 190

Asp Thr Phe Thr Tyr Ala Lys Val Val Ala Leu Ile Ala Ile Ile Val

195 200 205

Met Gly Leu Val Lys Leu Cys Gln Gly His Ser Glu His Phe Gln Asp

210 215 220

Ala Phe Glu Gly Ser Ser Trp Asp Met Gly Asn Leu Ser Leu Ala Leu

225 230 235 240

Tyr Ser Ala Leu Phe Ser Tyr Ser Gly Trp Asp Thr Leu Asn Phe Val

245 250 255

Thr Glu Glu Ile Lys Asn Pro Glu Arg Asn Leu Pro Leu Ala Ile Gly

260 265 270

Ile Ser Met Pro Ile Val Thr Leu Ile Tyr Ile Leu Thr Asn Val Ala

275 280 285

Tyr Tyr Thr Val Leu Asn Ile Ser Asp Val Leu Ser Ser Asp Ala Val

290 295 300

Ala Val Thr Phe Ala Asp Gln Thr Phe Gly Met Phe Ser Trp Thr Ile

305 310 315 320

Pro Ile Ala Val Ala Leu Ser Cys Phe Gly Gly Leu Asn Ala Ser Ile

325 330 335

Phe Ala Ser Ser Arg Leu Phe Phe Val Gly Ser Arg Glu Gly His Leu

340 345 350

Pro Asp Leu Leu Ser Met Ile His Ile Glu Arg Phe Thr Pro Ile Pro

355 360 365

Ala Leu Leu Phe Asn Cys Thr Met Ala Leu Ile Tyr Leu Ile Val Glu

370 375 380

Asp Val Phe Gln Leu Ile Asn Tyr Phe Ser Phe Ser Tyr Trp Phe Phe

385 390 395 400

Val Gly Leu Ser Val Val Gly Gln Leu Tyr Leu Arg Trp Lys Glu Pro

405 410 415

Lys Arg Pro Arg Pro Leu Lys Leu Ser Val Phe Phe Pro Ile Val Phe

420 425 430

Cys Ile Cys Ser Val Phe Leu Val Ile Val Pro Leu Phe Thr Asp Thr

435 440 445

Ile Asn Ser Leu Ile Gly Ile Gly Ile Ala Leu Ser Gly Val Pro Phe

450 455 460

Tyr Phe Met Gly Val Tyr Leu Pro Glu Ser Arg Arg Pro Leu Phe Ile

465 470 475 480

Arg Asn Val Leu Ala Ala Ile Thr Arg Gly Thr Gln Gln Leu Cys Phe

485 490 495

Cys Val Leu Thr Glu Leu Asp Val Ala Glu Glu Lys Lys Asp Glu Arg

500 505 510

Lys Thr Asp

515

<210> 7

<211> 445

<212> PRT

<213> Homo sapiens

<400> 7

Met Ala Ala Pro Thr Pro Ala Arg Pro Val Leu Thr His Leu Leu Val

1 5 10 15

Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val

20 25 30

Glu Leu Pro Val Val Val Lys Glu Leu Pro Glu Gly Trp Ser Leu Pro

35 40 45

Ser Tyr Val Ser Val Leu Val Ala Leu Gly Asn Leu Gly Leu Leu Val

50 55 60

Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Asp Glu Gln Val Pro

65 70 75 80

Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala

85 90 95

Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val

100 105 110

Ala Phe Leu Ala Leu Ala Phe Val Leu Ala Leu Ala Cys Cys Ala Ser

115 120 125

Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Arg Phe Leu
130 135 140
Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val
145 150 155 160
Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro
165 170 175
Ile Asn Gly Thr Pro Gly Pro Pro Leu Asp Phe Leu Glu Arg Phe Pro
180 185 190

Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Ala Ser Ala
195 200 205
Ala Ala Phe Gln Gly Leu Leu Leu Leu Leu Pro Pro Pro Pro Ser Val
210 215 220
Pro Thr Gly Glu Leu Gly Ser Gly Leu Gln Val Gly Ala Pro Gly Ala
225 230 235 240
Glu Glu Glu Val Glu Glu Ser Ser Pro Leu Gln Glu Pro Pro Ser Gln
245 250 255

Ala Ala Gly Thr Thr Pro Gly Pro Asp Pro Lys Ala Tyr Gln Leu Leu
260 265 270
Ser Ala Arg Ser Ala Cys Leu Leu Gly Leu Leu Ala Ala Thr Asn Ala
275 280 285
Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro
290 295 300
Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly Ser Ala Ala
305 310 315 320

Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys Arg Ser Leu
325 330 335
Ala Gly Leu Gly Gly Leu Ser Leu Leu Gly Val Phe Cys Gly Gly Tyr
340 345 350
Leu Met Ala Leu Ala Val Leu Ser Pro Cys Pro Pro Leu Val Gly Thr
355 360 365

Ser Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu Cys Leu Gly
370 375 380

Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu His Gly Gly
385 390 395 400
Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln Val Gly Ser
405 410 415
Leu Leu Gly Ala Val Ala Met Phe Pro Pro Thr Ser Ile Tyr His Val
420 425 430
Phe His Ser Arg Lys Asp Cys Ala Asp Pro Cys Asp Ser
435 440 445

<210> 8

<211> 277
<212> PRT
<213> Homo sapiens
<400> 8

Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
1 5 10 15
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
20 25 30
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu

50 55 60
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
100 105 110
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly

115 120 125

Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
130 135 140
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
145 150 155 160
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln
165 170 175
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu

180 185 190
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile
195 200 205
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn
210 215 220
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp
225 230 235 240
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His

245 250 255
Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser
260 265 270
Val Gln Glu Arg Gln
275

<210> 9
<211> 487
<212> PRT
<213> Homo sapiens
<400> 9
Met Met His Phe Lys Ser Gly Leu Glu Leu Thr Glu Leu Gln Asn Met
1 5 10 15
Thr Val Pro Glu Asp Asp Asn Ile Ser Asn Asp Ser Asn Asp Phe Thr

20 25 30
Glu Val Glu Asn Gly Gln Ile Asn Ser Lys Phe Ile Ser Asp Arg Glu
35 40 45
Ser Arg Arg Ser Leu Thr Asn Ser His Leu Glu Lys Lys Lys Cys Asp

50 55 60

Glu Tyr Ile Pro Gly Thr Thr Ser Leu Gly Met Ser Val Phe Asn Leu

65 70 75 80

Ser Asn Ala Ile Met Gly Ser Gly Ile Leu Gly Leu Ala Phe Ala Leu

85 90 95

Ala Asn Thr Gly Ile Leu Leu Phe Leu Val Leu Leu Thr Ser Val Thr

100 105 110

Leu Leu Ser Ile Tyr Ser Ile Asn Leu Leu Leu Ile Cys Ser Lys Glu

115 120 125

Thr Gly Cys Met Val Tyr Glu Lys Leu Gly Glu Gln Val Phe Gly Thr

130 135 140

Thr Gly Lys Phe Val Ile Phe Gly Ala Thr Ser Leu Gln Asn Thr Gly

145 150 155 160

Ala Met Leu Ser Tyr Leu Phe Ile Val Lys Asn Glu Leu Pro Ser Ala

165 170 175

Ile Lys Phe Leu Met Gly Lys Glu Glu Thr Phe Ser Ala Trp Tyr Val

180 185 190

Asp Gly Arg Val Leu Val Val Ile Val Thr Phe Gly Ile Ile Leu Pro

195 200 205

Leu Cys Leu Leu Lys Asn Leu Gly Tyr Leu Gly Tyr Thr Ser Gly Phe

210 215 220

Ser Leu Ser Cys Met Val Phe Phe Leu Ile Val Val Ile Tyr Lys Lys

225 230 235 240

Phe Gln Ile Pro Cys Ile Val Pro Glu Leu Asn Ser Thr Ile Ser Ala

245 250 255

Asn Ser Thr Asn Ala Asp Thr Cys Thr Pro Lys Tyr Val Thr Phe Asn

260 265 270

Ser Lys Thr Val Tyr Ala Leu Pro Thr Ile Ala Phe Ala Phe Val Cys

275 280 285

His Pro Ser Val Leu Pro Ile Tyr Ser Glu Leu Lys Asp Arg Ser Gln

290 295 300

Lys Lys Met Gln Met Val Ser Asn Ile Ser Phe Phe Ala Met Phe Val
305 310 315 320
Met Tyr Phe Leu Thr Ala Ile Phe Gly Tyr Leu Thr Phe Tyr Asp Asn
325 330 335
Val Gln Ser Asp Leu Leu His Lys Tyr Gln Ser Lys Asp Asp Ile Leu

340 345 350
Ile Leu Thr Val Arg Leu Ala Val Ile Val Ala Val Ile Leu Thr Val
355 360 365
Pro Val Leu Phe Phe Thr Val Arg Ser Ser Leu Phe Glu Leu Ala Lys
370 375 380
Lys Thr Lys Phe Asn Leu Cys Arg His Thr Val Val Thr Cys Ile Leu
385 390 395 400
Leu Val Val Ile Asn Leu Leu Val Ile Phe Ile Pro Ser Met Lys Asp

405 410 415
Ile Phe Gly Val Val Gly Val Thr Ser Ala Asn Met Leu Ile Phe Ile
420 425 430
Leu Pro Ser Ser Leu Tyr Leu Lys Ile Thr Asp Gln Asp Gly Asp Lys
435 440 445
Gly Thr Gln Arg Ile Trp Ala Ala Leu Phe Leu Gly Leu Gly Val Leu
450 455 460
Phe Ser Leu Val Ser Ile Pro Leu Val Ile Tyr Asp Trp Ala Cys Ser

465 470 475 480
Ser Ser Ser Asp Glu Gly His
485

<210> 10
<211> 458
<212> PRT
<213> Homo sapiens
<400> 10
Met Asn Arg Gly Val Pro Phe Arg His Leu Leu Leu Val Leu Gln Leu
1 5 10 15
Ala Leu Leu Pro Ala Ala Thr Gln Gly Lys Lys Val Val Leu Gly Lys

```
            20                  25                  30
Lys Gly Asp Thr Val Glu Leu Thr Cys Thr Ala Ser Gln Lys Lys Ser

        35                  40                  45
Ile Gln Phe His Trp Lys Asn Ser Asn Gln Ile Lys Ile Leu Gly Asn
    50                  55                  60
Gln Gly Ser Phe Leu Thr Lys Gly Pro Ser Lys Leu Asn Asp Arg Ala
65                  70                  75                  80
Asp Ser Arg Arg Ser Leu Trp Asp Gln Gly Asn Phe Pro Leu Ile Ile
                85                  90                  95
Lys Asn Leu Lys Ile Glu Asp Ser Asp Thr Tyr Ile Cys Glu Val Glu

            100                 105                 110
Asp Gln Lys Glu Glu Val Gln Leu Leu Val Phe Gly Leu Thr Ala Asn
        115                 120                 125
Ser Asp Thr His Leu Leu Gln Gly Gln Ser Leu Thr Leu Thr Leu Glu
    130                 135                 140
Ser Pro Pro Gly Ser Ser Pro Ser Val Gln Cys Arg Ser Pro Arg Gly
145                 150                 155                 160
Lys Asn Ile Gln Gly Gly Lys Thr Leu Ser Val Ser Gln Leu Glu Leu

                165                 170                 175
Gln Asp Ser Gly Thr Trp Thr Cys Thr Val Leu Gln Asn Gln Lys Lys
            180                 185                 190
Val Glu Phe Lys Ile Asp Ile Val Val Leu Ala Phe Gln Lys Ala Ser
        195                 200                 205
Ser Ile Val Tyr Lys Lys Glu Gly Glu Gln Val Glu Phe Ser Phe Pro
    210                 215                 220
Leu Ala Phe Thr Val Glu Lys Leu Thr Gly Ser Gly Glu Leu Trp Trp

225                 230                 235                 240
Gln Ala Glu Arg Ala Ser Ser Ser Lys Ser Trp Ile Thr Phe Asp Leu
                245                 250                 255
Lys Asn Lys Glu Val Ser Val Lys Arg Val Thr Gln Asp Pro Lys Leu
            260                 265                 270
```

Gln Met Gly Lys Lys Leu Pro Leu His Leu Thr Leu Pro Gln Ala Leu

275 280 285

Pro Gln Tyr Ala Gly Ser Gly Asn Leu Thr Leu Ala Leu Glu Ala Lys

290 295 300

Thr Gly Lys Leu His Gln Glu Val Asn Leu Val Val Met Arg Ala Thr

305 310 315 320

Gln Leu Gln Lys Asn Leu Thr Cys Glu Val Trp Gly Pro Thr Ser Pro

325 330 335

Lys Leu Met Leu Ser Leu Lys Leu Glu Asn Lys Glu Ala Lys Val Ser

340 345 350

Lys Arg Glu Lys Ala Val Trp Val Leu Asn Pro Glu Ala Gly Met Trp

355 360 365

Gln Cys Leu Leu Ser Asp Ser Gly Gln Val Leu Leu Glu Ser Asn Ile

370 375 380

Lys Val Leu Pro Thr Trp Ser Thr Pro Val Gln Pro Met Ala Leu Ile

385 390 395 400

Val Leu Gly Gly Val Ala Gly Leu Leu Leu Phe Ile Gly Leu Gly Ile

405 410 415

Phe Phe Cys Val Arg Cys Arg His Arg Arg Arg Gln Ala Glu Arg Met

420 425 430

Ser Gln Ile Lys Arg Leu Leu Ser Glu Lys Lys Thr Cys Gln Cys Pro

435 440 445

His Arg Phe Gln Lys Thr Cys Ser Pro Ile

450 455

<210> 11

<211> 281

<212> PRT

<213> Homo sapiens

<400> 11

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> 12

<211> 661

<212> PRT

<213> Homo sapiens

<400> 12

Met Ala Phe Asp Val Ser Cys Phe Phe Trp Val Val Leu Phe Ser Ala

1 5 10 15

Gly Cys Lys Val Ile Thr Ser Trp Asp Gln Met Cys Ile Glu Lys Glu

20 25 30

Ala Asn Lys Thr Tyr Asn Cys Glu Asn Leu Gly Leu Ser Glu Ile Pro

35 40 45

Asp Thr Leu Pro Asn Thr Thr Glu Phe Leu Glu Phe Ser Phe Asn Phe

50 55 60

Leu Pro Thr Ile His Asn Arg Thr Phe Ser Arg Leu Met Asn Leu Thr

65 70 75 80

Phe Leu Asp Leu Thr Arg Cys Gln Ile Asn Trp Ile His Glu Asp Thr

85 90 95

Phe Gln Ser His His Gln Leu Ser Thr Leu Val Leu Thr Gly Asn Pro

100 105 110

Leu Ile Phe Met Ala Glu Thr Ser Leu Asn Gly Pro Lys Ser Leu Lys

115 120 125

His Leu Phe Leu Ile Gln Thr Gly Ile Ser Asn Leu Glu Phe Ile Pro

130 135 140

Val His Asn Leu Glu Asn Leu Glu Ser Leu Tyr Leu Gly Ser Asn His

145 150 155 160

Ile Ser Ser Ile Lys Phe Pro Lys Asp Phe Pro Ala Arg Asn Leu Lys

165 170 175

Val Leu Asp Phe Gln Asn Asn Ala Ile His Tyr Ile Ser Arg Glu Asp

180 185 190

Met Arg Ser Leu Glu Gln Ala Ile Asn Leu Ser Leu Asn Phe Asn Gly

195 200 205

Asn Asn Val Lys Gly Ile Glu Leu Gly Ala Phe Asp Ser Thr Ile Phe

210 215 220

Gln Ser Leu Asn Phe Gly Gly Thr Pro Asn Leu Ser Val Ile Phe Asn

225 230 235 240

Gly Leu Gln Asn Ser Thr Thr Gln Ser Leu Trp Leu Gly Thr Phe Glu

245 250 255

Asp Ile Asp Asp Glu Asp Ile Ser Ser Ala Met Leu Lys Gly Leu Cys

260 265 270

Glu Met Ser Val Glu Ser Leu Asn Leu Gln Glu His Arg Phe Ser Asp

275 280 285

Ile Ser Ser Thr Thr Phe Gln Cys Phe Thr Gln Leu Gln Glu Leu Asp

290 295 300

Leu Thr Ala Thr His Leu Lys Gly Leu Pro Ser Gly Met Lys Gly Leu

305 310 315 320

Asn Leu Leu Lys Lys Leu Val Leu Ser Val Asn His Phe Asp Gln Leu

325 330 335

Cys Gln Ile Ser Ala Ala Asn Phe Pro Ser Leu Thr His Leu Tyr Ile

340 345 350

Arg Gly Asn Val Lys Lys Leu His Leu Gly Val Gly Cys Leu Glu Lys

355 360 365

Leu Gly Asn Leu Gln Thr Leu Asp Leu Ser His Asn Asp Ile Glu Ala

370 375 380

Ser Asp Cys Cys Ser Leu Gln Leu Lys Asn Leu Ser His Leu Gln Thr

385 390 395 400

Leu Asn Leu Ser His Asn Glu Pro Leu Gly Leu Gln Ser Gln Ala Phe

405 410 415

Lys Glu Cys Pro Gln Leu Glu Leu Leu Asp Leu Ala Phe Thr Arg Leu

420 425 430

His Ile Asn Ala Pro Gln Ser Pro Phe Gln Asn Leu His Phe Leu Gln

435 440 445

Val Leu Asn Leu Thr Tyr Cys Phe Leu Asp Thr Ser Asn Gln His Leu

450 455 460

Leu Ala Gly Leu Pro Val Leu Arg His Leu Asn Leu Lys Gly Asn His

465 470 475 480

Phe Gln Asp Gly Thr Ile Thr Lys Thr Asn Leu Leu Gln Thr Val Gly

485 490 495

Ser Leu Glu Val Leu Ile Leu Ser Ser Cys Gly Leu Leu Ser Ile Asp

500 505 510

Gln Gln Ala Phe His Ser Leu Gly Lys Met Ser His Val Asp Leu Ser

515 520 525

His Asn Ser Leu Thr Cys Asp Ser Ile Asp Ser Leu Ser His Leu Lys

530 535 540

Gly Ile Tyr Leu Asn Leu Ala Ala Asn Ser Ile Asn Ile Ile Ser Pro

545 550 555 560

Arg Leu Leu Pro Ile Leu Ser Gln Gln Ser Thr Ile Asn Leu Ser His

565 570 575

Asn Pro Leu Asp Cys Thr Cys Ser Asn Ile His Phe Leu Thr Trp Tyr

580 585 590

Lys Glu Asn Leu His Lys Leu Glu Gly Ser Glu Glu Thr Thr Cys Ala

595 600 605

Asn Pro Pro Ser Leu Arg Gly Val Lys Leu Ser Asp Val Lys Leu Ser

610 615 620

Cys Gly Ile Thr Ala Ile Gly Ile Phe Phe Leu Ile Val Phe Leu Leu

625 630 635 640

Leu Leu Ala Ile Leu Leu Phe Phe Ala Val Lys Tyr Leu Leu Arg Trp

645 650 655

Lys Tyr Gln His Ile

660

<210> 13

<211> 823

<212> PRT

<213> Homo sapiens

<400> 13

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> 14

<211> 364

<212> PRT

<213> Homo sapiens

<400> 14

Met Pro Leu Leu Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala

1 5 10 15

Met Asp Pro Asn Phe Trp Leu Gln Val Gln Glu Ser Val Thr Val Gln

20 25 30

Glu Gly Leu Cys Val Leu Val Pro Cys Thr Phe Phe His Pro Ile Pro

35 40 45

Tyr Tyr Asp Lys Asn Ser Pro Val His Gly Tyr Trp Phe Arg Glu Gly

50 55 60

Ala Ile Ile Ser Arg Asp Ser Pro Val Ala Thr Asn Lys Leu Asp Gln

65 70 75 80

Glu Val Gln Glu Glu Thr Gln Gly Arg Phe Arg Leu Leu Gly Asp Pro

85 90 95

Ser Arg Asn Asn Cys Ser Leu Ser Ile Val Asp Ala Arg Arg Arg Asp

100 105 110

Asn Gly Ser Tyr Phe Phe Arg Met Glu Arg Gly Ser Thr Lys Tyr Ser

115 120 125

Tyr Lys Ser Pro Gln Leu Ser Val His Val Thr Asp Leu Thr His Arg

130 135 140

Pro Lys Ile Leu Ile Pro Gly Thr Leu Glu Pro Gly His Ser Lys Asn

145 150 155 160

Leu Thr Cys Ser Val Ser Trp Ala Cys Glu Gln Gly Thr Pro Pro Ile

165 170 175

Phe Ser Trp Leu Ser Ala Ala Pro Thr Ser Leu Gly Pro Arg Thr Thr

180 185 190

His Ser Ser Val Leu Ile Ile Thr Pro Arg Pro Gln Asp His Gly Thr

195 200 205

Asn Leu Thr Cys Gln Val Lys Phe Ala Gly Ala Gly Val Thr Thr Glu

210 215 220

Arg Thr Ile Gln Leu Asn Val Thr Tyr Val Pro Gln Asn Pro Thr Thr

225 230 235 240

Gly Ile Phe Pro Gly Asp Gly Ser Gly Lys Gln Glu Thr Arg Ala Gly

245 250 255

Val Val His Gly Ala Ile Gly Gly Ala Gly Val Thr Ala Leu Leu Ala

260 265 270

Leu Cys Leu Cys Leu Ile Phe Phe Ile Val Lys Thr His Arg Arg Lys

275 280 285

Ala Ala Arg Thr Ala Val Gly Arg Asn Asp Thr His Pro Thr Thr Gly

290 295 300

Ser Ala Ser Pro Lys His Gln Lys Lys Ser Lys Leu His Gly Pro Thr

305 310 315 320

Glu Thr Ser Ser Cys Ser Gly Ala Ala Pro Thr Val Glu Met Asp Glu

325 330 335

Glu Leu His Tyr Ala Ser Leu Asn Phe His Gly Met Asn Pro Ser Lys

340 345 350

Asp Thr Ser Thr Glu Tyr Ser Glu Val Arg Thr Gln

355 360

<210> 15

<211> 2146

<212> PRT

<213> Homo sapiens

<400> 15

Met Ala Phe Trp Thr Gln Leu Met Leu Leu Leu Trp Lys Asn Phe Met

1 5 10 15

Tyr Arg Arg Arg Gln Pro Val Gln Leu Leu Val Glu Leu Leu Trp Pro

20 25 30

Leu Phe Leu Phe Phe Ile Leu Val Ala Val Arg His Ser His Pro Pro

35 40 45

Leu Glu His His Glu Cys His Phe Pro Asn Lys Pro Leu Pro Ser Ala

50 55 60

Gly Thr Val Pro Trp Leu Gln Gly Leu Ile Cys Asn Val Asn Asn Thr

65 70 75 80

Cys Phe Pro Gln Leu Thr Pro Gly Glu Glu Pro Gly Arg Leu Ser Asn

85 90 95

Phe Asn Asp Ser Leu Val Ser Arg Leu Leu Ala Asp Ala Arg Thr Val

100 105 110

Leu Gly Gly Ala Ser Ala His Arg Thr Leu Ala Gly Leu Gly Lys Leu

115 120 125

Ile Ala Thr Leu Arg Ala Ala Arg Ser Thr Ala Gln Pro Gln Pro Thr

130 135 140

Lys Gln Ser Pro Leu Glu Pro Pro Met Leu Asp Val Ala Glu Leu Leu

145 150 155 160

Thr Ser Leu Leu Arg Thr Glu Ser Leu Gly Leu Ala Leu Gly Gln Ala

165 170 175

Gln Glu Pro Leu His Ser Leu Leu Glu Ala Ala Glu Asp Leu Ala Gln
180 185 190
Glu Leu Leu Ala Leu Arg Ser Leu Val Glu Leu Arg Ala Leu Leu Gln
195 200 205
Arg Pro Arg Gly Thr Ser Gly Pro Leu Glu Leu Leu Ser Glu Ala Leu
210 215 220
Cys Ser Val Arg Gly Pro Ser Ser Thr Val Gly Pro Ser Leu Asn Trp

225 230 235 240
Tyr Glu Ala Ser Asp Leu Met Glu Leu Val Gly Gln Glu Pro Glu Ser
245 250 255
Ala Leu Pro Asp Ser Ser Leu Ser Pro Ala Cys Ser Glu Leu Ile Gly
260 265 270
Ala Leu Asp Ser His Pro Leu Ser Arg Leu Leu Trp Arg Arg Leu Lys
275 280 285
Pro Leu Ile Leu Gly Lys Leu Leu Phe Ala Pro Asp Thr Pro Phe Thr

290 295 300
Arg Lys Leu Met Ala Gln Val Asn Arg Thr Phe Glu Glu Leu Thr Leu
305 310 315 320
Leu Arg Asp Val Arg Glu Val Trp Glu Met Leu Gly Pro Arg Ile Phe
325 330 335
Thr Phe Met Asn Asp Ser Ser Asn Val Ala Met Leu Gln Arg Leu Leu
340 345 350
Gln Met Gln Asp Glu Gly Arg Arg Gln Pro Arg Pro Gly Gly Arg Asp

355 360 365
His Met Glu Ala Leu Arg Ser Phe Leu Asp Pro Gly Ser Gly Gly Tyr
370 375 380
Ser Trp Gln Asp Ala His Ala Asp Val Gly His Leu Val Gly Thr Leu
385 390 395 400
Gly Arg Val Thr Glu Cys Leu Ser Leu Asp Lys Leu Glu Ala Ala Pro
405 410 415
Ser Glu Ala Ala Leu Val Ser Arg Ala Leu Gln Leu Leu Ala Glu His

420 425 430

Arg Phe Trp Ala Gly Val Val Phe Leu Gly Pro Glu Asp Ser Ser Asp

435 440 445

Pro Thr Glu His Pro Thr Pro Asp Leu Gly Pro Gly His Val Arg Ile

450 455 460

Lys Ile Arg Met Asp Ile Asp Val Val Thr Arg Thr Asn Lys Ile Arg

465 470 475 480

Asp Arg Phe Trp Asp Pro Gly Pro Ala Ala Asp Pro Leu Thr Asp Leu

485 490 495

Arg Tyr Val Trp Gly Gly Phe Val Tyr Leu Gln Asp Leu Val Glu Arg

500 505 510

Ala Ala Val Arg Val Leu Ser Gly Ala Asn Pro Arg Ala Gly Leu Tyr

515 520 525

Leu Gln Gln Met Pro Tyr Pro Cys Tyr Val Asp Asp Val Phe Leu Arg

530 535 540

Val Leu Ser Arg Ser Leu Pro Leu Phe Leu Thr Leu Ala Trp Ile Tyr

545 550 555 560

Ser Val Thr Leu Thr Val Lys Ala Val Val Arg Glu Lys Glu Thr Arg

565 570 575

Leu Arg Asp Thr Met Arg Ala Met Gly Leu Ser Arg Ala Val Leu Trp

580 585 590

Leu Gly Trp Phe Leu Ser Cys Leu Gly Pro Phe Leu Leu Ser Ala Ala

595 600 605

Leu Leu Val Leu Val Leu Lys Leu Gly Asp Ile Leu Pro Tyr Ser His

610 615 620

Pro Gly Val Val Phe Leu Phe Leu Ala Ala Phe Ala Val Ala Thr Val

625 630 635 640

Thr Gln Ser Phe Leu Leu Ser Ala Phe Phe Ser Arg Ala Asn Leu Ala

645 650 655

Ala Ala Cys Gly Gly Leu Ala Tyr Phe Ser Leu Tyr Leu Pro Tyr Val

660 665 670

Leu Cys Val Ala Trp Arg Asp Arg Leu Pro Ala Gly Gly Arg Val Ala

675 680 685

Ala Ser Leu Leu Ser Pro Val Ala Phe Gly Phe Gly Cys Glu Ser Leu

690 695 700

Ala Leu Leu Glu Glu Gln Gly Glu Gly Ala Gln Trp His Asn Val Gly

705 710 715 720

Thr Arg Pro Thr Ala Asp Val Phe Ser Leu Ala Gln Val Ser Gly Leu

725 730 735

Leu Leu Leu Asp Ala Ala Leu Tyr Gly Leu Ala Thr Trp Tyr Leu Glu

740 745 750

Ala Val Cys Pro Gly Gln Tyr Gly Ile Pro Glu Pro Trp Asn Phe Pro

755 760 765

Phe Arg Arg Ser Tyr Trp Cys Gly Pro Arg Pro Pro Lys Ser Pro Ala

770 775 780

Pro Cys Pro Thr Pro Leu Asp Pro Lys Val Leu Val Glu Glu Ala Pro

785 790 795 800

Pro Gly Leu Ser Pro Gly Val Ser Val Arg Ser Leu Glu Lys Arg Phe

805 810 815

Pro Gly Ser Pro Gln Pro Ala Leu Arg Gly Leu Ser Leu Asp Phe Tyr

820 825 830

Gln Gly His Ile Thr Ala Phe Leu Gly His Asn Gly Ala Gly Lys Thr

835 840 845

Thr Thr Leu Ser Ile Leu Ser Gly Leu Phe Pro Pro Ser Gly Gly Ser

850 855 860

Ala Phe Ile Leu Gly His Asp Val Arg Ser Ser Met Ala Ala Ile Arg

865 870 875 880

Pro His Leu Gly Val Cys Pro Gln Tyr Asn Val Leu Phe Asp Met Leu

885 890 895

Thr Val Asp Glu His Val Trp Phe Tyr Gly Arg Leu Lys Gly Leu Ser

900 905 910

Ala Ala Val Val Gly Pro Glu Gln Asp Arg Leu Leu Gln Asp Val Gly

915 920 925

Leu Val Ser Lys Gln Ser Val Gln Thr Arg His Leu Ser Gly Gly Met

930 935 940

Gln Arg Lys Leu Ser Val Ala Ile Ala Phe Val Gly Gly Ser Gln Val

945 950 955 960

Val Ile Leu Asp Glu Pro Thr Ala Gly Val Asp Pro Ala Ser Arg Arg

965 970 975

Gly Ile Trp Glu Leu Leu Leu Lys Tyr Arg Glu Gly Arg Thr Leu Ile

980 985 990

Leu Ser Thr His His Leu Asp Glu Ala Glu Leu Leu Gly Asp Arg Val

995 1000 1005

Ala Val Val Ala Gly Gly Arg Leu Cys Cys Cys Gly Ser Pro Leu

1010 1015 1020

Phe Leu Arg Arg His Leu Gly Ser Gly Tyr Tyr Leu Thr Leu Val

1025 1030 1035

Lys Ala Arg Leu Pro Leu Thr Thr Asn Glu Lys Ala Asp Thr Asp

1040 1045 1050

Met Glu Gly Ser Val Asp Thr Arg Gln Glu Lys Lys Asn Gly Ser

1055 1060 1065

Gln Gly Ser Arg Val Gly Thr Pro Gln Leu Leu Ala Leu Val Gln

1070 1075 1080

His Trp Val Pro Gly Ala Arg Leu Val Glu Glu Leu Pro His Glu

1085 1090 1095

Leu Val Leu Val Leu Pro Tyr Thr Gly Ala His Asp Gly Ser Phe

1100 1105 1110

Ala Thr Leu Phe Arg Glu Leu Asp Thr Arg Leu Ala Glu Leu Arg

1115 1120 1125

Leu Thr Gly Tyr Gly Ile Ser Asp Thr Ser Leu Glu Glu Ile Phe

1130 1135 1140

Leu Lys Val Val Glu Glu Cys Ala Ala Asp Thr Asp Met Glu Asp

1145 1150 1155

Gly Ser Cys Gly Gln His Leu Cys Thr Gly Ile Ala Gly Leu Asp

1160 1165 1170

Val Thr Leu Arg Leu Lys Met Pro Pro Gln Glu Thr Ala Leu Glu

1175 1180 1185

Asn Gly Glu Pro Ala Gly Ser Ala Pro Glu Thr Asp Gln Gly Ser

1190 1195 1200

Gly Pro Asp Ala Val Gly Arg Val Gln Gly Trp Ala Leu Thr Arg

1205 1210 1215

Gln Gln Leu Gln Ala Leu Leu Leu Lys Arg Phe Leu Leu Ala Arg

1220 1225 1230

Arg Ser Arg Arg Gly Leu Phe Ala Gln Ile Val Leu Pro Ala Leu

1235 1240 1245

Phe Val Gly Leu Ala Leu Val Phe Ser Leu Ile Val Pro Pro Phe

1250 1255 1260

Gly His Tyr Pro Ala Leu Arg Leu Ser Pro Thr Met Tyr Gly Ala

1265 1270 1275

Gln Val Ser Phe Phe Ser Glu Asp Ala Pro Gly Asp Pro Gly Arg

1280 1285 1290

Ala Arg Leu Leu Glu Ala Leu Leu Gln Glu Ala Gly Leu Glu Glu

1295 1300 1305

Pro Pro Val Gln His Ser Ser His Arg Phe Ser Ala Pro Glu Val

1310 1315 1320

Pro Ala Glu Val Ala Lys Val Leu Ala Ser Gly Asn Trp Thr Pro

1325 1330 1335

Glu Ser Pro Ser Pro Ala Cys Gln Cys Ser Arg Pro Gly Ala Arg

1340 1345 1350

Arg Leu Leu Pro Asp Cys Pro Ala Ala Ala Gly Gly Pro Pro Pro

1355 1360 1365

Pro Gln Ala Val Thr Gly Ser Gly Glu Val Val Gln Asn Leu Thr

1370 1375 1380

Gly Arg Asn Leu Ser Asp Phe Leu Val Lys Thr Tyr Pro Arg Leu

1385 1390 1395

Val Arg Gln Gly Leu Lys Thr Lys Lys Trp Val Asn Glu Val Arg

1400 1405 1410

Tyr Gly Gly Phe Ser Leu Gly Gly Arg Asp Pro Gly Leu Pro Ser

1415 1420 1425

Gly Gln Glu Leu Gly Arg Ser Val Glu Glu Leu Trp Ala Leu Leu

1430 1435 1440

Ser Pro Leu Pro Gly Gly Ala Leu Asp Arg Val Leu Lys Asn Leu

1445 1450 1455

Thr Ala Trp Ala His Ser Leu Asp Ala Gln Asp Ser Leu Lys Ile

1460 1465 1470

Trp Phe Asn Asn Lys Gly Trp His Ser Met Val Ala Phe Val Asn

1475 1480 1485

Arg Ala Ser Asn Ala Ile Leu Arg Ala His Leu Pro Pro Gly Pro

1490 1495 1500

Ala Arg His Ala His Ser Ile Thr Thr Leu Asn His Pro Leu Asn

1505 1510 1515

Leu Thr Lys Glu Gln Leu Ser Glu Gly Ala Leu Met Ala Ser Ser

1520 1525 1530

Val Asp Val Leu Val Ser Ile Cys Val Val Phe Ala Met Ser Phe

1535 1540 1545

Val Pro Ala Ser Phe Thr Leu Val Leu Ile Glu Glu Arg Val Thr

1550 1555 1560

Arg Ala Lys His Leu Gln Leu Met Gly Gly Leu Ser Pro Thr Leu

1565 1570 1575

Tyr Trp Leu Gly Asn Phe Leu Trp Asp Met Cys Asn Tyr Leu Val

1580 1585 1590

Pro Ala Cys Ile Val Val Leu Ile Phe Leu Ala Phe Gln Gln Arg

1595 1600 1605

Ala Tyr Val Ala Pro Ala Asn Leu Pro Ala Leu Leu Leu Leu Leu

1610 1615 1620

Leu Leu Tyr Gly Trp Ser Ile Thr Pro Leu Met Tyr Pro Ala Ser

1625 1630 1635

Phe Phe Phe Ser Val Pro Ser Thr Ala Tyr Val Val Leu Thr Cys

1640 1645 1650

Ile Asn Leu Phe Ile Gly Ile Asn Gly Ser Met Ala Thr Phe Val

1655 1660 1665

Leu Glu Leu Phe Ser Asp Gln Lys Leu Gln Glu Val Ser Arg Ile

1670 1675 1680

Leu Lys Gln Val Phe Leu Ile Phe Pro His Phe Cys Leu Gly Arg

1685 1690 1695

Gly Leu Ile Asp Met Val Arg Asn Gln Ala Met Ala Asp Ala Phe

1700 1705 1710

Glu Arg Leu Gly Asp Arg Gln Phe Gln Ser Pro Leu Arg Trp Glu

1715 1720 1725

Val Val Gly Lys Asn Leu Leu Ala Met Val Ile Gln Gly Pro Leu

1730 1735 1740

Phe Leu Leu Phe Thr Leu Leu Leu Gln His Arg Ser Gln Leu Leu

1745 1750 1755

Pro Gln Pro Arg Val Arg Ser Leu Pro Leu Leu Gly Glu Glu Asp

1760 1765 1770

Glu Asp Val Ala Arg Glu Arg Glu Arg Val Val Gln Gly Ala Thr

1775 1780 1785

Gln Gly Asp Val Leu Val Leu Arg Asn Leu Thr Lys Val Tyr Arg

1790 1795 1800

Gly Gln Arg Met Pro Ala Val Asp Arg Leu Cys Leu Gly Ile Pro

1805 1810 1815

Pro Gly Glu Cys Phe Gly Leu Leu Gly Val Asn Gly Ala Gly Lys

1820 1825 1830

Thr Ser Thr Phe Arg Met Val Thr Gly Asp Thr Leu Ala Ser Arg

1835 1840 1845

Gly Glu Ala Val Leu Ala Gly His Ser Val Ala Arg Glu Pro Ser

1850 1855 1860

Ala Ala His Leu Ser Met Gly Tyr Cys Pro Gln Ser Asp Ala Ile

1865 1870 1875

Phe Glu Leu Leu Thr Gly Arg Glu His Leu Glu Leu Leu Ala Arg

1880 1885 1890

Leu Arg Gly Val Pro Glu Ala Gln Val Ala Gln Thr Ala Gly Ser

1895 1900 1905

Gly Leu Ala Arg Leu Gly Leu Ser Trp Tyr Ala Asp Arg Pro Ala

1910 1915 1920

Gly Thr Tyr Ser Gly Gly Asn Lys Arg Lys Leu Ala Thr Ala Leu

1925 1930 1935

Ala Leu Val Gly Asp Pro Ala Val Val Phe Leu Asp Glu Pro Thr

1940 1945 1950

Thr Gly Met Asp Pro Ser Ala Arg Arg Phe Leu Trp Asn Ser Leu

1955 1960 1965

Leu Ala Val Val Arg Glu Gly Arg Ser Val Met Leu Thr Ser His

1970 1975 1980

Ser Met Glu Glu Cys Glu Ala Leu Cys Ser Arg Leu Ala Ile Met

1985 1990 1995

Val Asn Gly Arg Phe Arg Cys Leu Gly Ser Pro Gln His Leu Lys

2000 2005 2010

Gly Arg Phe Ala Ala Gly His Thr Leu Thr Leu Arg Val Pro Ala

2015 2020 2025

Ala Arg Ser Gln Pro Ala Ala Ala Phe Val Ala Ala Glu Phe Pro

2030 2035 2040

Gly Ala Glu Leu Arg Glu Ala His Gly Gly Arg Leu Arg Phe Gln

2045 2050 2055

Leu Pro Pro Gly Gly Arg Cys Ala Leu Ala Arg Val Phe Gly Glu

2060 2065 2070

Leu Ala Val His Gly Ala Glu His Gly Val Glu Asp Phe Ser Val

2075 2080 2085

Ser Gln Thr Met Leu Glu Glu Val Phe Leu Tyr Phe Ser Lys Asp

2090 2095 2100

Gln Gly Lys Asp Glu Asp Thr Glu Glu Gln Lys Glu Ala Gly Val

2105 2110 2115

Gly Val Asp Pro Ala Pro Gly Leu Gln His Pro Lys Arg Val Ser

2120 2125 2130

Gln Phe Leu Asp Asp Pro Ser Thr Ala Glu Thr Val Leu

2135 2140 2145

<210> 16

<211> 635

<212> PRT

<213> Homo sapiens

<400> 16

Met Ser Val Gly Val Ser Thr Ser Ala Pro Leu Ser Pro Thr Ser Gly

1 5 10 15

Thr Ser Val Gly Met Ser Thr Phe Ser Ile Met Asp Tyr Val Val Phe

20 25 30

Val Leu Leu Leu Val Leu Ser Leu Ala Ile Gly Leu Tyr His Ala Cys

35 40 45

Arg Gly Trp Gly Arg His Thr Val Gly Glu Leu Leu Met Ala Asp Arg

50 55 60

Lys Met Gly Cys Leu Pro Val Ala Leu Ser Leu Leu Ala Thr Phe Gln

65 70 75 80

Ser Ala Val Ala Ile Leu Gly Val Pro Ser Glu Ile Tyr Arg Phe Gly

85 90 95

Thr Gln Tyr Trp Phe Leu Gly Cys Cys Tyr Phe Leu Gly Leu Leu Ile

100 105 110

Pro Ala His Ile Phe Ile Pro Val Phe Tyr Arg Leu His Leu Thr Ser

115 120 125

Ala Tyr Glu Tyr Leu Glu Leu Arg Phe Asn Lys Thr Val Arg Val Cys

130 135 140

Gly Thr Val Thr Phe Ile Phe Gln Met Val Ile Tyr Met Gly Val Val

145 150 155 160

Leu Tyr Ala Pro Ser Leu Ala Leu Asn Ala Val Thr Gly Phe Asp Leu

165 170 175

Trp Leu Ser Val Leu Ala Leu Gly Ile Val Cys Thr Val Tyr Thr Ala

180 185 190

Leu Gly Gly Leu Lys Ala Val Ile Trp Thr Asp Val Phe Gln Thr Leu

195 200 205

Val Met Phe Leu Gly Gln Leu Ala Val Ile Ile Val Gly Ser Ala Lys

210 215 220

Val Gly Gly Leu Gly Arg Val Trp Ala Val Ala Ser Gln His Gly Arg

225 230 235 240

Ile Ser Gly Phe Glu Leu Asp Pro Asp Pro Phe Val Arg His Thr Phe

245 250 255

Trp Thr Leu Ala Phe Gly Gly Val Phe Met Met Leu Ser Leu Tyr Gly

260 265 270

Val Asn Gln Ala Gln Val Gln Arg Tyr Leu Ser Ser Arg Thr Glu Lys

275 280 285

Ala Ala Val Leu Ser Cys Tyr Ala Val Phe Pro Phe Gln Gln Val Ser

290 295 300

Leu Cys Val Gly Cys Leu Ile Gly Leu Val Met Phe Ala Tyr Tyr Gln

305 310 315 320

Glu Tyr Pro Met Ser Ile Gln Gln Ala Gln Ala Ala Pro Asp Gln Phe

325 330 335

Val Leu Tyr Phe Val Met Asp Leu Leu Lys Gly Leu Pro Gly Leu Pro

340 345 350

Gly Leu Phe Ile Ala Cys Leu Phe Ser Gly Ser Leu Ser Thr Ile Ser

355 360 365

Ser Ala Phe Asn Ser Leu Ala Thr Val Thr Met Glu Asp Leu Ile Arg

370 375 380

Pro Trp Phe Pro Glu Phe Ser Glu Ala Arg Ala Ile Met Leu Ser Arg

385 390 395 400

Gly Leu Ala Phe Gly Tyr Gly Leu Leu Cys Leu Gly Met Ala Tyr Ile
405 410 415
Ser Ser Gln Met Gly Pro Val Leu Gln Ala Ala Ile Ser Ile Phe Gly
420 425 430

Met Val Gly Gly Pro Leu Leu Gly Leu Phe Cys Leu Gly Met Phe Phe
435 440 445
Pro Cys Ala Asn Pro Pro Gly Ala Val Val Gly Leu Leu Ala Gly Leu
450 455 460
Val Met Ala Phe Trp Ile Gly Ile Gly Ser Ile Val Thr Ser Met Gly
465 470 475 480
Ser Ser Met Pro Pro Ser Pro Ser Asn Gly Ser Ser Phe Ser Leu Pro
485 490 495

Thr Asn Leu Thr Val Ala Thr Val Thr Thr Leu Met Pro Leu Thr Thr
500 505 510
Phe Ser Lys Pro Thr Gly Leu Gln Arg Phe Tyr Ser Leu Ser Tyr Leu
515 520 525
Trp Tyr Ser Ala His Asn Ser Thr Thr Val Ile Val Val Gly Leu Ile
530 535 540
Val Ser Leu Leu Thr Gly Arg Met Arg Gly Arg Ser Leu Asn Pro Ala
545 550 555 560

Thr Ile Tyr Pro Val Leu Pro Lys Leu Leu Ser Leu Leu Pro Leu Ser
565 570 575
Cys Gln Lys Arg Leu His Cys Arg Ser Tyr Gly Gln Asp His Leu Asp
580 585 590
Thr Gly Leu Phe Pro Glu Lys Pro Arg Asn Gly Val Leu Gly Asp Ser
595 600 605
Arg Asp Lys Glu Ala Met Ala Leu Asp Gly Thr Ala Tyr Gln Gly Ser
610 615 620

Ser Ser Thr Cys Ile Leu Gln Glu Thr Ser Leu
625 630 635

<210> 17

<211> 400

<212> PRT

<213> Homo sapiens

<400> 17

Met Ala Thr Leu Leu Leu Leu Leu Gly Val Leu Val Val Ser Pro Asp
1 5 10 15

Ala Leu Gly Ser Thr Thr Ala Val Gln Thr Pro Thr Ser Gly Glu Pro
20 25 30

Leu Val Ser Thr Ser Glu Pro Leu Ser Ser Lys Met Tyr Thr Thr Ser
35 40 45

Ile Thr Ser Asp Pro Lys Ala Asp Ser Thr Gly Asp Gln Thr Ser Ala
50 55 60

Leu Pro Pro Ser Thr Ser Ile Asn Glu Gly Ser Pro Leu Trp Thr Ser
65 70 75 80

Ile Gly Ala Ser Thr Gly Ser Pro Leu Pro Glu Pro Thr Thr Tyr Gln
85 90 95

Glu Val Ser Ile Lys Met Ser Ser Val Pro Gln Glu Thr Pro His Ala
100 105 110

Thr Ser His Pro Ala Val Pro Ile Thr Ala Asn Ser Leu Gly Ser His
115 120 125

Thr Val Thr Gly Gly Thr Ile Thr Thr Asn Ser Pro Glu Thr Ser Ser
130 135 140

Arg Thr Ser Gly Ala Pro Val Thr Thr Ala Ala Ser Ser Leu Glu Thr
145 150 155 160

Ser Arg Gly Thr Ser Gly Pro Pro Leu Thr Met Ala Thr Val Ser Leu
165 170 175

Glu Thr Ser Lys Gly Thr Ser Gly Pro Pro Val Thr Met Ala Thr Asp
180 185 190

Ser Leu Glu Thr Ser Thr Gly Thr Thr Gly Pro Pro Val Thr Met Thr
195 200 205

Thr Gly Ser Leu Glu Pro Ser Ser Gly Ala Ser Gly Pro Gln Val Ser
210 215 220

Ser Val Lys Leu Ser Thr Met Met Ser Pro Thr Thr Ser Thr Asn Ala
225 230 235 240

Ser Thr Val Pro Phe Arg Asn Pro Asp Glu Asn Ser Arg Gly Met Leu
245 250 255
Pro Val Ala Val Leu Val Ala Leu Leu Ala Val Ile Val Leu Val Ala
260 265 270
Leu Leu Leu Leu Trp Arg Arg Arg Gln Lys Arg Arg Thr Gly Ala Leu
275 280 285
Val Leu Ser Arg Gly Gly Lys Arg Asn Gly Val Val Asp Ala Trp Ala
290 295 300

Gly Pro Ala Gln Val Pro Glu Glu Gly Ala Val Thr Val Thr Val Gly
305 310 315 320
Gly Ser Gly Gly Asp Lys Gly Ser Gly Phe Pro Asp Gly Glu Gly Ser
325 330 335
Ser Arg Arg Pro Thr Leu Thr Thr Phe Phe Gly Arg Arg Lys Ser Arg
340 345 350
Gln Gly Ser Leu Ala Met Glu Glu Leu Lys Ser Gly Ser Gly Pro Ser
355 360 365

Leu Lys Gly Glu Glu Glu Pro Leu Val Ala Ser Glu Asp Gly Ala Val
370 375 380
Asp Ala Pro Ala Pro Asp Glu Pro Glu Gly Gly Asp Gly Ala Ala Pro
385 390 395 400
<210> 18
<211> 1170
<212> PRT
<213> Homo sapiens
<400> 18
Met Lys Asp Ser Cys Ile Thr Val Met Ala Met Ala Leu Leu Ser Gly
1 5 10 15
Phe Phe Phe Phe Ala Pro Ala Ser Ser Tyr Asn Leu Asp Val Arg Gly

20 25 30

Ala Arg Ser Phe Ser Pro Pro Arg Ala Gly Arg His Phe Gly Tyr Arg
35 40 45
Val Leu Gln Val Gly Asn Gly Val Ile Val Gly Ala Pro Gly Glu Gly
50 55 60
Asn Ser Thr Gly Ser Leu Tyr Gln Cys Gln Ser Gly Thr Gly His Cys
65 70 75 80
Leu Pro Val Thr Leu Arg Gly Ser Asn Tyr Thr Ser Lys Tyr Leu Gly

85 90 95
Met Thr Leu Ala Thr Asp Pro Thr Asp Gly Ser Ile Leu Ala Cys Asp
100 105 110
Pro Gly Leu Ser Arg Thr Cys Asp Gln Asn Thr Tyr Leu Ser Gly Leu
115 120 125
Cys Tyr Leu Phe Arg Gln Asn Leu Gln Gly Pro Met Leu Gln Gly Arg
130 135 140
Pro Gly Phe Gln Glu Cys Ile Lys Gly Asn Val Asp Leu Val Phe Leu

145 150 155 160
Phe Asp Gly Ser Met Ser Leu Gln Pro Asp Glu Phe Gln Lys Ile Leu
165 170 175
Asp Phe Met Lys Asp Val Met Lys Lys Leu Ser Asn Thr Ser Tyr Gln
180 185 190
Phe Ala Ala Val Gln Phe Ser Thr Ser Tyr Lys Thr Glu Phe Asp Phe
195 200 205
Ser Asp Tyr Val Lys Arg Lys Asp Pro Asp Ala Leu Leu Lys His Val

210 215 220
Lys His Met Leu Leu Leu Thr Asn Thr Phe Gly Ala Ile Asn Tyr Val
225 230 235 240
Ala Thr Glu Val Phe Arg Glu Glu Leu Gly Ala Arg Pro Asp Ala Thr
245 250 255
Lys Val Leu Ile Ile Ile Thr Asp Gly Glu Ala Thr Asp Ser Gly Asn
260 265 270
Ile Asp Ala Ala Lys Asp Ile Ile Arg Tyr Ile Ile Gly Ile Gly Lys

275 280 285

His Phe Gln Thr Lys Glu Ser Gln Glu Thr Leu His Lys Phe Ala Ser

290 295 300

Lys Pro Ala Ser Glu Phe Val Lys Ile Leu Asp Thr Phe Glu Lys Leu

305 310 315 320

Lys Asp Leu Phe Thr Glu Leu Gln Lys Lys Ile Tyr Val Ile Glu Gly

325 330 335

Thr Ser Lys Gln Asp Leu Thr Ser Phe Asn Met Glu Leu Ser Ser Ser

340 345 350

Gly Ile Ser Ala Asp Leu Ser Arg Gly His Ala Val Val Gly Ala Val

355 360 365

Gly Ala Lys Asp Trp Ala Gly Gly Phe Leu Asp Leu Lys Ala Asp Leu

370 375 380

Gln Asp Asp Thr Phe Ile Gly Asn Glu Pro Leu Thr Pro Glu Val Arg

385 390 395 400

Ala Gly Tyr Leu Gly Tyr Thr Val Thr Trp Leu Pro Ser Arg Gln Lys

405 410 415

Thr Ser Leu Leu Ala Ser Gly Ala Pro Arg Tyr Gln His Met Gly Arg

420 425 430

Val Leu Leu Phe Gln Glu Pro Gln Gly Gly Gly His Trp Ser Gln Val

435 440 445

Gln Thr Ile His Gly Thr Gln Ile Gly Ser Tyr Phe Gly Gly Glu Leu

450 455 460

Cys Gly Val Asp Val Asp Gln Asp Gly Glu Thr Glu Leu Leu Leu Ile

465 470 475 480

Gly Ala Pro Leu Phe Tyr Gly Glu Gln Arg Gly Gly Arg Val Phe Ile

485 490 495

Tyr Gln Arg Arg Gln Leu Gly Phe Glu Glu Val Ser Glu Leu Gln Gly

500 505 510

Asp Pro Gly Tyr Pro Leu Gly Arg Phe Gly Glu Ala Ile Thr Ala Leu

515 520 525

Thr Asp Ile Asn Gly Asp Gly Leu Val Asp Val Ala Val Gly Ala Pro

530 535 540

Leu Glu Glu Gln Gly Ala Val Tyr Ile Phe Asn Gly Arg His Gly Gly

545 550 555 560

Leu Ser Pro Gln Pro Ser Gln Arg Ile Glu Gly Thr Gln Val Leu Ser

565 570 575

Gly Ile Gln Trp Phe Gly Arg Ser Ile His Gly Val Lys Asp Leu Glu

580 585 590

Gly Asp Gly Leu Ala Asp Val Ala Val Gly Ala Glu Ser Gln Met Ile

595 600 605

Val Leu Ser Ser Arg Pro Val Val Asp Met Val Thr Leu Met Ser Phe

610 615 620

Ser Pro Ala Glu Ile Pro Val His Glu Val Glu Cys Ser Tyr Ser Thr

625 630 635 640

Ser Asn Lys Met Lys Glu Gly Val Asn Ile Thr Ile Cys Phe Gln Ile

645 650 655

Lys Ser Leu Ile Pro Gln Phe Gln Gly Arg Leu Val Ala Asn Leu Thr

660 665 670

Tyr Thr Leu Gln Leu Asp Gly His Arg Thr Arg Arg Arg Gly Leu Phe

675 680 685

Pro Gly Gly Arg His Glu Leu Arg Arg Asn Ile Ala Val Thr Thr Ser

690 695 700

Met Ser Cys Thr Asp Phe Ser Phe His Phe Pro Val Cys Val Gln Asp

705 710 715 720

Leu Ile Ser Pro Ile Asn Val Ser Leu Asn Phe Ser Leu Trp Glu Glu

725 730 735

Glu Gly Thr Pro Arg Asp Gln Arg Ala Gln Gly Lys Asp Ile Pro Pro

740 745 750

Ile Leu Arg Pro Ser Leu His Ser Glu Thr Trp Glu Ile Pro Phe Glu

755 760 765

Lys Asn Cys Gly Glu Asp Lys Lys Cys Glu Ala Asn Leu Arg Val Ser

770 775 780

Phe Ser Pro Ala Arg Ser Arg Ala Leu Arg Leu Thr Ala Phe Ala Ser

785 790 795 800

Leu Ser Val Glu Leu Ser Leu Ser Asn Leu Glu Glu Asp Ala Tyr Trp

805 810 815

Val Gln Leu Asp Leu His Phe Pro Pro Gly Leu Ser Phe Arg Lys Val

820 825 830

Glu Met Leu Lys Pro His Ser Gln Ile Pro Val Ser Cys Glu Glu Leu

835 840 845

Pro Glu Glu Ser Arg Leu Leu Ser Arg Ala Leu Ser Cys Asn Val Ser

850 855 860

Ser Pro Ile Phe Lys Ala Gly His Ser Val Ala Leu Gln Met Met Phe

865 870 875 880

Asn Thr Leu Val Asn Ser Ser Trp Gly Asp Ser Val Glu Leu His Ala

885 890 895

Asn Val Thr Cys Asn Asn Glu Asp Ser Asp Leu Leu Glu Asp Asn Ser

900 905 910

Ala Thr Thr Ile Ile Pro Ile Leu Tyr Pro Ile Asn Ile Leu Ile Gln

915 920 925

Asp Gln Glu Asp Ser Thr Leu Tyr Val Ser Phe Thr Pro Lys Gly Pro

930 935 940

Lys Ile His Gln Val Lys His Met Tyr Gln Val Arg Ile Gln Pro Ser

945 950 955 960

Ile His Asp His Asn Ile Pro Thr Leu Glu Ala Val Val Gly Val Pro

965 970 975

Gln Pro Pro Ser Glu Gly Pro Ile Thr His Gln Trp Ser Val Gln Met

980 985 990

Glu Pro Pro Val Pro Cys His Tyr Glu Asp Leu Glu Arg Leu Pro Asp

995 1000 1005

Ala Ala Glu Pro Cys Leu Pro Gly Ala Leu Phe Arg Cys Pro Val

1010 1015 1020

Val Phe Arg Gln Glu Ile Leu Val Gln Val Ile Gly Thr Leu Glu

1025 1030 1035

Leu Val Gly Glu Ile Glu Ala Ser Ser Met Phe Ser Leu Cys Ser

1040 1045 1050

Ser Leu Ser Ile Ser Phe Asn Ser Ser Lys His Phe His Leu Tyr

1055 1060 1065

Gly Ser Asn Ala Ser Leu Ala Gln Val Val Met Lys Val Asp Val

1070 1075 1080

Val Tyr Glu Lys Gln Met Leu Tyr Leu Tyr Val Leu Ser Gly Ile

1085 1090 1095

Gly Gly Leu Leu Leu Leu Leu Leu Ile Phe Ile Val Leu Tyr Lys

1100 1105 1110

Val Gly Phe Phe Lys Arg Asn Leu Lys Glu Lys Met Glu Ala Gly

1115 1120 1125

Arg Gly Val Pro Asn Gly Ile Pro Ala Glu Asp Ser Glu Gln Leu

1130 1135 1140

Ala Ser Gly Gln Glu Ala Gly Asp Pro Gly Cys Leu Lys Pro Leu

1145 1150 1155

His Glu Lys Asp Ser Glu Ser Gly Gly Gly Lys Asp

1160 1165 1170

<210> 19

<211> 662

<212> PRT

<213> Homo sapiens

<400> 19

Met Glu Pro Leu Val Thr Trp Val Val Pro Leu Leu Phe Leu Phe Leu

1 5 10 15

Leu Ser Arg Gln Gly Ala Ala Cys Arg Thr Ser Glu Cys Cys Phe Gln

20 25 30

Asp Pro Pro Tyr Pro Asp Ala Asp Ser Gly Ser Ala Ser Gly Pro Arg

35 40 45

Asp Leu Arg Cys Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp
50 55 60
Gln Tyr Glu Gly Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys
65 70 75 80
Leu Ser Ser Gly Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg
85 90 95
Leu Gln Phe Ser Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr
100 105 110

Leu Trp Val Glu Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu
115 120 125
Val Thr Leu Gln Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly
130 135 140
Asp Ile Lys Val Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu
145 150 155 160
Thr Pro Asp Asn Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr
165 170 175

Pro Ser Ser Pro Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp
180 185 190
Thr Glu Ser Cys Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe
195 200 205
Gln Leu Arg Arg Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys
210 215 220
Trp Ser Ser Pro Val Cys Val Pro Pro Glu Asn Pro Pro Gln Pro Gln
225 230 235 240

Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu
245 250 255
Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln
260 265 270
Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met
275 280 285
Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly

290 295 300

Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser
305 310 315 320
Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala
325 330 335
Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn
340 345 350
Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys
355 360 365

Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser
370 375 380
Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser
385 390 395 400
Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile
405 410 415
Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr
420 425 430

Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr
435 440 445
Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser Val Ser Val
450 455 460
Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu
465 470 475 480
Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His
485 490 495

Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala
500 505 510
Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg
515 520 525
Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser
530 535 540

Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu
545 550 555 560

Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His
565 570 575
Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe
580 585 590
Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln
595 600 605
Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp
610 615 620

Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly
625 630 635 640
Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp
645 650 655
Arg Cys Lys Ala Lys Met
660

<210> 20
<211> 650
<212> PRT
<213> Homo sapiens
<400> 20
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 Thr Gln Gly Ser Pro Val Thr Leu Arg
35 40 45
Cys Gln Gly Gly Gln Glu Thr Gln Glu Tyr Arg Leu Tyr Arg Glu Lys
50 55 60
Lys Thr Ala Leu Trp Ile Thr Arg Ile Pro Gln Glu Leu Val Lys Lys
65 70 75 80

Gly Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr
85 90 95
Arg Cys Tyr Tyr Gly Ser Asp Thr Ala Gly Arg Ser Glu Ser Ser Asp
100 105 110
Pro Leu Glu Leu Val Val Thr Gly Ala Tyr Ile Lys Pro Thr Leu Ser
115 120 125
Ala Gln Pro Ser Pro Val Val Asn Ser Gly Gly Asn Val Ile Leu Gln
130 135 140

Cys Asp Ser Gln Val Ala Phe Asp Gly Phe Ser Leu Cys Lys Glu Gly
145 150 155 160
Glu Asp Glu His Pro Gln Cys Leu Asn Ser Gln Pro His Ala Arg Gly
165 170 175
Ser Ser Arg Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg
180 185 190
Trp Trp Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Glu Trp
195 200 205

Ser Leu Pro Ser Asp Leu Leu Glu Leu Leu Val Leu Gly Val Ser Lys
210 215 220
Lys Pro Ser Leu Ser Val Gln Pro Gly Pro Ile Val Ala Pro Glu Glu
225 230 235 240
Thr Leu Thr Leu Gln Cys Gly Ser Asp Ala Gly Tyr Asn Arg Phe Val
245 250 255
Leu Tyr Lys Asp Gly Glu Arg Asp Phe Leu Gln Leu Ala Gly Ala Gln
260 265 270

Pro Gln Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser
275 280 285
Arg Ser Tyr Gly Gly Gln Tyr Arg Cys Tyr Gly Ala His Asn Leu Ser
290 295 300
Ser Glu Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Ala Gly
305 310 315 320
Gln Phe Tyr Asp Arg Val Ser Leu Ser Val Gln Pro Gly Pro Thr Val

325 330 335

Ala Ser Gly Glu Asn Val Thr Leu Leu Cys Gln Ser Gln Gly Trp Met
340 345 350
Gln Thr Phe Leu Leu Thr Lys Glu Gly Ala Ala Asp Asp Pro Trp Arg
355 360 365
Leu Arg Ser Thr Tyr Gln Ser Gln Lys Tyr Gln Ala Glu Phe Pro Met
370 375 380
Gly Pro Val Thr Ser Ala His Ala Gly Thr Tyr Arg Cys Tyr Gly Ser
385 390 395 400

Gln Ser Ser Lys Pro Tyr Leu Leu Thr His Pro Ser Asp Pro Leu Glu
405 410 415
Leu Val Val Ser Gly Pro Ser Gly Gly Pro Ser Ser Pro Thr Thr Gly
420 425 430
Pro Thr Ser Thr Ser Gly Pro Glu Asp Gln Pro Leu Thr Pro Thr Gly
435 440 445
Ser Asp Pro Gln Ser Gly Leu Gly Arg His Leu Gly Val Val Ile Gly
450 455 460

Ile Leu Val Ala Val Ile Leu Leu Leu Leu Leu Leu Leu Leu Leu Phe
465 470 475 480
Leu Ile Leu Arg His Arg Arg Gln Gly Lys His Trp Thr Ser Thr Gln
485 490 495
Arg Lys Ala Asp Phe Gln His Pro Ala Gly Ala Val Gly Pro Glu Pro
500 505 510
Thr Asp Arg Gly Leu Gln Trp Arg Ser Ser Pro Ala Ala Asp Ala Gln
515 520 525

Glu Glu Asn Leu Tyr Ala Ala Val Lys His Thr Gln Pro Glu Asp Gly
530 535 540
Val Glu Met Asp Thr Arg Ser Pro His Asp Glu Asp Pro Gln Ala Val
545 550 555 560
Thr Tyr Ala Glu Val Lys His Ser Arg Pro Arg Arg Glu Met Ala Ser
565 570 575

Pro Pro Ser Pro Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln
580 585 590

Ala Glu Glu Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala
595 600 605

Pro Gln Asp Val Thr Tyr Ala Gln Leu His Ser Leu Thr Leu Arg Arg
610 615 620

Glu Ala Thr Glu Pro Pro Pro Ser Gln Glu Gly Pro Ser Pro Ala Val
625 630 635 640

Pro Ser Ile Tyr Ala Thr Leu Ala Ile His
645 650

<210> 21

<211> 655

<212> PRT

<213> Homo sapiens

<400> 21

Met Val Ala Pro Lys Ser His Thr Asp Asp Trp Ala Pro Gly Pro Phe
1 5 10 15

Ser Ser Lys Pro Gln Arg Ser Gln Leu Gln Ile Phe Ser Ser Val Leu
20 25 30

Gln Thr Ser Leu Leu Phe Leu Leu Met Gly Leu Arg Ala Ser Gly Lys
35 40 45

Asp Ser Ala Pro Thr Val Val Ser Gly Ile Leu Gly Gly Ser Val Thr
50 55 60

Leu Pro Leu Asn Ile Ser Val Asp Thr Glu Ile Glu Asn Val Ile Trp
65 70 75 80

Ile Gly Pro Lys Asn Ala Leu Ala Phe Ala Arg Pro Lys Glu Asn Val
85 90 95

Thr Ile Met Val Lys Ser Tyr Leu Gly Arg Leu Asp Ile Thr Lys Trp
100 105 110

Ser Tyr Ser Leu Cys Ile Ser Asn Leu Thr Leu Asn Asp Ala Gly Ser
115 120 125

Tyr Lys Ala Gln Ile Asn Gln Arg Asn Phe Glu Val Thr Thr Glu Glu
130 135 140
Glu Phe Thr Leu Phe Val Tyr Glu Gln Leu Gln Glu Pro Gln Val Thr
145 150 155 160
Met Lys Ser Val Lys Val Ser Glu Asn Phe Ser Cys Asn Ile Thr Leu
165 170 175
Met Cys Ser Val Lys Gly Ala Glu Lys Ser Val Leu Tyr Ser Trp Thr
180 185 190

Pro Arg Glu Pro His Ala Ser Glu Ser Asn Gly Gly Ser Ile Leu Thr
195 200 205
Val Ser Arg Thr Pro Cys Asp Pro Asp Leu Pro Tyr Ile Cys Thr Ala
210 215 220
Gln Asn Pro Val Ser Gln Arg Ser Ser Leu Pro Val His Val Gly Gln
225 230 235 240
Phe Cys Thr Asp Pro Gly Ala Ser Arg Gly Gly Thr Thr Gly Glu Thr
245 250 255

Val Val Gly Val Leu Gly Glu Pro Val Thr Leu Pro Leu Ala Leu Pro
260 265 270
Ala Cys Arg Asp Thr Glu Lys Val Val Trp Leu Phe Asn Thr Ser Ile
275 280 285
Ile Ser Lys Glu Arg Glu Glu Ala Ala Thr Ala Asp Pro Leu Ile Lys
290 295 300
Ser Arg Asp Pro Tyr Lys Asn Arg Val Trp Val Ser Ser Gln Asp Cys
305 310 315 320

Ser Leu Lys Ile Ser Gln Leu Lys Ile Glu Asp Ala Gly Pro Tyr His
325 330 335
Ala Tyr Val Cys Ser Glu Ala Ser Ser Val Thr Ser Met Thr His Val
340 345 350
Thr Leu Leu Ile Tyr Arg Arg Leu Arg Lys Pro Lys Ile Thr Trp Ser
355 360 365
Leu Arg His Ser Glu Asp Gly Ile Cys Arg Ile Ser Leu Thr Cys Ser

370 375 380

Val Glu Asp Gly Gly Asn Thr Val Met Tyr Thr Trp Thr Pro Leu Gln
385 390 395 400
Lys Glu Ala Val Val Ser Gln Gly Glu Ser His Leu Asn Val Ser Trp
405 410 415
Arg Ser Ser Glu Asn His Pro Asn Leu Thr Cys Thr Ala Ser Asn Pro
420 425 430
Val Ser Arg Ser Ser His Gln Phe Leu Ser Glu Asn Ile Cys Ser Gly
435 440 445

Pro Glu Arg Asn Thr Lys Leu Trp Ile Gly Leu Phe Leu Met Val Cys
450 455 460
Leu Leu Cys Val Gly Ile Phe Ser Trp Cys Ile Trp Lys Arg Lys Gly
465 470 475 480
Arg Cys Ser Val Pro Ala Phe Cys Ser Ser Gln Ala Glu Ala Pro Ala
485 490 495
Asp Thr Pro Glu Pro Thr Ala Gly His Thr Leu Tyr Ser Val Leu Ser
500 505 510

Gln Gly Tyr Glu Lys Leu Asp Thr Pro Leu Arg Pro Ala Arg Gln Gln
515 520 525
Pro Thr Pro Thr Ser Asp Ser Ser Ser Asp Ser Asn Leu Thr Thr Glu
530 535 540
Glu Asp Glu Asp Arg Pro Glu Val His Lys Pro Ile Ser Gly Arg Tyr
545 550 555 560
Glu Val Phe Asp Gln Val Thr Gln Glu Gly Ala Gly His Asp Pro Ala
565 570 575

Pro Glu Gly Gln Ala Asp Tyr Asp Pro Val Thr Pro Tyr Val Thr Glu
580 585 590
Val Glu Ser Val Val Gly Glu Asn Thr Met Tyr Ala Gln Val Phe Asn
595 600 605
Leu Gln Gly Lys Thr Pro Val Ser Gln Lys Glu Glu Ser Ser Ala Thr
610 615 620

Ile Tyr Cys Ser Ile Arg Lys Pro Gln Val Val Pro Pro Pro Gln Gln
625 630 635 640

Asn Asp Leu Glu Ile Pro Glu Ser Pro Thr Tyr Glu Asn Phe Thr
645 650 655

<210> 22

<211> 775

<212> PRT

<213> Homo sapiens

<400> 22

Met Leu Gln Gly Leu Leu Pro Val Ser Leu Leu Leu Ser Val Ala Val
1 5 10 15

Ser Ala Ile Lys Glu Leu Pro Gly Val Lys Lys Tyr Glu Val Val Tyr
20 25 30

Pro Ile Arg Leu His Pro Leu His Lys Arg Glu Ala Lys Glu Pro Glu
35 40 45

Gln Gln Glu Gln Phe Glu Thr Glu Leu Lys Tyr Lys Met Thr Ile Asn
50 55 60

Gly Lys Ile Ala Val Leu Tyr Leu Lys Lys Asn Lys Asn Leu Leu Ala
65 70 75 80

Pro Gly Tyr Thr Glu Thr Tyr Tyr Asn Ser Thr Gly Lys Glu Ile Thr
85 90 95

Thr Ser Pro Gln Ile Met Asp Asp Cys Tyr Tyr Gln Gly His Ile Leu
100 105 110

Asn Glu Lys Val Ser Asp Ala Ser Ile Ser Thr Cys Arg Gly Leu Arg
115 120 125

Gly Tyr Phe Ser Gln Gly Asp Gln Arg Tyr Phe Ile Glu Pro Leu Ser
130 135 140

Pro Ile His Arg Asp Gly Gln Glu His Ala Leu Phe Lys Tyr Asn Pro
145 150 155 160

Asp Glu Lys Asn Tyr Asp Ser Thr Cys Gly Met Asp Gly Val Leu Trp
165 170 175

Ala His Asp Leu Gln Gln Asn Ile Ala Leu Pro Ala Thr Lys Leu Val
180 185 190
Lys Leu Lys Asp Arg Lys Val Gln Glu His Glu Lys Tyr Ile Glu Tyr
195 200 205
Tyr Leu Val Leu Asp Asn Gly Glu Phe Lys Arg Tyr Asn Glu Asn Gln
210 215 220
Asp Glu Ile Arg Lys Arg Val Phe Glu Met Ala Asn Tyr Val Asn Met

225 230 235 240
Leu Tyr Lys Lys Leu Asn Thr His Val Ala Leu Val Gly Met Glu Ile
245 250 255
Trp Thr Asp Lys Asp Lys Ile Lys Ile Thr Pro Asn Ala Ser Phe Thr
260 265 270
Leu Glu Asn Phe Ser Lys Trp Arg Gly Ser Val Leu Ser Arg Arg Lys
275 280 285
Arg His Asp Ile Ala Gln Leu Ile Thr Ala Thr Glu Leu Ala Gly Thr

290 295 300
Thr Val Gly Leu Ala Phe Met Ser Thr Met Cys Ser Pro Tyr Ser Val
305 310 315 320
Gly Val Val Gln Asp His Ser Asp Asn Leu Leu Arg Val Ala Gly Thr
325 330 335
Met Ala His Glu Met Gly His Asn Phe Gly Met Phe His Asp Asp Tyr
340 345 350
Ser Cys Lys Cys Pro Ser Thr Ile Cys Val Met Asp Lys Ala Leu Ser

355 360 365
Phe Tyr Ile Pro Thr Asp Phe Ser Ser Cys Ser Arg Leu Ser Tyr Asp
370 375 380
Lys Phe Phe Glu Asp Lys Leu Ser Asn Cys Leu Phe Asn Ala Pro Leu
385 390 395 400
Pro Thr Asp Ile Ile Ser Thr Pro Ile Cys Gly Asn Gln Leu Val Glu
405 410 415
Met Gly Glu Asp Cys Asp Cys Gly Thr Ser Glu Glu Cys Thr Asn Ile

420 425 430

Cys Cys Asp Ala Lys Thr Cys Lys Ile Lys Ala Thr Phe Gln Cys Ala

435 440 445

Leu Gly Glu Cys Cys Glu Lys Cys Gln Phe Lys Lys Ala Gly Met Val

450 455 460

Cys Arg Pro Ala Lys Asp Glu Cys Asp Leu Pro Glu Met Cys Asn Gly

465 470 475 480

Lys Ser Gly Asn Cys Pro Asp Asp Arg Phe Gln Val Asn Gly Phe Pro

485 490 495

Cys His His Gly Lys Gly His Cys Leu Met Gly Thr Cys Pro Thr Leu

500 505 510

Gln Glu Gln Cys Thr Glu Leu Trp Gly Pro Gly Thr Glu Val Ala Asp

515 520 525

Lys Ser Cys Tyr Asn Arg Asn Glu Gly Gly Ser Lys Tyr Gly Tyr Cys

530 535 540

Arg Arg Val Asp Asp Thr Leu Ile Pro Cys Lys Ala Asn Asp Thr Met

545 550 555 560

Cys Gly Lys Leu Phe Cys Gln Gly Gly Ser Asp Asn Leu Pro Trp Lys

565 570 575

Gly Arg Ile Val Thr Phe Leu Thr Cys Lys Thr Phe Asp Pro Glu Asp

580 585 590

Thr Ser Gln Glu Ile Gly Met Val Ala Asn Gly Thr Lys Cys Gly Asp

595 600 605

Asn Lys Val Cys Ile Asn Ala Glu Cys Val Asp Ile Glu Lys Ala Tyr

610 615 620

Lys Ser Thr Asn Cys Ser Ser Lys Cys Lys Gly His Ala Val Cys Asp

625 630 635 640

His Glu Leu Gln Cys Gln Cys Glu Glu Gly Trp Ile Pro Pro Asp Cys

645 650 655

Asp Asp Ser Ser Val Val Phe His Phe Ser Ile Val Val Gly Val Leu

660 665 670

Phe Pro Met Ala Val Ile Phe Val Val Val Ala Met Val Ile Arg His

675 680 685

Gln Ser Ser Arg Glu Lys Gln Lys Lys Asp Gln Arg Pro Leu Ser Thr

690 695 700

Thr Gly Thr Arg Pro His Lys Gln Lys Arg Lys Pro Gln Met Val Lys

705 710 715 720

Ala Val Gln Pro Gln Glu Met Ser Gln Met Lys Pro His Val Tyr Asp

725 730 735

Leu Pro Val Glu Gly Asn Glu Pro Pro Ala Ser Phe His Lys Asp Thr

740 745 750

Asn Ala Leu Pro Pro Thr Val Phe Lys Asp Asn Pro Val Ser Thr Pro

755 760 765

Lys Asp Ser Asn Pro Lys Ala

770 775

<210> 23

<211> 163

<212> PRT

<213> Homo sapiens

<400> 23

Met Ser Leu Leu Leu Leu Val Val Ser Ala Leu His Ile Leu Ile Leu

1 5 10 15

Ile Leu Leu Phe Val Ala Thr Leu Asp Lys Ser Trp Trp Thr Leu Pro

20 25 30

Gly Lys Glu Ser Leu Asn Leu Trp Tyr Asp Cys Thr Trp Asn Asn Asp

35 40 45

Thr Lys Thr Trp Ala Cys Ser Asn Val Ser Glu Asn Gly Trp Leu Lys

50 55 60

Ala Val Gln Val Leu Met Val Leu Ser Leu Ile Leu Cys Cys Leu Ser

65 70 75 80

Phe Ile Leu Phe Met Phe Gln Leu Tyr Thr Met Arg Arg Gly Gly Leu

85 90 95

Phe Tyr Ala Thr Gly Leu Cys Gln Leu Cys Thr Ser Val Ala Val Phe
100 105 110
Thr Gly Ala Leu Ile Tyr Ala Ile His Ala Glu Glu Ile Leu Glu Lys
115 120 125
His Pro Arg Gly Gly Ser Phe Gly Tyr Cys Phe Ala Leu Ala Trp Val
130 135 140
Ala Phe Pro Leu Ala Leu Val Ser Gly Ile Ile Tyr Ile His Leu Arg

145 150 155 160
Lys Arg Glu

<210> 24
<211> 713
<212> PRT
<213> Homo sapiens
<400> 24
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> 25

<211> 1306

<212> PRT

<213> Homo sapiens

<400> 25

Met Thr Met Tyr Leu Trp Leu Lys Leu Leu Ala Phe Gly Phe Ala Phe

1 5 10 15

Leu Asp Thr Glu Val Phe Val Thr Gly Gln Ser Pro Thr Pro Ser Pro

20 25 30

Thr Gly Leu Thr Thr Ala Lys Met Pro Ser Val Pro Leu Ser Ser Asp

35 40 45

Pro Leu Pro Thr His Thr Thr Ala Phe Ser Pro Ala Ser Thr Phe Glu

50 55 60

Arg Glu Asn Asp Phe Ser Glu Thr Thr Thr Ser Leu Ser Pro Asp Asn

65 70 75 80

Thr Ser Thr Gln Val Ser Pro Asp Ser Leu Asp Asn Ala Ser Ala Phe

85 90 95

Asn Thr Thr Gly Val Ser Ser Val Gln Thr Pro His Leu Pro Thr His

100 105 110

Ala Asp Ser Gln Thr Pro Ser Ala Gly Thr Asp Thr Gln Thr Phe Ser

115 120 125

Gly Ser Ala Ala Asn Ala Lys Leu Asn Pro Thr Pro Gly Ser Asn Ala
130 135 140
Ile Ser Asp Val Pro Gly Glu Arg Ser Thr Ala Ser Thr Phe Pro Thr
145 150 155 160

Asp Pro Val Ser Pro Leu Thr Thr Thr Leu Ser Leu Ala His His Ser
165 170 175
Ser Ala Ala Leu Pro Ala Arg Thr Ser Asn Thr Thr Ile Thr Ala Asn
180 185 190
Thr Ser Asp Ala Tyr Leu Asn Ala Ser Glu Thr Thr Thr Leu Ser Pro
195 200 205
Ser Gly Ser Ala Val Ile Ser Thr Thr Thr Ile Ala Thr Thr Pro Ser
210 215 220

Lys Pro Thr Cys Asp Glu Lys Tyr Ala Asn Ile Thr Val Asp Tyr Leu
225 230 235 240
Tyr Asn Lys Glu Thr Lys Leu Phe Thr Ala Lys Leu Asn Val Asn Glu
245 250 255
Asn Val Glu Cys Gly Asn Asn Thr Cys Thr Asn Asn Glu Val His Asn
260 265 270
Leu Thr Glu Cys Lys Asn Ala Ser Val Ser Ile Ser His Asn Ser Cys
275 280 285

Thr Ala Pro Asp Lys Thr Leu Ile Leu Asp Val Pro Pro Gly Val Glu
290 295 300
Lys Phe Gln Leu His Asp Cys Thr Gln Val Glu Lys Ala Asp Thr Thr
305 310 315 320
Ile Cys Leu Lys Trp Lys Asn Ile Glu Thr Phe Thr Cys Asp Thr Gln
325 330 335
Asn Ile Thr Tyr Arg Phe Gln Cys Gly Asn Met Ile Phe Asp Asn Lys
340 345 350

Glu Ile Lys Leu Glu Asn Leu Glu Pro Glu His Glu Tyr Lys Cys Asp
355 360 365
Ser Glu Ile Leu Tyr Asn Asn His Lys Phe Thr Asn Ala Ser Lys Ile

370 375 380

Ile Lys Thr Asp Phe Gly Ser Pro Gly Glu Pro Gln Ile Ile Phe Cys

385 390 395 400

Arg Ser Glu Ala Ala His Gln Gly Val Ile Thr Trp Asn Pro Pro Gln

405 410 415

Arg Ser Phe His Asn Phe Thr Leu Cys Tyr Ile Lys Glu Thr Glu Lys

420 425 430

Asp Cys Leu Asn Leu Asp Lys Asn Leu Ile Lys Tyr Asp Leu Gln Asn

435 440 445

Leu Lys Pro Tyr Thr Lys Tyr Val Leu Ser Leu His Ala Tyr Ile Ile

450 455 460

Ala Lys Val Gln Arg Asn Gly Ser Ala Ala Met Cys His Phe Thr Thr

465 470 475 480

Lys Ser Ala Pro Pro Ser Gln Val Trp Asn Met Thr Val Ser Met Thr

485 490 495

Ser Asp Asn Ser Met His Val Lys Cys Arg Pro Pro Arg Asp Arg Asn

500 505 510

Gly Pro His Glu Arg Tyr His Leu Glu Val Glu Ala Gly Asn Thr Leu

515 520 525

Val Arg Asn Glu Ser His Lys Asn Cys Asp Phe Arg Val Lys Asp Leu

530 535 540

Gln Tyr Ser Thr Asp Tyr Thr Phe Lys Ala Tyr Phe His Asn Gly Asp

545 550 555 560

Tyr Pro Gly Glu Pro Phe Ile Leu His His Ser Thr Ser Tyr Asn Ser

565 570 575

Lys Ala Leu Ile Ala Phe Leu Ala Phe Leu Ile Ile Val Thr Ser Ile

580 585 590

Ala Leu Leu Val Val Leu Tyr Lys Ile Tyr Asp Leu His Lys Lys Arg

595 600 605

Ser Cys Asn Leu Asp Glu Gln Gln Glu Leu Val Glu Arg Asp Asp Glu

610 615 620

Lys Gln Leu Met Asn Val Glu Pro Ile His Ala Asp Ile Leu Leu Glu
625 630 635 640
Thr Tyr Lys Arg Lys Ile Ala Asp Glu Gly Arg Leu Phe Leu Ala Glu
645 650 655
Phe Gln Ser Ile Pro Arg Val Phe Ser Lys Phe Pro Ile Lys Glu Ala
660 665 670

Arg Lys Pro Phe Asn Gln Asn Lys Asn Arg Tyr Val Asp Ile Leu Pro
675 680 685
Tyr Asp Tyr Asn Arg Val Glu Leu Ser Glu Ile Asn Gly Asp Ala Gly
690 695 700
Ser Asn Tyr Ile Asn Ala Ser Tyr Ile Asp Gly Phe Lys Glu Pro Arg
705 710 715 720
Lys Tyr Ile Ala Ala Gln Gly Pro Arg Asp Glu Thr Val Asp Asp Phe
725 730 735

Trp Arg Met Ile Trp Glu Gln Lys Ala Thr Val Ile Val Met Val Thr
740 745 750
Arg Cys Glu Glu Gly Asn Arg Asn Lys Cys Ala Glu Tyr Trp Pro Ser
755 760 765
Met Glu Glu Gly Thr Arg Ala Phe Gly Asp Val Val Val Lys Ile Asn
770 775 780
Gln His Lys Arg Cys Pro Asp Tyr Ile Ile Gln Lys Leu Asn Ile Val
785 790 795 800

Asn Lys Lys Glu Lys Ala Thr Gly Arg Glu Val Thr His Ile Gln Phe
805 810 815
Thr Ser Trp Pro Asp His Gly Val Pro Glu Asp Pro His Leu Leu Leu
820 825 830
Lys Leu Arg Arg Arg Val Asn Ala Phe Ser Asn Phe Phe Ser Gly Pro
835 840 845
Ile Val Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Tyr Ile
850 855 860

Gly Ile Asp Ala Met Leu Glu Gly Leu Glu Ala Glu Asn Lys Val Asp

865 870 875 880

Val Tyr Gly Tyr Val Val Lys Leu Arg Arg Gln Arg Cys Leu Met Val

885 890 895

Gln Val Glu Ala Gln Tyr Ile Leu Ile His Gln Ala Leu Val Glu Tyr

900 905 910

Asn Gln Phe Gly Glu Thr Glu Val Asn Leu Ser Glu Leu His Pro Tyr

915 920 925

Leu His Asn Met Lys Lys Arg Asp Pro Pro Ser Glu Pro Ser Pro Leu

930 935 940

Glu Ala Glu Phe Gln Arg Leu Pro Ser Tyr Arg Ser Trp Arg Thr Gln

945 950 955 960

His Ile Gly Asn Gln Glu Glu Asn Lys Ser Lys Asn Arg Asn Ser Asn

965 970 975

Val Ile Pro Tyr Asp Tyr Asn Arg Val Pro Leu Lys His Glu Leu Glu

980 985 990

Met Ser Lys Glu Ser Glu His Asp Ser Asp Glu Ser Ser Asp Asp Asp

995 1000 1005

Ser Asp Ser Glu Glu Pro Ser Lys Tyr Ile Asn Ala Ser Phe Ile

1010 1015 1020

Met Ser Tyr Trp Lys Pro Glu Val Met Ile Ala Ala Gln Gly Pro

1025 1030 1035

Leu Lys Glu Thr Ile Gly Asp Phe Trp Gln Met Ile Phe Gln Arg

1040 1045 1050

Lys Val Lys Val Ile Val Met Leu Thr Glu Leu Lys His Gly Asp

1055 1060 1065

Gln Glu Ile Cys Ala Gln Tyr Trp Gly Glu Gly Lys Gln Thr Tyr

1070 1075 1080

Gly Asp Ile Glu Val Asp Leu Lys Asp Thr Asp Lys Ser Ser Thr

1085 1090 1095

Tyr Thr Leu Arg Val Phe Glu Leu Arg His Ser Lys Arg Lys Asp

1100 1105 1110

Ser Arg Thr Val Tyr Gln Tyr Gln Tyr Thr Asn Trp Ser Val Glu
1115 1120 1125
Gln Leu Pro Ala Glu Pro Lys Glu Leu Ile Ser Met Ile Gln Val
1130 1135 1140
Val Lys Gln Lys Leu Pro Gln Lys Asn Ser Ser Glu Gly Asn Lys
1145 1150 1155
His His Lys Ser Thr Pro Leu Leu Ile His Cys Arg Asp Gly Ser
1160 1165 1170

Gln Gln Thr Gly Ile Phe Cys Ala Leu Leu Asn Leu Leu Glu Ser
1175 1180 1185
Ala Glu Thr Glu Glu Val Val Asp Ile Phe Gln Val Val Lys Ala
1190 1195 1200
Leu Arg Lys Ala Arg Pro Gly Met Val Ser Thr Phe Glu Gln Tyr
1205 1210 1215
Gln Phe Leu Tyr Asp Val Ile Ala Ser Thr Tyr Pro Ala Gln Asn
1220 1225 1230

Gly Gln Val Lys Lys Asn Asn His Gln Glu Asp Lys Ile Glu Phe
1235 1240 1245
Asp Asn Glu Val Asp Lys Val Lys Gln Asp Ala Asn Cys Val Asn
1250 1255 1260
Pro Leu Gly Ala Pro Glu Lys Leu Pro Glu Ala Lys Glu Gln Ala
1265 1270 1275
Glu Gly Ser Glu Pro Thr Ser Gly Thr Glu Gly Pro Glu His Ser
1280 1285 1290

Val Asn Gly Pro Ala Ser Pro Ala Leu Asn Gln Gly Ser
1295 1300 1305
<210> 26
<211> 369
<212> PRT
<213> Homo sapiens
<400> 26
Met Leu Lys Pro Ser Leu Pro Phe Thr Ser Leu Leu Phe Leu Gln Leu

1 5 10 15

Pro Leu Leu Gly Val Gly Leu Asn Thr Thr Ile Leu Thr Pro Asn Gly

20 25 30

Asn Glu Asp Thr Thr Ala Asp Phe Phe Leu Thr Thr Met Pro Thr Asp

35 40 45

Ser Leu Ser Val Ser Thr Leu Pro Leu Pro Glu Val Gln Cys Phe Val

50 55 60

Phe Asn Val Glu Tyr Met Asn Cys Thr Trp Asn Ser Ser Ser Glu Pro

65 70 75 80

Gln Pro Thr Asn Leu Thr Leu His Tyr Trp Tyr Lys Asn Ser Asp Asn

85 90 95

Asp Lys Val Gln Lys Cys Ser His Tyr Leu Phe Ser Glu Glu Ile Thr

100 105 110

Ser Gly Cys Gln Leu Gln Lys Lys Glu Ile His Leu Tyr Gln Thr Phe

115 120 125

Val Val Gln Leu Gln Asp Pro Arg Glu Pro Arg Arg Gln Ala Thr Gln

130 135 140

Met Leu Lys Leu Gln Asn Leu Val Ile Pro Trp Ala Pro Glu Asn Leu

145 150 155 160

Thr Leu His Lys Leu Ser Glu Ser Gln Leu Glu Leu Asn Trp Asn Asn

165 170 175

Arg Phe Leu Asn His Cys Leu Glu His Leu Val Gln Tyr Arg Thr Asp

180 185 190

Trp Asp His Ser Trp Thr Glu Gln Ser Val Asp Tyr Arg His Lys Phe

195 200 205

Ser Leu Pro Ser Val Asp Gly Gln Lys Arg Tyr Thr Phe Arg Val Arg

210 215 220

Ser Arg Phe Asn Pro Leu Cys Gly Ser Ala Gln His Trp Ser Glu Trp

225 230 235 240

Ser His Pro Ile His Trp Gly Ser Asn Thr Ser Lys Glu Asn Pro Phe

245 250 255

Leu Phe Ala Leu Glu Ala Val Val Ile Ser Val Gly Ser Met Gly Leu
260 265 270
Ile Ile Ser Leu Leu Cys Val Tyr Phe Trp Leu Glu Arg Thr Met Pro
275 280 285
Arg Ile Pro Thr Leu Lys Asn Leu Glu Asp Leu Val Thr Glu Tyr His

290 295 300
Gly Asn Phe Ser Ala Trp Ser Gly Val Ser Lys Gly Leu Ala Glu Ser
305 310 315 320
Leu Gln Pro Asp Tyr Ser Glu Arg Leu Cys Leu Val Ser Glu Ile Pro
325 330 335
Pro Lys Gly Gly Ala Leu Gly Glu Gly Pro Gly Ala Ser Pro Cys Asn
340 345 350
Gln His Ser Pro Tyr Trp Ala Pro Pro Cys Tyr Thr Leu Lys Pro Glu

355 360 365
Thr

<210> 27
<211> 184
<212> PRT
<213> Homo sapiens
<400> 27
Met Leu Gln Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser
1 5 10 15
Leu Leu His Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr
20 25 30
Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser
35 40 45

Val Lys Gly Thr Asn Ala Ile Leu Trp Thr Cys Leu Gly Leu Ser Leu
50 55 60
Ile Ile Ser Leu Ala Val Phe Val Leu Met Phe Leu Leu Arg Lys Ile
65 70 75 80
Asn Ser Glu Pro Leu Lys Asp Glu Phe Lys Asn Thr Gly Ser Gly Leu

85 90 95

Leu Gly Met Ala Asn Ile Asp Leu Glu Lys Ser Arg Thr Gly Asp Glu

100 105 110

Ile Ile Leu Pro Arg Gly Leu Glu Tyr Thr Val Glu Glu Cys Thr Cys

115 120 125

Glu Asp Cys Ile Lys Ser Lys Pro Lys Val Asp Ser Asp His Cys Phe

130 135 140

Pro Leu Pro Ala Met Glu Glu Gly Ala Thr Ile Leu Val Thr Thr Lys

145 150 155 160

Thr Asn Asp Tyr Cys Lys Ser Leu Pro Ala Ala Leu Ser Ala Thr Glu

165 170 175

Ile Glu Lys Ser Ile Ser Ala Arg

180

<210> 28

<211> 468

<212> PRT

<213> Homo sapiens

<400> 28

Met Ala Pro Pro Pro Ala Arg Val His Leu Gly Ala Phe Leu Ala Val

1 5 10 15

Thr Pro Asn Pro Gly Ser Ala Ala Ser Gly Thr Glu Ala Ala Ala Ala

20 25 30

Thr Pro Ser Lys Val Trp Gly Ser Ser Ala Gly Arg Ile Glu Pro Arg

35 40 45

Gly Gly Gly Arg Gly Ala Leu Pro Thr Ser Met Gly Gln His Gly Pro

50 55 60

Ser Ala Arg Ala Arg Ala Gly Arg Ala Pro Gly Pro Arg Pro Ala Arg

65 70 75 80

Glu Ala Ser Pro Arg Leu Arg Val His Lys Thr Phe Lys Phe Val Val

85 90 95

Val Gly Val Leu Leu Gln Val Val Pro Ser Ser Ala Ala Thr Ile Lys

100 105 110

Leu His Asp Gln Ser Ile Gly Thr Gln Gln Trp Glu His Ser Pro Leu
115 120 125
Gly Glu Leu Cys Pro Pro Gly Ser His Arg Ser Glu His Pro Gly Ala
130 135 140
Cys Asn Arg Cys Thr Glu Gly Val Gly Tyr Thr Asn Ala Ser Asn Asn
145 150 155 160
Leu Phe Ala Cys Leu Pro Cys Thr Ala Cys Lys Ser Asp Glu Glu Glu
165 170 175

Arg Ser Pro Cys Thr Thr Thr Arg Asn Thr Ala Cys Gln Cys Lys Pro
180 185 190
Gly Thr Phe Arg Asn Asp Asn Ser Ala Glu Met Cys Arg Lys Cys Ser
195 200 205
Arg Gly Cys Pro Arg Gly Met Val Lys Val Lys Asp Cys Thr Pro Trp
210 215 220
Ser Asp Ile Glu Cys Val His Lys Glu Ser Gly Asn Gly His Asn Ile
225 230 235 240

Trp Val Ile Leu Val Val Thr Leu Val Val Pro Leu Leu Leu Val Ala
245 250 255
Val Leu Ile Val Cys Cys Cys Ile Gly Ser Gly Cys Gly Gly Asp Pro
260 265 270
Lys Cys Met Asp Arg Val Cys Phe Trp Arg Leu Gly Leu Leu Arg Gly
275 280 285
Pro Gly Ala Glu Asp Asn Ala His Asn Glu Ile Leu Ser Asn Ala Asp
290 295 300

Ser Leu Ser Thr Phe Val Ser Glu Gln Gln Met Glu Ser Gln Glu Pro
305 310 315 320
Ala Asp Leu Thr Gly Val Thr Val Gln Ser Pro Gly Glu Ala Gln Cys
325 330 335
Leu Leu Gly Pro Ala Glu Ala Glu Gly Ser Gln Arg Arg Arg Leu Leu
340 345 350

Val Pro Ala Asn Gly Ala Asp Pro Thr Glu Thr Leu Met Leu Phe Phe
355 360 365

Asp Lys Phe Ala Asn Ile Val Pro Phe Asp Ser Trp Asp Gln Leu Met
370 375 380
Arg Gln Leu Asp Leu Thr Lys Asn Glu Ile Asp Val Val Arg Ala Gly
385 390 395 400
Thr Ala Gly Pro Gly Asp Ala Leu Tyr Ala Met Leu Met Lys Trp Val
405 410 415
Asn Lys Thr Gly Arg Asn Ala Ser Ile His Thr Leu Leu Asp Ala Leu
420 425 430

Glu Arg Met Glu Glu Arg His Ala Arg Glu Lys Ile Gln Asp Leu Leu
435 440 445
Val Asp Ser Gly Lys Phe Ile Tyr Leu Glu Asp Gly Thr Gly Ser Ala
450 455 460
Val Ser Leu Glu
465

<210> 29
<211> 335
<212> PRT
<213> Homo sapiens
<400> 29
Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp Gln
1 5 10 15
Leu Thr Gly Ser Ala Ala Ser Gly Pro Val Lys Glu Leu Val Gly Ser

20 25 30
Val Gly Gly Ala Val Thr Phe Pro Leu Lys Ser Lys Val Lys Gln Val
35 40 45
Asp Ser Ile Val Trp Thr Phe Asn Thr Thr Pro Leu Val Thr Ile Gln
50 55 60
Pro Glu Gly Gly Thr Ile Ile Val Thr Gln Asn Arg Asn Arg Glu Arg
65 70 75 80

Val Asp Phe Pro Asp Gly Gly Tyr Ser Leu Lys Leu Ser Lys Leu Lys

85 90 95

Lys Asn Asp Ser Gly Ile Tyr Tyr Val Gly Ile Tyr Ser Ser Ser Leu

100 105 110

Gln Gln Pro Ser Thr Gln Glu Tyr Val Leu His Val Tyr Glu His Leu

115 120 125

Ser Lys Pro Lys Val Thr Met Gly Leu Gln Ser Asn Lys Asn Gly Thr

130 135 140

Cys Val Thr Asn Leu Thr Cys Cys Met Glu His Gly Glu Glu Asp Val

145 150 155 160

Ile Tyr Thr Trp Lys Ala Leu Gly Gln Ala Ala Asn Glu Ser His Asn

165 170 175

Gly Ser Ile Leu Pro Ile Ser Trp Arg Trp Gly Glu Ser Asp Met Thr

180 185 190

Phe Ile Cys Val Ala Arg Asn Pro Val Ser Arg Asn Phe Ser Ser Pro

195 200 205

Ile Leu Ala Arg Lys Leu Cys Glu Gly Ala Ala Asp Asp Pro Asp Ser

210 215 220

Ser Met Val Leu Leu Cys Leu Leu Leu Val Pro Leu Leu Leu Ser Leu

225 230 235 240

Phe Val Leu Gly Leu Phe Leu Trp Phe Leu Lys Arg Glu Arg Gln Glu

245 250 255

Glu Tyr Ile Glu Glu Lys Lys Arg Val Asp Ile Cys Arg Glu Thr Pro

260 265 270

Asn Ile Cys Pro His Ser Gly Glu Asn Thr Glu Tyr Asp Thr Ile Pro

275 280 285

His Thr Asn Arg Thr Ile Leu Lys Glu Asp Pro Ala Asn Thr Val Tyr

290 295 300

Ser Thr Val Glu Ile Pro Lys Lys Met Glu Asn Pro His Ser Leu Leu

305 310 315 320

Thr Met Pro Asp Thr Pro Arg Leu Phe Ala Tyr Glu Asn Val Ile

325 330 335

<210> 30

<211> 461

<212> PRT

<213> Homo sapiens

<400> 30

Met Ala Pro Val Ala Val Trp Ala Ala Leu Ala Val Gly Leu Glu Leu
1 5 10 15

Trp Ala Ala Ala His Ala Leu Pro Ala Gln Val Ala Phe Thr Pro Tyr
20 25 30

Ala Pro Glu Pro Gly Ser Thr Cys Arg Leu Arg Glu Tyr Tyr Asp Gln
35 40 45

Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys
50 55 60

Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp
65 70 75 80

Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys
85 90 95

Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg
100 105 110

Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu
115 120 125

Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg
130 135 140

Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val
145 150 155 160

Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr
165 170 175

Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly
180 185 190

Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser

195 200 205

Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser

210 215 220

Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser

225 230 235 240

Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly

245 250 255

Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly

260 265 270

Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys

275 280 285

Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro

290 295 300

Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu

305 310 315 320

Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser

325 330 335

Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly

340 345 350

Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser

355 360 365

Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile

370 375 380

Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln

385 390 395 400

Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro

405 410 415

Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser

420 425 430

Gln Leu Glu Thr Pro Glu Thr Leu Leu Gly Ser Thr Glu Glu Lys Pro

435 440 445

Leu Pro Leu Gly Val Pro Asp Ala Gly Met Lys Pro Ser

450 455 460

<210> 31

<211> 287

<212> PRT

<213> Homo sapiens

<400> 31

Met Ser Pro His Pro Thr Ala Leu Leu Gly Leu Val Leu Cys Leu Ala

1 5 10 15

Gln Thr Ile His Thr Gln Glu Glu Asp Leu Pro Arg Pro Ser Ile Ser

20 25 30

Ala Glu Pro Gly Thr Val Ile Pro Leu Gly Ser His Val Thr Phe Val

35 40 45

Cys Arg Gly Pro Val Gly Val Gln Thr Phe Arg Leu Glu Arg Glu Ser

50 55 60

Arg Ser Thr Tyr Asn Asp Thr Glu Asp Val Ser Gln Ala Ser Pro Ser

65 70 75 80

Glu Ser Glu Ala Arg Phe Arg Ile Asp Ser Val Ser Glu Gly Asn Ala

85 90 95

Gly Pro Tyr Arg Cys Ile Tyr Tyr Lys Pro Pro Lys Trp Ser Glu Gln

100 105 110

Ser Asp Tyr Leu Glu Leu Leu Val Lys Glu Thr Ser Gly Gly Pro Asp

115 120 125

Ser Pro Asp Thr Glu Pro Gly Ser Ser Ala Gly Pro Thr Gln Arg Pro

130 135 140

Ser Asp Asn Ser His Asn Glu His Ala Pro Ala Ser Gln Gly Leu Lys

145 150 155 160

Ala Glu His Leu Tyr Ile Leu Ile Gly Val Ser Val Val Phe Leu Phe

165 170 175

Cys Leu Leu Leu Leu Val Leu Phe Cys Leu His Arg Gln Asn Gln Ile

180 185 190

Lys Gln Gly Pro Pro Arg Ser Lys Asp Glu Glu Gln Lys Pro Gln Gln

195 200 205

Arg Pro Asp Leu Ala Val Asp Val Leu Glu Arg Thr Ala Asp Lys Ala

210 215 220

Thr Val Asn Gly Leu Pro Glu Lys Asp Arg Glu Thr Asp Thr Ser Ala

225 230 235 240

Leu Ala Ala Gly Ser Ser Gln Glu Val Thr Tyr Ala Gln Leu Asp His

245 250 255

Trp Ala Leu Thr Gln Arg Thr Ala Arg Ala Val Ser Pro Gln Ser Thr

260 265 270

Lys Pro Met Ala Glu Ser Ile Thr Tyr Ala Ala Val Ala Arg His

275 280 285

<210> 32

<211> 786

<212> PRT

<213> Homo sapiens

<400> 32

Met Thr Ser Ile Phe His Phe Ala Ile Ile Phe Met Leu Ile Leu Gln

1 5 10 15

Ile Arg Ile Gln Leu Ser Glu Glu Ser Glu Phe Leu Val Asp Arg Ser

20 25 30

Lys Asn Gly Leu Ile His Val Pro Lys Asp Leu Ser Gln Lys Thr Thr

35 40 45

Ile Leu Asn Ile Ser Gln Asn Tyr Ile Ser Glu Leu Trp Thr Ser Asp

50 55 60

Ile Leu Ser Leu Ser Lys Leu Arg Ile Leu Ile Ile Ser His Asn Arg

65 70 75 80

Ile Gln Tyr Leu Asp Ile Ser Val Phe Lys Phe Asn Gln Glu Leu Glu

85 90 95

Tyr Leu Asp Leu Ser His Asn Lys Leu Val Lys Ile Ser Cys His Pro

100 105 110

Thr Val Asn Leu Lys His Leu Asp Leu Ser Phe Asn Ala Phe Asp Ala

115 120 125

Leu Pro Ile Cys Lys Glu Phe Gly Asn Met Ser Gln Leu Lys Phe Leu
130 135 140
Gly Leu Ser Thr Thr His Leu Glu Lys Ser Ser Val Leu Pro Ile Ala
145 150 155 160
His Leu Asn Ile Ser Lys Val Leu Leu Val Leu Gly Glu Thr Tyr Gly
165 170 175
Glu Lys Glu Asp Pro Glu Gly Leu Gln Asp Phe Asn Thr Glu Ser Leu
180 185 190

His Ile Val Phe Pro Thr Asn Lys Glu Phe His Phe Ile Leu Asp Val
195 200 205
Ser Val Lys Thr Val Ala Asn Leu Glu Leu Ser Asn Ile Lys Cys Val
210 215 220
Leu Glu Asp Asn Lys Cys Ser Tyr Phe Leu Ser Ile Leu Ala Lys Leu
225 230 235 240
Gln Thr Asn Pro Lys Leu Ser Asn Leu Thr Leu Asn Asn Ile Glu Thr
245 250 255

Thr Trp Asn Ser Phe Ile Arg Ile Leu Gln Leu Val Trp His Thr Thr
260 265 270
Val Trp Tyr Phe Ser Ile Ser Asn Val Lys Leu Gln Gly Gln Leu Asp
275 280 285
Phe Arg Asp Phe Asp Tyr Ser Gly Thr Ser Leu Lys Ala Leu Ser Ile
290 295 300
His Gln Val Val Ser Asp Val Phe Gly Phe Pro Gln Ser Tyr Ile Tyr
305 310 315 320

Glu Ile Phe Ser Asn Met Asn Ile Lys Asn Phe Thr Val Ser Gly Thr
325 330 335
Arg Met Val His Met Leu Cys Pro Ser Lys Ile Ser Pro Phe Leu His
340 345 350
Leu Asp Phe Ser Asn Asn Leu Leu Thr Asp Thr Val Phe Glu Asn Cys
355 360 365

Gly His Leu Thr Glu Leu Glu Thr Leu Ile Leu Gln Met Asn Gln Leu
370 375 380

Lys Glu Leu Ser Lys Ile Ala Glu Met Thr Thr Gln Met Lys Ser Leu
385 390 395 400
Gln Gln Leu Asp Ile Ser Gln Asn Ser Val Ser Tyr Asp Glu Lys Lys
405 410 415
Gly Asp Cys Ser Trp Thr Lys Ser Leu Leu Ser Leu Asn Met Ser Ser
420 425 430
Asn Ile Leu Thr Asp Thr Ile Phe Arg Cys Leu Pro Pro Arg Ile Lys
435 440 445

Val Leu Asp Leu His Ser Asn Lys Ile Lys Ser Ile Pro Lys Gln Val
450 455 460
Val Lys Leu Glu Ala Leu Gln Glu Leu Asn Val Ala Phe Asn Ser Leu
465 470 475 480
Thr Asp Leu Pro Gly Cys Gly Ser Phe Ser Ser Leu Ser Val Leu Ile
485 490 495
Ile Asp His Asn Ser Val Ser His Pro Ser Ala Asp Phe Phe Gln Ser
500 505 510

Cys Gln Lys Met Arg Ser Ile Lys Ala Gly Asp Asn Pro Phe Gln Cys
515 520 525
Thr Cys Glu Leu Gly Glu Phe Val Lys Asn Ile Asp Gln Val Ser Ser
530 535 540
Glu Val Leu Glu Gly Trp Pro Asp Ser Tyr Lys Cys Asp Tyr Pro Glu
545 550 555 560
Ser Tyr Arg Gly Thr Leu Leu Lys Asp Phe His Met Ser Glu Leu Ser
565 570 575

Cys Asn Ile Thr Leu Leu Ile Val Thr Ile Val Ala Thr Met Leu Val
580 585 590
Leu Ala Val Thr Val Thr Ser Leu Cys Ser Tyr Leu Asp Leu Pro Trp
595 600 605
Tyr Leu Arg Met Val Cys Gln Trp Thr Gln Thr Arg Arg Arg Ala Arg

610 615 620

Asn Ile Pro Leu Glu Glu Leu Gln Arg Asn Leu Gln Phe His Ala Phe
625 630 635 640

Ile Ser Tyr Ser Gly His Asp Ser Phe Trp Val Lys Asn Glu Leu Leu
645 650 655

Pro Asn Leu Glu Lys Glu Gly Met Gln Ile Cys Leu His Glu Arg Asn
660 665 670

Phe Val Pro Gly Lys Ser Ile Val Glu Asn Ile Ile Thr Cys Ile Glu
675 680 685

Lys Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Ser
690 695 700

Glu Trp Cys His Tyr Glu Leu Tyr Phe Ala His His Asn Leu Phe His
705 710 715 720

Glu Gly Ser Asn Ser Leu Ile Leu Ile Leu Leu Glu Pro Ile Pro Gln
725 730 735

Tyr Ser Ile Pro Ser Ser Tyr His Lys Leu Lys Ser Leu Met Ala Arg
740 745 750

Arg Thr Tyr Leu Glu Trp Pro Lys Glu Lys Ser Lys Arg Gly Leu Phe
755 760 765

Trp Ala Asn Leu Arg Ala Ala Ile Asn Ile Lys Leu Thr Glu Gln Ala
770 775 780

Lys Lys
785

<210> 33
<211> 1049
<212> PRT
<213> Homo sapiens
<400> 33

Met Val Phe Pro Met Trp Thr Leu Lys Arg Gln Ile Leu Ile Leu Phe
1 5 10 15

Asn Ile Ile Leu Ile Ser Lys Leu Leu Gly Ala Arg Trp Phe Pro Lys
20 25 30

Thr Leu Pro Cys Asp Val Thr Leu Asp Val Pro Lys Asn His Val Ile

35 40 45

Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro Gly Gly Ile Pro

50 55 60

Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn His Ile Pro Asp Ile

65 70 75 80

Ser Pro Ala Ser Phe His Arg Leu Asp His Leu Val Glu Ile Asp Phe

85 90 95

Arg Cys Asn Cys Val Pro Ile Pro Leu Gly Ser Lys Asn Asn Met Cys

100 105 110

Ile Lys Arg Leu Gln Ile Lys Pro Arg Ser Phe Ser Gly Leu Thr Tyr

115 120 125

Leu Lys Ser Leu Tyr Leu Asp Gly Asn Gln Leu Leu Glu Ile Pro Gln

130 135 140

Gly Leu Pro Pro Ser Leu Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile

145 150 155 160

Phe Ser Ile Arg Lys Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile

165 170 175

Leu Tyr Leu Gly Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser

180 185 190

Tyr Ser Ile Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val

195 200 205

Leu Ser Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro

210 215 220

Ser Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile

225 230 235 240

Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp Leu

245 250 255

Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro

260 265 270

Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala

275 280 285

Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His

290 295 300

Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys Leu Gln Glu Leu Asp

305 310 315 320

Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile Gly Asp Ala Lys Phe Leu

325 330 335

His Phe Leu Pro Ser Leu Ile Gln Leu Asp Leu Ser Phe Asn Phe Glu

340 345 350

Leu Gln Val Tyr Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser

355 360 365

Leu Lys Ser Leu Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu

370 375 380

Leu Lys Ser Phe Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu

385 390 395 400

Val Leu Asp Leu Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met

405 410 415

Phe Lys Gln Phe Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys

420 425 430

Ile Ser Pro Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala

435 440 445

Arg Thr Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His

450 455 460

Tyr Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys

465 470 475 480

Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly Gln

485 490 495

Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp

500 505 510

Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn Leu

515 520 525

Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro Leu Ala Glu Leu
530 535 540
Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp Leu Leu His Ser Thr

545 550 555 560
Ala Phe Glu Glu Leu His Lys Leu Glu Val Leu Asp Ile Ser Ser Asn
565 570 575
Ser His Tyr Phe Gln Ser Glu Gly Ile Thr His Met Leu Asn Phe Thr
580 585 590
Lys Asn Leu Lys Val Leu Gln Lys Leu Met Met Asn Asp Asn Asp Ile
595 600 605
Ser Ser Ser Thr Ser Arg Thr Met Glu Ser Glu Ser Leu Arg Thr Leu

610 615 620
Glu Phe Arg Gly Asn His Leu Asp Val Leu Trp Arg Glu Gly Asp Asn
625 630 635 640
Arg Tyr Leu Gln Leu Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp
645 650 655
Ile Ser Lys Asn Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly
660 665 670
Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys

675 680 685
Ser Phe Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu
690 695 700
Asp Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn
705 710 715 720
Cys Ser Arg Ser Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile Arg
725 730 735
Ser Leu Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg Tyr Leu

740 745 750
Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr Ser Phe Pro
755 760 765
Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu His His Asn Arg

770 775 780

Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn His

785 790 795 800

Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val Gly

805 810 815

Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr

820 825 830

Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser Leu Ser Ile Ser

835 840 845

Val Ser Leu Phe Leu Met Val Met Met Thr Ala Ser His Leu Tyr Phe

850 855 860

Trp Asp Val Trp Tyr Ile Tyr His Phe Cys Lys Ala Lys Ile Lys Gly

865 870 875 880

Tyr Gln Arg Leu Ile Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val

885 890 895

Tyr Asp Thr Lys Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu

900 905 910

Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu

915 920 925

Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser

930 935 940

Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys

945 950 955 960

Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His Gln

965 970 975

Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu Glu

980 985 990

Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu Cys

995 1000 1005

Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln Ala His Pro

1010 1015 1020

Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr Asp Asn His

1025 1030 1035

Val Ala Tyr Ser Gln Val Phe Lys Glu Thr Val

1040 1045

<210> 34

<211> 241

<212> PRT

<213> Homo sapiens

<400> 34

Met Ala Gln His Gly Ala Met Gly Ala Phe Arg Ala Leu Cys Gly Leu

1 5 10 15

Ala Leu Leu Cys Ala Leu Ser Leu Gly Gln Arg Pro Thr Gly Gly Pro

20 25 30

Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly Thr Asp Ala Arg

35 40 45

Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu

50 55 60

Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln Pro Glu Phe His

65 70 75 80

Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His Pro Cys Pro Pro

85 90 95

Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe Gly Phe Gln Cys

100 105 110

Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His Glu Gly His Cys

115 120 125

Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu Thr Val Phe Pro

130 135 140

Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly Ser Pro Pro Ala

145 150 155 160

Glu Pro Leu Gly Trp Leu Thr Val Val Leu Leu Ala Val Ala Ala Cys

165 170 175

Val Leu Leu Leu Thr Ser Ala Gln Leu Gly Leu His Ile Trp Gln Leu

180 185 190

Arg Ser Gln Cys Met Trp Pro Arg Glu Thr Gln Leu Leu Leu Glu Val

195 200 205

Pro Pro Ser Thr Glu Asp Ala Arg Ser Cys Gln Phe Pro Glu Glu Glu

210 215 220

Arg Gly Glu Arg Ser Ala Glu Glu Lys Gly Arg Leu Gly Asp Leu Trp

225 230 235 240

Val

<210> 35

<211> 595

<212> PRT

<213> Homo sapiens

<400> 35

Met Arg Val Leu Leu Ala Ala Leu Gly Leu Leu Phe Leu Gly Ala Leu

1 5 10 15

Arg Ala Phe Pro Gln Asp Arg Pro Phe Glu Asp Thr Cys His Gly Asn

20 25 30

Pro Ser His Tyr Tyr Asp Lys Ala Val Arg Arg Cys Cys Tyr Arg Cys

35 40 45

Pro Met Gly Leu Phe Pro Thr Gln Gln Cys Pro Gln Arg Pro Thr Asp

50 55 60

Cys Arg Lys Gln Cys Glu Pro Asp Tyr Tyr Leu Asp Glu Ala Asp Arg

65 70 75 80

Cys Thr Ala Cys Val Thr Cys Ser Arg Asp Asp Leu Val Glu Lys Thr

85 90 95

Pro Cys Ala Trp Asn Ser Ser Arg Val Cys Glu Cys Arg Pro Gly Met

100 105 110

Phe Cys Ser Thr Ser Ala Val Asn Ser Cys Ala Arg Cys Phe Phe His

115 120 125

Ser Val Cys Pro Ala Gly Met Ile Val Lys Phe Pro Gly Thr Ala Gln

130 135 140

Lys Asn Thr Val Cys Glu Pro Ala Ser Pro Gly Val Ser Pro Ala Cys
145 150 155 160
Ala Ser Pro Glu Asn Cys Lys Glu Pro Ser Ser Gly Thr Ile Pro Gln
165 170 175
Ala Lys Pro Thr Pro Val Ser Pro Ala Thr Ser Ser Ala Ser Thr Met
180 185 190
Pro Val Arg Gly Gly Thr Arg Leu Ala Gln Glu Ala Ala Ser Lys Leu
195 200 205

Thr Arg Ala Pro Asp Ser Pro Ser Ser Val Gly Arg Pro Ser Ser Asp
210 215 220
Pro Gly Leu Ser Pro Thr Gln Pro Cys Pro Glu Gly Ser Gly Asp Cys
225 230 235 240
Arg Lys Gln Cys Glu Pro Asp Tyr Tyr Leu Asp Glu Ala Gly Arg Cys
245 250 255
Thr Ala Cys Val Ser Cys Ser Arg Asp Asp Leu Val Glu Lys Thr Pro
260 265 270

Cys Ala Trp Asn Ser Ser Arg Thr Cys Glu Cys Arg Pro Gly Met Ile
275 280 285
Cys Ala Thr Ser Ala Thr Asn Ser Cys Ala Arg Cys Val Pro Tyr Pro
290 295 300
Ile Cys Ala Ala Glu Thr Val Thr Lys Pro Gln Asp Met Ala Glu Lys
305 310 315 320
Asp Thr Thr Phe Glu Ala Pro Pro Leu Gly Thr Gln Pro Asp Cys Asn
325 330 335

Pro Thr Pro Glu Asn Gly Glu Ala Pro Ala Ser Thr Ser Pro Thr Gln
340 345 350
Ser Leu Leu Val Asp Ser Gln Ala Ser Lys Thr Leu Pro Ile Pro Thr
355 360 365
Ser Ala Pro Val Ala Leu Ser Ser Thr Gly Lys Pro Val Leu Asp Ala
370 375 380

Gly Pro Val Leu Phe Trp Val Ile Leu Val Leu Val Val Val Val Gly
385 390 395 400

Ser Ser Ala Phe Leu Leu Cys His Arg Arg Ala Cys Arg Lys Arg Ile
405 410 415
Arg Gln Lys Leu His Leu Cys Tyr Pro Val Gln Thr Ser Gln Pro Lys
420 425 430
Leu Glu Leu Val Asp Ser Arg Pro Arg Arg Ser Ser Thr Gln Leu Arg
435 440 445
Ser Gly Ala Ser Val Thr Glu Pro Val Ala Glu Glu Arg Gly Leu Met
450 455 460

Ser Gln Pro Leu Met Glu Thr Cys His Ser Val Gly Ala Ala Tyr Leu
465 470 475 480
Glu Ser Leu Pro Leu Gln Asp Ala Ser Pro Ala Gly Gly Pro Ser Ser
485 490 495
Pro Arg Asp Leu Pro Glu Pro Arg Val Ser Thr Glu His Thr Asn Asn
500 505 510
Lys Ile Glu Lys Ile Tyr Ile Met Lys Ala Asp Thr Val Ile Val Gly
515 520 525

Thr Val Lys Ala Glu Leu Pro Glu Gly Arg Gly Leu Ala Gly Pro Ala
530 535 540
Glu Pro Glu Leu Glu Glu Glu Leu Glu Ala Asp His Thr Pro His Tyr
545 550 555 560
Pro Glu Gln Glu Thr Glu Pro Pro Leu Gly Ser Cys Ser Asp Val Met
565 570 575
Leu Ser Val Glu Glu Glu Gly Lys Glu Asp Pro Leu Pro Thr Ala Ala
580 585 590

Ser Gly Lys
595

<210> 36
<211> 515
<212> PRT

<213> Homo sapiens

<400> 36

Met Leu Leu Ser Gln Asn Ala Phe Ile Phe Arg Ser Leu Asn Leu Val
1 5 10 15

Leu Met Val Tyr Ile Ser Leu Val Phe Gly Ile Ser Tyr Asp Ser Pro
20 25 30

Asp Tyr Thr Asp Glu Ser Cys Thr Phe Lys Ile Ser Leu Arg Asn Phe
35 40 45

Arg Ser Ile Leu Ser Trp Glu Leu Lys Asn His Ser Ile Val Pro Thr

50 55 60

His Tyr Thr Leu Leu Tyr Thr Ile Met Ser Lys Pro Glu Asp Leu Lys
65 70 75 80

Val Val Lys Asn Cys Ala Asn Thr Thr Arg Ser Phe Cys Asp Leu Thr
85 90 95

Asp Glu Trp Arg Ser Thr His Glu Ala Tyr Val Thr Val Leu Glu Gly
100 105 110

Phe Ser Gly Asn Thr Thr Leu Phe Ser Cys Ser His Asn Phe Trp Leu

115 120 125

Ala Ile Asp Met Ser Phe Glu Pro Pro Glu Phe Glu Ile Val Gly Phe
130 135 140

Thr Asn His Ile Asn Val Met Val Lys Phe Pro Ser Ile Val Glu Glu
145 150 155 160

Glu Leu Gln Phe Asp Leu Ser Leu Val Ile Glu Glu Gln Ser Glu Gly
165 170 175

Ile Val Lys Lys His Lys Pro Glu Ile Lys Gly Asn Met Ser Gly Asn

180 185 190

Phe Thr Tyr Ile Ile Asp Lys Leu Ile Pro Asn Thr Asn Tyr Cys Val
195 200 205

Ser Val Tyr Leu Glu His Ser Asp Glu Gln Ala Val Ile Lys Ser Pro
210 215 220

Leu Lys Cys Thr Leu Leu Pro Pro Gly Gln Glu Ser Glu Ser Ala Glu
225 230 235 240

Ser Ala Lys Ile Gly Gly Ile Ile Thr Val Phe Leu Ile Ala Leu Val

245 250 255

Leu Thr Ser Thr Ile Val Thr Leu Lys Trp Ile Gly Tyr Ile Cys Leu

260 265 270

Arg Asn Ser Leu Pro Lys Val Leu Asn Phe His Asn Phe Leu Ala Trp

275 280 285

Pro Phe Pro Asn Leu Pro Pro Leu Glu Ala Met Asp Met Val Glu Val

290 295 300

Ile Tyr Ile Asn Arg Lys Lys Lys Val Trp Asp Tyr Asn Tyr Asp Asp

305 310 315 320

Glu Ser Asp Ser Asp Thr Glu Ala Ala Pro Arg Thr Ser Gly Gly Gly

325 330 335

Tyr Thr Met His Gly Leu Thr Val Arg Pro Leu Gly Gln Ala Ser Ala

340 345 350

Thr Ser Thr Glu Ser Gln Leu Ile Asp Pro Glu Ser Glu Glu Glu Pro

355 360 365

Asp Leu Pro Glu Val Asp Val Glu Leu Pro Thr Met Pro Lys Asp Ser

370 375 380

Pro Gln Gln Leu Glu Leu Leu Ser Gly Pro Cys Glu Arg Arg Lys Ser

385 390 395 400

Pro Leu Gln Asp Pro Phe Pro Glu Glu Asp Tyr Ser Ser Thr Glu Gly

405 410 415

Ser Gly Gly Arg Ile Thr Phe Asn Val Asp Leu Asn Ser Val Phe Leu

420 425 430

Arg Val Leu Asp Asp Glu Asp Ser Asp Asp Leu Glu Ala Pro Leu Met

435 440 445

Leu Ser Ser His Leu Glu Glu Met Val Asp Pro Glu Asp Pro Asp Asn

450 455 460

Val Gln Ser Asn His Leu Leu Ala Ser Gly Glu Gly Thr Gln Pro Thr

465 470 475 480

Phe Pro Ser Pro Ser Ser Glu Gly Leu Trp Ser Glu Asp Ala Pro Ser

485 490 495

Asp Gln Ser Asp Thr Ser Glu Ser Asp Val Asp Leu Gly Asp Gly Tyr

500 505 510

Ile Met Arg

515

<210> 37

<211> 332

<212> PRT

<213> Homo sapiens

<400> 37

Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro

1 5 10 15

Gly Asn Val Val Ser Gln Ser Ser Leu Thr Pro Leu Met Val Asn Gly

20 25 30

Ile Leu Gly Glu Ser Val Thr Leu Pro Leu Glu Phe Pro Ala Gly Glu

35 40 45

Lys Val Asn Phe Ile Thr Trp Leu Phe Asn Glu Thr Ser Leu Ala Phe

50 55 60

Ile Val Pro His Glu Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro

65 70 75 80

Lys Gln Gly Lys Arg Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu

85 90 95

Ser Asn Leu Lys Met Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser

100 105 110

Thr Lys Thr Ser Ala Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Arg

115 120 125

Gln Leu Arg Asn Ile Gln Val Thr Asn His Ser Gln Leu Phe Gln Asn

130 135 140

Met Thr Cys Glu Leu His Leu Thr Cys Ser Val Glu Asp Ala Asp Asp

145 150 155 160

Asn Val Ser Phe Arg Trp Glu Ala Leu Gly Asn Thr Leu Ser Ser Gln

165 170 175

Pro Asn Leu Thr Val Ser Trp Asp Pro Arg Ile Ser Ser Glu Gln Asp
180 185 190
Tyr Thr Cys Ile Ala Glu Asn Ala Val Ser Asn Leu Ser Phe Ser Val
195 200 205
Ser Ala Gln Lys Leu Cys Glu Asp Val Lys Ile Gln Tyr Thr Asp Thr
210 215 220
Lys Met Ile Leu Phe Met Val Ser Gly Ile Cys Ile Val Phe Gly Phe
225 230 235 240

Ile Ile Leu Leu Leu Leu Val Leu Arg Lys Arg Arg Asp Ser Leu Ser
245 250 255
Leu Ser Thr Gln Arg Thr Gln Gly Pro Ala Glu Ser Ala Arg Asn Leu
260 265 270
Glu Tyr Val Ser Val Ser Pro Thr Asn Asn Thr Val Tyr Ala Ser Val
275 280 285
Thr His Ser Asn Arg Glu Thr Glu Ile Trp Thr Pro Arg Glu Asn Asp
290 295 300

Thr Ile Thr Ile Tyr Ser Thr Ile Asn His Ser Lys Glu Ser Lys Pro
305 310 315 320
Thr Phe Ser Arg Ala Thr Ala Leu Asp Asn Val Val
325 330

<210> 38
<211> 386
<212> PRT
<213> Homo sapiens
<400> 38
Met Gly Leu Trp Gly Gln Ser Val Pro Thr Ala Ser Ser Ala Arg Ala
1 5 10 15
Gly Arg Tyr Pro Gly Ala Arg Thr Ala Ser Gly Thr Arg Pro Trp Leu
20 25 30

Leu Asp Pro Lys Ile Leu Lys Phe Val Val Phe Ile Val Ala Val Leu

35 40 45

Leu Pro Val Arg Val Asp Ser Ala Thr Ile Pro Arg Gln Asp Glu Val

50 55 60

Pro Gln Gln Thr Val Ala Pro Gln Gln Gln Arg Arg Ser Leu Lys Glu

65 70 75 80

Glu Glu Cys Pro Ala Gly Ser His Arg Ser Glu Tyr Thr Gly Ala Cys

85 90 95

Asn Pro Cys Thr Glu Gly Val Asp Tyr Thr Ile Ala Ser Asn Asn Leu

100 105 110

Pro Ser Cys Leu Leu Cys Thr Val Cys Lys Ser Gly Gln Thr Asn Lys

115 120 125

Ser Ser Cys Thr Thr Thr Arg Asp Thr Val Cys Gln Cys Glu Lys Gly

130 135 140

Ser Phe Gln Asp Lys Asn Ser Pro Glu Met Cys Arg Thr Cys Arg Thr

145 150 155 160

Gly Cys Pro Arg Gly Met Val Lys Val Ser Asn Cys Thr Pro Arg Ser

165 170 175

Asp Ile Lys Cys Lys Asn Glu Ser Ala Ala Ser Ser Thr Gly Lys Thr

180 185 190

Pro Ala Ala Glu Glu Thr Val Thr Thr Ile Leu Gly Met Leu Ala Ser

195 200 205

Pro Tyr His Tyr Leu Ile Ile Ile Val Val Leu Val Ile Ile Leu Ala

210 215 220

Val Val Val Val Gly Phe Ser Cys Arg Lys Lys Phe Ile Ser Tyr Leu

225 230 235 240

Lys Gly Ile Cys Ser Gly Gly Gly Gly Gly Pro Glu Arg Val His Arg

245 250 255

Val Leu Phe Arg Arg Arg Ser Cys Pro Ser Arg Val Pro Gly Ala Glu

260 265 270

Asp Asn Ala Arg Asn Glu Thr Leu Ser Asn Arg Tyr Leu Gln Pro Thr

275 280 285

Gln Val Ser Glu Gln Glu Ile Gln Gly Gln Glu Leu Ala Glu Leu Thr
290 295 300
Gly Val Thr Val Glu Ser Pro Glu Glu Pro Gln Arg Leu Leu Glu Gln
305 310 315 320
Ala Glu Ala Glu Gly Cys Gln Arg Arg Arg Leu Leu Val Pro Val Asn
325 330 335
Asp Ala Asp Ser Ala Asp Ile Ser Thr Leu Leu Asp Ala Ser Ala Thr
340 345 350

Leu Glu Glu Gly His Ala Lys Glu Thr Ile Gln Asp Gln Leu Val Gly
355 360 365
Ser Glu Lys Leu Phe Tyr Glu Glu Asp Glu Ala Gly Ser Ala Thr Ser
370 375 380
Cys Leu
385

<210> 39
<211> 412
<212> PRT
<213> Homo sapiens
<400> 39
Met Pro Leu Gln Leu Leu Leu Leu Leu Ile Leu Leu Gly Pro Gly Asn
1 5 10 15
Ser Leu Gln Leu Trp Asp Thr Trp Ala Asp Glu Ala Glu Lys Ala Leu

20 25 30
Gly Pro Leu Leu Ala Arg Asp Arg Arg Gln Ala Thr Glu Tyr Glu Tyr
35 40 45
Leu Asp Tyr Asp Phe Leu Pro Glu Thr Glu Pro Pro Glu Met Leu Arg
50 55 60
Asn Ser Thr Asp Thr Thr Pro Leu Thr Gly Pro Gly Thr Pro Glu Ser
65 70 75 80
Thr Thr Val Glu Pro Ala Ala Arg Arg Ser Thr Gly Leu Asp Ala Gly

85 90 95
Gly Ala Val Thr Glu Leu Thr Thr Glu Leu Ala Asn Met Gly Asn Leu

100 105 110

Ser Thr Asp Ser Ala Ala Met Glu Ile Gln Thr Thr Gln Pro Ala Ala

115 120 125

Thr Glu Ala Gln Thr Thr Gln Pro Val Pro Thr Glu Ala Gln Thr Thr

130 135 140

Pro Leu Ala Ala Thr Glu Ala Gln Thr Thr Arg Leu Thr Ala Thr Glu

145 150 155 160

Ala Gln Thr Thr Pro Leu Ala Ala Thr Glu Ala Gln Thr Thr Pro Pro

165 170 175

Ala Ala Thr Glu Ala Gln Thr Thr Gln Pro Thr Gly Leu Glu Ala Gln

180 185 190

Thr Thr Ala Pro Ala Ala Met Glu Ala Gln Thr Thr Ala Pro Ala Ala

195 200 205

Met Glu Ala Gln Thr Thr Pro Pro Ala Ala Met Glu Ala Gln Thr Thr

210 215 220

Gln Thr Thr Ala Met Glu Ala Gln Thr Thr Ala Pro Glu Ala Thr Glu

225 230 235 240

Ala Gln Thr Thr Gln Pro Thr Ala Thr Glu Ala Gln Thr Thr Pro Leu

245 250 255

Ala Ala Met Glu Ala Leu Ser Thr Glu Pro Ser Ala Thr Glu Ala Leu

260 265 270

Ser Met Glu Pro Thr Thr Lys Arg Gly Leu Phe Ile Pro Phe Ser Val

275 280 285

Ser Ser Val Thr His Lys Gly Ile Pro Met Ala Ala Ser Asn Leu Ser

290 295 300

Val Asn Tyr Pro Val Gly Ala Pro Asp His Ile Ser Val Lys Gln Cys

305 310 315 320

Leu Leu Ala Ile Leu Ile Leu Ala Leu Val Ala Thr Ile Phe Phe Val

325 330 335

Cys Thr Val Val Leu Ala Val Arg Leu Ser Arg Lys Gly His Met Tyr

340 345 350

Pro Val Arg Asn Tyr Ser Pro Thr Glu Met Val Cys Ile Ser Ser Leu
355 360 365

Leu Pro Asp Gly Gly Glu Gly Pro Ser Ala Thr Ala Asn Gly Gly Leu
370 375 380

Ser Lys Ala Lys Ser Pro Gly Leu Thr Pro Glu Pro Arg Glu Asp Arg
385 390 395 400

Glu Gly Asp Asp Leu Thr Leu His Ser Phe Leu Pro
405 410

<210> 40

<211> 585

<212> PRT

<213> Homo sapiens

<400> 40

Met Glu Lys Lys Trp Lys Tyr Cys Ala Val Tyr Tyr Ile Ile Gln Ile
1 5 10 15

His Phe Val Lys Gly Val Trp Glu Lys Thr Val Asn Thr Glu Glu Asn
20 25 30

Val Tyr Ala Thr Leu Gly Ser Asp Val Asn Leu Thr Cys Gln Thr Gln
35 40 45

Thr Val Gly Phe Phe Val Gln Met Gln Trp Ser Lys Val Thr Asn Lys
50 55 60

Ile Asp Leu Ile Ala Val Tyr His Pro Gln Tyr Gly Phe Tyr Cys Ala
65 70 75 80

Tyr Gly Arg Pro Cys Glu Ser Leu Val Thr Phe Thr Glu Thr Pro Glu
85 90 95

Asn Gly Ser Lys Trp Thr Leu His Leu Arg Asn Met Ser Cys Ser Val
100 105 110

Ser Gly Arg Tyr Glu Cys Met Leu Val Leu Tyr Pro Glu Gly Ile Gln
115 120 125

Thr Lys Ile Tyr Asn Leu Leu Ile Gln Thr His Val Thr Ala Asp Glu
130 135 140

Trp Asn Ser Asn His Thr Ile Glu Ile Glu Ile Asn Gln Thr Leu Glu

145 150 155 160

Ile Pro Cys Phe Gln Asn Ser Ser Ser Lys Ile Ser Ser Glu Phe Thr

165 170 175

Tyr Ala Trp Ser Val Glu Asn Ser Ser Thr Asp Ser Trp Val Leu Leu

180 185 190

Ser Lys Gly Ile Lys Glu Asp Asn Gly Thr Gln Glu Thr Leu Ile Ser

195 200 205

Gln Asn His Leu Ile Ser Asn Ser Thr Leu Leu Lys Asp Arg Val Lys

210 215 220

Leu Gly Thr Asp Tyr Arg Leu His Leu Ser Pro Val Gln Ile Phe Asp

225 230 235 240

Asp Gly Arg Lys Phe Ser Cys His Ile Arg Val Gly Pro Asn Lys Ile

245 250 255

Leu Arg Ser Ser Thr Thr Val Lys Val Phe Ala Lys Pro Glu Ile Pro

260 265 270

Val Ile Val Glu Asn Asn Ser Thr Asp Val Leu Val Glu Arg Arg Phe

275 280 285

Thr Cys Leu Leu Lys Asn Val Phe Pro Lys Ala Asn Ile Thr Trp Phe

290 295 300

Ile Asp Gly Ser Phe Leu His Asp Glu Lys Glu Gly Ile Tyr Ile Thr

305 310 315 320

Asn Glu Glu Arg Lys Gly Lys Asp Gly Phe Leu Glu Leu Lys Ser Val

325 330 335

Leu Thr Arg Val His Ser Asn Lys Pro Ala Gln Ser Asp Asn Leu Thr

340 345 350

Ile Trp Cys Met Ala Leu Ser Pro Val Pro Gly Asn Lys Val Trp Asn

355 360 365

Ile Ser Ser Glu Lys Ile Thr Phe Leu Leu Gly Ser Glu Ile Ser Ser

370 375 380

Thr Asp Pro Pro Leu Ser Val Thr Glu Ser Thr Leu Asp Thr Gln Pro

385 390 395 400

Ser Pro Ala Ser Ser Val Ser Pro Ala Arg Tyr Pro Ala Thr Ser Ser
405 410 415
Val Thr Leu Val Asp Val Ser Ala Leu Arg Pro Asn Thr Thr Pro Gln
420 425 430

Pro Ser Asn Ser Ser Met Thr Thr Arg Gly Phe Asn Tyr Pro Trp Thr
435 440 445
Ser Ser Gly Thr Asp Thr Lys Lys Ser Val Ser Arg Ile Pro Ser Glu
450 455 460
Thr Tyr Ser Ser Ser Pro Ser Gly Ala Gly Ser Thr Leu His Asp Asn
465 470 475 480
Val Phe Thr Ser Thr Ala Arg Ala Phe Ser Glu Val Pro Thr Thr Ala
485 490 495

Asn Gly Ser Thr Lys Thr Asn His Val His Ile Thr Gly Ile Val Val
500 505 510
Asn Lys Pro Lys Asp Gly Met Ser Trp Pro Val Ile Val Ala Ala Leu
515 520 525
Leu Phe Cys Cys Met Ile Leu Phe Gly Leu Gly Val Arg Lys Trp Cys
530 535 540
Gln Tyr Gln Lys Glu Ile Met Glu Arg Pro Pro Pro Phe Lys Pro Pro
545 550 555 560

Pro Pro Pro Ile Lys Tyr Thr Cys Ile Gln Glu Pro Asn Glu Ser Asp
565 570 575
Leu Pro Tyr His Glu Met Glu Thr Leu
580 585

<210> 41
<211> 208
<212> PRT
<213> Homo sapiens
<400> 41

Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly Thr
1 5 10 15
Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala Ala Met

20 25 30

Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His Asn Ser Ser
35 40 45
Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser Asp His Thr Asn
50 55 60
Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp
65 70 75 80
Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn
85 90 95

Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu
100 105 110
Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile
115 120 125
Ser Thr Ser Thr Met Thr Val Thr His Asn Ser Ser Val Thr Ser Ala
130 135 140
Ala Ser Ser Val Thr Ile Thr Thr Thr Met His Ser Glu Ala Lys Lys
145 150 155 160

Gly Ser Lys Phe Asp Thr Gly Ser Phe Val Gly Gly Ile Val Leu Thr
165 170 175
Leu Gly Val Leu Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser
180 185 190
Arg Arg Gly Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile
195 200 205

<210> 42
<211> 1032
<212> PRT
<213> Homo sapiens
<400> 42

Met Ala Trp Glu Ala Arg Arg Glu Pro Gly Pro Arg Arg Ala Ala Val

1 5 10 15
Arg Glu Thr Val Met Leu Leu Leu Cys Leu Gly Val Pro Thr Gly Arg

20 25 30

Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His

35 40 45

Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn

50 55 60

Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala

65 70 75 80

Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn

85 90 95

Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu

100 105 110

Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly

115 120 125

Val Thr Leu Ser Arg Gln Pro Gly Glu Asn Gly Ser Ile Val Thr Cys

130 135 140

Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu

145 150 155 160

Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu

165 170 175

Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly

180 185 190

Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys

195 200 205

Asp Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser

210 215 220

Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp

225 230 235 240

Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly

245 250 255

Ala Gly His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala

260 265 270

Pro Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu
275 280 285
Lys Glu Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser
290 295 300
Tyr Phe Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe
305 310 315 320
Ser Asp Leu Leu Val Gly Ala Pro Met Gln Ser Thr Ile Arg Glu Glu

325 330 335
Gly Arg Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn
340 345 350
Ala Met Glu Thr Asn Leu Val Gly Ser Asp Lys Tyr Ala Ala Arg Phe
355 360 365
Gly Glu Ser Ile Val Asn Leu Gly Asp Ile Asp Asn Asp Gly Phe Glu
370 375 380
Asp Val Ala Ile Gly Ala Pro Gln Glu Asp Asp Leu Gln Gly Ala Ile

385 390 395 400
Tyr Ile Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln
405 410 415
Arg Ile Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln
420 425 430
Ser Ile Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val
435 440 445
Ala Val Gly Ala Phe Arg Ser Asp Ser Ala Val Leu Leu Arg Thr Arg

450 455 460
Pro Val Val Ile Val Asp Ala Ser Leu Ser His Pro Glu Ser Val Asn
465 470 475 480
Arg Thr Lys Phe Asp Cys Val Glu Asn Gly Trp Pro Ser Val Cys Ile
485 490 495
Asp Leu Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr
500 505 510
Ile Val Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu

515 520 525

Ser Pro Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile

530 535 540

Thr Gly Ser Ile Gln Val Ser Ser Arg Glu Ala Asn Cys Arg Thr His

545 550 555 560

Gln Ala Phe Met Arg Lys Asp Val Arg Asp Ile Leu Thr Pro Ile Gln

565 570 575

Ile Glu Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser

580 585 590

Thr Glu Glu Phe Pro Pro Leu Gln Pro Ile Leu Gln Gln Lys Lys Glu

595 600 605

Lys Asp Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His

610 615 620

Glu Asn Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu

625 630 635 640

Lys Pro His Glu Asn Lys Thr Tyr Leu Ala Val Gly Ser Met Lys Thr

645 650 655

Leu Met Leu Asn Val Ser Leu Phe Asn Ala Gly Asp Asp Ala Tyr Glu

660 665 670

Thr Thr Leu His Val Lys Leu Pro Val Gly Leu Tyr Phe Ile Lys Ile

675 680 685

Leu Glu Leu Glu Glu Lys Gln Ile Asn Cys Glu Val Thr Asp Asn Ser

690 695 700

Gly Val Val Gln Leu Asp Cys Ser Ile Gly Tyr Ile Tyr Val Asp His

705 710 715 720

Leu Ser Arg Ile Asp Ile Ser Phe Leu Leu Asp Val Ser Ser Leu Ser

725 730 735

Arg Ala Glu Glu Asp Leu Ser Ile Thr Val His Ala Thr Cys Glu Asn

740 745 750

Glu Glu Glu Met Asp Asn Leu Lys His Ser Arg Val Thr Val Ala Ile

755 760 765

Pro Leu Lys Tyr Glu Val Lys Leu Thr Val His Gly Phe Val Asn Pro

770 775 780

Thr Ser Phe Val Tyr Gly Ser Asn Asp Glu Asn Glu Pro Glu Thr Cys

785 790 795 800

Met Val Glu Lys Met Asn Leu Thr Phe His Val Ile Asn Thr Gly Asn

805 810 815

Ser Met Ala Pro Asn Val Ser Val Glu Ile Met Val Pro Asn Ser Phe

820 825 830

Ser Pro Gln Thr Asp Lys Leu Phe Asn Ile Leu Asp Val Gln Thr Thr

835 840 845

Thr Gly Glu Cys His Phe Glu Asn Tyr Gln Arg Val Cys Ala Leu Glu

850 855 860

Gln Gln Lys Ser Ala Met Gln Thr Leu Lys Gly Ile Val Arg Phe Leu

865 870 875 880

Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His

885 890 895

Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu

900 905 910

Ala Ser Val His Ile Gln Leu Glu Gly Arg Pro Ser Ile Leu Glu Met

915 920 925

Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro

930 935 940

Glu Pro Asn Pro Arg Val Ile Glu Leu Asn Lys Asp Glu Asn Val Ala

945 950 955 960

His Val Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe

965 970 975

Thr Ile Val Ile Ile Ser Ser Ser Leu Leu Leu Gly Leu Ile Val Leu

980 985 990

Leu Leu Ile Ser Tyr Val Met Trp Lys Ala Gly Phe Phe Lys Arg Gln

995 1000 1005

Tyr Lys Ser Ile Leu Gln Glu Glu Asn Arg Arg Asp Ser Trp Ser

1010 1015 1020

Tyr Ile Asn Ser Lys Ser Asn Asp Asp

1025 1030

<210> 43

<211> 360

<212> PRT

<213> Homo sapiens

<400> 43

Met Asp Pro Glu Glu Thr Ser Val Tyr Leu Asp Tyr Tyr Tyr Ala Thr

1 5 10 15

Ser Pro Asn Ser Asp Ile Arg Glu Thr His Ser His Val Pro Tyr Thr

20 25 30

Ser Val Phe Leu Pro Val Phe Tyr Thr Ala Val Phe Leu Thr Gly Val

35 40 45

Leu Gly Asn Leu Val Leu Met Gly Ala Leu His Phe Lys Pro Gly Ser

50 55 60

Arg Arg Leu Ile Asp Ile Phe Ile Ile Asn Leu Ala Ala Ser Asp Phe

65 70 75 80

Ile Phe Leu Val Thr Leu Pro Leu Trp Val Asp Lys Glu Ala Ser Leu

85 90 95

Gly Leu Trp Arg Thr Gly Ser Phe Leu Cys Lys Gly Ser Ser Tyr Met

100 105 110

Ile Ser Val Asn Met His Cys Ser Val Leu Leu Leu Thr Cys Met Ser

115 120 125

Val Asp Arg Tyr Leu Ala Ile Val Trp Pro Val Val Ser Arg Lys Phe

130 135 140

Arg Arg Thr Asp Cys Ala Tyr Val Val Cys Ala Ser Ile Trp Phe Ile

145 150 155 160

Ser Cys Leu Leu Gly Leu Pro Thr Leu Leu Ser Arg Glu Leu Thr Leu

165 170 175

Ile Asp Asp Lys Pro Tyr Cys Ala Glu Lys Lys Ala Thr Pro Ile Lys

180 185 190

Leu Ile Trp Ser Leu Val Ala Leu Ile Phe Thr Phe Phe Val Pro Leu

195 200 205

Leu Ser Ile Val Thr Cys Tyr Cys Cys Ile Ala Arg Lys Leu Cys Ala

210 215 220

His Tyr Gln Gln Ser Gly Lys His Asn Lys Lys Leu Lys Lys Ser Ile

225 230 235 240

Lys Ile Ile Phe Ile Val Val Ala Ala Phe Leu Val Ser Trp Leu Pro

245 250 255

Phe Asn Thr Phe Lys Phe Leu Ala Ile Val Ser Gly Leu Arg Gln Glu

260 265 270

His Tyr Leu Pro Ser Ala Ile Leu Gln Leu Gly Met Glu Val Ser Gly

275 280 285

Pro Leu Ala Phe Ala Asn Ser Cys Val Asn Pro Phe Ile Tyr Tyr Ile

290 295 300

Phe Asp Ser Tyr Ile Arg Arg Ala Ile Val His Cys Leu Cys Pro Cys

305 310 315 320

Leu Lys Asn Tyr Asp Phe Gly Ser Ser Thr Glu Thr Ser Asp Ser His

325 330 335

Leu Thr Lys Ala Leu Ser Thr Phe Ile His Ala Glu Asp Phe Ala Arg

340 345 350

Arg Arg Lys Arg Ser Val Ser Leu

355 360

<210> 44

<211> 1531

<212> PRT

<213> Homo sapiens

<400> 44

Met Ala Leu Arg Gly Phe Cys Ser Ala Asp Gly Ser Asp Pro Leu Trp

1 5 10 15

Asp Trp Asn Val Thr Trp Asn Thr Ser Asn Pro Asp Phe Thr Lys Cys

20 25 30

Phe Gln Asn Thr Val Leu Val Trp Val Pro Cys Phe Tyr Leu Trp Ala
35 40 45
Cys Phe Pro Phe Tyr Phe Leu Tyr Leu Ser Arg His Asp Arg Gly Tyr
50 55 60
Ile Gln Met Thr Pro Leu Asn Lys Thr Lys Thr Ala Leu Gly Phe Leu

65 70 75 80
Leu Trp Ile Val Cys Trp Ala Asp Leu Phe Tyr Ser Phe Trp Glu Arg
85 90 95
Ser Arg Gly Ile Phe Leu Ala Pro Val Phe Leu Val Ser Pro Thr Leu
100 105 110
Leu Gly Ile Thr Met Leu Leu Ala Thr Phe Leu Ile Gln Leu Glu Arg
115 120 125
Arg Lys Gly Val Gln Ser Ser Gly Ile Met Leu Thr Phe Trp Leu Val

130 135 140
Ala Leu Val Cys Ala Leu Ala Ile Leu Arg Ser Lys Ile Met Thr Ala
145 150 155 160
Leu Lys Glu Asp Ala Gln Val Asp Leu Phe Arg Asp Ile Thr Phe Tyr
165 170 175
Val Tyr Phe Ser Leu Leu Leu Ile Gln Leu Val Leu Ser Cys Phe Ser
180 185 190
Asp Arg Ser Pro Leu Phe Ser Glu Thr Ile His Asp Pro Asn Pro Cys

195 200 205
Pro Glu Ser Ser Ala Ser Phe Leu Ser Arg Ile Thr Phe Trp Trp Ile
210 215 220
Thr Gly Leu Ile Val Arg Gly Tyr Arg Gln Pro Leu Glu Gly Ser Asp
225 230 235 240
Leu Trp Ser Leu Asn Lys Glu Asp Thr Ser Glu Gln Val Val Pro Val
245 250 255
Leu Val Lys Asn Trp Lys Lys Glu Cys Ala Lys Thr Arg Lys Gln Pro

260 265 270
Val Lys Val Val Tyr Ser Ser Lys Asp Pro Ala Gln Pro Lys Glu Ser

275 280 285

Ser Lys Val Asp Ala Asn Glu Glu Val Glu Ala Leu Ile Val Lys Ser

290 295 300

Pro Gln Lys Glu Trp Asn Pro Ser Leu Phe Lys Val Leu Tyr Lys Thr

305 310 315 320

Phe Gly Pro Tyr Phe Leu Met Ser Phe Phe Phe Lys Ala Ile His Asp

325 330 335

Leu Met Met Phe Ser Gly Pro Gln Ile Leu Lys Leu Leu Ile Lys Phe

340 345 350

Val Asn Asp Thr Lys Ala Pro Asp Trp Gln Gly Tyr Phe Tyr Thr Val

355 360 365

Leu Leu Phe Val Thr Ala Cys Leu Gln Thr Leu Val Leu His Gln Tyr

370 375 380

Phe His Ile Cys Phe Val Ser Gly Met Arg Ile Lys Thr Ala Val Ile

385 390 395 400

Gly Ala Val Tyr Arg Lys Ala Leu Val Ile Thr Asn Ser Ala Arg Lys

405 410 415

Ser Ser Thr Val Gly Glu Ile Val Asn Leu Met Ser Val Asp Ala Gln

420 425 430

Arg Phe Met Asp Leu Ala Thr Tyr Ile Asn Met Ile Trp Ser Ala Pro

435 440 445

Leu Gln Val Ile Leu Ala Leu Tyr Leu Leu Trp Leu Asn Leu Gly Pro

450 455 460

Ser Val Leu Ala Gly Val Ala Val Met Val Leu Met Val Pro Val Asn

465 470 475 480

Ala Val Met Ala Met Lys Thr Lys Thr Tyr Gln Val Ala His Met Lys

485 490 495

Ser Lys Asp Asn Arg Ile Lys Leu Met Asn Glu Ile Leu Asn Gly Ile

500 505 510

Lys Val Leu Lys Leu Tyr Ala Trp Glu Leu Ala Phe Lys Asp Lys Val

515 520 525

Leu Ala Ile Arg Gln Glu Glu Leu Lys Val Leu Lys Lys Ser Ala Tyr
530 535 540
Leu Ser Ala Val Gly Thr Phe Thr Trp Val Cys Thr Pro Phe Leu Val
545 550 555 560
Ala Leu Cys Thr Phe Ala Val Tyr Val Thr Ile Asp Glu Asn Asn Ile
565 570 575
Leu Asp Ala Gln Thr Ala Phe Val Ser Leu Ala Leu Phe Asn Ile Leu

580 585 590
Arg Phe Pro Leu Asn Ile Leu Pro Met Val Ile Ser Ser Ile Val Gln
595 600 605
Ala Ser Val Ser Leu Lys Arg Leu Arg Ile Phe Leu Ser His Glu Glu
610 615 620
Leu Glu Pro Asp Ser Ile Glu Arg Arg Pro Val Lys Asp Gly Gly Gly
625 630 635 640
Thr Asn Ser Ile Thr Val Arg Asn Ala Thr Phe Thr Trp Ala Arg Ser

645 650 655
Asp Pro Pro Thr Leu Asn Gly Ile Thr Phe Ser Ile Pro Glu Gly Ala
660 665 670
Leu Val Ala Val Val Gly Gln Val Gly Cys Gly Lys Ser Ser Leu Leu
675 680 685
Ser Ala Leu Leu Ala Glu Met Asp Lys Val Glu Gly His Val Ala Ile
690 695 700
Lys Gly Ser Val Ala Tyr Val Pro Gln Gln Ala Trp Ile Gln Asn Asp

705 710 715 720
Ser Leu Arg Glu Asn Ile Leu Phe Gly Cys Gln Leu Glu Glu Pro Tyr
725 730 735
Tyr Arg Ser Val Ile Gln Ala Cys Ala Leu Leu Pro Asp Leu Glu Ile
740 745 750
Leu Pro Ser Gly Asp Arg Thr Glu Ile Gly Glu Lys Gly Val Asn Leu
755 760 765
Ser Gly Gly Gln Lys Gln Arg Val Ser Leu Ala Arg Ala Val Tyr Ser

770 775 780

Asn Ala Asp Ile Tyr Leu Phe Asp Asp Pro Leu Ser Ala Val Asp Ala

785 790 795 800

His Val Gly Lys His Ile Phe Glu Asn Val Ile Gly Pro Lys Gly Met

805 810 815

Leu Lys Asn Lys Thr Arg Ile Leu Val Thr His Ser Met Ser Tyr Leu

820 825 830

Pro Gln Val Asp Val Ile Ile Val Met Ser Gly Gly Lys Ile Ser Glu

835 840 845

Met Gly Ser Tyr Gln Glu Leu Leu Ala Arg Asp Gly Ala Phe Ala Glu

850 855 860

Phe Leu Arg Thr Tyr Ala Ser Thr Glu Gln Glu Gln Asp Ala Glu Glu

865 870 875 880

Asn Gly Val Thr Gly Val Ser Gly Pro Gly Lys Glu Ala Lys Gln Met

885 890 895

Glu Asn Gly Met Leu Val Thr Asp Ser Ala Gly Lys Gln Leu Gln Arg

900 905 910

Gln Leu Ser Ser Ser Ser Ser Tyr Ser Gly Asp Ile Ser Arg His His

915 920 925

Asn Ser Thr Ala Glu Leu Gln Lys Ala Glu Ala Lys Lys Glu Glu Thr

930 935 940

Trp Lys Leu Met Glu Ala Asp Lys Ala Gln Thr Gly Gln Val Lys Leu

945 950 955 960

Ser Val Tyr Trp Asp Tyr Met Lys Ala Ile Gly Leu Phe Ile Ser Phe

965 970 975

Leu Ser Ile Phe Leu Phe Met Cys Asn His Val Ser Ala Leu Ala Ser

980 985 990

Asn Tyr Trp Leu Ser Leu Trp Thr Asp Asp Pro Ile Val Asn Gly Thr

995 1000 1005

Gln Glu His Thr Lys Val Arg Leu Ser Val Tyr Gly Ala Leu Gly

1010 1015 1020

Ile Ser Gln Gly Ile Ala Val Phe Gly Tyr Ser Met Ala Val Ser

1025 1030 1035

Ile Gly Gly Ile Leu Ala Ser Arg Cys Leu His Val Asp Leu Leu

1040 1045 1050

His Ser Ile Leu Arg Ser Pro Met Ser Phe Phe Glu Arg Thr Pro

1055 1060 1065

Ser Gly Asn Leu Val Asn Arg Phe Ser Lys Glu Leu Asp Thr Val

1070 1075 1080

Asp Ser Met Ile Pro Glu Val Ile Lys Met Phe Met Gly Ser Leu

1085 1090 1095

Phe Asn Val Ile Gly Ala Cys Ile Val Ile Leu Leu Ala Thr Pro

1100 1105 1110

Ile Ala Ala Ile Ile Ile Pro Pro Leu Gly Leu Ile Tyr Phe Phe

1115 1120 1125

Val Gln Arg Phe Tyr Val Ala Ser Ser Arg Gln Leu Lys Arg Leu

1130 1135 1140

Glu Ser Val Ser Arg Ser Pro Val Tyr Ser His Phe Asn Glu Thr

1145 1150 1155

Leu Leu Gly Val Ser Val Ile Arg Ala Phe Glu Glu Gln Glu Arg

1160 1165 1170

Phe Ile His Gln Ser Asp Leu Lys Val Asp Glu Asn Gln Lys Ala

1175 1180 1185

Tyr Tyr Pro Ser Ile Val Ala Asn Arg Trp Leu Ala Val Arg Leu

1190 1195 1200

Glu Cys Val Gly Asn Cys Ile Val Leu Phe Ala Ala Leu Phe Ala

1205 1210 1215

Val Ile Ser Arg His Ser Leu Ser Ala Gly Leu Val Gly Leu Ser

1220 1225 1230

Val Ser Tyr Ser Leu Gln Val Thr Thr Tyr Leu Asn Trp Leu Val

1235 1240 1245

Arg Met Ser Ser Glu Met Glu Thr Asn Ile Val Ala Val Glu Arg

1250 1255 1260

Leu Lys Glu Tyr Ser Glu Thr Glu Lys Glu Ala Pro Trp Gln Ile

1265 1270 1275

Gln Glu Thr Ala Pro Pro Ser Ser Trp Pro Gln Val Gly Arg Val

1280 1285 1290

Glu Phe Arg Asn Tyr Cys Leu Arg Tyr Arg Glu Asp Leu Asp Phe

1295 1300 1305

Val Leu Arg His Ile Asn Val Thr Ile Asn Gly Gly Glu Lys Val

1310 1315 1320

Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser Leu Thr Leu

1325 1330 1335

Gly Leu Phe Arg Ile Asn Glu Ser Ala Glu Gly Glu Ile Ile Ile

1340 1345 1350

Asp Gly Ile Asn Ile Ala Lys Ile Gly Leu His Asp Leu Arg Phe

1355 1360 1365

Lys Ile Thr Ile Ile Pro Gln Asp Pro Val Leu Phe Ser Gly Ser

1370 1375 1380

Leu Arg Met Asn Leu Asp Pro Phe Ser Gln Tyr Ser Asp Glu Glu

1385 1390 1395

Val Trp Thr Ser Leu Glu Leu Ala His Leu Lys Asp Phe Val Ser

1400 1405 1410

Ala Leu Pro Asp Lys Leu Asp His Glu Cys Ala Glu Gly Gly Glu

1415 1420 1425

Asn Leu Ser Val Gly Gln Arg Gln Leu Val Cys Leu Ala Arg Ala

1430 1435 1440

Leu Leu Arg Lys Thr Lys Ile Leu Val Leu Asp Glu Ala Thr Ala

1445 1450 1455

Ala Val Asp Leu Glu Thr Asp Asp Leu Ile Gln Ser Thr Ile Arg

1460 1465 1470

Thr Gln Phe Glu Asp Cys Thr Val Leu Thr Ile Ala His Arg Leu

1475 1480 1485

Asn Thr Ile Met Asp Tyr Thr Arg Val Ile Val Leu Asp Lys Gly

1490 1495 1500

Glu Ile Gln Glu Tyr Gly Ala Pro Ser Asp Leu Leu Gln Gln Arg

1505 1510 1515

Gly Leu Phe Tyr Ser Met Ala Lys Asp Ala Gly Leu Val

1520 1525 1530

<210> 45

<211> 355

<212> PRT

<213> Homo sapiens

<400> 45

Met Asp Gln Phe Pro Glu Ser Val Thr Glu Asn Phe Glu Tyr Asp Asp

1 5 10 15

Leu Ala Glu Ala Cys Tyr Ile Gly Asp Ile Val Val Phe Gly Thr Val

20 25 30

Phe Leu Ser Ile Phe Tyr Ser Val Ile Phe Ala Ile Gly Leu Val Gly

35 40 45

Asn Leu Leu Val Val Phe Ala Leu Thr Asn Ser Lys Lys Pro Lys Ser

50 55 60

Val Thr Asp Ile Tyr Leu Leu Asn Leu Ala Leu Ser Asp Leu Leu Phe

65 70 75 80

Val Ala Thr Leu Pro Phe Trp Thr His Tyr Leu Ile Asn Glu Lys Gly

85 90 95

Leu His Asn Ala Met Cys Lys Phe Thr Thr Ala Phe Phe Phe Ile Gly

100 105 110

Phe Phe Gly Ser Ile Phe Phe Ile Thr Val Ile Ser Ile Asp Arg Tyr

115 120 125

Leu Ala Ile Val Leu Ala Ala Asn Ser Met Asn Asn Arg Thr Val Gln

130 135 140

His Gly Val Thr Ile Ser Leu Gly Val Trp Ala Ala Ala Ile Leu Val

145 150 155 160

Ala Ala Pro Gln Phe Met Phe Thr Lys Gln Lys Glu Asn Glu Cys Leu
165 170 175
Gly Asp Tyr Pro Glu Val Leu Gln Glu Ile Trp Pro Val Leu Arg Asn
180 185 190
Val Glu Thr Asn Phe Leu Gly Phe Leu Leu Pro Leu Leu Ile Met Ser
195 200 205
Tyr Cys Tyr Phe Arg Ile Ile Gln Thr Leu Phe Ser Cys Lys Asn His
210 215 220

Lys Lys Ala Lys Ala Ile Lys Leu Ile Leu Leu Val Val Ile Val Phe
225 230 235 240
Phe Leu Phe Trp Thr Pro Tyr Asn Val Met Ile Phe Leu Glu Thr Leu
245 250 255
Lys Leu Tyr Asp Phe Phe Pro Ser Cys Asp Met Arg Lys Asp Leu Arg
260 265 270
Leu Ala Leu Ser Val Thr Glu Thr Val Ala Phe Ser His Cys Cys Leu
275 280 285

Asn Pro Leu Ile Tyr Ala Phe Ala Gly Glu Lys Phe Arg Arg Tyr Leu
290 295 300
Tyr His Leu Tyr Gly Lys Cys Leu Ala Val Leu Cys Gly Arg Ser Val
305 310 315 320
His Val Asp Phe Ser Ser Ser Glu Ser Gln Arg Ser Arg His Gly Ser
325 330 335
Val Leu Ser Ser Asn Phe Thr Tyr His Thr Ser Asp Gly Asp Ala Leu
340 345 350

Leu Leu Leu
355

<210> 46
<211> 297
<212> PRT
<213> Homo sapiens
<400> 46
Met Thr Thr Pro Arg Asn Ser Val Asn Gly Thr Phe Pro Ala Glu Pro

1 5 10 15

Met Lys Gly Pro Ile Ala Met Gln Ser Gly Pro Lys Pro Leu Phe Arg

20 25 30

Arg Met Ser Ser Leu Val Gly Pro Thr Gln Ser Phe Phe Met Arg Glu

35 40 45

Ser Lys Thr Leu Gly Ala Val Gln Ile Met Asn Gly Leu Phe His Ile

50 55 60

Ala Leu Gly Gly Leu Leu Met Ile Pro Ala Gly Ile Tyr Ala Pro Ile

65 70 75 80

Cys Val Thr Val Trp Tyr Pro Leu Trp Gly Gly Ile Met Tyr Ile Ile

85 90 95

Ser Gly Ser Leu Leu Ala Ala Thr Glu Lys Asn Ser Arg Lys Cys Leu

100 105 110

Val Lys Gly Lys Met Ile Met Asn Ser Leu Ser Leu Phe Ala Ala Ile

115 120 125

Ser Gly Met Ile Leu Ser Ile Met Asp Ile Leu Asn Ile Lys Ile Ser

130 135 140

His Phe Leu Lys Met Glu Ser Leu Asn Phe Ile Arg Ala His Thr Pro

145 150 155 160

Tyr Ile Asn Ile Tyr Asn Cys Glu Pro Ala Asn Pro Ser Glu Lys Asn

165 170 175

Ser Pro Ser Thr Gln Tyr Cys Tyr Ser Ile Gln Ser Leu Phe Leu Gly

180 185 190

Ile Leu Ser Val Met Leu Ile Phe Ala Phe Phe Gln Glu Leu Val Ile

195 200 205

Ala Gly Ile Val Glu Asn Glu Trp Lys Arg Thr Cys Ser Arg Pro Lys

210 215 220

Ser Asn Ile Val Leu Leu Ser Ala Glu Glu Lys Lys Glu Gln Thr Ile

225 230 235 240

Glu Ile Lys Glu Glu Val Val Gly Leu Thr Glu Thr Ser Ser Gln Pro

245 250 255

Lys Asn Glu Glu Asp Ile Glu Ile Ile Pro Ile Gln Glu Glu Glu Glu

260 265 270

Glu Glu Thr Glu Thr Asn Phe Pro Glu Pro Pro Gln Asp Gln Glu Ser

275 280 285

Ser Pro Ile Glu Asn Asp Ser Ser Pro

290 295

<210> 47

<211> 263

<212> PRT

<213> Homo sapiens

<400> 47

Met Ile Thr Phe Leu Pro Leu Leu Leu Gly Leu Ser Leu Gly Cys Thr

1 5 10 15

Gly Ala Gly Gly Phe Val Ala His Val Glu Ser Thr Cys Leu Leu Asp

20 25 30

Asp Ala Gly Thr Pro Lys Asp Phe Thr Tyr Cys Ile Ser Phe Asn Lys

35 40 45

Asp Leu Leu Thr Cys Trp Asp Pro Glu Glu Asn Lys Met Ala Pro Cys

50 55 60

Glu Phe Gly Val Leu Asn Ser Leu Ala Asn Val Leu Ser Gln His Leu

65 70 75 80

Asn Gln Lys Asp Thr Leu Met Gln Arg Leu Arg Asn Gly Leu Gln Asn

85 90 95

Cys Ala Thr His Thr Gln Pro Phe Trp Gly Ser Leu Thr Asn Arg Thr

100 105 110

Arg Pro Pro Ser Val Gln Val Ala Lys Thr Thr Pro Phe Asn Thr Arg

115 120 125

Glu Pro Val Met Leu Ala Cys Tyr Val Trp Gly Phe Tyr Pro Ala Glu

130 135 140

Val Thr Ile Thr Trp Arg Lys Asn Gly Lys Leu Val Met Pro His Ser

145 150 155 160

Ser Ala His Lys Thr Ala Gln Pro Asn Gly Asp Trp Thr Tyr Gln Thr

165 170 175

Leu Ser His Leu Ala Leu Thr Pro Ser Tyr Gly Asp Thr Tyr Thr Cys

180 185 190

Val Val Glu His Ile Gly Ala Pro Glu Pro Ile Leu Arg Asp Trp Thr

195 200 205

Pro Gly Leu Ser Pro Met Gln Thr Leu Lys Val Ser Val Ser Ala Val

210 215 220

Thr Leu Gly Leu Gly Leu Ile Ile Phe Ser Leu Gly Val Ile Ser Trp

225 230 235 240

Arg Arg Ala Gly His Ser Ser Tyr Thr Pro Leu Pro Gly Ser Asn Tyr

245 250 255

Ser Glu Gly Trp His Ile Ser

260

<210> 48

<211> 310

<212> PRT

<213> Homo sapiens

<400> 48

Met Gly Ile Leu Ser Phe Leu Pro Val Leu Ala Thr Glu Ser Asp Trp

1 5 10 15

Ala Asp Cys Lys Ser Pro Gln Pro Trp Gly His Met Leu Leu Trp Thr

20 25 30

Ala Val Leu Phe Leu Ala Pro Val Ala Gly Thr Pro Ala Ala Pro Pro

35 40 45

Lys Ala Val Leu Lys Leu Glu Pro Gln Trp Ile Asn Val Leu Gln Glu

50 55 60

Asp Ser Val Thr Leu Thr Cys Arg Gly Thr His Ser Pro Glu Ser Asp

65 70 75 80

Ser Ile Gln Trp Phe His Asn Gly Asn Leu Ile Pro Thr His Thr Gln

85 90 95

Pro Ser Tyr Arg Phe Lys Ala Asn Asn Asn Asp Ser Gly Glu Tyr Thr

100 105 110

Cys Gln Thr Gly Gln Thr Ser Leu Ser Asp Pro Val His Leu Thr Val

115 120 125

Leu Ser Glu Trp Leu Val Leu Gln Thr Pro His Leu Glu Phe Gln Glu

130 135 140

Gly Glu Thr Ile Val Leu Arg Cys His Ser Trp Lys Asp Lys Pro Leu

145 150 155 160

Val Lys Val Thr Phe Phe Gln Asn Gly Lys Ser Lys Lys Phe Ser Arg

165 170 175

Ser Asp Pro Asn Phe Ser Ile Pro Gln Ala Asn His Ser His Ser Gly

180 185 190

Asp Tyr His Cys Thr Gly Asn Ile Gly Tyr Thr Leu Tyr Ser Ser Lys

195 200 205

Pro Val Thr Ile Thr Val Gln Ala Pro Ser Ser Ser Pro Met Gly Ile

210 215 220

Ile Val Ala Val Val Thr Gly Ile Ala Val Ala Ala Ile Val Ala Ala

225 230 235 240

Val Val Ala Leu Ile Tyr Cys Arg Lys Lys Arg Ile Ser Ala Leu Pro

245 250 255

Gly Tyr Pro Glu Cys Arg Glu Met Gly Glu Thr Leu Pro Glu Lys Pro

260 265 270

Ala Asn Pro Thr Asn Pro Asp Glu Ala Asp Lys Val Gly Ala Glu Asn

275 280 285

Thr Ile Thr Tyr Ser Leu Leu Met His Pro Asp Ala Leu Glu Glu Pro

290 295 300

Asp Asp Gln Asn Arg Ile

305 310

<210> 49

<211> 346

<212> PRT

<213> Homo sapiens

<400> 49

Met Ala Pro Arg Ser Leu Leu Leu Leu Leu Ser Gly Ala Leu Ala Leu

1 5 10 15

Thr Asp Thr Trp Ala Gly Ser His Ser Leu Arg Tyr Phe Ser Thr Ala

20 25 30

Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Tyr Ile Ala Val Glu Tyr

35 40 45

Val Asp Asp Thr Gln Phe Leu Arg Phe Asp Ser Asp Ala Ala Ile Pro

50 55 60

Arg Met Glu Pro Arg Glu Pro Trp Val Glu Gln Glu Gly Pro Gln Tyr

65 70 75 80

Trp Glu Trp Thr Thr Gly Tyr Ala Lys Ala Asn Ala Gln Thr Asp Arg

85 90 95

Val Ala Leu Arg Asn Leu Leu Arg Arg Tyr Asn Gln Ser Glu Ala Gly

100 105 110

Ser His Thr Leu Gln Gly Met Asn Gly Cys Asp Met Gly Pro Asp Gly

115 120 125

Arg Leu Leu Arg Gly Tyr His Gln His Ala Tyr Asp Gly Lys Asp Tyr

130 135 140

Ile Ser Leu Asn Glu Asp Leu Arg Ser Trp Thr Ala Ala Asp Thr Val

145 150 155 160

Ala Gln Ile Thr Gln Arg Phe Tyr Glu Ala Glu Glu Tyr Ala Glu Glu

165 170 175

Phe Arg Thr Tyr Leu Glu Gly Glu Cys Leu Glu Leu Leu Arg Arg Tyr

180 185 190

Leu Glu Asn Gly Lys Glu Thr Leu Gln Arg Ala Asp Pro Pro Lys Ala

195 200 205

His Val Ala His His Pro Ile Ser Asp His Glu Ala Thr Leu Arg Cys

210 215 220

Trp Ala Leu Gly Phe Tyr Pro Ala Glu Ile Thr Leu Thr Trp Gln Arg

225 230 235 240

Asp Gly Glu Glu Gln Thr Gln Asp Thr Glu Leu Val Glu Thr Arg Pro

245 250 255

Ala Gly Asp Gly Thr Phe Gln Lys Trp Ala Ala Val Val Val Pro Pro

260 265 270

Gly Glu Glu Gln Arg Tyr Thr Cys His Val Gln His Glu Gly Leu Pro

275 280 285

Gln Pro Leu Ile Leu Arg Trp Glu Gln Ser Pro Gln Pro Thr Ile Pro

290 295 300

Ile Val Gly Ile Val Ala Gly Leu Val Val Leu Gly Ala Val Val Thr

305 310 315 320

Gly Ala Val Val Ala Ala Val Met Trp Arg Lys Lys Ser Ser Asp Arg

325 330 335

Asn Arg Gly Ser Tyr Ser Gln Ala Ala Val

340 345

<210> 50

<211> 819

<212> PRT

<213> Homo sapiens

<400> 50

Met Gly Ser Gly Ala Arg Phe Pro Ser Gly Thr Leu Arg Val Arg Trp

1 5 10 15

Leu Leu Leu Leu Gly Leu Val Gly Pro Val Leu Gly Ala Ala Arg Pro

20 25 30

Gly Phe Gln Gln Thr Ser His Leu Ser Ser Tyr Glu Ile Ile Thr Pro

35 40 45

Trp Arg Leu Thr Arg Glu Arg Arg Glu Ala Pro Arg Pro Tyr Ser Lys

50 55 60

Gln Val Ser Tyr Val Ile Gln Ala Glu Gly Lys Glu His Ile Ile His

65 70 75 80

Leu Glu Arg Asn Lys Asp Leu Leu Pro Glu Asp Phe Val Val Tyr Thr

85 90 95

Tyr Asn Lys Glu Gly Thr Leu Ile Thr Asp His Pro Asn Ile Gln Asn

100 105 110

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His Cys His Tyr Arg Gly Tyr Val Glu Gly Val His Asn Ser Ser Ile
        115                 120                 125
Ala Leu Ser Asp Cys Phe Gly Leu Arg Gly Leu Leu His Leu Glu Asn
    130                 135                 140
Ala Ser Tyr Gly Ile Glu Pro Leu Gln Asn Ser Ser His Phe Glu His

145                 150                 155                 160
Ile Ile Tyr Arg Met Asp Asp Val Tyr Lys Glu Pro Leu Lys Cys Gly
                165                 170                 175
Val Ser Asn Lys Asp Ile Glu Lys Glu Thr Ala Lys Asp Glu Glu Glu
            180                 185                 190
Glu Pro Pro Ser Met Thr Gln Leu Leu Arg Arg Arg Arg Ala Val Leu
        195                 200                 205
Pro Gln Thr Arg Tyr Val Glu Leu Phe Ile Val Val Asp Lys Glu Arg

    210                 215                 220
Tyr Asp Met Met Gly Arg Asn Gln Thr Ala Val Arg Glu Glu Met Ile
225                 230                 235                 240
Leu Leu Ala Asn Tyr Leu Asp Ser Met Tyr Ile Met Leu Asn Ile Arg
                245                 250                 255
Ile Val Leu Val Gly Leu Glu Ile Trp Thr Asn Gly Asn Leu Ile Asn
            260                 265                 270
Ile Val Gly Gly Ala Gly Asp Val Leu Gly Asn Phe Val Gln Trp Arg

        275                 280                 285
Glu Lys Phe Leu Ile Thr Arg Arg Arg His Asp Ser Ala Gln Leu Val
    290                 295                 300
Leu Lys Lys Gly Phe Gly Gly Thr Ala Gly Met Ala Phe Val Gly Thr
305                 310                 315                 320
Val Cys Ser Arg Ser His Ala Gly Gly Ile Asn Val Phe Gly Gln Ile
                325                 330                 335
Thr Val Glu Thr Phe Ala Ser Ile Val Ala His Glu Leu Gly His Asn

            340                 345                 350
Leu Gly Met Asn His Asp Asp Gly Arg Asp Cys Ser Cys Gly Ala Lys
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355 360 365

Ser Cys Ile Met Asn Ser Gly Ala Ser Gly Ser Arg Asn Phe Ser Ser

370 375 380

Cys Ser Ala Glu Asp Phe Glu Lys Leu Thr Leu Asn Lys Gly Gly Asn

385 390 395 400

Cys Leu Leu Asn Ile Pro Lys Pro Asp Glu Ala Tyr Ser Ala Pro Ser

405 410 415

Cys Gly Asn Lys Leu Val Asp Ala Gly Glu Glu Cys Asp Cys Gly Thr

420 425 430

Pro Lys Glu Cys Glu Leu Asp Pro Cys Cys Glu Gly Ser Thr Cys Lys

435 440 445

Leu Lys Ser Phe Ala Glu Cys Ala Tyr Gly Asp Cys Cys Lys Asp Cys

450 455 460

Arg Phe Leu Pro Gly Gly Thr Leu Cys Arg Gly Lys Thr Ser Glu Cys

465 470 475 480

Asp Val Pro Glu Tyr Cys Asn Gly Ser Ser Gln Phe Cys Gln Pro Asp

485 490 495

Val Phe Ile Gln Asn Gly Tyr Pro Cys Gln Asn Asn Lys Ala Tyr Cys

500 505 510

Tyr Asn Gly Met Cys Gln Tyr Tyr Asp Ala Gln Cys Gln Val Ile Phe

515 520 525

Gly Ser Lys Ala Lys Ala Ala Pro Lys Asp Cys Phe Ile Glu Val Asn

530 535 540

Ser Lys Gly Asp Arg Phe Gly Asn Cys Gly Phe Ser Gly Asn Glu Tyr

545 550 555 560

Lys Lys Cys Ala Thr Gly Asn Ala Leu Cys Gly Lys Leu Gln Cys Glu

565 570 575

Asn Val Gln Glu Ile Pro Val Phe Gly Ile Val Pro Ala Ile Ile Gln

580 585 590

Thr Pro Ser Arg Gly Thr Lys Cys Trp Gly Val Asp Phe Gln Leu Gly

595 600 605

Ser Asp Val Pro Asp Pro Gly Met Val Asn Glu Gly Thr Lys Cys Gly
610 615 620
Ala Gly Lys Ile Cys Arg Asn Phe Gln Cys Val Asp Ala Ser Val Leu
625 630 635 640
Asn Tyr Asp Cys Asp Val Gln Lys Lys Cys His Gly His Gly Val Cys
645 650 655
Asn Ser Asn Lys Asn Cys His Cys Glu Asn Gly Trp Ala Pro Pro Asn

660 665 670
Cys Glu Thr Lys Gly Tyr Gly Gly Ser Val Asp Ser Gly Pro Thr Tyr
675 680 685
Asn Glu Met Asn Thr Ala Leu Arg Asp Gly Leu Leu Val Phe Phe Phe
690 695 700
Leu Ile Val Pro Leu Ile Val Cys Ala Ile Phe Ile Phe Ile Lys Arg
705 710 715 720
Asp Gln Leu Trp Arg Ser Tyr Phe Arg Lys Lys Arg Ser Gln Thr Tyr

725 730 735
Glu Ser Asp Gly Lys Asn Gln Ala Asn Pro Ser Arg Gln Pro Gly Ser
740 745 750
Val Pro Arg His Val Ser Pro Val Thr Pro Pro Arg Glu Val Pro Ile
755 760 765
Tyr Ala Asn Arg Phe Ala Val Pro Thr Tyr Ala Ala Lys Gln Pro Gln
770 775 780
Gln Phe Pro Ser Arg Pro Pro Pro Pro Gln Pro Lys Val Ser Ser Gln

785 790 795 800
Gly Asn Leu Ile Pro Ala Arg Pro Ala Pro Ala Pro Pro Leu Tyr Ser
805 810 815
Ser Leu Thr

<210> 51
<211> 365
<212> PRT
<213> Homo sapiens

<400> 51

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> 52
<211> 918
<212> PRT
<213> Homo sapiens
<400> 52
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> 53
<211> 250
<212> PRT
<213> Homo sapiens
<400> 53

Met Val Ala Gly Ser Asp Ala Gly Arg Ala Leu Gly Val Leu Ser Val
1 5 10 15

Val Cys Leu Leu His Cys Phe Gly Phe Ile Ser Cys Phe Ser Gln Gln
20 25 30

Ile Tyr Gly Val Val Tyr Gly Asn Val Thr Phe His Val Pro Ser Asn
35 40 45

Val Pro Leu Lys Glu Val Leu Trp Lys Lys Gln Lys Asp Lys Val Ala
50 55 60

Glu Leu Glu Asn Ser Glu Phe Arg Ala Phe Ser Ser Phe Lys Asn Arg
65 70 75 80

Val Tyr Leu Asp Thr Val Ser Gly Ser Leu Thr Ile Tyr Asn Leu Thr
85 90 95

Ser Ser Asp Glu Asp Glu Tyr Glu Met Glu Ser Pro Asn Ile Thr Asp
100 105 110

Thr Met Lys Phe Phe Leu Tyr Val Leu Glu Ser Leu Pro Ser Pro Thr

115 120 125

Leu Thr Cys Ala Leu Thr Asn Gly Ser Ile Glu Val Gln Cys Met Ile

130 135 140

Pro Glu His Tyr Asn Ser His Arg Gly Leu Ile Met Tyr Ser Trp Asp

145 150 155 160

Cys Pro Met Glu Gln Cys Lys Arg Asn Ser Thr Ser Ile Tyr Phe Lys

165 170 175

Met Glu Asn Asp Leu Pro Gln Lys Ile Gln Cys Thr Leu Ser Asn Pro

180 185 190

Leu Phe Asn Thr Thr Ser Ser Ile Ile Leu Thr Thr Cys Ile Pro Ser

195 200 205

Ser Gly His Ser Arg His Arg Tyr Ala Leu Ile Pro Ile Pro Leu Ala

210 215 220

Val Ile Thr Thr Cys Ile Val Leu Tyr Met Asn Gly Ile Leu Lys Cys

225 230 235 240

Asp Arg Lys Pro Asp Arg Thr Asn Ser Asn

245 250

<210> 54

<211> 362

<212> PRT

<213> Homo sapiens

<400> 54

Met Gly Thr Glu Ala Thr Glu Gln Val Ser Trp Gly His Tyr Ser Gly

1 5 10 15

Asp Glu Glu Asp Ala Tyr Ser Ala Glu Pro Leu Pro Glu Leu Cys Tyr

20 25 30

Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser

35 40 45

Leu Thr Val Ala Ala Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala

50 55 60

Thr His Leu Ala Ala Arg Arg Ala Ala Arg Ser Pro Thr Ser Ala His

65 70 75 80

Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro
85 90 95
Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Ser Leu Gly Ser Ala Thr
100 105 110
Cys Arg Thr Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe
115 120 125
Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg
130 135 140

Ala Leu Pro Ala Gly Pro Arg Pro Ser Thr Pro Gly Arg Ala His Leu
145 150 155 160
Val Ser Val Ile Val Trp Leu Leu Ser Leu Leu Leu Ala Leu Pro Ala
165 170 175
Leu Leu Phe Ser Gln Asp Gly Gln Arg Glu Gly Gln Arg Arg Cys Arg
180 185 190
Leu Ile Phe Pro Glu Gly Leu Thr Gln Thr Val Lys Gly Ala Ser Ala
195 200 205

Val Ala Gln Val Ala Leu Gly Phe Ala Leu Pro Leu Gly Val Met Val
210 215 220
Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro
225 230 235 240
Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Ala Ala Phe
245 250 255
Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala
260 265 270

Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Pro Ala Ser Lys Arg Lys
275 280 285
Asp Val Ala Leu Leu Val Thr Ser Gly Leu Ala Leu Ala Arg Cys Gly
290 295 300
Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Gln Asp
305 310 315 320

Leu Arg Arg Leu Leu Arg Gly Gly Ser Cys Pro Ser Gly Pro Gln Pro
325 330 335

Arg Arg Gly Cys Pro Arg Arg Pro Arg Leu Ser Ser Cys Ser Ala Pro
340 345 350

Thr Glu Thr His Ser Leu Ser Trp Asp Asn
355 360

<210> 55

<211> 247

<212> PRT

<213> Homo sapiens

<400> 55

Met Glu Tyr His Pro Asp Leu Glu Asn Leu Asp Glu Asp Gly Tyr Thr
1 5 10 15

Gln Leu His Phe Asp Ser Gln Ser Asn Thr Arg Ile Ala Val Val Ser
20 25 30

Glu Lys Gly Ser Cys Ala Ala Ser Pro Pro Trp Arg Leu Ile Ala Val
35 40 45

Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile Ala Val Val Leu
50 55 60

Gly Thr Met Ala Ile Trp Arg Ser Asn Ser Gly Ser Asn Thr Leu Glu
65 70 75 80

Asn Gly Tyr Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr
85 90 95

Gln Ser Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr
100 105 110

Thr Gly Val Leu Ser Ser Pro Cys Pro Pro Asn Trp Ile Ile Tyr Glu
115 120 125

Lys Ser Cys Tyr Leu Phe Ser Met Ser Leu Asn Ser Trp Asp Gly Ser
130 135 140

Lys Arg Gln Cys Trp Gln Leu Gly Ser Asn Leu Leu Lys Ile Asp Ser
145 150 155 160

Ser Asn Glu Leu Gly Phe Ile Val Lys Gln Val Ser Ser Gln Pro Asp
165 170 175
Asn Ser Phe Trp Ile Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp
180 185 190
Leu Trp Glu Asp Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg
195 200 205
Thr Thr Ala Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His
210 215 220

Val Ser Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile
225 230 235 240
Cys Glu Lys Lys Phe Ser Met
245

<210> 56
<211> 282
<212> PRT
<213> Homo sapiens
<400> 56
Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
1 5 10 15
Leu Gly Leu Ala Leu Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu
20 25 30

Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly
35 40 45
Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser
50 55 60
Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys
65 70 75 80
Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln
85 90 95

Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly
100 105 110
Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser

115 120 125

Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp

130 135 140

Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp

145 150 155 160

Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly

165 170 175

Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser

180 185 190

Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val

195 200 205

Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly

210 215 220

Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Ala Val Leu Ser Ala

225 230 235 240

Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln

245 250 255

Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu

260 265 270

Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro

275 280

<210> 57

<211> 734

<212>

PRT

<213> Homo sapiens

<400> 57

Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln

1 5 10 15

Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asn Pro Pro Trp Ser

20 25 30

Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser

35 40 45

His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu
50 55 60

Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr
65 70 75 80
Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu
85 90 95
Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu
100 105 110
Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr
115 120 125

His Gln Lys Val Tyr Tyr Lys Asp Gly Lys Gln Leu Pro Asn Ser Tyr
130 135 140
Asn Leu Glu Lys Ile Thr Val Asn Ser Val Ser Arg Asp Asn Ser Lys
145 150 155 160
Tyr His Cys Thr Ala Tyr Arg Lys Phe Tyr Ile Leu Asp Ile Glu Val
165 170 175
Thr Ser Lys Pro Leu Asn Ile Gln Val Gln Glu Leu Phe Leu His Pro
180 185 190

Val Leu Arg Ala Ser Ser Ser Thr Pro Ile Glu Gly Ser Pro Met Thr
195 200 205
Leu Thr Cys Glu Thr Gln Leu Ser Pro Gln Arg Pro Asp Val Gln Leu
210 215 220
Gln Phe Ser Leu Phe Arg Asp Ser Gln Thr Leu Gly Leu Gly Trp Ser
225 230 235 240
Arg Ser Pro Arg Leu Gln Ile Pro Ala Met Trp Thr Glu Asp Ser Gly
245 250 255

Ser Tyr Trp Cys Glu Val Glu Thr Val Thr His Ser Ile Lys Lys Arg
260 265 270
Ser Leu Arg Ser Gln Ile Arg Val Gln Arg Val Pro Val Ser Asn Val
275 280 285
Asn Leu Glu Ile Arg Pro Thr Gly Gly Gln Leu Ile Glu Gly Glu Asn

290 295 300

Met Val Leu Ile Cys Ser Val Ala Gln Gly Ser Gly Thr Val Thr Phe

305 310 315 320

Ser Trp His Lys Glu Gly Arg Val Arg Ser Leu Gly Arg Lys Thr Gln

325 330 335

Arg Ser Leu Leu Ala Glu Leu His Val Leu Thr Val Lys Glu Ser Asp

340 345 350

Ala Gly Arg Tyr Tyr Cys Ala Ala Asp Asn Val His Ser Pro Ile Leu

355 360 365

Ser Thr Trp Ile Arg Val Thr Val Arg Ile Pro Val Ser His Pro Val

370 375 380

Leu Thr Phe Arg Ala Pro Arg Ala His Thr Val Val Gly Asp Leu Leu

385 390 395 400

Glu Leu His Cys Glu Ser Leu Arg Gly Ser Pro Pro Ile Leu Tyr Arg

405 410 415

Phe Tyr His Glu Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly

420 425 430

Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn

435 440 445

Tyr Ser Cys Asp Ala Asp Asn Gly Leu Gly Ala Gln His Ser His Gly

450 455 460

Val Ser Leu Arg Val Thr Val Pro Val Ser Arg Pro Val Leu Thr Leu

465 470 475 480

Arg Ala Pro Gly Ala Gln Ala Val Val Gly Asp Leu Leu Glu Leu His

485 490 495

Cys Glu Ser Leu Arg Gly Ser Phe Pro Ile Leu Tyr Trp Phe Tyr His

500 505 510

Glu Asp Asp Thr Leu Gly Asn Ile Ser Ala His Ser Gly Gly Gly Ala

515 520 525

Ser Phe Asn Leu Ser Leu Thr Thr Glu His Ser Gly Asn Tyr Ser Cys

530 535 540

Glu Ala Asp Asn Gly Leu Gly Ala Gln His Ser Lys Val Val Thr Leu
545 550 555 560
Asn Val Thr Gly Thr Ser Arg Asn Arg Thr Gly Leu Thr Ala Ala Gly
565 570 575

Ile Thr Gly Leu Val Leu Ser Ile Leu Val Leu Ala Ala Ala Ala Ala
580 585 590
Leu Leu His Tyr Ala Arg Ala Arg Arg Lys Pro Gly Gly Leu Ser Ala
595 600 605
Thr Gly Thr Ser Ser His Ser Pro Ser Glu Cys Gln Glu Pro Ser Ser
610 615 620
Ser Arg Pro Ser Arg Ile Asp Pro Gln Glu Pro Thr His Ser Lys Pro
625 630 635 640

Leu Ala Pro Met Glu Leu Glu Pro Met Tyr Ser Asn Val Asn Pro Gly
645 650 655
Asp Ser Asn Pro Ile Tyr Ser Gln Ile Trp Ser Ile Gln His Thr Lys
660 665 670
Glu Asn Ser Ala Asn Cys Pro Met Met His Gln Glu His Glu Glu Leu
675 680 685
Thr Val Leu Tyr Ser Glu Leu Lys Lys Thr His Pro Asp Asp Ser Ala
690 695 700

Gly Glu Ala Ser Ser Arg Gly Arg Ala His Glu Glu Asp Asp Glu Glu
705 710 715 720
Asn Tyr Glu Asn Val Pro Arg Val Leu Leu Ala Ser Asp His
725 730

<210> 58
<211> 1568
<212> PRT
<213> Homo sapiens
<400> 58
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

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        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
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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> 59

<211> 866

<212> PRT

<213> Homo sapiens

<400> 59

Met Gly Ala Ala Arg Ser Pro Pro Ser Ala Val Pro Gly Pro Leu Leu

1 5 10 15

Gly Leu Leu Leu Leu Leu Leu Gly Val Leu Ala Pro Gly Gly Ala Ser

20 25 30

Leu Arg Leu Leu Asp His Arg Ala Leu Val Cys Ser Gln Pro Gly Leu

35 40 45

Asn Cys Thr Val Lys Asn Ser Thr Cys Leu Asp Asp Ser Trp Ile His

50 55 60

Pro Arg Asn Leu Thr Pro Ser Ser Pro Lys Asp Leu Gln Ile Gln Leu

65 70 75 80

His Phe Ala His Thr Gln Gln Gly Asp Leu Phe Pro Val Ala His Ile

85 90 95

Glu Trp Thr Leu Gln Thr Asp Ala Ser Ile Leu Tyr Leu Glu Gly Ala

100 105 110

Glu Leu Ser Val Leu Gln Leu Asn Thr Asn Glu Arg Leu Cys Val Arg

115 120 125

Phe Glu Phe Leu Ser Lys Leu Arg His His His Arg Arg Trp Arg Phe

130 135 140

Thr Phe Ser His Phe Val Val Asp Pro Asp Gln Glu Tyr Glu Val Thr

145 150 155 160

Val His His Leu Pro Lys Pro Ile Pro Asp Gly Asp Pro Asn His Gln

165 170 175

Ser Lys Asn Phe Leu Val Pro Asp Cys Glu His Ala Arg Met Lys Val

180 185 190

Thr Thr Pro Cys Met Ser Ser Gly Ser Leu Trp Asp Pro Asn Ile Thr

195 200 205

Val Glu Thr Leu Glu Ala His Gln Leu Arg Val Ser Phe Thr Leu Trp

210 215 220

Asn Glu Ser Thr His Tyr Gln Ile Leu Leu Thr Ser Phe Pro His Met

225 230 235 240

Glu Asn His Ser Cys Phe Glu His Met His His Ile Pro Ala Pro Arg

245 250 255

Pro Glu Glu Phe His Gln Arg Ser Asn Val Thr Leu Thr Leu Arg Asn

260 265 270

Leu Lys Gly Cys Cys Arg His Gln Val Gln Ile Gln Pro Phe Phe Ser

275 280 285

Ser Cys Leu Asn Asp Cys Leu Arg His Ser Ala Thr Val Ser Cys Pro

290 295 300

Glu Met Pro Asp Thr Pro Glu Pro Ile Pro Asp Tyr Met Pro Leu Trp

305 310 315 320

Val Tyr Trp Phe Ile Thr Gly Ile Ser Ile Leu Leu Val Gly Ser Val

325 330 335

Ile Leu Leu Ile Val Cys Met Thr Trp Arg Leu Ala Gly Pro Gly Ser

340 345 350

Glu Lys Tyr Ser Asp Asp Thr Lys Tyr Thr Asp Gly Leu Pro Ala Ala
355 360 365
Asp Leu Ile Pro Pro Pro Leu Lys Pro Arg Lys Val Trp Ile Ile Tyr
370 375 380
Ser Ala Asp His Pro Leu Tyr Val Asp Val Val Leu Lys Phe Ala Gln

385 390 395 400
Phe Leu Leu Thr Ala Cys Gly Thr Glu Val Ala Leu Asp Leu Leu Glu
405 410 415
Glu Gln Ala Ile Ser Glu Ala Gly Val Met Thr Trp Val Gly Arg Gln
420 425 430
Lys Gln Glu Met Val Glu Ser Asn Ser Lys Ile Ile Val Leu Cys Ser
435 440 445
Arg Gly Thr Arg Ala Lys Trp Gln Ala Leu Leu Gly Arg Gly Ala Pro

450 455 460
Val Arg Leu Arg Cys Asp His Gly Lys Pro Val Gly Asp Leu Phe Thr
465 470 475 480
Ala Ala Met Asn Met Ile Leu Pro Asp Phe Lys Arg Pro Ala Cys Phe
485 490 495
Gly Thr Tyr Val Val Cys Tyr Phe Ser Glu Val Ser Cys Asp Gly Asp
500 505 510
Val Pro Asp Leu Phe Gly Ala Ala Pro Arg Tyr Pro Leu Met Asp Arg

515 520 525
Phe Glu Glu Val Tyr Phe Arg Ile Gln Asp Leu Glu Met Phe Gln Pro
530 535 540
Gly Arg Met His Arg Val Gly Glu Leu Ser Gly Asp Asn Tyr Leu Arg
545 550 555 560
Ser Pro Gly Gly Arg Gln Leu Arg Ala Ala Leu Asp Arg Phe Arg Asp
565 570 575
Trp Gln Val Arg Cys Pro Asp Trp Phe Glu Cys Glu Asn Leu Tyr Ser

580 585 590
Ala Asp Asp Gln Asp Ala Pro Ser Leu Asp Glu Glu Val Phe Glu Glu

595 600 605

Pro Leu Leu Pro Pro Gly Thr Gly Ile Val Lys Arg Ala Pro Leu Val

610 615 620

Arg Glu Pro Gly Ser Gln Ala Cys Leu Ala Ile Asp Pro Leu Val Gly

625 630 635 640

Glu Glu Gly Gly Ala Ala Val Ala Lys Leu Glu Pro His Leu Gln Pro

645 650 655

Arg Gly Gln Pro Ala Pro Gln Pro Leu His Thr Leu Val Leu Ala Ala

660 665 670

Glu Glu Gly Ala Leu Val Ala Ala Val Glu Pro Gly Pro Leu Ala Asp

675 680 685

Gly Ala Ala Val Arg Leu Ala Leu Ala Gly Glu Gly Glu Ala Cys Pro

690 695 700

Leu Leu Gly Ser Pro Gly Ala Gly Arg Asn Ser Val Leu Phe Leu Pro

705 710 715 720

Val Asp Pro Glu Asp Ser Pro Leu Gly Ser Ser Thr Pro Met Ala Ser

725 730 735

Pro Asp Leu Leu Pro Glu Asp Val Arg Glu His Leu Glu Gly Leu Met

740 745 750

Leu Ser Leu Phe Glu Gln Ser Leu Ser Cys Gln Ala Gln Gly Gly Cys

755 760 765

Ser Arg Pro Ala Met Val Leu Thr Asp Pro His Thr Pro Tyr Glu Glu

770 775 780

Glu Gln Arg Gln Ser Val Gln Ser Asp Gln Gly Tyr Ile Ser Arg Ser

785 790 795 800

Ser Pro Gln Pro Pro Glu Gly Leu Thr Glu Met Glu Glu Glu Glu Glu

805 810 815

Glu Glu Gln Asp Pro Gly Lys Pro Ala Leu Pro Leu Ser Pro Glu Asp

820 825 830

Leu Glu Ser Leu Arg Ser Leu Gln Arg Gln Leu Leu Phe Arg Gln Leu

835 840 845

Gln Lys Asn Ser Gly Trp Asp Thr Met Gly Ser Glu Ser Glu Gly Pro
850 855 860

Ser Ala
865

<210> 60

<211> 355

<212> PRT

<213> Homo sapiens

<400> 60

Met Glu Thr Pro Asn Thr Thr Glu Asp Tyr Asp Thr Thr Thr Glu Phe
1 5 10 15

Asp Tyr Gly Asp Ala Thr Pro Cys Gln Lys Val Asn Glu Arg Ala Phe
20 25 30

Gly Ala Gln Leu Leu Pro Pro Leu Tyr Ser Leu Val Phe Val Ile Gly
35 40 45

Leu Val Gly Asn Ile Leu Val Val Leu Val Leu Val Gln Tyr Lys Arg
50 55 60

Leu Lys Asn Met Thr Ser Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp
65 70 75 80

Leu Leu Phe Leu Phe Thr Leu Pro Phe Trp Ile Asp Tyr Lys Leu Lys
85 90 95

Asp Asp Trp Val Phe Gly Asp Ala Met Cys Lys Ile Leu Ser Gly Phe
100 105 110

Tyr Tyr Thr Gly Leu Tyr Ser Glu Ile Phe Phe Ile Ile Leu Leu Thr
115 120 125

Ile Asp Arg Tyr Leu Ala Ile Val His Ala Val Phe Ala Leu Arg Ala
130 135 140

Arg Thr Val Thr Phe Gly Val Ile Thr Ser Ile Ile Ile Trp Ala Leu
145 150 155 160

Ala Ile Leu Ala Ser Met Pro Gly Leu Tyr Phe Ser Lys Thr Gln Trp
165 170 175

Glu Phe Thr His His Thr Cys Ser Leu His Phe Pro His Glu Ser Leu

180 185 190

Arg Glu Trp Lys Leu Phe Gln Ala Leu Lys Leu Asn Leu Phe Gly Leu

195 200 205

Val Leu Pro Leu Leu Val Met Ile Ile Cys Tyr Thr Gly Ile Ile Lys

210 215 220

Ile Leu Leu Arg Arg Pro Asn Glu Lys Lys Ser Lys Ala Val Arg Leu

225 230 235 240

Ile Phe Val Ile Met Ile Ile Phe Phe Leu Phe Trp Thr Pro Tyr Asn

245 250 255

Leu Thr Ile Leu Ile Ser Val Phe Gln Asp Phe Leu Phe Thr His Glu

260 265 270

Cys Glu Gln Ser Arg His Leu Asp Leu Ala Val Gln Val Thr Glu Val

275 280 285

Ile Ala Tyr Thr His Cys Cys Val Asn Pro Val Ile Tyr Ala Phe Val

290 295 300

Gly Glu Arg Phe Arg Lys Tyr Leu Arg Gln Leu Phe His Arg Arg Val

305 310 315 320

Ala Val His Leu Val Lys Trp Leu Pro Phe Leu Ser Val Asp Arg Leu

325 330 335

Glu Arg Val Ser Ser Thr Ser Pro Ser Thr Gly Glu His Glu Leu Ser

340 345 350

Ala Gly Phe

355

<210> 61

<211> 288

<212> PRT

<213> Homo sapiens

<400> 61

Met Gly His Thr Arg Arg Gln Gly Thr Ser Pro Ser Lys Cys Pro Tyr

1 5 10 15

Leu Asn Phe Phe Gln Leu Leu Val Leu Ala Gly Leu Ser His Phe Cys

20 25 30

Ser Gly Val Ile His Val Thr Lys Glu Val Lys Glu Val Ala Thr Leu

35 40 45

Ser Cys Gly His Asn Val Ser Val Glu Glu Leu Ala Gln Thr Arg Ile

50 55 60

Tyr Trp Gln Lys Glu Lys Lys Met Val Leu Thr Met Met Ser Gly Asp

65 70 75 80

Met Asn Ile Trp Pro Glu Tyr Lys Asn Arg Thr Ile Phe Asp Ile Thr

85 90 95

Asn Asn Leu Ser Ile Val Ile Leu Ala Leu Arg Pro Ser Asp Glu Gly

100 105 110

Thr Tyr Glu Cys Val Val Leu Lys Tyr Glu Lys Asp Ala Phe Lys Arg

115 120 125

Glu His Leu Ala Glu Val Thr Leu Ser Val Lys Ala Asp Phe Pro Thr

130 135 140

Pro Ser Ile Ser Asp Phe Glu Ile Pro Thr Ser Asn Ile Arg Arg Ile

145 150 155 160

Ile Cys Ser Thr Ser Gly Gly Phe Pro Glu Pro His Leu Ser Trp Leu

165 170 175

Glu Asn Gly Glu Glu Leu Asn Ala Ile Asn Thr Thr Val Ser Gln Asp

180 185 190

Pro Glu Thr Glu Leu Tyr Ala Val Ser Ser Lys Leu Asp Phe Asn Met

195 200 205

Thr Thr Asn His Ser Phe Met Cys Leu Ile Lys Tyr Gly His Leu Arg

210 215 220

Val Asn Gln Thr Phe Asn Trp Asn Thr Thr Lys Gln Glu His Phe Pro

225 230 235 240

Asp Asn Leu Leu Pro Ser Trp Ala Ile Thr Leu Ile Ser Val Asn Gly

245 250 255

Ile Phe Val Ile Cys Cys Leu Thr Tyr Cys Phe Ala Pro Arg Cys Arg

260 265 270

Glu Arg Arg Arg Asn Glu Arg Leu Arg Arg Glu Ser Val Arg Pro Val

275 280 285

<210> 62

<211> 385

<212> PRT

<213> Homo sapiens

<400> 62

Met Trp Gly Arg Leu Leu Leu Trp Pro Leu Val Leu Gly Phe Ser Leu
1 5 10 15

Ser Gly Gly Thr Gln Thr Pro Ser Val Tyr Asp Glu Ser Gly Ser Thr
20 25 30

Gly Gly Gly Asp Asp Ser Thr Pro Ser Ile Leu Pro Ala Pro Arg Gly
35 40 45

Tyr Pro Gly Gln Val Cys Ala Asn Asp Ser Asp Thr Leu Glu Leu Pro
50 55 60

Asp Ser Ser Arg Ala Leu Leu Leu Gly Trp Val Pro Thr Arg Leu Val
65 70 75 80

Pro Ala Leu Tyr Gly Leu Val Leu Val Val Gly Leu Pro Ala Asn Gly
85 90 95

Leu Ala Leu Trp Val Leu Ala Thr Gln Ala Pro Arg Leu Pro Ser Thr
100 105 110

Met Leu Leu Met Asn Leu Ala Ala Ala Asp Leu Leu Leu Ala Leu Ala
115 120 125

Leu Pro Pro Arg Ile Ala Tyr His Leu Arg Gly Gln Arg Trp Pro Phe
130 135 140

Gly Glu Ala Ala Cys Arg Leu Ala Thr Ala Ala Leu Tyr Gly His Met
145 150 155 160

Tyr Gly Ser Val Leu Leu Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu
165 170 175

Ala Leu Val His Pro Leu Arg Ala Arg Ala Leu Arg Gly Arg Arg Leu
180 185 190

Ala Leu Gly Leu Cys Met Ala Ala Trp Leu Met Ala Ala Ala Leu Ala

195 200 205

Leu Pro Leu Thr Leu Gln Arg Gln Thr Phe Arg Leu Ala Arg Ser Asp
210 215 220
Arg Val Leu Cys His Asp Ala Leu Pro Leu Asp Ala Gln Ala Ser His
225 230 235 240
Trp Gln Pro Ala Phe Thr Cys Leu Ala Leu Leu Gly Cys Phe Leu Pro
245 250 255
Leu Leu Ala Met Leu Leu Cys Tyr Gly Ala Thr Leu His Thr Leu Ala
260 265 270

Ala Ser Gly Arg Arg Tyr Gly His Ala Leu Arg Leu Thr Ala Val Val
275 280 285
Leu Ala Ser Ala Val Ala Phe Phe Val Pro Ser Asn Leu Leu Leu Leu
290 295 300
Leu His Tyr Ser Asp Pro Ser Pro Ser Ala Trp Gly Asn Leu Tyr Gly
305 310 315 320
Ala Tyr Val Pro Ser Leu Ala Leu Ser Thr Leu Asn Ser Cys Val Asp
325 330 335

Pro Phe Ile Tyr Tyr Tyr Val Ser Ala Glu Phe Arg Asp Lys Val Arg
340 345 350
Ala Gly Leu Phe Gln Arg Ser Pro Gly Asp Thr Val Ala Ser Lys Ala
355 360 365
Ser Ala Glu Gly Gly Ser Arg Gly Met Gly Thr His Ser Ser Leu Leu
370 375 380
Gln
385

<210> 63
<211> 468
<212> PRT
<213> Homo sapiens
<400> 63

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

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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> 64

<211> 301

<212> PRT

<213> Homo sapiens

<400> 64

Met Phe Ser His Leu Pro Phe Asp Cys Val Leu Leu Leu Leu Leu Leu
1 5 10 15

Leu Leu Thr Arg Ser Ser Glu Val Glu Tyr Arg Ala Glu Val Gly Gln
20 25 30

Asn Ala Tyr Leu Pro Cys Phe Tyr Thr Pro Ala Ala Pro Gly Asn Leu
35 40 45

Val Pro Val Cys Trp Gly Lys Gly Ala Cys Pro Val Phe Glu Cys Gly
50 55 60

Asn Val Val Leu Arg Thr Asp Glu Arg Asp Val Asn Tyr Trp Thr Ser
65 70 75 80

Arg Tyr Trp Leu Asn Gly Asp Phe Arg Lys Gly Asp Val Ser Leu Thr
85 90 95

Ile Glu Asn Val Thr Leu Ala Asp Ser Gly Ile Tyr Cys Cys Arg Ile
100 105 110

Gln Ile Pro Gly Ile Met Asn Asp Glu Lys Phe Asn Leu Lys Leu Val
115 120 125

Ile Lys Pro Ala Lys Val Thr Pro Ala Pro Thr Arg Gln Arg Asp Phe
130 135 140

Thr Ala Ala Phe Pro Arg Met Leu Thr Thr Arg Gly His Gly Pro Ala
145 150 155 160

Glu Thr Gln Thr Leu Gly Ser Leu Pro Asp Ile Asn Leu Thr Gln Ile
165 170 175

Ser Thr Leu Ala Asn Glu Leu Arg Asp Ser Arg Leu Ala Asn Asp Leu
180 185 190

Arg Asp Ser Gly Ala Thr Ile Arg Ile Gly Ile Tyr Ile Gly Ala Gly
195 200 205

Ile Cys Ala Gly Leu Ala Leu Ala Leu Ile Phe Gly Ala Leu Ile Phe
210 215 220

Lys Trp Tyr Ser His Ser Lys Glu Lys Ile Gln Asn Leu Ser Leu Ile

225 230 235 240

Ser Leu Ala Asn Leu Pro Pro Ser Gly Leu Ala Asn Ala Val Ala Glu
245 250 255
Gly Ile Arg Ser Glu Glu Asn Ile Tyr Thr Ile Glu Glu Asn Val Tyr
260 265 270
Glu Val Glu Glu Pro Asn Glu Tyr Tyr Cys Tyr Val Ser Ser Arg Gln
275 280 285
Gln Pro Ser Gln Pro Leu Gly Cys Arg Phe Ala Met Pro
290 295 300

<210>
65
<211> 636
<212> PRT
<213> Homo sapiens
<400> 65

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> 66

<211> 380

<212> PRT

<213> Homo sapiens

<400> 66

Met Ala Phe Val Cys Leu Ala Ile Gly Cys Leu Tyr Thr Phe Leu Ile
1 5 10 15

Ser Thr Thr Phe Gly Cys Thr Ser Ser Ser Asp Thr Glu Ile Lys Val
20 25 30

Asn Pro Pro Gln Asp Phe Glu Ile Val Asp Pro Gly Tyr Leu Gly Tyr
35 40 45

Leu Tyr Leu Gln Trp Gln Pro Pro Leu Ser Leu Asp His Phe Lys Glu
50 55 60

Cys Thr Val Glu Tyr Glu Leu Lys Tyr Arg Asn Ile Gly Ser Glu Thr
65 70 75 80

Trp Lys Thr Ile Ile Thr Lys Asn Leu His Tyr Lys Asp Gly Phe Asp
85 90 95

Leu Asn Lys Gly Ile Glu Ala Lys Ile His Thr Leu Leu Pro Trp Gln
100 105 110

Cys Thr Asn Gly Ser Glu Val Gln Ser Ser Trp Ala Glu Thr Thr Tyr
115 120 125

Trp Ile Ser Pro Gln Gly Ile Pro Glu Thr Lys Val Gln Asp Met Asp
130 135 140

Cys Val Tyr Tyr Asn Trp Gln Tyr Leu Leu Cys Ser Trp Lys Pro Gly
145 150 155 160

Ile Gly Val Leu Leu Asp Thr Asn Tyr Asn Leu Phe Tyr Trp Tyr Glu
165 170 175

Gly Leu Asp His Ala Leu Gln Cys Val Asp Tyr Ile Lys Ala Asp Gly
180 185 190

Gln Asn Ile Gly Cys Arg Phe Pro Tyr Leu Glu Ala Ser Asp Tyr Lys
195 200 205

Asp Phe Tyr Ile Cys Val Asn Gly Ser Ser Glu Asn Lys Pro Ile Arg
210 215 220
Ser Ser Tyr Phe Thr Phe Gln Leu Gln Asn Ile Val Lys Pro Leu Pro
225 230 235 240

Pro Val Tyr Leu Thr Phe Thr Arg Glu Ser Ser Cys Glu Ile Lys Leu
245 250 255
Lys Trp Ser Ile Pro Leu Gly Pro Ile Pro Ala Arg Cys Phe Asp Tyr
260 265 270
Glu Ile Glu Ile Arg Glu Asp Asp Thr Thr Leu Val Thr Ala Thr Val
275 280 285
Glu Asn Glu Thr Tyr Thr Leu Lys Thr Thr Asn Glu Thr Arg Gln Leu
290 295 300

Cys Phe Val Val Arg Ser Lys Val Asn Ile Tyr Cys Ser Asp Asp Gly
305 310 315 320
Ile Trp Ser Glu Trp Ser Asp Lys Gln Cys Trp Glu Gly Glu Asp Leu
325 330 335
Ser Lys Lys Thr Leu Leu Arg Phe Trp Leu Pro Phe Gly Phe Ile Leu
340 345 350
Ile Leu Val Ile Phe Val Thr Gly Leu Leu Leu Arg Lys Pro Asn Thr
355 360 365

Tyr Pro Lys Met Ile Pro Glu Phe Phe Cys Asp Thr
370 375 380
<210> 67
<211> 798
<212> PRT
<213> Homo sapiens
<400> 67
Met Val Ala Leu Pro Met Val Leu Val Leu Leu Leu Val Leu Ser Arg
1 5 10 15
Gly Glu Ser Glu Leu Asp Ala Lys Ile Pro Ser Thr Gly Asp Ala Thr
20 25 30
Glu Trp Arg Asn Pro His Leu Ser Met Leu Gly Ser Cys Gln Pro Ala

35 40 45

Pro Ser Cys Gln Lys Cys Ile Leu Ser His Pro Ser Cys Ala Trp Cys
50 55 60
Lys Gln Leu Asn Phe Thr Ala Ser Gly Glu Ala Glu Ala Arg Arg Cys
65 70 75 80
Ala Arg Arg Glu Glu Leu Leu Ala Arg Gly Cys Pro Leu Glu Glu Leu
85 90 95
Glu Glu Pro Arg Gly Gln Gln Glu Val Leu Gln Asp Gln Pro Leu Ser
100 105 110

Gln Gly Ala Arg Gly Glu Gly Ala Thr Gln Leu Ala Pro Gln Arg Val
115 120 125
Arg Val Thr Leu Arg Pro Gly Glu Pro Gln Gln Leu Gln Val Arg Phe
130 135 140
Leu Arg Ala Glu Gly Tyr Pro Val Asp Leu Tyr Tyr Leu Met Asp Leu
145 150 155 160
Ser Tyr Ser Met Lys Asp Asp Leu Glu Arg Val Arg Gln Leu Gly His
165 170 175

Ala Leu Leu Val Arg Leu Gln Glu Val Thr His Ser Val Arg Ile Gly
180 185 190
Phe Gly Ser Phe Val Asp Lys Thr Val Leu Pro Phe Val Ser Thr Val
195 200 205
Pro Ser Lys Leu Arg His Pro Cys Pro Thr Arg Leu Glu Arg Cys Gln
210 215 220
Ser Pro Phe Ser Phe His His Val Leu Ser Leu Thr Gly Asp Ala Gln
225 230 235 240

Ala Phe Glu Arg Glu Val Gly Arg Gln Ser Val Ser Gly Asn Leu Asp
245 250 255
Ser Pro Glu Gly Gly Phe Asp Ala Ile Leu Gln Ala Ala Leu Cys Gln
260 265 270
Glu Gln Ile Gly Trp Arg Asn Val Ser Arg Leu Leu Val Phe Thr Ser
275 280 285

Asp Asp Thr Phe His Thr Ala Gly Asp Gly Lys Leu Gly Gly Ile Phe
290 295 300

Met Pro Ser Asp Gly His Cys His Leu Asp Ser Asn Gly Leu Tyr Ser
305 310 315 320
Arg Ser Thr Glu Phe Asp Tyr Pro Ser Val Gly Gln Val Ala Gln Ala
325 330 335
Leu Ser Ala Ala Asn Ile Gln Pro Ile Phe Ala Val Thr Ser Ala Ala
340 345 350
Leu Pro Val Tyr Gln Glu Leu Ser Lys Leu Ile Pro Lys Ser Ala Val
355 360 365

Gly Glu Leu Ser Glu Asp Ser Ser Asn Val Val Gln Leu Ile Met Asp
370 375 380
Ala Tyr Asn Ser Leu Ser Ser Thr Val Thr Leu Glu His Ser Ser Leu
385 390 395 400
Pro Pro Gly Val His Ile Ser Tyr Glu Ser Gln Cys Glu Gly Pro Glu
405 410 415
Lys Arg Glu Gly Lys Ala Glu Asp Arg Gly Gln Cys Asn His Val Arg
420 425 430

Ile Asn Gln Thr Val Thr Phe Trp Val Ser Leu Gln Ala Thr His Cys
435 440 445
Leu Pro Glu Pro His Leu Leu Arg Leu Arg Ala Leu Gly Phe Ser Glu
450 455 460
Glu Leu Ile Val Glu Leu His Thr Leu Cys Asp Cys Asn Cys Ser Asp
465 470 475 480
Thr Gln Pro Gln Ala Pro His Cys Ser Asp Gly Gln Gly His Leu Gln
485 490 495

Cys Gly Val Cys Ser Cys Ala Pro Gly Arg Leu Gly Arg Leu Cys Glu
500 505 510
Cys Ser Val Ala Glu Leu Ser Ser Pro Asp Leu Glu Ser Gly Cys Arg
515 520 525
Ala Pro Asn Gly Thr Gly Pro Leu Cys Ser Gly Lys Gly His Cys Gln

530 535 540

Cys Gly Arg Cys Ser Cys Ser Gly Gln Ser Ser Gly His Leu Cys Glu
545 550 555 560

Cys Asp Asp Ala Ser Cys Glu Arg His Glu Gly Ile Leu Cys Gly Gly
565 570 575

Phe Gly Arg Cys Gln Cys Gly Val Cys His Cys His Ala Asn Arg Thr
580 585 590

Gly Arg Ala Cys Glu Cys Ser Gly Asp Met Asp Ser Cys Ile Ser Pro
595 600 605

Glu Gly Gly Leu Cys Ser Gly His Gly Arg Cys Lys Cys Asn Arg Cys
610 615 620

Gln Cys Leu Asp Gly Tyr Tyr Gly Ala Leu Cys Asp Gln Cys Pro Gly
625 630 635 640

Cys Lys Thr Pro Cys Glu Arg His Arg Asp Cys Ala Glu Cys Gly Ala
645 650 655

Phe Arg Thr Gly Pro Leu Ala Thr Asn Cys Ser Thr Ala Cys Ala His
660 665 670

Thr Asn Val Thr Leu Ala Leu Ala Pro Ile Leu Asp Asp Gly Trp Cys
675 680 685

Lys Glu Arg Thr Leu Asp Asn Gln Leu Phe Phe Phe Leu Val Glu Asp
690 695 700

Asp Ala Arg Gly Thr Val Val Leu Arg Val Arg Pro Gln Glu Lys Gly
705 710 715 720

Ala Asp His Thr Gln Ala Ile Val Leu Gly Cys Val Gly Gly Ile Val
725 730 735

Ala Val Gly Leu Gly Leu Val Leu Ala Tyr Arg Leu Ser Val Glu Ile
740 745 750

Tyr Asp Arg Arg Glu Tyr Ser Arg Phe Glu Lys Glu Gln Gln Gln Leu
755 760 765

Asn Trp Lys Gln Asp Ser Asn Pro Leu Tyr Lys Ser Ala Ile Thr Thr
770 775 780

Thr Ile Asn Pro Arg Phe Gln Glu Ala Asp Ser Pro Thr Leu

785 790 795

<210> 68

<211> 508

<212> PRT

<213> Homo sapiens

<400> 68

Met Leu Leu Trp Ser Leu Leu Val Ile Phe Asp Ala Val Thr Glu Gln

1 5 10 15

Ala Asp Ser Leu Thr Leu Val Ala Pro Ser Ser Val Phe Glu Gly Asp

20 25 30

Ser Ile Val Leu Lys Cys Gln Gly Glu Gln Asn Trp Lys Ile Gln Lys

35 40 45

Met Ala Tyr His Lys Asp Asn Lys Glu Leu Ser Val Phe Lys Lys Phe

50 55 60

Ser Asp Phe Leu Ile Gln Ser Ala Val Leu Ser Asp Ser Gly Asn Tyr

65 70 75 80

Phe Cys Ser Thr Lys Gly Gln Leu Phe Leu Trp Asp Lys Thr Ser Asn

85 90 95

Ile Val Lys Ile Lys Val Gln Glu Leu Phe Gln Arg Pro Val Leu Thr

100 105 110

Ala Ser Ser Phe Gln Pro Ile Glu Gly Gly Pro Val Ser Leu Lys Cys

115 120 125

Glu Thr Arg Leu Ser Pro Gln Arg Leu Asp Val Gln Leu Gln Phe Cys

130 135 140

Phe Phe Arg Glu Asn Gln Val Leu Gly Ser Gly Trp Ser Ser Ser Pro

145 150 155 160

Glu Leu Gln Ile Ser Ala Val Trp Ser Glu Asp Thr Gly Ser Tyr Trp

165 170 175

Cys Lys Ala Glu Thr Val Thr His Arg Ile Arg Lys Gln Ser Leu Gln

180 185 190

Ser Gln Ile His Val Gln Arg Ile Pro Ile Ser Asn Val Ser Leu Glu

195 200 205

Ile Arg Ala Pro Gly Gly Gln Val Thr Glu Gly Gln Lys Leu Ile Leu

210 215 220

Leu Cys Ser Val Ala Gly Gly Thr Gly Asn Val Thr Phe Ser Trp Tyr

225 230 235 240

Arg Glu Ala Thr Gly Thr Ser Met Gly Lys Lys Thr Gln Arg Ser Leu

245 250 255

Ser Ala Glu Leu Glu Ile Pro Ala Val Lys Glu Ser Asp Ala Gly Lys

260 265 270

Tyr Tyr Cys Arg Ala Asp Asn Gly His Val Pro Ile Gln Ser Lys Val

275 280 285

Val Asn Ile Pro Val Arg Ile Pro Val Ser Arg Pro Val Leu Thr Leu

290 295 300

Arg Ser Pro Gly Ala Gln Ala Ala Val Gly Asp Leu Leu Glu Leu His

305 310 315 320

Cys Glu Ala Leu Arg Gly Ser Pro Pro Ile Leu Tyr Gln Phe Tyr His

325 330 335

Glu Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly Gly Gly Ala

340 345 350

Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Ser Cys

355 360 365

Glu Ala Asn Asn Gly Leu Gly Ala Gln Cys Ser Glu Ala Val Pro Val

370 375 380

Ser Ile Ser Gly Pro Asp Gly Tyr Arg Arg Asp Leu Met Thr Ala Gly

385 390 395 400

Val Leu Trp Gly Leu Phe Gly Val Leu Gly Phe Thr Gly Val Ala Leu

405 410 415

Leu Leu Tyr Ala Leu Phe His Lys Ile Ser Gly Glu Ser Ser Ala Thr

420 425 430

Asn Glu Pro Arg Gly Ala Ser Arg Pro Asn Pro Gln Glu Phe Thr Tyr

435 440 445

Ser Ser Pro Thr Pro Asp Met Glu Glu Leu Gln Pro Val Tyr Val Asn

450 455 460

Val Gly Ser Val Asp Val Asp Val Val Tyr Ser Gln Val Trp Ser Met

465 470 475 480

Gln Gln Pro Glu Ser Ser Ala Asn Ile Arg Thr Leu Leu Glu Asn Lys

485 490 495

Asp Ser Gln Val Ile Tyr Ser Ser Val Lys Lys Ser

500 505

<210> 69

<211> 372

<212> PRT

<213> Homo sapiens

<400> 69

Met Ile Phe Pro Trp Lys Cys Gln Ser Thr Gln Arg Asp Leu Trp Asn

1 5 10 15

Ile Phe Lys Leu Trp Gly Trp Thr Met Leu Cys Cys Asp Phe Leu Ala

20 25 30

His His Gly Thr Asp Cys Trp Thr Tyr His Tyr Ser Glu Lys Pro Met

35 40 45

Asn Trp Gln Arg Ala Arg Arg Phe Cys Arg Asp Asn Tyr Thr Asp Leu

50 55 60

Val Ala Ile Gln Asn Lys Ala Glu Ile Glu Tyr Leu Glu Lys Thr Leu

65 70 75 80

Pro Phe Ser Arg Ser Tyr Tyr Trp Ile Gly Ile Arg Lys Ile Gly Gly

85 90 95

Ile Trp Thr Trp Val Gly Thr Asn Lys Ser Leu Thr Glu Glu Ala Glu

100 105 110

Asn Trp Gly Asp Gly Glu Pro Asn Asn Lys Lys Asn Lys Glu Asp Cys

115 120 125

Val Glu Ile Tyr Ile Lys Arg Asn Lys Asp Ala Gly Lys Trp Asn Asp

130 135 140

Asp Ala Cys His Lys Leu Lys Ala Ala Leu Cys Tyr Thr Ala Ser Cys

145 150 155 160

Gln Pro Trp Ser Cys Ser Gly His Gly Glu Cys Val Glu Ile Ile Asn

165 170 175

Asn Tyr Thr Cys Asn Cys Asp Val Gly Tyr Tyr Gly Pro Gln Cys Gln

180 185 190

Phe Val Ile Gln Cys Glu Pro Leu Glu Ala Pro Glu Leu Gly Thr Met

195 200 205

Asp Cys Thr His Pro Leu Gly Asn Phe Ser Phe Ser Ser Gln Cys Ala

210 215 220

Phe Ser Cys Ser Glu Gly Thr Asn Leu Thr Gly Ile Glu Glu Thr Thr

225 230 235 240

Cys Gly Pro Phe Gly Asn Trp Ser Ser Pro Glu Pro Thr Cys Gln Val

245 250 255

Ile Gln Cys Glu Pro Leu Ser Ala Pro Asp Leu Gly Ile Met Asn Cys

260 265 270

Ser His Pro Leu Ala Ser Phe Ser Phe Thr Ser Ala Cys Thr Phe Ile

275 280 285

Cys Ser Glu Gly Thr Glu Leu Ile Gly Lys Lys Lys Thr Ile Cys Glu

290 295 300

Ser Ser Gly Ile Trp Ser Asn Pro Ser Pro Ile Cys Gln Lys Leu Asp

305 310 315 320

Lys Ser Phe Ser Met Ile Lys Glu Gly Asp Tyr Asn Pro Leu Phe Ile

325 330 335

Pro Val Ala Val Met Val Thr Ala Phe Ser Gly Leu Ala Phe Ile Ile

340 345 350

Trp Leu Ala Arg Arg Leu Lys Lys Gly Lys Lys Ser Lys Arg Ser Met

355 360 365

Asn Asp Pro Tyr

370

<210> 70

<211> 275

<212> PRT

<213> Homo sapiens

<400> 70

Met Ser Ser Phe Gly Tyr Arg Thr Leu Thr Val Ala Leu Phe Thr Leu
1 5 10 15

Ile Cys Cys Pro Gly Ser Asp Glu Lys Val Phe Glu Val His Val Arg
20 25 30

Pro Lys Lys Leu Ala Val Glu Pro Lys Gly Ser Leu Glu Val Asn Cys
35 40 45

Ser Thr Thr Cys Asn Gln Pro Glu Val Gly Gly Leu Glu Thr Ser Leu
50 55 60

Asp Lys Ile Leu Leu Asp Glu Gln Ala Gln Trp Lys His Tyr Leu Val
65 70 75 80

Ser Asn Ile Ser His Asp Thr Val Leu Gln Cys His Phe Thr Cys Ser
85 90 95

Gly Lys Gln Glu Ser Met Asn Ser Asn Val Ser Val Tyr Gln Pro Pro
100 105 110

Arg Gln Val Ile Leu Thr Leu Gln Pro Thr Leu Val Ala Val Gly Lys
115 120 125

Ser Phe Thr Ile Glu Cys Arg Val Pro Thr Val Glu Pro Leu Asp Ser
130 135 140

Leu Thr Leu Phe Leu Phe Arg Gly Asn Glu Thr Leu His Tyr Glu Thr
145 150 155 160

Phe Gly Lys Ala Ala Pro Ala Pro Gln Glu Ala Thr Ala Thr Phe Asn
165 170 175

Ser Thr Ala Asp Arg Glu Asp Gly His Arg Asn Phe Ser Cys Leu Ala
180 185 190

Val Leu Asp Leu Met Ser Arg Gly Gly Asn Ile Phe His Lys His Ser
195 200 205

Ala Pro Lys Met Leu Glu Ile Tyr Glu Pro Val Ser Asp Ser Gln Met

210 215 220

Val Ile Ile Val Thr Val Val Ser Val Leu Leu Ser Leu Phe Val Thr

225 230 235 240

Ser Val Leu Leu Cys Phe Ile Phe Gly Gln His Leu Arg Gln Gln Arg

245 250 255

Met Gly Thr Tyr Gly Val Arg Ala Ala Trp Arg Arg Leu Pro Gln Ala

260 265 270

Phe Arg Pro

275

<210> 71

<211> 267

<212> PRT

<213> Homo sapiens

<400> 71

Met Gly Ser Ala Cys Ile Lys Val Thr Lys Tyr Phe Leu Phe Leu Phe

1 5 10 15

Asn Leu Ile Phe Phe Ile Leu Gly Ala Val Ile Leu Gly Phe Gly Val

20 25 30

Trp Ile Leu Ala Asp Lys Ser Ser Phe Ile Ser Val Leu Gln Thr Ser

35 40 45

Ser Ser Ser Leu Arg Met Gly Ala Tyr Val Phe Ile Gly Val Gly Ala

50 55 60

Val Thr Met Leu Met Gly Phe Leu Gly Cys Ile Gly Ala Val Asn Glu

65 70 75 80

Val Arg Cys Leu Leu Gly Leu Tyr Phe Ala Phe Leu Leu Leu Ile Leu

85 90 95

Ile Ala Gln Val Thr Ala Gly Ala Leu Phe Tyr Phe Asn Met Gly Lys

100 105 110

Leu Lys Gln Glu Met Gly Gly Ile Val Thr Glu Leu Ile Arg Asp Tyr

115 120 125

Asn Ser Ser Arg Glu Asp Ser Leu Gln Asp Ala Trp Asp Tyr Val Gln

130 135 140

Ala Gln Val Lys Cys Cys Gly Trp Val Ser Phe Tyr Asn Trp Thr Asp
145 150 155 160
Asn Ala Glu Leu Met Asn Arg Pro Glu Val Thr Tyr Pro Cys Ser Cys
165 170 175
Glu Val Lys Gly Glu Glu Asp Asn Ser Leu Ser Val Arg Lys Gly Phe

180 185 190
Cys Glu Ala Pro Gly Asn Arg Thr Gln Ser Gly Asn His Pro Glu Asp
195 200 205
Trp Pro Val Tyr Gln Glu Gly Cys Met Glu Lys Val Gln Ala Trp Leu
210 215 220
Gln Glu Asn Leu Gly Ile Ile Leu Gly Val Gly Val Gly Val Ala Ile
225 230 235 240
Ile Glu Leu Leu Gly Met Val Leu Ser Ile Cys Leu Cys Arg His Val

245 250 255
His Ser Glu Asp Tyr Ser Lys Val Pro Lys Tyr
260 265

<210> 72
<211> 205
<212> PRT
<213> Homo sapiens
<400> 72
Met Ser Arg Gly Leu Gln Leu Leu Leu Leu Ser Cys Ala Tyr Ser Leu
1 5 10 15
Ala Pro Ala Thr Pro Glu Val Lys Val Ala Cys Ser Glu Asp Val Asp
20 25 30
Leu Pro Cys Thr Ala Pro Trp Asp Pro Gln Val Pro Tyr Thr Val Ser

35 40 45
Trp Val Lys Leu Leu Glu Gly Gly Glu Glu Arg Met Glu Thr Pro Gln
50 55 60
Glu Asp His Leu Arg Gly Gln His Tyr His Gln Lys Gly Gln Asn Gly
65 70 75 80
Ser Phe Asp Ala Pro Asn Glu Arg Pro Tyr Ser Leu Lys Ile Arg Asn

85 90 95

Thr Thr Ser Cys Asn Ser Gly Thr Tyr Arg Cys Thr Leu Gln Asp Pro

100 105 110

Asp Gly Gln Arg Asn Leu Ser Gly Lys Val Ile Leu Arg Val Thr Gly

115 120 125

Cys Pro Ala Gln Arg Lys Glu Glu Thr Phe Lys Lys Tyr Arg Ala Glu

130 135 140

Ile Val Leu Leu Leu Ala Leu Val Ile Phe Tyr Leu Thr Leu Ile Ile

145 150 155 160

Phe Thr Cys Lys Phe Ala Arg Leu Gln Ser Ile Phe Pro Asp Phe Ser

165 170 175

Lys Ala Gly Met Glu Arg Ala Phe Leu Pro Val Thr Ser Pro Asn Lys

180 185 190

His Leu Gly Leu Val Thr Pro His Lys Thr Glu Leu Val

195 200 205

<210> 73

<211> 505

<212> PRT

<213> Homo sapiens

<400> 73

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

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
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> 74

<211> 1722

<212> PRT

<213> Homo sapiens

<400> 74

Met Arg Thr Gly Trp Ala Thr Pro Arg Arg Pro Ala Gly Leu Leu Met
1 5 10 15

Leu Leu Phe Trp Phe Phe Asp Leu Ala Glu Pro Ser Gly Arg Ala Ala
20 25 30

Asn Asp Pro Phe Thr Ile Val His Gly Asn Thr Gly Lys Cys Ile Lys

35 40 45

Pro Val Tyr Gly Trp Ile Val Ala Asp Asp Cys Asp Glu Thr Glu Asp

50 55 60

Lys Leu Trp Lys Trp Val Ser Gln His Arg Leu Phe His Leu His Ser

65 70 75 80

Gln Lys Cys Leu Gly Leu Asp Ile Thr Lys Ser Val Asn Glu Leu Arg

85 90 95

Met Phe Ser Cys Asp Ser Ser Ala Met Leu Trp Trp Lys Cys Glu His

100 105 110

His Ser Leu Tyr Gly Ala Ala Arg Tyr Arg Leu Ala Leu Lys Asp Gly

115 120 125

His Gly Thr Ala Ile Ser Asn Ala Ser Asp Val Trp Lys Lys Gly Gly

130 135 140

Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile Tyr Thr Arg

145 150 155 160

Asp Gly Asn Ser Tyr Gly Arg Pro Cys Glu Phe Pro Phe Leu Ile Asp

165 170 175

Gly Thr Trp His His Asp Cys Ile Leu Asp Glu Asp His Ser Gly Pro

180 185 190

Trp Cys Ala Thr Thr Leu Asn Tyr Glu Tyr Asp Arg Lys Trp Gly Ile

195 200 205

Cys Leu Lys Pro Glu Asn Gly Cys Glu Asp Asn Trp Glu Lys Asn Glu

210 215 220

Gln Phe Gly Ser Cys Tyr Gln Phe Asn Thr Gln Thr Ala Leu Ser Trp

225 230 235 240

Lys Glu Ala Tyr Val Ser Cys Gln Asn Gln Gly Ala Asp Leu Leu Ser

245 250 255

Ile Asn Ser Ala Ala Glu Leu Thr Tyr Leu Lys Glu Lys Glu Gly Ile

260 265 270

Ala Lys Ile Phe Trp Ile Gly Leu Asn Gln Leu Tyr Ser Ala Arg Gly

275 280 285

Trp Glu Trp Ser Asp His Lys Pro Leu Asn Phe Leu Asn Trp Asp Pro
290 295 300
Asp Arg Pro Ser Ala Pro Thr Ile Gly Gly Ser Ser Cys Ala Arg Met
305 310 315 320
Asp Ala Glu Ser Gly Leu Trp Gln Ser Phe Ser Cys Glu Ala Gln Leu
325 330 335

Pro Tyr Val Cys Arg Lys Pro Leu Asn Asn Thr Val Glu Leu Thr Asp
340 345 350
Val Trp Thr Tyr Ser Asp Thr Arg Cys Asp Ala Gly Trp Leu Pro Asn
355 360 365
Asn Gly Phe Cys Tyr Leu Leu Val Asn Glu Ser Asn Ser Trp Asp Lys
370 375 380
Ala His Ala Lys Cys Lys Ala Phe Ser Ser Asp Leu Ile Ser Ile His
385 390 395 400

Ser Leu Ala Asp Val Glu Val Val Val Thr Lys Leu His Asn Glu Asp
405 410 415
Ile Lys Glu Glu Val Trp Ile Gly Leu Lys Asn Ile Asn Ile Pro Thr
420 425 430
Leu Phe Gln Trp Ser Asp Gly Thr Glu Val Thr Leu Thr Tyr Trp Asp
435 440 445
Glu Asn Glu Pro Asn Val Pro Tyr Asn Lys Thr Pro Asn Cys Val Ser
450 455 460

Tyr Leu Gly Glu Leu Gly Gln Trp Lys Val Gln Ser Cys Glu Glu Lys
465 470 475 480
Leu Lys Tyr Val Cys Lys Arg Lys Gly Glu Lys Leu Asn Asp Ala Ser
485 490 495
Ser Asp Lys Met Cys Pro Pro Asp Glu Gly Trp Lys Arg His Gly Glu
500 505 510
Thr Cys Tyr Lys Ile Tyr Glu Asp Glu Val Pro Phe Gly Thr Asn Cys
515 520 525

Asn Leu Thr Ile Thr Ser Arg Phe Glu Gln Glu Tyr Leu Asn Asp Leu

530 535 540

Met Lys Lys Tyr Asp Lys Ser Leu Arg Lys Tyr Phe Trp Thr Gly Leu

545 550 555 560

Arg Asp Val Asp Ser Cys Gly Glu Tyr Asn Trp Ala Thr Val Gly Gly

565 570 575

Arg Arg Arg Ala Val Thr Phe Ser Asn Trp Asn Phe Leu Glu Pro Ala

580 585 590

Ser Pro Gly Gly Cys Val Ala Met Ser Thr Gly Lys Ser Val Gly Lys

595 600 605

Trp Glu Val Lys Asp Cys Arg Ser Phe Lys Ala Leu Ser Ile Cys Lys

610 615 620

Lys Met Ser Gly Pro Leu Gly Pro Glu Glu Ala Ser Pro Lys Pro Asp

625 630 635 640

Asp Pro Cys Pro Glu Gly Trp Gln Ser Phe Pro Ala Ser Leu Ser Cys

645 650 655

Tyr Lys Val Phe His Ala Glu Arg Ile Val Arg Lys Arg Asn Trp Glu

660 665 670

Glu Ala Glu Arg Phe Cys Gln Ala Leu Gly Ala His Leu Ser Ser Phe

675 680 685

Ser His Val Asp Glu Ile Lys Glu Phe Leu His Phe Leu Thr Asp Gln

690 695 700

Phe Ser Gly Gln His Trp Leu Trp Ile Gly Leu Asn Lys Arg Ser Pro

705 710 715 720

Asp Leu Gln Gly Ser Trp Gln Trp Ser Asp Arg Thr Pro Val Ser Thr

725 730 735

Ile Ile Met Pro Asn Glu Phe Gln Gln Asp Tyr Asp Ile Arg Asp Cys

740 745 750

Ala Ala Val Lys Val Phe His Arg Pro Trp Arg Arg Gly Trp His Phe

755 760 765

Tyr Asp Asp Arg Glu Phe Ile Tyr Leu Arg Pro Phe Ala Cys Asp Thr

770 775 780

Lys Leu Glu Trp Val Cys Gln Ile Pro Lys Gly Arg Thr Pro Lys Thr
785 790 795 800
Pro Asp Trp Tyr Asn Pro Asp Arg Ala Gly Ile His Gly Pro Pro Leu
805 810 815
Ile Ile Glu Gly Ser Glu Tyr Trp Phe Val Ala Asp Leu His Leu Asn
820 825 830
Tyr Glu Glu Ala Val Leu Tyr Cys Ala Ser Asn His Ser Phe Leu Ala
835 840 845

Thr Ile Thr Ser Phe Val Gly Leu Lys Ala Ile Lys Asn Lys Ile Ala
850 855 860
Asn Ile Ser Gly Asp Gly Gln Lys Trp Trp Ile Arg Ile Ser Glu Trp
865 870 875 880
Pro Ile Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro Trp His Arg Phe
885 890 895
Pro Val Thr Phe Gly Glu Glu Cys Leu Tyr Met Ser Ala Lys Thr Trp
900 905 910

Leu Ile Asp Leu Gly Lys Pro Thr Asp Cys Ser Thr Lys Leu Pro Phe
915 920 925
Ile Cys Glu Lys Tyr Asn Val Ser Ser Leu Glu Lys Tyr Ser Pro Asp
930 935 940
Ser Ala Ala Lys Val Gln Cys Ser Glu Gln Trp Ile Pro Phe Gln Asn
945 950 955 960
Lys Cys Phe Leu Lys Ile Lys Pro Val Ser Leu Thr Phe Ser Gln Ala
965 970 975

Ser Asp Thr Cys His Ser Tyr Gly Gly Thr Leu Pro Ser Val Leu Ser
980 985 990
Gln Ile Glu Gln Asp Phe Ile Thr Ser Leu Leu Pro Asp Met Glu Ala
995 1000 1005
Thr Leu Trp Ile Gly Leu Arg Trp Thr Ala Tyr Glu Lys Ile Asn
1010 1015 1020
Lys Trp Thr Asp Asn Arg Glu Leu Thr Tyr Ser Asn Phe His Pro

1025 1030 1035

Leu Leu Val Ser Gly Arg Leu Arg Ile Pro Glu Asn Phe Phe Glu
1040 1045 1050
Glu Glu Ser Arg Tyr His Cys Ala Leu Ile Leu Asn Leu Gln Lys
1055 1060 1065
Ser Pro Phe Thr Gly Thr Trp Asn Phe Thr Ser Cys Ser Glu Arg
1070 1075 1080
His Phe Val Ser Leu Cys Gln Lys Tyr Ser Glu Val Lys Ser Arg
1085 1090 1095

Gln Thr Leu Gln Asn Ala Ser Glu Thr Val Lys Tyr Leu Asn Asn
1100 1105 1110
Leu Tyr Lys Ile Ile Pro Lys Thr Leu Thr Trp His Ser Ala Lys
1115 1120 1125
Arg Glu Cys Leu Lys Ser Asn Met Gln Leu Val Ser Ile Thr Asp
1130 1135 1140
Pro Tyr Gln Gln Ala Phe Leu Ser Val Gln Ala Leu Leu His Asn
1145 1150 1155

Ser Ser Leu Trp Ile Gly Leu Phe Ser Gln Asp Asp Glu Leu Asn
1160 1165 1170
Phe Gly Trp Ser Asp Gly Lys Arg Leu His Phe Ser Arg Trp Ala
1175 1180 1185
Glu Thr Asn Gly Gln Leu Glu Asp Cys Val Val Leu Asp Thr Asp
1190 1195 1200
Gly Phe Trp Lys Thr Val Asp Cys Asn Asp Asn Gln Pro Gly Ala
1205 1210 1215

Ile Cys Tyr Tyr Ser Gly Asn Glu Thr Glu Lys Glu Val Lys Pro
1220 1225 1230
Val Asp Ser Val Lys Cys Pro Ser Pro Val Leu Asn Thr Pro Trp
1235 1240 1245
Ile Pro Phe Gln Asn Cys Cys Tyr Asn Phe Ile Ile Thr Lys Asn
1250 1255 1260

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Arg His  Met Ala Thr Thr Gln  Asp Glu Val His Thr  Lys Cys Gln
    1265                 1270                 1275

Lys Leu  Asn Pro Lys Ser His  Ile Leu Ser Ile Arg  Asp Glu Lys
    1280                 1285                 1290
Glu Asn  Asn Phe Val Leu Glu  Gln Leu Leu Tyr Phe  Asn Tyr Met
    1295                 1300                 1305
Ala Ser  Trp Val Met Leu Gly  Ile Thr Tyr Arg Asn  Lys Ser Leu
    1310                 1315                 1320
Met Trp  Phe Asp Lys Thr Pro  Leu Ser Tyr Thr His  Trp Arg Ala
    1325                 1330                 1335

Gly Arg  Pro Thr Ile Lys Asn  Glu Lys Phe Leu Ala  Gly Leu Ser
    1340                 1345                 1350
Thr Asp  Gly Phe Trp Asp Ile  Gln Thr Phe Lys Val  Ile Glu Glu
    1355                 1360                 1365
Ala Val  Tyr Phe His Gln His  Ser Ile Leu Ala Cys  Lys Ile Glu
    1370                 1375                 1380
Met Val  Asp Tyr Lys Glu Glu  Tyr Asn Thr Thr Leu  Pro Gln Phe
    1385                 1390                 1395

Met Pro  Tyr Glu Asp Gly Ile  Tyr Ser Val Ile Gln  Lys Lys Val
    1400                 1405                 1410
Thr Trp  Tyr Glu Ala Leu Asn  Met Cys Ser Gln Ser  Gly Gly His
    1415                 1420                 1425
Leu Ala  Ser Val His Asn Gln  Asn Gly Gln Leu Phe  Leu Glu Asp
    1430                 1435                 1440
Ile Val  Lys Arg Asp Gly Phe  Pro Leu Trp Val Gly  Leu Ser Ser
    1445                 1450                 1455

His Asp  Gly Ser Glu Ser Ser  Phe Glu Trp Ser Asp  Gly Ser Thr
    1460                 1465                 1470
Phe Asp  Tyr Ile Pro Trp Lys  Gly Gln Thr Ser Pro  Gly Asn Cys
    1475                 1480                 1485
Val Leu  Leu Asp Pro Lys Gly  Thr Trp Lys His Glu  Lys Cys Asn
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1490 1495 1500

Ser Val Lys Asp Gly Ala Ile Cys Tyr Lys Pro Thr Lys Ser Lys

1505 1510 1515

Lys Leu Ser Arg Leu Thr Tyr Ser Ser Arg Cys Pro Ala Ala Lys

1520 1525 1530

Glu Asn Gly Ser Arg Trp Ile Gln Tyr Lys Gly His Cys Tyr Lys

1535 1540 1545

Ser Asp Gln Ala Leu His Ser Phe Ser Glu Ala Lys Lys Leu Cys

1550 1555 1560

Ser Lys His Asp His Ser Ala Thr Ile Val Ser Ile Lys Asp Glu

1565 1570 1575

Asp Glu Asn Lys Phe Val Ser Arg Leu Met Arg Glu Asn Asn Asn

1580 1585 1590

Ile Thr Met Arg Val Trp Leu Gly Leu Ser Gln His Ser Val Asp

1595 1600 1605

Gln Ser Trp Ser Trp Leu Asp Gly Ser Glu Val Thr Phe Val Lys

1610 1615 1620

Trp Glu Asn Lys Ser Lys Ser Gly Val Gly Arg Cys Ser Met Leu

1625 1630 1635

Ile Ala Ser Asn Glu Thr Trp Lys Lys Val Glu Cys Glu His Gly

1640 1645 1650

Phe Gly Arg Val Val Cys Lys Val Pro Leu Gly Pro Asp Tyr Thr

1655 1660 1665

Ala Ile Ala Ile Ile Val Ala Thr Leu Ser Ile Leu Val Leu Met

1670 1675 1680

Gly Gly Leu Ile Trp Phe Leu Phe Gln Arg His Arg Leu His Leu

1685 1690 1695

Ala Gly Phe Ser Ser Val Arg Tyr Ala Gln Gly Val Asn Glu Asp

1700 1705 1710

Glu Ile Met Leu Pro Ser Phe His Asp

1715 1720

<210> 75

<211> 298

<212> PRT

<213> Homo sapiens

<400> 75

Met Ala Arg Arg Ser Arg His Arg Leu Leu Leu Leu Leu Leu Arg Tyr
1 5 10 15

Leu Val Val Ala Leu Gly Tyr His Lys Ala Tyr Gly Phe Ser Ala Pro
20 25 30

Lys Asp Gln Gln Val Val Thr Ala Val Glu Tyr Gln Glu Ala Ile Leu
35 40 45

Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
50 55 60

Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
65 70 75 80

Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
85 90 95

Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser
100 105 110

Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
115 120 125

Glu Val Leu Val Ala Pro Ala Val Pro Ser Cys Glu Val Pro Ser Ser
130 135 140

Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys Gln Asp Lys Glu Gly
145 150 155 160

Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu
165 170 175

Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met
180 185 190

Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp
195 200 205

Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg

210 215 220

Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
225 230 235 240
Ile Ala Ala Val Val Val Val Ala Leu Val Ile Ser Val Cys Gly Leu
245 250 255
Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe Ser Lys Glu Thr Ser
260 265 270
Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr Thr Met Ser Glu Asn
275 280 285

Asp Phe Lys His Thr Lys Ser Phe Ile Ile
290 295

<210> 76
<211> 963
<212> PRT
<213> Homo sapiens
<400> 76
Met Gly Leu Pro Glu Pro Gly Pro Leu Arg Leu Leu Ala Leu Leu Leu
1 5 10 15
Leu Leu Leu Leu Leu Leu Leu Leu Gln Leu Gln His Leu Ala Ala Ala
20 25 30
Ala Ala Asp Pro Leu Leu Gly Gly Gln Gly Pro Ala Lys Asp Cys Glu
35 40 45

Lys Asp Gln Phe Gln Cys Arg Asn Glu Arg Cys Ile Pro Ser Val Trp
50 55 60
Arg Cys Asp Glu Asp Asp Asp Cys Leu Asp His Ser Asp Glu Asp Asp
65 70 75 80
Cys Pro Lys Lys Thr Cys Ala Asp Ser Asp Phe Thr Cys Asp Asn Gly
85 90 95
His Cys Ile His Glu Arg Trp Lys Cys Asp Gly Glu Glu Glu Cys Pro
100 105 110

Asp Gly Ser Asp Glu Ser Glu Ala Thr Cys Thr Lys Gln Val Cys Pro

115 120 125

Ala Glu Lys Leu Ser Cys Gly Pro Thr Ser His Lys Cys Val Pro Ala

130 135 140

Ser Trp Arg Cys Asp Gly Glu Lys Asp Cys Glu Gly Gly Ala Asp Glu

145 150 155 160

Ala Gly Cys Ala Thr Leu Cys Ala Pro His Glu Phe Gln Cys Gly Asn

165 170 175

Arg Ser Cys Leu Ala Ala Val Phe Val Cys Asp Gly Asp Asp Asp Cys

180 185 190

Gly Asp Gly Ser Asp Glu Arg Gly Cys Ala Asp Pro Ala Cys Gly Pro

195 200 205

Arg Glu Phe Arg Cys Gly Gly Asp Gly Gly Gly Ala Cys Ile Pro Glu

210 215 220

Arg Trp Val Cys Asp Arg Gln Phe Asp Cys Glu Asp Arg Ser Asp Glu

225 230 235 240

Ala Ala Glu Leu Cys Gly Arg Pro Gly Pro Gly Ala Thr Ser Ala Pro

245 250 255

Ala Ala Cys Ala Thr Ala Ser Gln Phe Ala Cys Arg Ser Gly Glu Cys

260 265 270

Val His Leu Gly Trp Arg Cys Asp Gly Asp Arg Asp Cys Lys Asp Lys

275 280 285

Ser Asp Glu Ala Asp Cys Pro Leu Gly Thr Cys Arg Gly Asp Glu Phe

290 295 300

Gln Cys Gly Asp Gly Thr Cys Val Leu Ala Ile Lys His Cys Asn Gln

305 310 315 320

Glu Gln Asp Cys Pro Asp Gly Ser Asp Glu Ala Gly Cys Leu Gln Gly

325 330 335

Leu Asn Glu Cys Leu His Asn Asn Gly Gly Cys Ser His Ile Cys Thr

340 345 350

Asp Leu Lys Ile Gly Phe Glu Cys Thr Cys Pro Ala Gly Phe Gln Leu

355 360 365

Leu Asp Gln Lys Thr Cys Gly Asp Ile Asp Glu Cys Lys Asp Pro Asp
370 375 380
Ala Cys Ser Gln Ile Cys Val Asn Tyr Lys Gly Tyr Phe Lys Cys Glu
385 390 395 400
Cys Tyr Pro Gly Tyr Glu Met Asp Leu Leu Thr Lys Asn Cys Lys Ala
405 410 415
Ala Ala Gly Lys Ser Pro Ser Leu Ile Phe Thr Asn Arg His Glu Val
420 425 430

Arg Arg Ile Asp Leu Val Lys Arg Asn Tyr Ser Arg Leu Ile Pro Met
435 440 445
Leu Lys Asn Val Val Ala Leu Asp Val Glu Val Ala Thr Asn Arg Ile
450 455 460
Tyr Trp Cys Asp Leu Ser Tyr Arg Lys Ile Tyr Ser Ala Tyr Met Asp
465 470 475 480
Lys Ala Ser Asp Pro Lys Glu Gln Glu Val Leu Ile Asp Glu Gln Leu
485 490 495

His Ser Pro Glu Gly Leu Ala Val Asp Trp Val His Lys His Ile Tyr
500 505 510
Trp Thr Asp Ser Gly Asn Lys Thr Ile Ser Val Ala Thr Val Asp Gly
515 520 525
Gly Arg Arg Arg Thr Leu Phe Ser Arg Asn Leu Ser Glu Pro Arg Ala
530 535 540
Ile Ala Val Asp Pro Leu Arg Gly Phe Met Tyr Trp Ser Asp Trp Gly
545 550 555 560

Asp Gln Ala Lys Ile Glu Lys Ser Gly Leu Asn Gly Val Asp Arg Gln
565 570 575
Thr Leu Val Ser Asp Asn Ile Glu Trp Pro Asn Gly Ile Thr Leu Asp
580 585 590
Leu Leu Ser Gln Arg Leu Tyr Trp Val Asp Ser Lys Leu His Gln Leu
595 600 605
Ser Ser Ile Asp Phe Ser Gly Gly Asn Arg Lys Thr Leu Ile Ser Ser

610 615 620

Thr Asp Phe Leu Ser His Pro Phe Gly Ile Ala Val Phe Glu Asp Lys
625 630 635 640
Val Phe Trp Thr Asp Leu Glu Asn Glu Ala Ile Phe Ser Ala Asn Arg
645 650 655
Leu Asn Gly Leu Glu Ile Ser Ile Leu Ala Glu Asn Leu Asn Asn Pro
660 665 670
His Asp Ile Val Ile Phe His Glu Leu Lys Gln Pro Arg Ala Pro Asp
675 680 685

Ala Cys Glu Leu Ser Val Gln Pro Asn Gly Gly Cys Glu Tyr Leu Cys
690 695 700
Leu Pro Ala Pro Gln Ile Ser Ser His Ser Pro Lys Tyr Thr Cys Ala
705 710 715 720
Cys Pro Asp Thr Met Trp Leu Gly Pro Asp Met Lys Arg Cys Tyr Arg
725 730 735
Ala Pro Gln Ser Thr Ser Thr Thr Thr Leu Ala Ser Thr Met Thr Arg
740 745 750

Thr Val Pro Ala Thr Thr Arg Ala Pro Gly Thr Thr Val His Arg Ser
755 760 765
Thr Tyr Gln Asn His Ser Thr Glu Thr Pro Ser Leu Thr Ala Ala Val
770 775 780
Pro Ser Ser Val Ser Val Pro Arg Ala Pro Ser Ile Ser Pro Ser Thr
785 790 795 800
Leu Ser Pro Ala Thr Ser Asn His Ser Gln His Tyr Ala Asn Glu Asp
805 810 815

Ser Lys Met Gly Ser Thr Val Thr Ala Ala Val Ile Gly Ile Ile Val
820 825 830
Pro Ile Val Val Ile Ala Leu Leu Cys Met Ser Gly Tyr Leu Ile Trp
835 840 845
Arg Asn Trp Lys Arg Lys Asn Thr Lys Ser Met Asn Phe Asp Asn Pro
850 855 860

Val Tyr Arg Lys Thr Thr Glu Glu Glu Asp Glu Asp Glu Leu His Ile
865 870 875 880

Gly Arg Thr Ala Gln Ile Gly His Val Tyr Pro Ala Ala Ile Ser Ser
885 890 895

Phe Asp Arg Pro Leu Trp Ala Glu Pro Cys Leu Gly Glu Thr Arg Glu
900 905 910

Pro Glu Asp Pro Ala Pro Ala Leu Lys Glu Leu Phe Val Leu Pro Gly
915 920 925

Glu Pro Arg Ser Gln Leu His Gln Leu Pro Lys Asn Pro Leu Ser Glu
930 935 940

Leu Pro Val Val Lys Ser Lys Arg Val Ala Leu Ser Leu Glu Asp Asp
945 950 955 960

Gly Leu Pro

<210> 77

<211> 897

<212> PRT

<213> Homo sapiens

<400> 77

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> 78

<211> 325

<212> PRT

<213> Homo sapiens

<400> 78

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> 79
<211> 489
<212> PRT
<213> Homo sapiens
<400> 79

Met Ala Leu Leu Phe Leu Leu Pro Leu Val Met Gln Gly Val Ser Arg
1 5 10 15

Ala Glu Met Gly Thr Ala Asp Leu Gly Pro Ser Ser Val Pro Thr Pro
20 25 30
Thr Asn Val Thr Ile Glu Ser Tyr Asn Met Asn Pro Ile Val Tyr Trp
35 40 45
Glu Tyr Gln Ile Met Pro Gln Val Pro Val Phe Thr Val Glu Val Lys
50 55 60
Asn Tyr Gly Val Lys Asn Ser Glu Trp Ile Asp Ala Cys Ile Asn Ile
65 70 75 80

Ser His His Tyr Cys Asn Ile Ser Asp His Val Gly Asp Pro Ser Asn
85 90 95
Ser Leu Trp Val Arg Val Lys Ala Arg Val Gly Gln Lys Glu Ser Ala
100 105 110
Tyr Ala Lys Ser Glu Glu Phe Ala Val Cys Arg Asp Gly Lys Ile Gly
115 120 125
Pro Pro Lys Leu Asp Ile Arg Lys Glu Glu Lys Gln Ile Met Ile Asp
130 135 140

Ile Phe His Pro Ser Val Phe Val Asn Gly Asp Glu Gln Glu Val Asp
145 150 155 160
Tyr Asp Pro Glu Thr Thr Cys Tyr Ile Arg Val Tyr Asn Val Tyr Val
165 170 175
Arg Met Asn Gly Ser Glu Ile Gln Tyr Lys Ile Leu Thr Gln Lys Glu
180 185 190
Asp Asp Cys Asp Glu Ile Gln Cys Gln Leu Ala Ile Pro Val Ser Ser
195 200 205

Leu Asn Ser Gln Tyr Cys Val Ser Ala Glu Gly Val Leu His Val Trp
210 215 220
Gly Val Thr Thr Glu Lys Ser Lys Glu Val Cys Ile Thr Ile Phe Asn
225 230 235 240
Ser Ser Ile Lys Gly Ser Leu Trp Ile Pro Val Val Ala Ala Leu Leu
245 250 255
Leu Phe Leu Val Leu Ser Leu Val Phe Ile Cys Phe Tyr Ile Lys Lys

260 265 270

Ile Asn Pro Leu Lys Glu Lys Ser Ile Ile Leu Pro Lys Ser Leu Ile
275 280 285
Ser Val Val Arg Ser Ala Thr Leu Glu Thr Lys Pro Glu Ser Lys Tyr
290 295 300
Val Ser Leu Ile Thr Ser Tyr Gln Pro Phe Ser Leu Glu Lys Glu Val
305 310 315 320
Val Cys Glu Glu Pro Leu Ser Pro Ala Thr Val Pro Gly Met His Thr
325 330 335

Glu Asp Asn Pro Gly Lys Val Glu His Thr Glu Glu Leu Ser Ser Ile
340 345 350
Thr Glu Val Val Thr Thr Glu Glu Asn Ile Pro Asp Val Val Pro Gly
355 360 365
Ser His Leu Thr Pro Ile Glu Arg Glu Ser Ser Ser Pro Leu Ser Ser
370 375 380
Asn Gln Ser Glu Pro Gly Ser Ile Ala Leu Asn Ser Tyr His Ser Arg
385 390 395 400

Asn Cys Ser Glu Ser Asp His Ser Arg Asn Gly Phe Asp Thr Asp Ser
405 410 415
Ser Cys Leu Glu Ser His Ser Ser Leu Ser Asp Ser Glu Phe Pro Pro
420 425 430
Asn Asn Lys Gly Glu Ile Lys Thr Glu Gly Gln Glu Leu Ile Thr Val
435 440 445
Ile Lys Ala Pro Thr Ser Phe Gly Tyr Asp Lys Pro His Val Leu Val
450 455 460

Asp Leu Leu Val Asp Asp Ser Gly Lys Glu Ser Leu Ile Gly Tyr Arg
465 470 475 480
Pro Thr Glu Asp Ser Lys Glu Phe Ser
485

<210> 80

<211> 1221

<212> PRT

<213> Homo sapiens

<400> 80

Met Met Phe Arg Ser Asp Arg Met Trp Ser Cys His Trp Lys Trp Lys
1 5 10 15

Pro Ser Pro Leu Leu Phe Leu Phe Ala Leu Tyr Ile Met Cys Val Pro
20 25 30

His Ser Val Trp Gly Cys Ala Asn Cys Arg Val Val Leu Ser Asn Pro
35 40 45

Ser Gly Thr Phe Thr Ser Pro Cys Tyr Pro Asn Asp Tyr Pro Asn Ser
50 55 60

Gln Ala Cys Met Trp Thr Leu Arg Ala Pro Thr Gly Tyr Ile Ile Gln
65 70 75 80

Ile Thr Phe Asn Asp Phe Asp Ile Glu Glu Ala Pro Asn Cys Ile Tyr
85 90 95

Asp Ser Leu Ser Leu Asp Asn Gly Glu Ser Gln Thr Lys Phe Cys Gly
100 105 110

Ala Thr Ala Lys Gly Leu Ser Phe Asn Ser Ser Ala Asn Glu Met His
115 120 125

Val Ser Phe Ser Ser Asp Phe Ser Ile Gln Lys Lys Gly Phe Asn Ala
130 135 140

Ser Tyr Ile Arg Val Ala Val Ser Leu Arg Asn Gln Lys Val Ile Leu
145 150 155 160

Pro Gln Thr Ser Asp Ala Tyr Gln Val Ser Val Ala Lys Ser Ile Ser
165 170 175

Ile Pro Glu Leu Ser Ala Phe Thr Leu Cys Phe Glu Ala Thr Lys Val
180 185 190

Gly His Glu Asp Ser Asp Trp Thr Ala Phe Ser Tyr Ser Asn Ala Ser
195 200 205

Phe Thr Gln Leu Leu Ser Phe Gly Lys Ala Lys Ser Gly Tyr Phe Leu
210 215 220

Ser Ile Ser Asp Ser Lys Cys Leu Leu Asn Asn Ala Leu Pro Val Lys
225 230 235 240
Glu Lys Glu Asp Ile Phe Ala Glu Ser Phe Glu Gln Leu Cys Leu Val
245 250 255
Trp Asn Asn Ser Leu Gly Ser Ile Gly Val Asn Phe Lys Arg Asn Tyr
260 265 270
Glu Thr Val Pro Cys Asp Ser Thr Ile Ser Lys Val Ile Pro Gly Asn
275 280 285

Gly Lys Leu Leu Leu Gly Ser Asn Gln Asn Glu Ile Val Ser Leu Lys
290 295 300
Gly Asp Ile Tyr Asn Phe Arg Leu Trp Asn Phe Thr Met Asn Ala Lys
305 310 315 320
Ile Leu Ser Asn Leu Ser Cys Asn Val Lys Gly Asn Val Val Asp Trp
325 330 335
Gln Asn Asp Phe Trp Asn Ile Pro Asn Leu Ala Leu Lys Ala Glu Ser
340 345 350

Asn Leu Ser Cys Gly Ser Tyr Leu Ile Pro Leu Pro Ala Ala Glu Leu
355 360 365
Ala Ser Cys Ala Asp Leu Gly Thr Leu Cys Gln Ala Thr Val Asn Ser
370 375 380
Pro Ser Thr Thr Pro Pro Thr Val Thr Thr Asn Met Pro Val Thr Asn
385 390 395 400
Arg Ile Asp Lys Gln Arg Asn Asp Gly Ile Ile Tyr Arg Ile Ser Val
405 410 415

Val Ile Gln Asn Ile Leu Arg His Pro Glu Val Lys Val Gln Ser Lys
420 425 430
Val Ala Glu Trp Leu Asn Ser Thr Phe Gln Asn Trp Asn Tyr Thr Val
435 440 445
Tyr Val Val Asn Ile Ser Phe His Leu Ser Ala Gly Glu Asp Lys Ile
450 455 460
Lys Val Lys Arg Ser Leu Glu Asp Glu Pro Arg Leu Val Leu Trp Ala

465 470 475 480

Leu Leu Val Tyr Asn Ala Thr Asn Asn Thr Asn Leu Glu Gly Lys Ile
485 490 495
Ile Gln Gln Lys Leu Leu Lys Asn Asn Glu Ser Leu Asp Glu Gly Leu
500 505 510
Arg Leu His Thr Val Asn Val Arg Gln Leu Gly His Cys Leu Ala Met
515 520 525
Glu Glu Pro Lys Gly Tyr Tyr Trp Pro Ser Ile Gln Pro Ser Glu Tyr
530 535 540

Val Leu Pro Cys Pro Asp Lys Pro Gly Phe Ser Ala Ser Arg Ile Cys
545 550 555 560
Phe Tyr Asn Ala Thr Asn Pro Leu Val Thr Tyr Trp Gly Pro Val Asp
565 570 575
Ile Ser Asn Cys Leu Lys Glu Ala Asn Glu Val Ala Asn Gln Ile Leu
580 585 590
Asn Leu Thr Ala Asp Gly Gln Asn Leu Thr Ser Ala Asn Ile Thr Asn
595 600 605

Ile Val Glu Gln Val Lys Arg Ile Val Asn Lys Glu Glu Asn Ile Asp
610 615 620
Ile Thr Leu Gly Ser Thr Leu Met Asn Ile Phe Ser Asn Ile Leu Ser
625 630 635 640
Ser Ser Asp Ser Asp Leu Leu Glu Ser Ser Ser Glu Ala Leu Lys Thr
645 650 655
Ile Asp Glu Leu Ala Phe Lys Ile Asp Leu Asn Ser Thr Ser His Val
660 665 670

Asn Ile Thr Thr Arg Asn Leu Ala Leu Ser Val Ser Ser Leu Leu Pro
675 680 685
Gly Thr Asn Ala Ile Ser Asn Phe Ser Ile Gly Leu Pro Ser Asn Asn
690 695 700
Glu Ser Tyr Phe Gln Met Asp Phe Glu Ser Gly Gln Val Asp Pro Leu
705 710 715 720

Ala Ser Val Ile Leu Pro Pro Asn Leu Leu Glu Asn Leu Ser Pro Glu
725 730 735

Asp Ser Val Leu Val Arg Arg Ala Gln Phe Thr Phe Phe Asn Lys Thr
740 745 750

Gly Leu Phe Gln Asp Val Gly Pro Gln Arg Lys Thr Leu Val Ser Tyr
755 760 765

Val Met Ala Cys Ser Ile Gly Asn Ile Thr Ile Gln Asn Leu Lys Asp
770 775 780

Pro Val Gln Ile Lys Ile Lys His Thr Arg Thr Gln Glu Val His His
785 790 795 800

Pro Ile Cys Ala Phe Trp Asp Leu Asn Lys Asn Lys Ser Phe Gly Gly
805 810 815

Trp Asn Thr Ser Gly Cys Val Ala His Arg Asp Ser Asp Ala Ser Glu
820 825 830

Thr Val Cys Leu Cys Asn His Phe Thr His Phe Gly Val Leu Met Asp
835 840 845

Leu Pro Arg Ser Ala Ser Gln Leu Asp Ala Arg Asn Thr Lys Val Leu
850 855 860

Thr Phe Ile Ser Tyr Ile Gly Cys Gly Ile Ser Ala Ile Phe Ser Ala
865 870 875 880

Ala Thr Leu Leu Thr Tyr Val Ala Phe Glu Lys Leu Arg Arg Asp Tyr
885 890 895

Pro Ser Lys Ile Leu Met Asn Leu Ser Thr Ala Leu Leu Phe Leu Asn
900 905 910

Leu Leu Phe Leu Leu Asp Gly Trp Ile Thr Ser Phe Asn Val Asp Gly
915 920 925

Leu Cys Ile Ala Val Ala Val Leu Leu His Phe Phe Leu Leu Ala Thr
930 935 940

Phe Thr Trp Met Gly Leu Glu Ala Ile His Met Tyr Ile Ala Leu Val
945 950 955 960

Lys Val Phe Asn Thr Tyr Ile Arg Arg Tyr Ile Leu Lys Phe Cys Ile

965 970 975

Ile Gly Trp Gly Leu Pro Ala Leu Val Val Ser Val Val Leu Ala Ser

980 985 990

Arg Asn Asn Asn Glu Val Tyr Gly Lys Glu Ser Tyr Gly Lys Glu Lys

995 1000 1005

Gly Asp Glu Phe Cys Trp Ile Gln Asp Pro Val Ile Phe Tyr Val

1010 1015 1020

Thr Cys Ala Gly Tyr Phe Gly Val Met Phe Phe Leu Asn Ile Ala

1025 1030 1035

Met Phe Ile Val Val Met Val Gln Ile Cys Gly Arg Asn Gly Lys

1040 1045 1050

Arg Ser Asn Arg Thr Leu Arg Glu Glu Val Leu Arg Asn Leu Arg

1055 1060 1065

Ser Val Val Ser Leu Thr Phe Leu Leu Gly Met Thr Trp Gly Phe

1070 1075 1080

Ala Phe Phe Ala Trp Gly Pro Leu Asn Ile Pro Phe Met Tyr Leu

1085 1090 1095

Phe Ser Ile Phe Asn Ser Leu Gln Gly Leu Phe Ile Phe Ile Phe

1100 1105 1110

His Cys Ala Met Lys Glu Asn Val Gln Lys Gln Trp Arg Gln His

1115 1120 1125

Leu Cys Cys Gly Arg Phe Arg Leu Ala Asp Asn Ser Asp Trp Ser

1130 1135 1140

Lys Thr Ala Thr Asn Ile Ile Lys Lys Ser Ser Asp Asn Leu Gly

1145 1150 1155

Lys Ser Leu Ser Ser Ser Ser Ile Gly Ser Asn Ser Thr Tyr Leu

1160 1165 1170

Thr Ser Lys Ser Lys Ser Ser Ser Thr Thr Tyr Phe Lys Arg Asn

1175 1180 1185

Ser His Thr Asp Asn Val Ser Tyr Glu His Ser Phe Asn Lys Ser

1190 1195 1200

Gly Ser Leu Arg Gln Cys Phe His Gly Gln Val Leu Val Lys Thr

1205 1210 1215

Gly Pro Cys

1220

<210> 81

<211> 412

<212> PRT

<213> Homo sapiens

<400> 81

Met Pro Ile Met Gly Ser Ser Val Tyr Ile Thr Val Glu Leu Ala Ile

1 5 10 15

Ala Val Leu Ala Ile Leu Gly Asn Val Leu Val Cys Trp Ala Val Trp

20 25 30

Leu Asn Ser Asn Leu Gln Asn Val Thr Asn Tyr Phe Val Val Ser Leu

35 40 45

Ala Ala Ala Asp Ile Ala Val Gly Val Leu Ala Ile Pro Phe Ala Ile

50 55 60

Thr Ile Ser Thr Gly Phe Cys Ala Ala Cys His Gly Cys Leu Phe Ile

65 70 75 80

Ala Cys Phe Val Leu Val Leu Thr Gln Ser Ser Ile Phe Ser Leu Leu

85 90 95

Ala Ile Ala Ile Asp Arg Tyr Ile Ala Ile Arg Ile Pro Leu Arg Tyr

100 105 110

Asn Gly Leu Val Thr Gly Thr Arg Ala Lys Gly Ile Ile Ala Ile Cys

115 120 125

Trp Val Leu Ser Phe Ala Ile Gly Leu Thr Pro Met Leu Gly Trp Asn

130 135 140

Asn Cys Gly Gln Pro Lys Glu Gly Lys Asn His Ser Gln Gly Cys Gly

145 150 155 160

Glu Gly Gln Val Ala Cys Leu Phe Glu Asp Val Val Pro Met Asn Tyr

165 170 175

Met Val Tyr Phe Asn Phe Phe Ala Cys Val Leu Val Pro Leu Leu Leu

180 185 190

Met Leu Gly Val Tyr Leu Arg Ile Phe Leu Ala Ala Arg Arg Gln Leu

195 200 205

Lys Gln Met Glu Ser Gln Pro Leu Pro Gly Glu Arg Ala Arg Ser Thr

210 215 220

Leu Gln Lys Glu Val His Ala Ala Lys Ser Leu Ala Ile Ile Val Gly

225 230 235 240

Leu Phe Ala Leu Cys Trp Leu Pro Leu His Ile Ile Asn Cys Phe Thr

245 250 255

Phe Phe Cys Pro Asp Cys Ser His Ala Pro Leu Trp Leu Met Tyr Leu

260 265 270

Ala Ile Val Leu Ser His Thr Asn Ser Val Val Asn Pro Phe Ile Tyr

275 280 285

Ala Tyr Arg Ile Arg Glu Phe Arg Gln Thr Phe Arg Lys Ile Ile Arg

290 295 300

Ser His Val Leu Arg Gln Gln Glu Pro Phe Lys Ala Ala Gly Thr Ser

305 310 315 320

Ala Arg Val Leu Ala Ala His Gly Ser Asp Gly Glu Gln Val Ser Leu

325 330 335

Arg Leu Asn Gly His Pro Pro Gly Val Trp Ala Asn Gly Ser Ala Pro

340 345 350

His Pro Glu Arg Arg Pro Asn Gly Tyr Ala Leu Gly Leu Val Ser Gly

355 360 365

Gly Ser Ala Gln Glu Ser Gln Gly Asn Thr Gly Leu Pro Asp Val Glu

370 375 380

Leu Leu Ser His Glu Leu Lys Gly Val Cys Pro Glu Pro Pro Gly Leu

385 390 395 400

Asp Asp Pro Leu Ala Gln Asp Gly Ala Gly Val Ser

405 410

<210> 82

<211> 492

<212> PRT

<213> Homo sapiens

<400> 82

Met Val Lys Phe Pro Ala Leu Thr His Tyr Trp Pro Leu Ile Arg Phe
1 5 10 15

Leu Val Pro Leu Gly Ile Thr Asn Ile Ala Ile Asp Phe Gly Glu Gln
20 25 30

Ala Leu Asn Arg Gly Ile Ala Ala Val Lys Glu Asp Ala Val Glu Met
35 40 45

Leu Ala Ser Tyr Gly Leu Ala Tyr Ser Leu Met Lys Phe Phe Thr Gly
50 55 60

Pro Met Ser Asp Phe Lys Asn Val Gly Leu Val Phe Val Asn Ser Lys
65 70 75 80

Arg Asp Arg Thr Lys Ala Val Leu Cys Met Val Val Ala Gly Ala Ile
85 90 95

Ala Ala Val Phe His Thr Leu Ile Ala Tyr Ser Asp Leu Gly Tyr Tyr
100 105 110

Ile Ile Asn Lys Leu His His Val Asp Glu Ser Val Gly Ser Lys Thr
115 120 125

Arg Arg Ala Phe Leu Tyr Leu Ala Ala Phe Pro Phe Met Asp Ala Met
130 135 140

Ala Trp Thr His Ala Gly Ile Leu Leu Lys His Lys Tyr Ser Phe Leu
145 150 155 160

Val Gly Cys Ala Ser Ile Ser Asp Val Ile Ala Gln Val Val Phe Val
165 170 175

Ala Ile Leu Leu His Ser His Leu Glu Cys Arg Glu Pro Leu Leu Ile
180 185 190

Pro Ile Leu Ser Leu Tyr Met Gly Ala Leu Val Arg Cys Thr Thr Leu
195 200 205

Cys Leu Gly Tyr Tyr Lys Asn Ile His Asp Ile Ile Pro Asp Arg Ser
210 215 220

Gly Pro Glu Leu Gly Gly Asp Ala Thr Ile Arg Lys Met Leu Ser Phe

225 230 235 240

Trp Trp Pro Leu Ala Leu Ile Leu Ala Thr Gln Arg Ile Ser Arg Pro

245 250 255

Ile Val Asn Leu Phe Val Ser Arg Asp Leu Gly Gly Ser Ser Ala Ala

260 265 270

Thr Glu Ala Val Ala Ile Leu Thr Ala Thr Tyr Pro Val Gly His Met

275 280 285

Pro Tyr Gly Trp Leu Thr Glu Ile Arg Ala Val Tyr Pro Ala Phe Asp

290 295 300

Lys Asn Asn Pro Ser Asn Lys Leu Val Ser Thr Ser Asn Thr Val Thr

305 310 315 320

Ala Ala His Ile Lys Lys Phe Thr Phe Val Cys Met Ala Leu Ser Leu

325 330 335

Thr Leu Cys Phe Val Met Phe Trp Thr Pro Asn Val Ser Glu Lys Ile

340 345 350

Leu Ile Asp Ile Ile Gly Val Asp Phe Ala Phe Ala Glu Leu Cys Val

355 360 365

Val Pro Leu Arg Ile Phe Ser Phe Phe Pro Val Pro Val Thr Val Arg

370 375 380

Ala His Leu Thr Gly Trp Leu Met Thr Leu Lys Lys Thr Phe Val Leu

385 390 395 400

Ala Pro Ser Ser Val Leu Arg Ile Ile Val Leu Ile Ala Ser Leu Val

405 410 415

Val Leu Pro Tyr Leu Gly Val His Gly Ala Thr Leu Gly Val Gly Ser

420 425 430

Leu Leu Ala Gly Phe Val Gly Glu Ser Thr Met Val Ala Ile Ala Ala

435 440 445

Cys Tyr Val Tyr Arg Lys Gln Lys Lys Lys Met Glu Asn Glu Ser Ala

450 455 460

Thr Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro Thr Glu Glu

465 470 475 480

Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu

485 490

<210> 83

<211> 1287

<212> PRT

<213> Homo sapiens

<400> 83

Met His Pro Asp Leu Gly Pro Leu Cys Thr Leu Leu Tyr Val Thr Leu

1 5 10 15

Thr Ile Leu Cys Ser Ser Val Ser Ser Asp Leu Ala Pro Tyr Phe Thr

20 25 30

Ser Glu Pro Leu Ser Ala Val Gln Lys Leu Gly Gly Pro Val Val Leu

35 40 45

His Cys Ser Ala Gln Pro Val Thr Thr Arg Ile Ser Trp Leu His Asn

50 55 60

Gly Lys Thr Leu Asp Gly Asn Leu Glu His Val Lys Ile His Gln Gly

65 70 75 80

Thr Leu Thr Ile Leu Ser Leu Asn Ser Ser Leu Leu Gly Tyr Tyr Gln

85 90 95

Cys Leu Ala Asn Asn Ser Ile Gly Ala Ile Val Ser Gly Pro Ala Thr

100 105 110

Val Ser Val Ala Val Leu Gly Asp Phe Gly Ser Ser Thr Lys His Val

115 120 125

Ile Thr Ala Glu Glu Lys Ser Ala Gly Phe Ile Gly Cys Arg Val Pro

130 135 140

Glu Ser Asn Pro Lys Ala Glu Val Arg Tyr Lys Ile Arg Gly Lys Trp

145 150 155 160

Leu Glu His Ser Thr Glu Asn Tyr Leu Ile Leu Pro Ser Gly Asn Leu

165 170 175

Gln Ile Leu Asn Val Ser Leu Glu Asp Lys Gly Ser Tyr Lys Cys Ala

180 185 190

Ala Tyr Asn Pro Val Thr His Gln Leu Lys Val Glu Pro Ile Gly Arg

195 200 205

Lys Leu Leu Val Ser Arg Pro Ser Ser Asp Asp Val His Ile Leu His

210 215 220

Pro Thr His Ser Gln Ala Leu Ala Val Leu Ser Arg Ser Pro Val Thr

225 230 235 240

Leu Glu Cys Val Val Ser Gly Val Pro Ala Pro Gln Val Tyr Trp Leu

245 250 255

Lys Asp Gly Gln Asp Ile Ala Pro Gly Ser Asn Trp Arg Arg Leu Tyr

260 265 270

Ser His Leu Ala Thr Asp Ser Val Asp Pro Ala Asp Ser Gly Asn Tyr

275 280 285

Ser Cys Met Ala Gly Asn Lys Ser Gly Asp Val Lys Tyr Val Thr Tyr

290 295 300

Met Val Asn Val Leu Glu His Ala Ser Ile Ser Lys Gly Leu Gln Asp

305 310 315 320

Gln Ile Val Ser Leu Gly Ala Thr Val His Phe Thr Cys Asp Val His

325 330 335

Gly Asn Pro Ala Pro Asn Cys Thr Trp Phe His Asn Ala Gln Pro Ile

340 345 350

His Pro Ser Ala Arg His Leu Thr Ala Gly Asn Gly Leu Lys Ile Ser

355 360 365

Gly Val Thr Val Glu Asp Val Gly Met Tyr Gln Cys Val Ala Asp Asn

370 375 380

Gly Ile Gly Phe Met His Ser Thr Gly Arg Leu Glu Ile Glu Asn Asp

385 390 395 400

Gly Gly Phe Lys Pro Val Ile Ile Thr Ala Pro Val Ser Ala Lys Val

405 410 415

Ala Asp Gly Asp Phe Val Thr Leu Ser Cys Asn Ala Ser Gly Leu Pro

420 425 430

Val Pro Val Ile Arg Trp Tyr Asp Ser His Gly Leu Ile Thr Ser His
435 440 445

Pro Ser Gln Val Leu Arg Ser Lys Ser Arg Lys Ser Gln Leu Ser Arg
450 455 460

Pro Glu Gly Leu Asn Leu Glu Pro Val Tyr Phe Val Leu Ser Gln Ala
465 470 475 480

Gly Ala Ser Ser Leu His Ile Gln Ala Val Thr Gln Glu His Ala Gly
485 490 495

Lys Tyr Ile Cys Glu Ala Ala Asn Glu His Gly Thr Thr Gln Ala Glu
500 505 510

Ala Ser Leu Met Val Val Pro Phe Glu Thr Asn Thr Lys Ala Glu Thr
515 520 525

Val Thr Leu Pro Asp Ala Ala Gln Asn Asp Asp Arg Ser Lys Arg Asp
530 535 540

Gly Ser Glu Thr Gly Leu Leu Ser Ser Phe Pro Val Lys Val His Pro
545 550 555 560

Ser Ala Val Glu Ser Ala Pro Glu Lys Asn Ala Ser Gly Ile Ser Val
565 570 575

Pro Asp Ala Pro Ile Ile Leu Ser Pro Pro Gln Thr His Thr Pro Asp
580 585 590

Thr Tyr Asn Leu Val Trp Arg Ala Gly Lys Asp Gly Gly Leu Pro Ile
595 600 605

Asn Ala Tyr Phe Val Lys Tyr Arg Lys Leu Asp Asp Gly Val Gly Met
610 615 620

Leu Gly Ser Trp His Thr Val Arg Val Pro Gly Ser Glu Asn Glu Leu
625 630 635 640

His Leu Ala Glu Leu Glu Pro Ser Ser Leu Tyr Glu Val Leu Met Val
645 650 655

Ala Arg Ser Ala Ala Gly Glu Gly Gln Pro Ala Met Leu Thr Phe Arg
660 665 670

Thr Ser Lys Glu Lys Thr Ala Ser Ser Lys Asn Thr Gln Ala Ser Ser

675 680 685

Pro Pro Val Gly Ile Pro Lys Tyr Pro Val Val Ser Glu Ala Ala Asn
690 695 700
Asn Asn Phe Gly Val Val Leu Thr Asp Ser Ser Arg His Ser Gly Val
705 710 715 720
Pro Glu Ala Pro Asp Arg Pro Thr Ile Ser Thr Ala Ser Glu Thr Ser
725 730 735
Val Tyr Val Thr Trp Ile Pro Arg Ala Asn Gly Gly Ser Pro Ile Thr
740 745 750

Ala Phe Lys Val Glu Tyr Lys Arg Met Arg Thr Ser Asn Trp Leu Val
755 760 765
Ala Ala Glu Asp Ile Pro Pro Ser Lys Leu Ser Val Glu Val Arg Ser
770 775 780
Leu Glu Pro Gly Ser Thr Tyr Lys Phe Arg Val Ile Ala Ile Asn His
785 790 795 800
Tyr Gly Glu Ser Phe Arg Ser Ser Ala Ser Arg Pro Tyr Gln Val Val
805 810 815

Gly Phe Pro Asn Arg Phe Ser Ser Arg Pro Ile Thr Gly Pro His Ile
820 825 830
Ala Tyr Thr Glu Ala Val Ser Asp Thr Gln Ile Met Leu Lys Trp Thr
835 840 845
Tyr Ile Pro Ser Ser Asn Asn Asn Thr Pro Ile Gln Gly Phe Tyr Ile
850 855 860
Tyr Tyr Arg Pro Thr Asp Ser Asp Asn Asp Ser Asp Tyr Lys Arg Asp
865 870 875 880

Val Val Glu Gly Ser Lys Gln Trp His Met Ile Gly His Leu Gln Pro
885 890 895
Glu Thr Ser Tyr Asp Ile Lys Met Gln Cys Phe Asn Glu Gly Gly Glu
900 905 910
Ser Glu Phe Ser Asn Val Met Ile Cys Glu Thr Lys Val Lys Arg Val
915 920 925

Pro Gly Ala Ser Glu Tyr Pro Val Lys Asp Leu Ser Thr Pro Pro Asn
930 935 940

Ser Leu Gly Ser Gly Gly Asn Val Gly Pro Ala Thr Ser Pro Ala Arg
945 950 955 960
Ser Ser Asp Met Leu Tyr Leu Ile Val Gly Cys Val Leu Gly Val Met
965 970 975
Val Leu Ile Leu Met Val Phe Ile Ala Met Cys Leu Trp Lys Asn Arg
980 985 990
Gln Gln Asn Thr Ile Gln Lys Tyr Asp Pro Pro Gly Tyr Leu Tyr Gln
995 1000 1005

Gly Ser Asp Met Asn Gly Gln Met Val Asp Tyr Thr Thr Leu Ser
1010 1015 1020
Gly Ala Ser Gln Ile Asn Gly Asn Val His Gly Gly Phe Leu Thr
1025 1030 1035
Asn Gly Gly Leu Ser Ser Gly Tyr Ser His Leu His His Lys Val
1040 1045 1050
Pro Asn Ala Val Asn Gly Ile Val Asn Gly Ser Leu Asn Gly Gly
1055 1060 1065

Leu Tyr Ser Gly His Ser Asn Ser Leu Thr Arg Thr His Val Asp
1070 1075 1080
Phe Glu His Pro His His Leu Val Asn Gly Gly Gly Met Tyr Thr
1085 1090 1095
Ala Val Pro Gln Ile Asp Pro Leu Glu Cys Val Asn Cys Arg Asn
1100 1105 1110
Cys Arg Asn Asn Asn Arg Cys Phe Thr Lys Thr Asn Ser Thr Phe
1115 1120 1125

Ser Ser Ser Pro Pro Pro Val Val Pro Val Val Ala Pro Tyr Pro
1130 1135 1140
Gln Asp Gly Leu Glu Met Lys Pro Leu Ser His Val Lys Val Pro
1145 1150 1155
Val Cys Leu Thr Ser Ala Val Pro Asp Cys Gly Gln Leu Pro Glu

1160 1165 1170

Glu Ser Val Lys Asp Asn Val Glu Pro Val Pro Thr Gln Arg Thr

1175 1180 1185

Cys Cys Gln Asp Ile Val Asn Asp Val Ser Ser Asp Gly Ser Glu

1190 1195 1200

Asp Pro Ala Glu Phe Ser Arg Gly Gln Glu Gly Met Ile Asn Leu

1205 1210 1215

Arg Ile Pro Asp His Leu Gln Leu Ala Lys Ser Cys Val Trp Glu

1220 1225 1230

Gly Asp Ser Cys Ala His Ser Glu Thr Glu Ile Asn Ile Val Ser

1235 1240 1245

Trp Asn Ala Leu Ile Leu Pro Pro Val Pro Glu Gly Cys Ala Glu

1250 1255 1260

Lys Thr Met Trp Ser Pro Pro Gly Ile Pro Leu Asp Ser Pro Thr

1265 1270 1275

Glu Val Leu Gln Gln Pro Arg Glu Thr

1280 1285

<210> 84

<211> 807

<212> PRT

<213> Homo sapiens

<400> 84

Met Met Asp Ser Pro Phe Leu Glu Leu Trp Gln Ser Lys Ala Val Ser

1 5 10 15

Ile Arg Glu Gln Leu Gly Leu Gly Asp Arg Pro Asn Asp Ser Tyr Cys

20 25 30

Tyr Asn Ser Ala Lys Asn Ser Thr Val Leu Gln Gly Val Thr Phe Gly

35 40 45

Gly Ile Pro Thr Val Leu Leu Ile Asp Val Ser Cys Phe Leu Phe Leu

50 55 60

Ile Leu Val Phe Ser Ile Ile Arg Arg Arg Phe Trp Asp Tyr Gly Arg

65 70 75 80

Ile Ala Leu Val Ser Glu Ala Asp Ser Glu Ser Arg Phe Gln Arg Leu
85 90 95

Ser Ser Thr Ser Ser Ser Gly Gln Gln Asp Phe Glu Asn Glu Leu Gly
100 105 110

Cys Cys Pro Trp Leu Thr Ala Ile Phe Arg Leu His Asp Asp Gln Ile
115 120 125

Leu Glu Trp Cys Gly Glu Asp Ala Ile His Tyr Leu Ser Phe Gln Arg
130 135 140

His Ile Ile Phe Leu Leu Val Val Val Ser Phe Leu Ser Leu Cys Val
145 150 155 160

Ile Leu Pro Val Asn Leu Ser Gly Asp Leu Leu Asp Lys Asp Pro Tyr
165 170 175

Ser Phe Gly Arg Thr Thr Ile Ala Asn Leu Gln Thr Asp Asn Asp Leu
180 185 190

Leu Trp Leu His Thr Ile Phe Ala Val Ile Tyr Leu Phe Leu Thr Val
195 200 205

Gly Phe Met Arg His His Thr Gln Ser Ile Lys Tyr Lys Glu Glu Asn
210 215 220

Leu Val Arg Arg Thr Leu Phe Ile Thr Gly Leu Pro Arg Asp Ala Arg
225 230 235 240

Lys Glu Thr Val Glu Ser His Phe Arg Asp Ala Tyr Pro Thr Cys Glu
245 250 255

Val Val Asp Val Gln Leu Cys Tyr Asn Val Ala Lys Leu Ile Tyr Leu
260 265 270

Cys Lys Glu Lys Lys Lys Thr Glu Lys Ser Leu Thr Tyr Tyr Thr Asn
275 280 285

Leu Gln Val Lys Thr Gly Gln Arg Thr Leu Ile Asn Pro Lys Pro Cys
290 295 300

Gly Gln Phe Cys Cys Cys Glu Val Leu Gly Cys Glu Trp Glu Asp Ala
305 310 315 320

Ile Ser Tyr Tyr Thr Arg Met Lys Asp Arg Leu Leu Glu Arg Ile Thr
325 330 335

Glu Glu Glu Arg His Val Gln Asp Gln Pro Leu Gly Met Ala Phe Val
340 345 350
Thr Phe Gln Glu Lys Ser Met Ala Thr Tyr Ile Leu Lys Asp Phe Asn
355 360 365
Ala Cys Lys Cys Gln Ser Leu Gln Cys Lys Gly Glu Pro Gln Pro Ser
370 375 380
Ser His Ser Arg Glu Leu Tyr Thr Ser Lys Trp Thr Val Thr Phe Ala
385 390 395 400

Ala Asp Pro Glu Asp Ile Cys Trp Lys Asn Leu Ser Ile Gln Gly Leu
405 410 415
Arg Trp Trp Leu Gln Trp Leu Gly Ile Asn Phe Thr Leu Phe Leu Gly
420 425 430
Leu Phe Phe Leu Thr Thr Pro Ser Ile Ile Leu Ser Thr Met Asp Lys
435 440 445
Phe Asn Val Thr Lys Pro Ile His Ala Leu Asn Asn Pro Ile Ile Ser
450 455 460

Gln Phe Phe Pro Thr Leu Leu Leu Trp Ser Phe Ser Ala Leu Leu Pro
465 470 475 480
Ser Ile Val Tyr Tyr Ser Thr Leu Leu Glu Ser His Trp Thr Lys Ser
485 490 495
Gly Glu Asn Gln Ile Met Met Thr Lys Val Tyr Ile Phe Leu Ile Phe
500 505 510
Met Val Leu Ile Leu Pro Ser Leu Gly Leu Thr Ser Leu Asp Phe Phe
515 520 525

Phe Arg Trp Leu Phe Asp Lys Thr Ser Ser Glu Ala Ser Ile Arg Leu
530 535 540
Glu Cys Val Phe Leu Pro Asp Gln Gly Ala Phe Phe Val Asn Tyr Val
545 550 555 560
Ile Ala Ser Ala Phe Ile Gly Asn Gly Met Glu Leu Leu Arg Leu Pro

565 570 575

Gly Leu Ile Leu Tyr Thr Phe Arg Met Ile Met Ala Lys Thr Ala Ala

580 585 590

Asp Arg Arg Asn Val Lys Gln Asn Gln Ala Phe Gln Tyr Glu Phe Gly

595 600 605

Ala Met Tyr Ala Trp Met Leu Cys Val Phe Thr Val Ile Val Ala Tyr

610 615 620

Ser Ile Thr Cys Pro Ile Ile Ala Pro Phe Gly Leu Ile Tyr Ile Leu

625 630 635 640

Leu Lys His Met Val Asp Arg His Asn Leu Tyr Phe Val Tyr Leu Pro

645 650 655

Ala Lys Leu Glu Lys Gly Ile His Phe Ala Ala Val Asn Gln Ala Leu

660 665 670

Ala Ala Pro Ile Leu Cys Leu Phe Trp Leu Tyr Phe Phe Ser Phe Leu

675 680 685

Arg Leu Gly Met Lys Ala Pro Ala Thr Leu Phe Thr Phe Leu Val Leu

690 695 700

Leu Leu Thr Ile Leu Val Cys Leu Ala His Thr Cys Phe Gly Cys Phe

705 710 715 720

Lys His Leu Ser Pro Leu Asn Tyr Lys Thr Glu Glu Pro Ala Ser Asp

725 730 735

Lys Gly Ser Glu Ala Glu Ala His Met Pro Pro Pro Phe Thr Pro Tyr

740 745 750

Val Pro Arg Ile Leu Asn Gly Leu Ala Ser Glu Arg Thr Ala Leu Ser

755 760 765

Pro Gln Gln Gln Gln Gln Gln Thr Tyr Gly Ala Ile His Asn Ile Ser

770 775 780

Gly Thr Ile Pro Gly Gln Cys Leu Ala Gln Ser Ala Thr Gly Ser Val

785 790 795 800

Ala Ala Ala Pro Gln Glu Ala

805

<210> 85

<211> 1032

<212> PRT

<213> Homo sapiens

<400> 85

Met Gly Phe Cys Arg Ser Ala Leu His Pro Leu Ser Leu Leu Val Gln
1 5 10 15

Ala Ile Met Leu Ala Met Thr Leu Ala Leu Gly Thr Leu Pro Ala Phe
20 25 30

Leu Pro Cys Glu Leu Gln Pro His Gly Leu Val Asn Cys Asn Trp Leu
35 40 45

Phe Leu Lys Ser Val Pro His Phe Ser Met Ala Ala Pro Arg Gly Asn
50 55 60

Val Thr Ser Leu Ser Leu Ser Ser Asn Arg Ile His His Leu His Asp
65 70 75 80

Ser Asp Phe Ala His Leu Pro Ser Leu Arg His Leu Asn Leu Lys Trp
85 90 95

Asn Cys Pro Pro Val Gly Leu Ser Pro Met His Phe Pro Cys His Met
100 105 110

Thr Ile Glu Pro Ser Thr Phe Leu Ala Val Pro Thr Leu Glu Glu Leu
115 120 125

Asn Leu Ser Tyr Asn Asn Ile Met Thr Val Pro Ala Leu Pro Lys Ser
130 135 140

Leu Ile Ser Leu Ser Leu Ser His Thr Asn Ile Leu Met Leu Asp Ser
145 150 155 160

Ala Ser Leu Ala Gly Leu His Ala Leu Arg Phe Leu Phe Met Asp Gly
165 170 175

Asn Cys Tyr Tyr Lys Asn Pro Cys Arg Gln Ala Leu Glu Val Ala Pro
180 185 190

Gly Ala Leu Leu Gly Leu Gly Asn Leu Thr His Leu Ser Leu Lys Tyr
195 200 205

Asn Asn Leu Thr Val Val Pro Arg Asn Leu Pro Ser Ser Leu Glu Tyr

210 215 220

Leu Leu Leu Ser Tyr Asn Arg Ile Val Lys Leu Ala Pro Glu Asp Leu
225 230 235 240
Ala Asn Leu Thr Ala Leu Arg Val Leu Asp Val Gly Gly Asn Cys Arg
245 250 255
Arg Cys Asp His Ala Pro Asn Pro Cys Met Glu Cys Pro Arg His Phe
260 265 270
Pro Gln Leu His Pro Asp Thr Phe Ser His Leu Ser Arg Leu Glu Gly
275 280 285

Leu Val Leu Lys Asp Ser Ser Leu Ser Trp Leu Asn Ala Ser Trp Phe
290 295 300
Arg Gly Leu Gly Asn Leu Arg Val Leu Asp Leu Ser Glu Asn Phe Leu
305 310 315 320
Tyr Lys Cys Ile Thr Lys Thr Lys Ala Phe Gln Gly Leu Thr Gln Leu
325 330 335
Arg Lys Leu Asn Leu Ser Phe Asn Tyr Gln Lys Arg Val Ser Phe Ala
340 345 350

His Leu Ser Leu Ala Pro Ser Phe Gly Ser Leu Val Ala Leu Lys Glu
355 360 365
Leu Asp Met His Gly Ile Phe Phe Arg Ser Leu Asp Glu Thr Thr Leu
370 375 380
Arg Pro Leu Ala Arg Leu Pro Met Leu Gln Thr Leu Arg Leu Gln Met
385 390 395 400
Asn Phe Ile Asn Gln Ala Gln Leu Gly Ile Phe Arg Ala Phe Pro Gly
405 410 415

Leu Arg Tyr Val Asp Leu Ser Asp Asn Arg Ile Ser Gly Ala Ser Glu
420 425 430
Leu Thr Ala Thr Met Gly Glu Ala Asp Gly Gly Glu Lys Val Trp Leu
435 440 445
Gln Pro Gly Asp Leu Ala Pro Ala Pro Val Asp Thr Pro Ser Ser Glu
450 455 460

Asp Phe Arg Pro Asn Cys Ser Thr Leu Asn Phe Thr Leu Asp Leu Ser
465 470 475 480

Arg Asn Asn Leu Val Thr Val Gln Pro Glu Met Phe Ala Gln Leu Ser
485 490 495
His Leu Gln Cys Leu Arg Leu Ser His Asn Cys Ile Ser Gln Ala Val
500 505 510
Asn Gly Ser Gln Phe Leu Pro Leu Thr Gly Leu Gln Val Leu Asp Leu
515 520 525
Ser His Asn Lys Leu Asp Leu Tyr His Glu His Ser Phe Thr Glu Leu
530 535 540

Pro Arg Leu Glu Ala Leu Asp Leu Ser Tyr Asn Ser Gln Pro Phe Gly
545 550 555 560
Met Gln Gly Val Gly His Asn Phe Ser Phe Val Ala His Leu Arg Thr
565 570 575
Leu Arg His Leu Ser Leu Ala His Asn Asn Ile His Ser Gln Val Ser
580 585 590
Gln Gln Leu Cys Ser Thr Ser Leu Arg Ala Leu Asp Phe Ser Gly Asn
595 600 605

Ala Leu Gly His Met Trp Ala Glu Gly Asp Leu Tyr Leu His Phe Phe
610 615 620
Gln Gly Leu Ser Gly Leu Ile Trp Leu Asp Leu Ser Gln Asn Arg Leu
625 630 635 640
His Thr Leu Leu Pro Gln Thr Leu Arg Asn Leu Pro Lys Ser Leu Gln
645 650 655
Val Leu Arg Leu Arg Asp Asn Tyr Leu Ala Phe Phe Lys Trp Trp Ser
660 665 670

Leu His Phe Leu Pro Lys Leu Glu Val Leu Asp Leu Ala Gly Asn Gln
675 680 685
Leu Lys Ala Leu Thr Asn Gly Ser Leu Pro Ala Gly Thr Arg Leu Arg
690 695 700
Arg Leu Asp Val Ser Cys Asn Ser Ile Ser Phe Val Ala Pro Gly Phe

705 710 715 720

Phe Ser Lys Ala Lys Glu Leu Arg Glu Leu Asn Leu Ser Ala Asn Ala

725 730 735

Leu Lys Thr Val Asp His Ser Trp Phe Gly Pro Leu Ala Ser Ala Leu

740 745 750

Gln Ile Leu Asp Val Ser Ala Asn Pro Leu His Cys Ala Cys Gly Ala

755 760 765

Ala Phe Met Asp Phe Leu Leu Glu Val Gln Ala Ala Val Pro Gly Leu

770 775 780

Pro Ser Arg Val Lys Cys Gly Ser Pro Gly Gln Leu Gln Gly Leu Ser

785 790 795 800

Ile Phe Ala Gln Asp Leu Arg Leu Cys Leu Asp Glu Ala Leu Ser Trp

805 810 815

Asp Cys Phe Ala Leu Ser Leu Leu Ala Val Ala Leu Gly Leu Gly Val

820 825 830

Pro Met Leu His His Leu Cys Gly Trp Asp Leu Trp Tyr Cys Phe His

835 840 845

Leu Cys Leu Ala Trp Leu Pro Trp Arg Gly Arg Gln Ser Gly Arg Asp

850 855 860

Glu Asp Ala Leu Pro Tyr Asp Ala Phe Val Val Phe Asp Lys Thr Gln

865 870 875 880

Ser Ala Val Ala Asp Trp Val Tyr Asn Glu Leu Arg Gly Gln Leu Glu

885 890 895

Glu Cys Arg Gly Arg Trp Ala Leu Arg Leu Cys Leu Glu Glu Arg Asp

900 905 910

Trp Leu Pro Gly Lys Thr Leu Phe Glu Asn Leu Trp Ala Ser Val Tyr

915 920 925

Gly Ser Arg Lys Thr Leu Phe Val Leu Ala His Thr Asp Arg Val Ser

930 935 940

Gly Leu Leu Arg Ala Ser Phe Leu Leu Ala Gln Gln Arg Leu Leu Glu

945 950 955 960

Asp Arg Lys Asp Val Val Val Leu Val Ile Leu Ser Pro Asp Gly Arg
965 970 975
Arg Ser Arg Tyr Val Arg Leu Arg Gln Arg Leu Cys Arg Gln Ser Val
980 985 990

Leu Leu Trp Pro His Gln Pro Ser Gly Gln Arg Ser Phe Trp Ala Gln
995 1000 1005
Leu Gly Met Ala Leu Thr Arg Asp Asn His His Phe Tyr Asn Arg
1010 1015 1020
Asn Phe Cys Gln Gly Pro Thr Ala Glu
1025 1030

<210> 86
<211> 620
<212> PRT
<213> Homo sapiens
<400> 86
Met Ala Thr Lys Glu Lys Leu Gln Cys Leu Lys Asp Phe His Lys Asp
1 5 10 15

Ile Leu Lys Pro Ser Pro Gly Lys Ser Pro Gly Thr Arg Pro Glu Asp
20 25 30
Glu Ala Glu Gly Lys Pro Pro Gln Arg Glu Lys Trp Ser Ser Lys Ile
35 40 45
Asp Phe Val Leu Ser Val Ala Gly Gly Phe Val Gly Leu Gly Asn Val
50 55 60
Trp Arg Phe Pro Tyr Leu Cys Tyr Lys Asn Gly Gly Gly Ala Phe Leu
65 70 75 80

Ile Pro Tyr Phe Ile Phe Leu Phe Gly Ser Gly Leu Pro Val Phe Phe
85 90 95
Leu Glu Ile Ile Ile Gly Gln Tyr Thr Ser Glu Gly Gly Ile Thr Cys
100 105 110
Trp Glu Lys Ile Cys Pro Leu Phe Ser Gly Ile Gly Tyr Ala Ser Val
115 120 125
Val Ile Val Ser Leu Leu Asn Val Tyr Tyr Ile Val Ile Leu Ala Trp

130 135 140

Ala Thr Tyr Tyr Leu Phe Gln Ser Phe Gln Lys Glu Leu Pro Trp Ala
145 150 155 160
His Cys Asn His Ser Trp Asn Thr Pro His Cys Met Glu Asp Thr Met
165 170 175
Arg Lys Asn Lys Ser Val Trp Ile Thr Ile Ser Ser Thr Asn Phe Thr
180 185 190
Ser Pro Val Ile Glu Phe Trp Glu Arg Asn Val Leu Ser Leu Ser Pro
195 200 205

Gly Ile Asp His Pro Gly Ser Leu Lys Trp Asp Leu Ala Leu Cys Leu
210 215 220
Leu Leu Val Trp Leu Val Cys Phe Phe Cys Ile Trp Lys Gly Val Arg
225 230 235 240
Ser Thr Gly Lys Val Val Tyr Phe Thr Ala Thr Phe Pro Phe Ala Met
245 250 255
Leu Leu Val Leu Leu Val Arg Gly Leu Thr Leu Pro Gly Ala Gly Ala
260 265 270

Gly Ile Lys Phe Tyr Leu Tyr Pro Asp Ile Thr Arg Leu Glu Asp Pro
275 280 285
Gln Val Trp Ile Asp Ala Gly Thr Gln Ile Phe Phe Ser Tyr Ala Ile
290 295 300
Cys Leu Gly Ala Met Thr Ser Leu Gly Ser Tyr Asn Lys Tyr Lys Tyr
305 310 315 320
Asn Ser Tyr Arg Asp Cys Met Leu Leu Gly Cys Leu Asn Ser Gly Thr
325 330 335

Ser Phe Val Ser Gly Phe Ala Ile Phe Ser Ile Leu Gly Phe Met Ala
340 345 350
Gln Glu Gln Gly Val Asp Ile Ala Asp Val Ala Glu Ser Gly Pro Gly
355 360 365
Leu Ala Phe Ile Ala Tyr Pro Lys Ala Val Thr Met Met Pro Leu Pro
370 375 380

Thr Phe Trp Ser Ile Leu Phe Phe Ile Met Leu Leu Leu Leu Gly Leu
385 390 395 400

Asp Ser Gln Phe Val Glu Val Glu Gly Gln Ile Thr Ser Leu Val Asp
405 410 415
Leu Tyr Pro Ser Phe Leu Arg Lys Gly Tyr Arg Arg Glu Ile Phe Ile
420 425 430
Ala Phe Val Cys Ser Ile Ser Tyr Leu Leu Gly Leu Thr Met Val Thr
435 440 445
Glu Gly Gly Met Tyr Val Phe Gln Leu Phe Asp Tyr Tyr Ala Ala Ser
450 455 460

Gly Val Cys Leu Leu Trp Val Ala Phe Phe Glu Cys Phe Val Ile Ala
465 470 475 480
Trp Ile Tyr Gly Gly Asp Asn Leu Tyr Asp Gly Ile Glu Asp Met Ile
485 490 495
Gly Tyr Arg Pro Gly Pro Trp Met Lys Tyr Ser Trp Ala Val Ile Thr
500 505 510
Pro Val Leu Cys Val Gly Cys Phe Ile Phe Ser Leu Val Lys Tyr Val
515 520 525

Pro Leu Thr Tyr Asn Lys Thr Tyr Val Tyr Pro Asn Trp Ala Ile Gly
530 535 540
Leu Gly Trp Ser Leu Ala Leu Ser Ser Met Leu Cys Val Pro Leu Val
545 550 555 560
Ile Val Ile Arg Leu Cys Gln Thr Glu Gly Pro Phe Leu Val Arg Val
565 570 575
Lys Tyr Leu Leu Thr Pro Arg Glu Pro Asn Arg Trp Ala Val Glu Arg
580 585 590

Glu Gly Ala Thr Pro Tyr Asn Ser Arg Thr Val Met Asn Gly Ala Leu
595 600 605
Val Lys Pro Thr His Ile Ile Val Glu Thr Met Met
610 615 620
<210> 87

<211> 243

<212> PRT

<213> Homo sapiens

<400> 87

Met Cys Ser Arg Gly Trp Asp Ser Cys Leu Ala Leu Glu Leu Leu Leu
1 5 10 15
Leu Pro Leu Ser Leu Leu Val Thr Ser Ile Gln Gly His Leu Val His
20 25 30

Met Thr Val Val Ser Gly Ser Asn Val Thr Leu Asn Ile Ser Glu Ser
35 40 45
Leu Pro Glu Asn Tyr Lys Gln Leu Thr Trp Phe Tyr Thr Phe Asp Gln
50 55 60
Lys Ile Val Glu Trp Asp Ser Arg Lys Ser Lys Tyr Phe Glu Ser Lys
65 70 75 80
Phe Lys Gly Arg Val Arg Leu Asp Pro Gln Ser Gly Ala Leu Tyr Ile
85 90 95

Ser Lys Val Gln Lys Glu Asp Asn Ser Thr Tyr Ile Met Arg Val Leu
100 105 110
Lys Lys Thr Gly Asn Glu Gln Glu Trp Lys Ile Lys Leu Gln Val Leu
115 120 125
Asp Pro Val Pro Lys Pro Val Ile Lys Ile Glu Lys Ile Glu Asp Met
130 135 140
Asp Asp Asn Cys Tyr Leu Lys Leu Ser Cys Val Ile Pro Gly Glu Ser
145 150 155 160

Val Asn Tyr Thr Trp Tyr Gly Asp Lys Arg Pro Phe Pro Lys Glu Leu
165 170 175
Gln Asn Ser Val Leu Glu Thr Thr Leu Met Pro His Asn Tyr Ser Arg
180 185 190
Cys Tyr Thr Cys Gln Val Ser Asn Ser Val Ser Ser Lys Asn Gly Thr
195 200 205
Val Cys Leu Ser Pro Pro Cys Thr Leu Ala Arg Ser Phe Gly Val Glu

210 215 220

Trp Ile Ala Ser Trp Leu Val Val Thr Val Pro Thr Ile Leu Gly Leu
225 230 235 240
Leu Leu Thr

<210> 88
<211> 300
<212> PRT
<213> Homo sapiens
<400> 88
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> 89

<211> 590

<212> PRT

<213> Homo sapiens

<400> 89

Met Thr Leu His Asn Asn Ser Thr Thr Ser Pro Leu Phe Pro Asn Ile

1 5 10 15

Ser Ser Ser Trp Ile His Ser Pro Ser Asp Ala Gly Leu Pro Pro Gly

20 25 30

Thr Val Thr His Phe Gly Ser Tyr Asn Val Ser Arg Ala Ala Gly Asn

35 40 45

Phe Ser Ser Pro Asp Gly Thr Thr Asp Asp Pro Leu Gly Gly His Thr

50 55 60

Val Trp Gln Val Val Phe Ile Ala Phe Leu Thr Gly Ile Leu Ala Leu

65 70 75 80

Val Thr Ile Ile Gly Asn Ile Leu Val Ile Val Ser Phe Lys Val Asn
85 90 95
Lys Gln Leu Lys Thr Val Asn Asn Tyr Phe Leu Leu Ser Leu Ala Cys
100 105 110

Ala Asp Leu Ile Ile Gly Val Ile Ser Met Asn Leu Phe Thr Thr Tyr
115 120 125
Ile Ile Met Asn Arg Trp Ala Leu Gly Asn Leu Ala Cys Asp Leu Trp
130 135 140
Leu Ala Ile Asp Tyr Val Ala Ser Asn Ala Ser Val Met Asn Leu Leu
145 150 155 160
Val Ile Ser Phe Asp Arg Tyr Phe Ser Ile Thr Arg Pro Leu Thr Tyr
165 170 175

Arg Ala Lys Arg Thr Thr Lys Arg Ala Gly Val Met Ile Gly Leu Ala
180 185 190
Trp Val Ile Ser Phe Val Leu Trp Ala Pro Ala Ile Leu Phe Trp Gln
195 200 205
Tyr Phe Val Gly Lys Arg Thr Val Pro Pro Gly Glu Cys Phe Ile Gln
210 215 220
Phe Leu Ser Glu Pro Thr Ile Thr Phe Gly Thr Ala Ile Ala Ala Phe
225 230 235 240

Tyr Met Pro Val Thr Ile Met Thr Ile Leu Tyr Trp Arg Ile Tyr Lys
245 250 255
Glu Thr Glu Lys Arg Thr Lys Glu Leu Ala Gly Leu Gln Ala Ser Gly
260 265 270
Thr Glu Ala Glu Thr Glu Asn Phe Val His Pro Thr Gly Ser Ser Arg
275 280 285
Ser Cys Ser Ser Tyr Glu Leu Gln Gln Gln Ser Met Lys Arg Ser Asn
290 295 300

Arg Arg Lys Tyr Gly Arg Cys His Phe Trp Phe Thr Thr Lys Ser Trp
305 310 315 320
Lys Pro Ser Ser Glu Gln Met Asp Gln Asp His Ser Ser Ser Asp Ser

325 330 335

Trp Asn Asn Asn Asp Ala Ala Ala Ser Leu Glu Asn Ser Ala Ser Ser

340 345 350

Asp Glu Glu Asp Ile Gly Ser Glu Thr Arg Ala Ile Tyr Ser Ile Val

355 360 365

Leu Lys Leu Pro Gly His Ser Thr Ile Leu Asn Ser Thr Lys Leu Pro

370 375 380

Ser Ser Asp Asn Leu Gln Val Pro Glu Glu Glu Leu Gly Met Val Asp

385 390 395 400

Leu Glu Arg Lys Ala Asp Lys Leu Gln Ala Gln Lys Ser Val Asp Asp

405 410 415

Gly Gly Ser Phe Pro Lys Ser Phe Ser Lys Leu Pro Ile Gln Leu Glu

420 425 430

Ser Ala Val Asp Thr Ala Lys Thr Ser Asp Val Asn Ser Ser Val Gly

435 440 445

Lys Ser Thr Ala Thr Leu Pro Leu Ser Phe Lys Glu Ala Thr Leu Ala

450 455 460

Lys Arg Phe Ala Leu Lys Thr Arg Ser Gln Ile Thr Lys Arg Lys Arg

465 470 475 480

Met Ser Leu Val Lys Glu Lys Lys Ala Ala Gln Thr Leu Ser Ala Ile

485 490 495

Leu Leu Ala Phe Ile Ile Thr Trp Thr Pro Tyr Asn Ile Met Val Leu

500 505 510

Val Asn Thr Phe Cys Asp Ser Cys Ile Pro Lys Thr Phe Trp Asn Leu

515 520 525

Gly Tyr Trp Leu Cys Tyr Ile Asn Ser Thr Val Asn Pro Val Cys Tyr

530 535 540

Ala Leu Cys Asn Lys Thr Phe Arg Thr Thr Phe Lys Met Leu Leu Leu

545 550 555 560

Cys Gln Cys Asp Lys Lys Lys Arg Arg Lys Gln Gln Tyr Gln Gln Arg

565 570 575

Gln Ser Val Ile Phe His Lys Arg Ala Pro Glu Gln Ala Leu
580 585 590

<210> 90

<211> 554

<212> PRT

<213> Homo sapiens

<400> 90

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu
1 5 10 15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr
20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
50 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr
85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu
145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
165 170 175

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
180 185 190

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His

195 200 205

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu

210 215 220

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro

225 230 235 240

Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser

245 250 255

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser

260 265 270

Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn

275 280 285

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val

290 295 300

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly

305 310 315 320

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu

325 330 335

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala

340 345 350

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly Thr Ala Leu Pro

355 360 365

Arg Val Gly Pro Val Arg Pro Thr Gly Gln Asp Trp Asn His Thr Pro

370 375 380

Gln Lys Thr Asp His Pro Ser Ala Leu Leu Arg Asp Pro Pro Glu Pro

385 390 395 400

Gly Ser Pro Arg Ile Ser Ser Leu Arg Pro Gln Gly Leu Ser Asn Pro

405 410 415

Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly

420 425 430

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp

435 440 445

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala

450 455 460

Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr Gly

465 470 475 480

His Glu Arg Gln Ser Glu Gly Ser Phe Ser Pro Gln Leu Gln Glu Ser

485 490 495

Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val

500 505 510

Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro

515 520 525

Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr

530 535 540

Gln Asp Asp Arg Gln Val Glu Leu Pro Val

545 550

<210> 91

<211> 1325

<212> PRT

<213> Homo sapiens

<400> 91

Met Leu Pro Val Tyr Gln Glu Val Lys Pro Asn Pro Leu Gln Asp Ala

1 5 10 15

Asn Leu Cys Ser Arg Val Phe Phe Trp Trp Leu Asn Pro Leu Phe Lys

20 25 30

Ile Gly His Lys Arg Arg Leu Glu Glu Asp Asp Met Tyr Ser Val Leu

35 40 45

Pro Glu Asp Arg Ser Gln His Leu Gly Glu Glu Leu Gln Gly Phe Trp

50 55 60

Asp Lys Glu Val Leu Arg Ala Glu Asn Asp Ala Gln Lys Pro Ser Leu

65 70 75 80

Thr Arg Ala Ile Ile Lys Cys Tyr Trp Lys Ser Tyr Leu Val Leu Gly

85 90 95

Ile Phe Thr Leu Ile Glu Glu Ser Ala Lys Val Ile Gln Pro Ile Phe

100 105 110

Leu Gly Lys Ile Ile Asn Tyr Phe Glu Asn Tyr Asp Pro Met Asp Ser

115 120 125

Val Ala Leu Asn Thr Ala Tyr Ala Tyr Ala Thr Val Leu Thr Phe Cys

130 135 140

Thr Leu Ile Leu Ala Ile Leu His His Leu Tyr Phe Tyr His Val Gln

145 150 155 160

Cys Ala Gly Met Arg Leu Arg Val Ala Met Cys His Met Ile Tyr Arg

165 170 175

Lys Ala Leu Arg Leu Ser Asn Met Ala Met Gly Lys Thr Thr Thr Gly

180 185 190

Gln Ile Val Asn Leu Leu Ser Asn Asp Val Asn Lys Phe Asp Gln Val

195 200 205

Thr Val Phe Leu His Phe Leu Trp Ala Gly Pro Leu Gln Ala Ile Ala

210 215 220

Val Thr Ala Leu Leu Trp Met Glu Ile Gly Ile Ser Cys Leu Ala Gly

225 230 235 240

Met Ala Val Leu Ile Ile Leu Leu Pro Leu Gln Ser Cys Phe Gly Lys

245 250 255

Leu Phe Ser Ser Leu Arg Ser Lys Thr Ala Thr Phe Thr Asp Ala Arg

260 265 270

Ile Arg Thr Met Asn Glu Val Ile Thr Gly Ile Arg Ile Ile Lys Met

275 280 285

Tyr Ala Trp Glu Lys Ser Phe Ser Asn Leu Ile Thr Asn Leu Arg Lys

290 295 300

Lys Glu Ile Ser Lys Ile Leu Arg Ser Ser Cys Leu Arg Gly Met Asn

305 310 315 320

Leu Ala Ser Phe Phe Ser Ala Ser Lys Ile Ile Val Phe Val Thr Phe

325 330 335

Thr Thr Tyr Val Leu Leu Gly Ser Val Ile Thr Ala Ser Arg Val Phe

340 345 350

Val Ala Val Thr Leu Tyr Gly Ala Val Arg Leu Thr Val Thr Leu Phe

355 360 365

Phe Pro Ser Ala Ile Glu Arg Val Ser Glu Ala Ile Val Ser Ile Arg

370 375 380

Arg Ile Gln Thr Phe Leu Leu Leu Asp Glu Ile Ser Gln Arg Asn Arg

385 390 395 400

Gln Leu Pro Ser Asp Gly Lys Lys Met Val His Val Gln Asp Phe Thr

405 410 415

Ala Phe Trp Asp Lys Ala Ser Glu Thr Pro Thr Leu Gln Gly Leu Ser

420 425 430

Phe Thr Val Arg Pro Gly Glu Leu Leu Ala Val Val Gly Pro Val Gly

435 440 445

Ala Gly Lys Ser Ser Leu Leu Ser Ala Val Leu Gly Glu Leu Ala Pro

450 455 460

Ser His Gly Leu Val Ser Val His Gly Arg Ile Ala Tyr Val Ser Gln

465 470 475 480

Gln Pro Trp Val Phe Ser Gly Thr Leu Arg Ser Asn Ile Leu Phe Gly

485 490 495

Lys Lys Tyr Glu Lys Glu Arg Tyr Glu Lys Val Ile Lys Ala Cys Ala

500 505 510

Leu Lys Lys Asp Leu Gln Leu Leu Glu Asp Gly Asp Leu Thr Val Ile

515 520 525

Gly Asp Arg Gly Thr Thr Leu Ser Gly Gly Gln Lys Ala Arg Val Asn

530 535 540

Leu Ala Arg Ala Val Tyr Gln Asp Ala Asp Ile Tyr Leu Leu Asp Asp

545 550 555 560

Pro Leu Ser Ala Val Asp Ala Glu Val Ser Arg His Leu Phe Glu Leu

565 570 575

Cys Ile Cys Gln Ile Leu His Glu Lys Ile Thr Ile Leu Val Thr His

580 585 590

Gln Leu Gln Tyr Leu Lys Ala Ala Ser Gln Ile Leu Ile Leu Lys Asp
595 600 605
Gly Lys Met Val Gln Lys Gly Thr Tyr Thr Glu Phe Leu Lys Ser Gly

610 615 620
Ile Asp Phe Gly Ser Leu Leu Lys Lys Asp Asn Glu Glu Ser Glu Gln
625 630 635 640
Pro Pro Val Pro Gly Thr Pro Thr Leu Arg Asn Arg Thr Phe Ser Glu
645 650 655
Ser Ser Val Trp Ser Gln Gln Ser Ser Arg Pro Ser Leu Lys Asp Gly
660 665 670
Ala Leu Glu Ser Gln Asp Thr Glu Asn Val Pro Val Thr Leu Ser Glu

675 680 685
Glu Asn Arg Ser Glu Gly Lys Val Gly Phe Gln Ala Tyr Lys Asn Tyr
690 695 700
Phe Arg Ala Gly Ala His Trp Ile Val Phe Ile Phe Leu Ile Leu Leu
705 710 715 720
Asn Thr Ala Ala Gln Val Ala Tyr Val Leu Gln Asp Trp Trp Leu Ser
725 730 735
Tyr Trp Ala Asn Lys Gln Ser Met Leu Asn Val Thr Val Asn Gly Gly

740 745 750
Gly Asn Val Thr Glu Lys Leu Asp Leu Asn Trp Tyr Leu Gly Ile Tyr
755 760 765
Ser Gly Leu Thr Val Ala Thr Val Leu Phe Gly Ile Ala Arg Ser Leu
770 775 780
Leu Val Phe Tyr Val Leu Val Asn Ser Ser Gln Thr Leu His Asn Lys
785 790 795 800
Met Phe Glu Ser Ile Leu Lys Ala Pro Val Leu Phe Phe Asp Arg Asn

805 810 815
Pro Ile Gly Arg Ile Leu Asn Arg Phe Ser Lys Asp Ile Gly His Leu
820 825 830
Asp Asp Leu Leu Pro Leu Thr Phe Leu Asp Phe Ile Gln Thr Leu Leu

835 840 845

Gln Val Val Gly Val Val Ser Val Ala Val Ala Val Ile Pro Trp Ile

850 855 860

Ala Ile Pro Leu Val Pro Leu Gly Ile Ile Phe Ile Phe Leu Arg Arg

865 870 875 880

Tyr Phe Leu Glu Thr Ser Arg Asp Val Lys Arg Leu Glu Ser Thr Thr

885 890 895

Arg Ser Pro Val Phe Ser His Leu Ser Ser Ser Leu Gln Gly Leu Trp

900 905 910

Thr Ile Arg Ala Tyr Lys Ala Glu Glu Arg Cys Gln Glu Leu Phe Asp

915 920 925

Ala His Gln Asp Leu His Ser Glu Ala Trp Phe Leu Phe Leu Thr Thr

930 935 940

Ser Arg Trp Phe Ala Val Arg Leu Asp Ala Ile Cys Ala Met Phe Val

945 950 955 960

Ile Ile Val Ala Phe Gly Ser Leu Ile Leu Ala Lys Thr Leu Asp Ala

965 970 975

Gly Gln Val Gly Leu Ala Leu Ser Tyr Ala Leu Thr Leu Met Gly Met

980 985 990

Phe Gln Trp Cys Val Arg Gln Ser Ala Glu Val Glu Asn Met Met Ile

995 1000 1005

Ser Val Glu Arg Val Ile Glu Tyr Thr Asp Leu Glu Lys Glu Ala

1010 1015 1020

Pro Trp Glu Tyr Gln Lys Arg Pro Pro Pro Ala Trp Pro His Glu

1025 1030 1035

Gly Val Ile Ile Phe Asp Asn Val Asn Phe Met Tyr Ser Pro Gly

1040 1045 1050

Gly Pro Leu Val Leu Lys His Leu Thr Ala Leu Ile Lys Ser Gln

1055 1060 1065

Glu Lys Val Gly Ile Val Gly Arg Thr Gly Ala Gly Lys Ser Ser

1070 1075 1080

Leu Ile Ser Ala Leu Phe Arg Leu Ser Glu Pro Glu Gly Lys Ile

1085 1090 1095

Trp Ile Asp Lys Ile Leu Thr Thr Glu Ile Gly Leu His Asp Leu

1100 1105 1110

Arg Lys Lys Met Ser Ile Ile Pro Gln Glu Pro Val Leu Phe Thr

1115 1120 1125

Gly Thr Met Arg Lys Asn Leu Asp Pro Phe Asn Glu His Thr Asp

1130 1135 1140

Glu Glu Leu Trp Asn Ala Leu Gln Glu Val Gln Leu Lys Glu Thr

1145 1150 1155

Ile Glu Asp Leu Pro Gly Lys Met Asp Thr Glu Leu Ala Glu Ser

1160 1165 1170

Gly Ser Asn Phe Ser Val Gly Gln Arg Gln Leu Val Cys Leu Ala

1175 1180 1185

Arg Ala Ile Leu Arg Lys Asn Gln Ile Leu Ile Ile Asp Glu Ala

1190 1195 1200

Thr Ala Asn Val Asp Pro Arg Thr Asp Glu Leu Ile Gln Lys Lys

1205 1210 1215

Ile Arg Glu Lys Phe Ala His Cys Thr Val Leu Thr Ile Ala His

1220 1225 1230

Arg Leu Asn Thr Ile Ile Asp Ser Asp Lys Ile Met Val Leu Asp

1235 1240 1245

Ser Gly Arg Leu Lys Glu Tyr Asp Glu Pro Tyr Val Leu Leu Gln

1250 1255 1260

Asn Lys Glu Ser Leu Phe Tyr Lys Met Val Gln Gln Leu Gly Lys

1265 1270 1275

Ala Glu Ala Ala Ala Leu Thr Glu Thr Ala Lys Gln Val Tyr Phe

1280 1285 1290

Lys Arg Asn Tyr Pro His Ile Gly His Thr Asp His Met Val Thr

1295 1300 1305

Asn Thr Ser Asn Gly Gln Pro Ser Thr Leu Thr Ile Phe Glu Thr

1310 1315 1320

Ala Leu

1325

<210> 92

<211> 349

<212> DNA

<213> Homo sapiens

<220><221> misc_feature

<222> (24)..(24)

<223> n is a, c, g, or t

<220><221> misc_feature

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<222> (89)..(89)

<223> n is a, c, g, or t

<220><221

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<222> (93)..(93)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (108)..(108)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (159)..(159)

<223> n is a, c, g, or t

<220><221> misc_feature

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<223> n is a, c, g, or t

<220><221> misc_feature

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<223> n is a, c, g, or t

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<222> (202)..(202)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (283)..(284)

<223> n is a, c, g, or t

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<222> (309)..(309)

<223> n is a, c, g, or t

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<222> (321)..(321)

<223> n is a, c, g, or t

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<222> (329)..(329)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (337)..(340)

<223> n is a, c, g, or t

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<222> (344)..(344)

<223> n is a, c, g, or t

<400> 92

mdrsrssarh rahrassgga htvnhgyaaa grdmtvvgdh vadgggaggc ggggcdrysa 60

agdccgrvvn sgrtktctgd krrmrydrny drnrsdayyy sggrrrvnvd srygamkrdg 120

rrrrdrvwys sgargavsvv svctrdkdya stsdsaagns tsgsragass sdvvtcwsvr 180

acskatsrnm ndvaytgtar gngamsarvr vrvrksrhsk ggtkasmrgg vssavyaadd 240

tsgssdawwa vvtmttvgyg dmhvtggkvg scaagvtavv vsnnyyhrtg symhvgschs 300

ssarkarsns tsksymvggm nhsatktgns tatcttnnnn scvnkktdv 349

<210> 93

<211> 315

<212> DNA

<213> Homo sapiens

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<223> n is a, c, g, or t

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<220><221> misc_feature

<222> (58)..(59)

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<223> n is a, c, g, or t

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<223> n is a, c, g, or t

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<222> (95)..(95)

<223> n is a, c, g, or t

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<222> (102)..(102)

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<220><221> misc_feature

<222> (109)..(109)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (115)..(115)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (158)..(158)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (161)..(161)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (165)..(165)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (178)..(178)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (193)..(193)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (206)..(206)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (217)..(217)

<223

> n is a, c, g, or t

<220><221> misc_feature

<222> (224)..(224)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (272)..(272)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (280)..(280)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (287)..(287)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (310)..(311)

<223> n is a, c, g, or t

<400> 93

mwgrrvgksn rkdystmssv tvgmcvhvrc ssyvdstdsd vhgywragnd swkavatnna 60

wavtrdrhgd tknctsrdar msdagryrmk gnkwnykyds vnvtathrng tsgcntcsvw 120

acgtmswmgt svshsttrss vthhgtstcv tgagvttnrt nvsyntvtvg gtastagnss 180

ssvgsrvcav dsnarswtwr styssnvvhg dgtcransgs hvsnsytgkm rvsgvgavgg 240

agatavscvv vrscrkksar aadvgdgmkd antrgsasgn tswaddnrhh gaahssgrya 300

shkgdsgatn nyskk 315

<210> 94

<211> 256

<212> DNA

<213> Homo sapiens

<220><221> misc_feature

<222> (2)..(2)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (21)..(21)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (46)..(46)

<223> n is a, c, g, or t

<220><221> misc_feature

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<223> n is a, c, g, or t

<220><221> misc_feature

<222> (74)..(74)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (125)..(125)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (182)..(182)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (194)..(194)

<223> n is a, c, g, or t

<220><221> misc_feature

<222> (198)..(198)

<223> n is a, c, g, or t

<400> 94

mnatgtvasc aagghsrvhy nhsgragrgg dgggargsva ascvvnvaat shmrsrrwvy 60

ycvntsdtga ayanvsgart raawrgtaaa ststagratm vrvasgatkt srvyggcwaa 120

gmgwnccadr cssyskrycv agvatmgyga rvasgkaraa rrkarrktvm avcwggadvg 180

snwayrgmdw aavnsavnys rsrvcravsc cgcrgmrggd caravahsga sttdssrrds 240

rgsrssrmrs sssvrs 256

<210> 95

<211> 274

<212> PRT

<213> Homo sapiens

<400> 95

Met Gly Lys Ser Leu Ser His Leu Pro Leu His Ser Ser Lys Glu Asp

1 5 10 15

Ala Tyr Asp Gly Val Thr Ser Glu Asn Met Arg Asn Gly Leu Val Asn

20 25 30

Ser Glu Val His Asn Glu Asp Gly Arg Asn Gly Asp Val Ser Gln Phe

35 40 45

Pro Tyr Val Glu Phe Thr Gly Arg Asp Ser Val Thr Cys Pro Thr Cys

50 55 60

Gln Gly Thr Gly Arg Ile Pro Arg Gly Gln Glu Asn Gln Leu Val Ala

65 70 75 80

Leu Ile Pro Tyr Ser Asp Gln Arg Leu Arg Pro Arg Arg Thr Lys Leu

85 90 95

Tyr Val Met Ala Ser Val Phe Val Cys Leu Leu Leu Ser Gly Leu Ala

100 105 110

Val Phe Phe Leu Phe Pro Arg Ser Ile Asp Val Lys Tyr Ile Gly Val

115 120 125

Lys Ser Ala Tyr Val Ser Tyr Asp Val Gln Lys Arg Thr Ile Tyr Leu

130 135 140

Asn Ile Thr Asn Thr Leu Asn Ile Thr Asn Asn Asn Tyr Tyr Ser Val

145 150 155 160

Glu Val Glu Asn Ile Thr Ala Gln Val Gln Phe Ser Lys Thr Val Ile

165 170 175

Gly Lys Ala Arg Leu Asn Asn Ile Thr Ile Ile Gly Pro Leu Asp Met

180 185 190

Lys Gln Ile Asp Tyr Thr Val Pro Thr Val Ile Ala Glu Glu Met Ser

195 200 205

Tyr Met Tyr Asp Phe Cys Thr Leu Ile Ser Ile Lys Val His Asn Ile

210 215 220

Val Leu Met Met Gln Val Thr Val Thr Thr Thr Tyr Phe Gly His Ser

225 230 235 240

Glu Gln Ile Ser Gln Glu Arg Tyr Gln Tyr Val Asp Cys Gly Arg Asn

245 250 255

Thr Thr Tyr Gln Leu Gly Gln Ser Glu Tyr Leu Asn Val Leu Gln Pro

260 265 270

Gln Gln

<210> 96

<211> 459

<212> PRT

<213> Homo sapiens

<400> 96

Met Glu Gly Ser Ala Ser Pro Pro Glu Lys Pro Arg Ala Arg Pro Ala

1 5 10 15

Ala Ala Val Leu Cys Arg Gly Pro Val Glu Pro Leu Val Phe Leu Ala

20 25 30

Asn Phe Ala Leu Val Leu Gln Gly Pro Leu Thr Thr Gln Tyr Leu Trp

35 40 45

His Arg Phe Ser Ala Asp Leu Gly Tyr Asn Gly Thr Arg Gln Arg Gly

50 55 60

Gly Cys Ser Asn Arg Ser Ala Asp Pro Thr Met Gln Glu Val Glu Thr

65 70 75 80

Leu Thr Ser His Trp Thr Leu Tyr Met Asn Val Gly Gly Phe Leu Val

85 90 95

Gly Leu Phe Ser Ser Thr Leu Leu Gly Ala Trp Ser Asp Ser Val Gly

100 105 110

Arg Arg Pro Leu Leu Val Leu Ala Ser Leu Gly Leu Leu Leu Gln Ala
115 120 125
Leu Val Ser Val Phe Val Val Gln Leu Gln Leu His Val Gly Tyr Phe
130 135 140
Val Leu Gly Arg Ile Leu Cys Ala Leu Leu Gly Asp Phe Gly Gly Leu
145 150 155 160
Leu Ala Ala Ser Phe Ala Ser Val Ala Asp Val Ser Ser Ser Arg Ser
165 170 175

Arg Thr Phe Arg Met Ala Leu Leu Glu Ala Ser Ile Gly Val Ala Gly
180 185 190
Met Leu Ala Ser Leu Leu Gly Gly His Trp Leu Arg Ala Gln Gly Tyr
195 200 205
Ala Asn Pro Phe Trp Leu Ala Leu Ala Leu Leu Ile Ala Met Thr Leu
210 215 220
Tyr Ala Ala Phe Cys Phe Gly Glu Thr Leu Lys Glu Pro Lys Ser Thr
225 230 235 240

Arg Leu Phe Thr Phe Arg His His Arg Ser Ile Val Gln Leu Tyr Val
245 250 255
Ala Pro Ala Pro Glu Lys Ser Arg Lys His Leu Ala Leu Tyr Ser Leu
260 265 270
Ala Ile Phe Val Val Ile Thr Val His Phe Gly Ala Gln Asp Ile Leu
275 280 285
Thr Leu Tyr Glu Leu Ser Thr Pro Leu Cys Trp Asp Ser Lys Leu Ile
290 295 300

Gly Tyr Gly Ser Ala Ala Gln His Leu Pro Tyr Leu Thr Ser Leu Leu
305 310 315 320
Ala Leu Lys Leu Leu Gln Tyr Cys Leu Ala Asp Ala Trp Val Ala Glu
325 330 335
Ile Gly Leu Ala Phe Asn Ile Leu Gly Met Val Val Phe Ala Phe Ala
340 345 350

Thr Ile Thr Pro Leu Met Phe Thr Gly Tyr Gly Leu Leu Phe Leu Ser
355 360 365

Leu Val Ile Thr Pro Val Ile Arg Ala Lys Leu Ser Lys Leu Val Arg
370 375 380
Glu Thr Glu Gln Gly Ala Leu Phe Ser Ala Val Ala Cys Val Asn Ser
385 390 395 400
Leu Ala Met Leu Thr Ala Ser Gly Ile Phe Asn Ser Leu Tyr Pro Ala
405 410 415
Thr Leu Asn Phe Met Lys Gly Phe Pro Phe Leu Leu Gly Ala Gly Leu
420 425 430

Leu Leu Ile Pro Ala Val Leu Ile Gly Met Leu Glu Lys Ala Asp Pro
435 440 445
His Leu Glu Phe Gln Gln Phe Pro Gln Ser Pro
450 455
<210> 97
<211> 343
<212> PRT
<213> Homo sapiens
<400> 97
Met Trp Ser His Leu Asn Arg Leu Leu Phe Trp Ser Ile Phe Ser Ser
1 5 10 15
Val Thr Cys Arg Lys Ala Val Leu Asp Cys Glu Ala Met Lys Thr Asn
20 25 30

Glu Phe Pro Ser Pro Cys Leu Asp Ser Lys Thr Lys Val Val Met Lys
35 40 45
Gly Gln Asn Val Ser Met Phe Cys Ser His Lys Asn Lys Ser Leu Gln
50 55 60
Ile Thr Tyr Ser Leu Phe Arg Arg Lys Thr His Leu Gly Thr Gln Asp
65 70 75 80
Gly Lys Gly Glu Pro Ala Ile Phe Asn Leu Ser Ile Thr Glu Ala His
85 90 95

Glu Ser Gly Pro Tyr Lys Cys Lys Ala Gln Val Thr Ser Cys Ser Lys
100 105 110
Tyr Ser Arg Asp Phe Ser Phe Thr Ile Val Asp Pro Val Thr Ser Pro
115 120 125
Val Leu Asn Ile Met Val Ile Gln Thr Glu Thr Asp Arg His Ile Thr
130 135 140
Leu His Cys Leu Ser Val Asn Gly Ser Leu Pro Ile Asn Tyr Thr Phe
145 150 155 160

Phe Glu Asn His Val Ala Ile Ser Pro Ala Ile Ser Lys Tyr Asp Arg
165 170 175
Glu Pro Ala Glu Phe Asn Leu Thr Lys Lys Asn Pro Gly Glu Glu Glu
180 185 190
Glu Tyr Arg Cys Glu Ala Lys Asn Arg Leu Pro Asn Tyr Ala Thr Tyr
195 200 205
Ser His Pro Val Thr Met Pro Ser Thr Gly Gly Asp Ser Cys Pro Phe
210 215 220

Cys Leu Lys Leu Leu Leu Pro Gly Leu Leu Leu Leu Leu Val Val Ile
225 230 235 240
Ile Leu Ile Leu Ala Phe Trp Val Leu Pro Lys Tyr Lys Thr Arg Lys
245 250 255
Ala Met Arg Asn Asn Val Pro Arg Asp Arg Gly Asp Thr Ala Met Glu
260 265 270
Val Gly Ile Tyr Ala Asn Ile Leu Glu Lys Gln Ala Lys Glu Glu Ser
275 280 285

Val Pro Glu Val Gly Ser Arg Pro Cys Val Ser Thr Ala Gln Asp Glu
290 295 300
Ala Lys His Ser Gln Glu Leu Gln Tyr Ala Thr Pro Val Phe Gln Glu
305 310 315 320
Val Ala Pro Arg Glu Gln Glu Ala Cys Asp Ser Tyr Lys Ser Gly Tyr
325 330 335
Val Tyr Ser Glu Leu Asn Phe
340

<210> 98

<211> 583

<212> PRT

<213> Homo sapiens

<400> 98

Met Pro Leu Arg Lys Met Lys Ile Pro Phe Leu Leu Leu Phe Phe Leu
1 5 10 15

Trp Glu Ala Glu Ser His Ala Ala Ser Arg Pro Asn Ile Ile Leu Val
20 25 30

Met Ala Asp Asp Leu Gly Ile Gly Asp Pro Gly Cys Tyr Gly Asn Lys
35 40 45

Thr Ile Arg Thr Pro Asn Ile Asp Arg Leu Ala Ser Gly Gly Val Lys
50 55 60

Leu Thr Gln His Leu Ala Ala Ser Pro Leu Cys Thr Pro Ser Arg Ala
65 70 75 80

Ala Phe Met Thr Gly Arg Tyr Pro Val Arg Ser Gly Met Ala Ser Trp
85 90 95

Ser Arg Thr Gly Val Phe Leu Phe Thr Ala Ser Ser Gly Gly Leu Pro
100 105 110

Thr Asp Glu Ile Thr Phe Ala Lys Leu Leu Lys Asp Gln Gly Tyr Ser
115 120 125

Thr Ala Leu Ile Gly Lys Trp His Leu Gly Met Ser Cys His Ser Lys
130 135 140

Thr Asp Phe Cys His His Pro Leu His His Gly Phe Asn Tyr Phe Tyr
145 150 155 160

Gly Ile Ser Leu Thr Asn Leu Arg Asp Cys Lys Pro Gly Glu Gly Ser
165 170 175

Val Phe Thr Thr Gly Phe Lys Arg Leu Val Phe Leu Pro Leu Gln Ile
180 185 190

Val Gly Val Thr Leu Leu Thr Leu Ala Ala Leu Asn Cys Leu Gly Leu
195 200 205

Leu His Val Pro Leu Gly Val Phe Phe Ser Leu Leu Phe Leu Ala Ala
210 215 220
Leu Ile Leu Thr Leu Phe Leu Gly Phe Leu His Tyr Phe Arg Pro Leu
225 230 235 240
Asn Cys Phe Met Met Arg Asn Tyr Glu Ile Ile Gln Gln Pro Met Ser
245 250 255

Tyr Asp Asn Leu Thr Gln Arg Leu Thr Val Glu Ala Ala Gln Phe Ile
260 265 270
Gln Arg Asn Thr Glu Thr Pro Phe Leu Leu Val Leu Ser Tyr Leu His
275 280 285
Val His Thr Ala Leu Phe Ser Ser Lys Asp Phe Ala Gly Lys Ser Gln
290 295 300
His Gly Val Tyr Gly Asp Ala Val Glu Glu Met Asp Trp Ser Val Gly
305 310 315 320

Gln Ile Leu Asn Leu Leu Asp Glu Leu Arg Leu Ala Asn Asp Thr Leu
325 330 335
Ile Tyr Phe Thr Ser Asp Gln Gly Ala His Val Glu Glu Val Ser Ser
340 345 350
Lys Gly Glu Ile His Gly Gly Ser Asn Gly Ile Tyr Lys Gly Gly Lys
355 360 365
Ala Asn Asn Trp Glu Gly Gly Ile Arg Val Pro Gly Ile Leu Arg Trp
370 375 380

Pro Arg Val Ile Gln Ala Gly Gln Lys Ile Asp Glu Pro Thr Ser Asn
385 390 395 400
Met Asp Ile Phe Pro Thr Val Ala Lys Leu Ala Gly Ala Pro Leu Pro
405 410 415
Glu Asp Arg Ile Ile Asp Gly Arg Asp Leu Met Pro Leu Leu Glu Gly
420 425 430
Lys Ser Gln Arg Ser Asp His Glu Phe Leu Phe His Tyr Cys Asn Ala
435 440 445

Tyr Leu Asn Ala Val Arg Trp His Pro Gln Asn Ser Thr Ser Ile Trp

450 455 460

Lys Ala Phe Phe Phe Thr Pro Asn Phe Asn Pro Val Gly Ser Asn Gly
465 470 475 480

Cys Phe Ala Thr His Val Cys Phe Cys Phe Gly Ser Tyr Val Thr His
485 490 495

His Asp Pro Pro Leu Leu Phe Asp Ile Ser Lys Asp Pro Arg Glu Arg
500 505 510

Asn Pro Leu Thr Pro Ala Ser Glu Pro Arg Phe Tyr Glu Ile Leu Lys
515 520 525

Val Met Gln Glu Ala Ala Asp Arg His Thr Gln Thr Leu Pro Glu Val
530 535 540

Pro Asp Gln Phe Ser Trp Asn Asn Phe Leu Trp Lys Pro Trp Leu Gln
545 550 555 560

Leu Cys Cys Pro Ser Thr Gly Leu Ser Cys Gln Cys Asp Arg Glu Lys
565 570 575

Gln Asp Lys Arg Leu Ser Arg
580

<210> 99
<211> 335
<212> PRT
<213> Homo sapiens
<400> 99

Met Leu Gly Ile Trp Thr Leu Leu Pro Leu Val Leu Thr Ser Val Ala
1 5 10 15

Arg Leu Ser Ser Lys Ser Val Asn Ala Gln Val Thr Asp Ile Asn Ser
20 25 30

Lys Gly Leu Glu Leu Arg Lys Thr Val Thr Thr Val Glu Thr Gln Asn
35 40 45

Leu Glu Gly Leu His His Asp Gly Gln Phe Cys His Lys Pro Cys Pro
50 55 60

Pro Gly Glu Arg Lys Ala Arg Asp Cys Thr Val Asn Gly Asp Glu Pro
65 70 75 80

Asp Cys Val Pro Cys Gln Glu Gly Lys Glu Tyr Thr Asp Lys Ala His
85 90 95
Phe Ser Ser Lys Cys Arg Arg Cys Arg Leu Cys Asp Glu Gly His Gly
100 105 110

Leu Glu Val Glu Ile Asn Cys Thr Arg Thr Gln Asn Thr Lys Cys Arg
115 120 125
Cys Lys Pro Asn Phe Phe Cys Asn Ser Thr Val Cys Glu His Cys Asp
130 135 140
Pro Cys Thr Lys Cys Glu His Gly Ile Ile Lys Glu Cys Thr Leu Thr
145 150 155 160
Ser Asn Thr Lys Cys Lys Glu Glu Gly Ser Arg Ser Asn Leu Gly Trp
165 170 175

Leu Cys Leu Leu Leu Leu Pro Ile Pro Leu Ile Val Trp Val Lys Arg
180 185 190
Lys Glu Val Gln Lys Thr Cys Arg Lys His Arg Lys Glu Asn Gln Gly
195 200 205
Ser His Glu Ser Pro Thr Leu Asn Pro Glu Thr Val Ala Ile Asn Leu
210 215 220
Ser Asp Val Asp Leu Ser Lys Tyr Ile Thr Thr Ile Ala Gly Val Met
225 230 235 240

Thr Leu Ser Gln Val Lys Gly Phe Val Arg Lys Asn Gly Val Asn Glu
245 250 255
Ala Lys Ile Asp Glu Ile Lys Asn Asp Asn Val Gln Asp Thr Ala Glu
260 265 270
Gln Lys Val Gln Leu Leu Arg Asn Trp His Gln Leu His Gly Lys Lys
275 280 285
Glu Ala Tyr Asp Thr Leu Ile Lys Asp Leu Lys Lys Ala Asn Leu Cys
290 295 300

Thr Leu Ala Glu Lys Ile Gln Thr Ile Ile Leu Lys Asp Ile Thr Ser
305 310 315 320
Asp Ser Glu Asn Ser Asn Phe Arg Asn Glu Ile Gln Ser Leu Val

325 330 335

<210> 100

<211> 448

<212> PRT

<213> Homo sapiens

<400> 100

Met Leu Thr Phe Met Ala Ser Asp Ser Glu Glu Glu Val Cys Asp Glu
1 5 10 15
Arg Thr Ser Leu Met Ser Ala Glu Ser Pro Thr Pro Arg Ser Cys Gln

20 25 30
Glu Gly Arg Gln Gly Pro Glu Asp Gly Glu Asn Thr Ala Gln Trp Arg
35 40 45
Ser Gln Glu Asn Glu Glu Asp Gly Glu Glu Asp Pro Asp Arg Tyr Val
50 55 60
Cys Ser Gly Val Pro Gly Arg Pro Pro Gly Leu Glu Glu Glu Leu Thr
65 70 75 80
Leu Lys Tyr Gly Ala Lys His Val Ile Met Leu Phe Val Pro Val Thr

85 90 95
Leu Cys Met Ile Val Val Val Ala Thr Ile Lys Ser Val Arg Phe Tyr
100 105 110
Thr Glu Lys Asn Gly Gln Leu Ile Tyr Thr Pro Phe Thr Glu Asp Thr
115 120 125
Pro Ser Val Gly Gln Arg Leu Leu Asn Ser Val Leu Asn Thr Leu Ile
130 135 140
Met Ile Ser Val Ile Val Val Met Thr Ile Phe Leu Val Val Leu Tyr

145 150 155 160
Lys Tyr Arg Cys Tyr Lys Phe Ile His Gly Trp Leu Ile Met Ser Ser
165 170 175
Leu Met Leu Leu Phe Leu Phe Thr Tyr Ile Tyr Leu Gly Glu Val Leu
180 185 190
Lys Thr Tyr Asn Val Ala Met Asp Tyr Pro Thr Leu Leu Leu Thr Val
195 200 205

Trp Asn Phe Gly Ala Val Gly Met Val Cys Ile His Trp Lys Gly Pro

210 215 220

Leu Val Leu Gln Gln Ala Tyr Leu Ile Met Ile Ser Ala Leu Met Ala
225 230 235 240
Leu Val Phe Ile Lys Tyr Leu Pro Glu Trp Ser Ala Trp Val Ile Leu
245 250 255
Gly Ala Ile Ser Val Tyr Asp Leu Val Ala Val Leu Cys Pro Lys Gly
260 265 270
Pro Leu Arg Met Leu Val Glu Thr Ala Gln Glu Arg Asn Glu Pro Ile

275 280 285

Phe Pro Ala Leu Ile Tyr Ser Ser Ala Met Val Trp Thr Val Gly Met
290 295 300
Ala Lys Leu Asp Pro Ser Ser Gln Gly Ala Leu Gln Leu Pro Tyr Asp
305 310 315 320
Pro Glu Met Glu Glu Asp Ser Tyr Asp Ser Phe Gly Glu Pro Ser Tyr
325 330 335
Pro Glu Val Phe Glu Pro Pro Leu Thr Gly Tyr Pro Gly Glu Glu Leu

340 345 350

Glu Glu Glu Glu Glu Arg Gly Val Lys Leu Gly Leu Gly Asp Phe Ile
355 360 365
Phe Tyr Ser Val Leu Val Gly Lys Ala Ala Ala Thr Gly Ser Gly Asp
370 375 380
Trp Asn Thr Thr Leu Ala Cys Phe Val Ala Ile Leu Ile Gly Leu Cys
385 390 395 400
Leu Thr Leu Leu Leu Leu Ala Val Phe Lys Lys Ala Leu Pro Ala Leu

405 410 415

Pro Ile Ser Ile Thr Phe Gly Leu Ile Phe Tyr Phe Ser Thr Asp Asn
420 425 430
Leu Val Arg Pro Phe Met Asp Thr Leu Ala Ser His Gln Leu Tyr Ile
435 440 445

<210> 101

<211> 722

<212> PRT

<213> Homo sapiens

<400> 101

Met Pro Leu His Gln Leu Gly Asp Lys Pro Leu Thr Phe Pro Ser Pro
1 5 10 15

Asn Ser Ala Met Glu Asn Gly Leu Asp His Thr Pro Pro Ser Arg Arg
20 25 30

Ala Ser Pro Gly Thr Pro Leu Ser Pro Gly Ser Leu Arg Ser Ala Ala
35 40 45

His Ser Pro Leu Asp Thr Ser Lys Gln Pro Leu Cys Gln Leu Trp Ala
50 55 60

Glu Lys His Gly Ala Arg Gly Thr His Glu Val Arg Tyr Val Ser Ala
65 70 75 80

Gly Gln Ser Val Ala Cys Gly Trp Trp Ala Phe Ala Pro Pro Cys Leu
85 90 95

Gln Val Leu Asn Thr Pro Lys Gly Ile Leu Phe Phe Leu Cys Ala Ala
100 105 110

Ala Phe Leu Gln Gly Met Thr Val Asn Gly Phe Ile Asn Thr Val Ile
115 120 125

Thr Ser Leu Glu Arg Arg Tyr Asp Leu His Ser Tyr Gln Ser Gly Leu
130 135 140

Ile Ala Ser Ser Tyr Asp Ile Ala Ala Cys Leu Cys Leu Thr Phe Val
145 150 155 160

Ser Tyr Phe Gly Gly Ser Gly His Lys Pro Arg Trp Leu Gly Trp Gly
165 170 175

Val Leu Leu Met Gly Thr Gly Ser Leu Val Phe Ala Leu Pro His Phe
180 185 190

Thr Ala Gly Arg Tyr Glu Val Glu Leu Asp Ala Gly Val Arg Thr Cys
195 200 205

Pro Ala Asn Pro Gly Ala Val Cys Ala Asp Ser Thr Ser Gly Leu Ser

210 215 220

Arg Tyr Gln Leu Val Phe Met Leu Gly Gln Phe Leu His Gly Val Gly

225 230 235 240

Ala Thr Pro Leu Tyr Thr Leu Gly Val Thr Tyr Leu Asp Glu Asn Val

245 250 255

Lys Ser Ser Cys Ser Pro Val Tyr Ile Ala Ile Phe Tyr Thr Ala Ala

260 265 270

Ile Leu Gly Pro Ala Ala Gly Tyr Leu Ile Gly Gly Ala Leu Leu Asn

275 280 285

Ile Tyr Thr Glu Met Gly Arg Arg Thr Glu Leu Thr Thr Glu Ser Pro

290 295 300

Leu Trp Val Gly Ala Trp Trp Val Gly Phe Leu Gly Ser Gly Ala Ala

305 310 315 320

Ala Phe Phe Thr Ala Val Pro Ile Leu Gly Tyr Pro Arg Gln Leu Pro

325 330 335

Gly Ser Gln Arg Tyr Ala Val Met Arg Ala Ala Glu Met His Gln Leu

340 345 350

Lys Asp Ser Ser Arg Gly Glu Ala Ser Asn Pro Asp Phe Gly Lys Thr

355 360 365

Ile Arg Asp Leu Pro Leu Ser Ile Trp Leu Leu Leu Lys Asn Pro Thr

370 375 380

Phe Ile Leu Leu Cys Leu Ala Gly Ala Thr Glu Ala Thr Leu Ile Thr

385 390 395 400

Gly Met Ser Thr Phe Ser Pro Lys Phe Leu Glu Ser Gln Phe Ser Leu

405 410 415

Ser Ala Ser Glu Ala Ala Thr Leu Phe Gly Tyr Leu Val Val Pro Ala

420 425 430

Gly Gly Gly Gly Thr Phe Leu Gly Gly Phe Phe Val Asn Lys Leu Arg

435 440 445

Leu Arg Gly Ser Ala Val Ile Lys Phe Cys Leu Phe Cys Thr Val Val

450 455 460

Ser Leu Leu Gly Ile Leu Val Phe Ser Leu His Cys Pro Ser Val Pro
465 470 475 480
Met Ala Gly Val Thr Ala Ser Tyr Gly Gly Ser Leu Leu Pro Glu Gly
485 490 495
His Leu Asn Leu Thr Ala Pro Cys Asn Ala Ala Cys Ser Cys Gln Pro
500 505 510
Glu His Tyr Ser Pro Val Cys Gly Ser Asp Gly Leu Met Tyr Phe Ser
515 520 525

Leu Cys His Ala Gly Cys Pro Ala Ala Thr Glu Thr Asn Val Asp Gly
530 535 540
Gln Lys Val Tyr Arg Asp Cys Ser Cys Ile Pro Gln Asn Leu Ser Ser
545 550 555 560
Gly Phe Gly His Ala Thr Ala Gly Lys Cys Thr Ser Thr Cys Gln Arg
565 570 575
Lys Pro Leu Leu Leu Val Phe Ile Phe Val Val Ile Phe Phe Thr Phe
580 585 590

Leu Ser Ser Ile Pro Ala Leu Thr Ala Thr Leu Arg Cys Val Arg Asp
595 600 605
Pro Gln Arg Ser Phe Ala Leu Gly Ile Gln Trp Ile Val Val Arg Ile
610 615 620
Leu Gly Gly Ile Pro Gly Pro Ile Ala Phe Gly Trp Val Ile Asp Lys
625 630 635 640
Ala Cys Leu Leu Trp Gln Asp Gln Cys Gly Gln Gln Gly Ser Cys Leu
645 650 655

Val Tyr Gln Asn Ser Ala Met Ser Arg Tyr Ile Leu Ile Met Gly Leu
660 665 670
Leu Tyr Lys Val Leu Gly Val Leu Phe Phe Ala Ile Ala Cys Phe Leu
675 680 685
Tyr Lys Pro Leu Ser Glu Ser Ser Asp Gly Leu Glu Thr Cys Leu Pro
690 695 700
Ser Gln Ser Ser Ala Pro Asp Ser Ala Thr Asp Ser Gln Leu Gln Ser

705 710 715 720

Ser Val

<210> 102

<211> 710

<212> PRT

<213> Homo sapiens

<400> 102

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> 103

<211> 183

<212> PRT

<213> Homo sapiens

<400> 103

Met Gln Ala Pro Arg Ala Ala Leu Val Phe Ala Leu Val Ile Ala Leu

1 5 10 15

Val Pro Val Gly Arg Gly Asn Tyr Glu Glu Leu Glu Asn Ser Gly Asp

20 25 30

Thr Thr Val Glu Ser Glu Arg Pro Asn Lys Val Thr Ile Pro Ser Thr

35 40 45

Phe Ala Ala Val Thr Ile Lys Glu Thr Leu Asn Ala Asn Ile Asn Ser

50 55 60

Thr Asn Phe Ala Pro Asp Glu Asn Gln Leu Glu Phe Ile Leu Met Val

65 70 75 80

Leu Ile Pro Leu Ile Leu Leu Val Leu Leu Leu Leu Ser Val Val Phe

85 90 95

Leu Ala Thr Tyr Tyr Lys Arg Lys Arg Thr Lys Gln Glu Pro Ser Ser

100 105 110

Gln Gly Ser Gln Ser Ala Leu Gln Thr Tyr Glu Leu Gly Ser Glu Asn

115 120 125

Val Lys Val Pro Ile Phe Glu Glu Asp Thr Pro Ser Val Met Glu Ile

130 135 140

Glu Met Glu Glu Leu Asp Lys Trp Met Asn Ser Met Asn Arg Asn Ala

145 150 155 160

Asp Phe Glu Cys Leu Pro Thr Leu Lys Glu Glu Lys Glu Ser Asn His

165 170 175

Asn Pro Ser Asp Ser Glu Ser

180

<210> 104

<211> 761

<212> PRT

<213> Homo sapiens

<400> 104

Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly Leu

1 5 10 15

Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr Ala Gly

20 25 30

Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly Asp

35 40 45

Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp Phe

50 55 60

Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly Ala

65 70 75 80

Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro Arg

85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu

100 105 110

Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile

115 120 125

Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr

130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr

145 150 155 160

Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser

165 170 175

Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met

180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu
195 200 205
Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu
210 215 220
Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr

225 230 235 240
Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe
245 250 255
Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp
260 265 270
Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys
275 280 285
Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile

290 295 300
Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile
305 310 315 320
Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser
325 330 335
Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly
340 345 350
Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg

355 360 365
Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser
370 375 380
Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu
385 390 395 400
Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr
405 410 415
Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu

420 425 430
Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val

435 440 445

Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro

450 455 460

Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala

465 470 475 480

Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn

485 490 495

Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro

500 505 510

His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala

515 520 525

Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu

530 535 540

Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser

545 550 555 560

Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu

565 570 575

Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser

580 585 590

His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly

595 600 605

Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys

610 615 620

Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val

625 630 635 640

Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile

645 650 655

Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala

660 665 670

Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr

675 680 685

Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala

690 695 700

Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu

705 710 715 720

Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu

725 730 735

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp

740 745 750

Asn Asn Cys Leu Gly Thr Glu Val Ala

755 760

<210> 105

<211> 1437

<212> PRT

<213> Homo sapiens

<400> 105

Met Lys Asp Ile Asp Ile Gly Lys Glu Tyr Ile Ile Pro Ser Pro Gly

1 5 10 15

Tyr Arg Ser Val Arg Glu Arg Thr Ser Thr Ser Gly Thr His Arg Asp

20 25 30

Arg Glu Asp Ser Lys Phe Arg Arg Thr Arg Pro Leu Glu Cys Gln Asp

35 40 45

Ala Leu Glu Thr Ala Ala Arg Ala Glu Gly Leu Ser Leu Asp Ala Ser

50 55 60

Met His Ser Gln Leu Arg Ile Leu Asp Glu Glu His Pro Lys Gly Lys

65 70 75 80

Tyr His His Gly Leu Ser Ala Leu Lys Pro Ile Arg Thr Thr Ser Lys

85 90 95

His Gln His Pro Val Asp Asn Ala Gly Leu Phe Ser Cys Met Thr Phe

100 105 110

Ser Trp Leu Ser Ser Leu Ala Arg Val Ala His Lys Lys Gly Glu Leu

115 120 125

Ser Met Glu Asp Val Trp Ser Leu Ser Lys His Glu Ser Ser Asp Val

130 135 140

Asn Cys Arg Arg Leu Glu Arg Leu Trp Gln Glu Glu Leu Asn Glu Val

145 150 155 160

Gly Pro Asp Ala Ala Ser Leu Arg Arg Val Val Trp Ile Phe Cys Arg

165 170 175

Thr Arg Leu Ile Leu Ser Ile Val Cys Leu Met Ile Thr Gln Leu Ala

180 185 190

Gly Phe Ser Gly Pro Ala Phe Met Val Lys His Leu Leu Glu Tyr Thr

195 200 205

Gln Ala Thr Glu Ser Asn Leu Gln Tyr Ser Leu Leu Leu Val Leu Gly

210 215 220

Leu Leu Leu Thr Glu Ile Val Arg Ser Trp Ser Leu Ala Leu Thr Trp

225 230 235 240

Ala Leu Asn Tyr Arg Thr Gly Val Arg Leu Arg Gly Ala Ile Leu Thr

245 250 255

Met Ala Phe Lys Lys Ile Leu Lys Leu Lys Asn Ile Lys Glu Lys Ser

260 265 270

Leu Gly Glu Leu Ile Asn Ile Cys Ser Asn Asp Gly Gln Arg Met Phe

275 280 285

Glu Ala Ala Ala Val Gly Ser Leu Leu Ala Gly Gly Pro Val Val Ala

290 295 300

Ile Leu Gly Met Ile Tyr Asn Val Ile Ile Leu Gly Pro Thr Gly Phe

305 310 315 320

Leu Gly Ser Ala Val Phe Ile Leu Phe Tyr Pro Ala Met Met Phe Ala

325 330 335

Ser Arg Leu Thr Ala Tyr Phe Arg Arg Lys Cys Val Ala Ala Thr Asp

340 345 350

Glu Arg Val Gln Lys Met Asn Glu Val Leu Thr Tyr Ile Lys Phe Ile

355 360 365

Lys Met Tyr Ala Trp Val Lys Ala Phe Ser Gln Ser Val Gln Lys Ile

370 375 380

Arg Glu Glu Glu Arg Arg Ile Leu Glu Lys Ala Gly Tyr Phe Gln Ser
385 390 395 400
Ile Thr Val Gly Val Ala Pro Ile Val Val Val Ile Ala Ser Val Val
405 410 415
Thr Phe Ser Val His Met Thr Leu Gly Phe Asp Leu Thr Ala Ala Gln

420 425 430
Ala Phe Thr Val Val Thr Val Phe Asn Ser Met Thr Phe Ala Leu Lys
435 440 445
Val Thr Pro Phe Ser Val Lys Ser Leu Ser Glu Ala Ser Val Ala Val
450 455 460
Asp Arg Phe Lys Ser Leu Phe Leu Met Glu Glu Val His Met Ile Lys
465 470 475 480
Asn Lys Pro Ala Ser Pro His Ile Lys Ile Glu Met Lys Asn Ala Thr

485 490 495
Leu Ala Trp Asp Ser Ser His Ser Ser Ile Gln Asn Ser Pro Lys Leu
500 505 510
Thr Pro Lys Met Lys Lys Asp Lys Arg Ala Ser Arg Gly Lys Lys Glu
515 520 525
Lys Val Arg Gln Leu Gln Arg Thr Glu His Gln Ala Val Leu Ala Glu
530 535 540
Gln Lys Gly His Leu Leu Leu Asp Ser Asp Glu Arg Pro Ser Pro Glu

545 550 555 560
Glu Glu Glu Gly Lys His Ile His Leu Gly His Leu Arg Leu Gln Arg
565 570 575
Thr Leu His Ser Ile Asp Leu Glu Ile Gln Glu Gly Lys Leu Val Gly
580 585 590
Ile Cys Gly Ser Val Gly Ser Gly Lys Thr Ser Leu Ile Ser Ala Ile
595 600 605
Leu Gly Gln Met Thr Leu Leu Glu Gly Ser Ile Ala Ile Ser Gly Thr

610 615 620
Phe Ala Tyr Val Ala Gln Gln Ala Trp Ile Leu Asn Ala Thr Leu Arg

625 630 635 640

Asp Asn Ile Leu Phe Gly Lys Glu Tyr Asp Glu Glu Arg Tyr Asn Ser

645 650 655

Val Leu Asn Ser Cys Cys Leu Arg Pro Asp Leu Ala Ile Leu Pro Ser

660 665 670

Ser Asp Leu Thr Glu Ile Gly Glu Arg Gly Ala Asn Leu Ser Gly Gly

675 680 685

Gln Arg Gln Arg Ile Ser Leu Ala Arg Ala Leu Tyr Ser Asp Arg Ser

690 695 700

Ile Tyr Ile Leu Asp Asp Pro Leu Ser Ala Leu Asp Ala His Val Gly

705 710 715 720

Asn His Ile Phe Asn Ser Ala Ile Arg Lys His Leu Lys Ser Lys Thr

725 730 735

Val Leu Phe Val Thr His Gln Leu Gln Tyr Leu Val Asp Cys Asp Glu

740 745 750

Val Ile Phe Met Lys Glu Gly Cys Ile Thr Glu Arg Gly Thr His Glu

755 760 765

Glu Leu Met Asn Leu Asn Gly Asp Tyr Ala Thr Ile Phe Asn Asn Leu

770 775 780

Leu Leu Gly Glu Thr Pro Pro Val Glu Ile Asn Ser Lys Lys Glu Thr

785 790 795 800

Ser Gly Ser Gln Lys Lys Ser Gln Asp Lys Gly Pro Lys Thr Gly Ser

805 810 815

Val Lys Lys Glu Lys Ala Val Lys Pro Glu Glu Gly Gln Leu Val Gln

820 825 830

Leu Glu Glu Lys Gly Gln Gly Ser Val Pro Trp Ser Val Tyr Gly Val

835 840 845

Tyr Ile Gln Ala Ala Gly Gly Pro Leu Ala Phe Leu Val Ile Met Ala

850 855 860

Leu Phe Met Leu Asn Val Gly Ser Thr Ala Phe Ser Thr Trp Trp Leu

865 870 875 880

Ser Tyr Trp Ile Lys Gln Gly Ser Gly Asn Thr Thr Val Thr Arg Gly
885 890 895
Asn Glu Thr Ser Val Ser Asp Ser Met Lys Asp Asn Pro His Met Gln
900 905 910
Tyr Tyr Ala Ser Ile Tyr Ala Leu Ser Met Ala Val Met Leu Ile Leu
915 920 925
Lys Ala Ile Arg Gly Val Val Phe Val Lys Gly Thr Leu Arg Ala Ser

930 935 940
Ser Arg Leu His Asp Glu Leu Phe Arg Arg Ile Leu Arg Ser Pro Met
945 950 955 960
Lys Phe Phe Asp Thr Thr Pro Thr Gly Arg Ile Leu Asn Arg Phe Ser
965 970 975
Lys Asp Met Asp Glu Val Asp Val Arg Leu Pro Phe Gln Ala Glu Met
980 985 990
Phe Ile Gln Asn Val Ile Leu Val Phe Phe Cys Val Gly Met Ile Ala

995 1000 1005
Gly Val Phe Pro Trp Phe Leu Val Ala Val Gly Pro Leu Val Ile
1010 1015 1020
Leu Phe Ser Val Leu His Ile Val Ser Arg Val Leu Ile Arg Glu
1025 1030 1035
Leu Lys Arg Leu Asp Asn Ile Thr Gln Ser Pro Phe Leu Ser His
1040 1045 1050
Ile Thr Ser Ser Ile Gln Gly Leu Ala Thr Ile His Ala Tyr Asn

1055 1060 1065
Lys Gly Gln Glu Phe Leu His Arg Tyr Gln Glu Leu Leu Asp Asp
1070 1075 1080
Asn Gln Ala Pro Phe Phe Leu Phe Thr Cys Ala Met Arg Trp Leu
1085 1090 1095
Ala Val Arg Leu Asp Leu Ile Ser Ile Ala Leu Ile Thr Thr Thr
1100 1105 1110
Gly Leu Met Ile Val Leu Met His Gly Gln Ile Pro Pro Ala Tyr

1115 1120 1125

Ala Gly Leu Ala Ile Ser Tyr Ala Val Gln Leu Thr Gly Leu Phe

1130 1135 1140

Gln Phe Thr Val Arg Leu Ala Ser Glu Thr Glu Ala Arg Phe Thr

1145 1150 1155

Ser Val Glu Arg Ile Asn His Tyr Ile Lys Thr Leu Ser Leu Glu

1160 1165 1170

Ala Pro Ala Arg Ile Lys Asn Lys Ala Pro Ser Pro Asp Trp Pro

1175 1180 1185

Gln Glu Gly Glu Val Thr Phe Glu Asn Ala Glu Met Arg Tyr Arg

1190 1195 1200

Glu Asn Leu Pro Leu Val Leu Lys Lys Val Ser Phe Thr Ile Lys

1205 1210 1215

Pro Lys Glu Lys Ile Gly Ile Val Gly Arg Thr Gly Ser Gly Lys

1220 1225 1230

Ser Ser Leu Gly Met Ala Leu Phe Arg Leu Val Glu Leu Ser Gly

1235 1240 1245

Gly Cys Ile Lys Ile Asp Gly Val Arg Ile Ser Asp Ile Gly Leu

1250 1255 1260

Ala Asp Leu Arg Ser Lys Leu Ser Ile Ile Pro Gln Glu Pro Val

1265 1270 1275

Leu Phe Ser Gly Thr Val Arg Ser Asn Leu Asp Pro Phe Asn Gln

1280 1285 1290

Tyr Thr Glu Asp Gln Ile Trp Asp Ala Leu Glu Arg Thr His Met

1295 1300 1305

Lys Glu Cys Ile Ala Gln Leu Pro Leu Lys Leu Glu Ser Glu Val

1310 1315 1320

Met Glu Asn Gly Asp Asn Phe Ser Val Gly Glu Arg Gln Leu Leu

1325 1330 1335

Cys Ile Ala Arg Ala Leu Leu Arg His Cys Lys Ile Leu Ile Leu

1340 1345 1350

Asp Glu Ala Thr Ala Ala Met Asp Thr Glu Thr Asp Leu Leu Ile

1355 1360 1365

Gln Glu Thr Ile Arg Glu Ala Phe Ala Asp Cys Thr Met Leu Thr

1370 1375 1380

Ile Ala His Arg Leu His Thr Val Leu Gly Ser Asp Arg Ile Met

1385 1390 1395

Val Leu Ala Gln Gly Gln Val Val Glu Phe Asp Thr Pro Ser Val

1400 1405 1410

Leu Leu Ser Asn Asp Ser Ser Arg Phe Tyr Ala Met Phe Ala Ala

1415 1420 1425

Ala Glu Asn Lys Val Ala Val Lys Gly

1430 1435

<210> 106

<211> 1074

<212> PRT

<213> Homo sapiens

<400> 106

Met Ala Pro Gly Met Ser Gly Arg Gly Gly Ala Ala Leu Leu Cys Leu

1 5 10 15

Ser Ala Leu Leu Ala His Ala Ser Gly Arg Ser His Pro Ala Ser Pro

20 25 30

Ser Pro Pro Gly Pro Gln Ala Ser Pro Val Leu Pro Val Ser Tyr Arg

35 40 45

Leu Ser His Thr Arg Leu Ala Phe Phe Leu Arg Glu Ala Arg Pro Pro

50 55 60

Ser Pro Ala Val Ala Asn Ser Ser Leu Gln Arg Ser Glu Pro Phe Val

65 70 75 80

Val Phe Gln Thr Lys Glu Leu Pro Val Leu Asn Val Ser Leu Gly Pro

85 90 95

Phe Ser Thr Ser Gln Val Val Ala Arg Glu Leu Leu Gln Pro Ser Ser

100 105 110

Thr Leu Asp Ile Pro Glu Arg Leu Thr Val Asn Trp Lys Val Arg Ala
115 120 125
Phe Ile Val Arg Ser His Val Pro Ala Ser Gln Pro Val Val Gln Val
130 135 140
Leu Phe Tyr Val Ala Gly Arg Asp Trp Asp Asp Phe Gly Val Thr Glu
145 150 155 160
Arg Leu Pro Cys Val Arg Leu His Ala Phe Arg Asp Ala Arg Glu Val

165 170 175
Lys Ser Ser Cys Arg Leu Ser Gly Gly Leu Ala Thr Cys Leu Val Arg
180 185 190
Ala Glu Leu Pro Leu Ala Trp Phe Gly Pro Pro Ala Pro Ala Ala Pro
195 200 205
Pro Thr Ala Arg Arg Lys Ser Pro Asp Gly Leu Glu Pro Glu Ala Thr
210 215 220
Gly Glu Ser Gln Gln Ala Glu Leu Tyr Tyr Thr Leu His Ala Pro Asp

225 230 235 240
Ala Ser Gly Gly Cys Gly Gly Ser Arg Arg Gly Ala Gly Pro Gly Val
245 250 255
Gly Ala Arg Ala Glu Ser Pro Thr Gln His Pro Leu Leu Arg Ile Gly
260 265 270
Ser Ile Ser Leu Phe Arg Pro Pro Pro Arg Arg Thr Leu Gln Glu His
275 280 285
Arg Leu Asp Ser Asn Leu Met Ile Arg Leu Pro Asp Arg Pro Leu Lys

290 295 300
Pro Gly Glu Val Leu Ser Ile Leu Leu Tyr Leu Ala Pro Asn Ser Ser
305 310 315 320
Ser Pro Ser Ser Pro Ser Val Glu His Phe Thr Leu Arg Val Lys Ala
325 330 335
Lys Lys Gly Val Thr Leu Leu Gly Thr Lys Ser Arg Ser Gly Gln Trp
340 345 350
His Val Thr Ser Glu Leu Leu Thr Gly Ala Lys His Ser Thr Ala Thr

355 360 365

Val Asp Val Ala Trp Ala Gln Ser Thr Pro Leu Pro Pro Arg Glu Gly

370 375 380

Gln Gly Pro Leu Glu Ile Leu Gln Leu Asp Phe Glu Met Glu Asn Phe

385 390 395 400

Thr Ser Gln Ser Val Lys Arg Arg Ile Met Trp His Ile Asp Tyr Arg

405 410 415

Gly His Gly Ala Leu Pro Asp Leu Glu Arg Ala Val Thr Glu Leu Thr

420 425 430

Val Ile Gln Arg Asp Val Gln Ala Ile Leu Pro Leu Ala Met Asp Thr

435 440 445

Glu Ile Ile Asn Thr Ala Ile Leu Thr Gly Arg Thr Val Ala Ile Pro

450 455 460

Val Lys Val Ile Ala Ile Glu Val Asn Gly Leu Val Leu Asp Ile Ser

465 470 475 480

Ala Leu Val Glu Cys Glu Ser Asp Asn Glu Asp Ile Ile Lys Val Ser

485 490 495

Ser Ser Cys Asp Tyr Val Phe Val Ser Gly Lys Glu Ser Arg Gly Ser

500 505 510

Met Asn Ala Arg Val Thr Phe Arg Tyr Asp Val Leu Asn Ala Pro Leu

515 520 525

Glu Met Thr Val Trp Val Pro Lys Leu Pro Leu His Ile Glu Leu Ser

530 535 540

Asp Ala Arg Leu Ser Gln Val Lys Gly Trp Arg Val Pro Ile Leu Pro

545 550 555 560

Asp Arg Arg Ser Val Arg Glu Ser Glu Asp Glu Asp Glu Glu Glu Glu

565 570 575

Glu Arg Arg Gln Ser Ala Ser Arg Gly Cys Thr Leu Gln Tyr Gln His

580 585 590

Ala Thr Leu Gln Val Phe Thr Gln Phe His Thr Thr Ser Ser Glu Gly

595 600 605

Thr Asp Gln Val Val Thr Met Leu Gly Pro Asp Trp Leu Val Glu Val

610 615 620

Thr Asp Leu Val Ser Asp Phe Met Arg Val Gly Asp Pro Arg Val Ala
625 630 635 640

His Met Val Asp Ser Ser Thr Leu Ala Gly Leu Glu Pro Gly Thr Thr
645 650 655

Pro Phe Lys Val Val Ser Pro Leu Thr Glu Ala Val Leu Gly Glu Thr
660 665 670

Leu Leu Thr Val Thr Glu Glu Lys Val Ser Ile Thr Gln Leu Gln Ala

675 680 685

Gln Val Val Ala Ser Leu Ala Leu Ser Leu Arg Pro Ser Pro Gly Ser
690 695 700

Ser His Thr Ile Leu Ala Thr Thr Ala Ala Gln Gln Thr Leu Ser Phe
705 710 715 720

Leu Lys Gln Glu Ala Leu Leu Ser Leu Trp Leu Ser Tyr Ser Asp Gly
725 730 735

Thr Thr Ala Pro Leu Ser Leu Tyr Ser Pro Arg Asp Tyr Gly Leu Leu

740 745 750

Val Ser Ser Leu Asp Glu His Val Ala Thr Val Thr Gln Asp Arg Ala
755 760 765

Phe Pro Leu Val Val Ala Glu Ala Glu Gly Ser Gly Glu Leu Leu Arg
770 775 780

Ala Glu Leu Thr Ile Ala Glu Ser Cys Gln Lys Thr Lys Arg Lys Ser
785 790 795 800

Val Leu Ala Thr Thr Pro Val Gly Leu Arg Val His Phe Gly Arg Asp

805 810 815

Glu Glu Asp Pro Thr Tyr Asp Tyr Pro Gly Pro Ser Gln Pro Gly Pro

820 825 830

Gly Gly Gly Glu Asp Glu Ala Arg Gly Ala Gly Pro Pro Gly Ser Ala
835 840 845

Leu Pro Ala Pro Glu Ala Pro Gly Pro Gly Thr Ala Ser Pro Val Val

850 855 860

Pro Pro Thr Glu Asp Phe Leu Pro Leu Pro Thr Gly Phe Leu Gln Val

865 870 875 880

Pro Arg Gly Leu Thr Asp Leu Glu Ile Gly Met Tyr Ala Leu Leu Gly

885 890 895

Val Phe Cys Leu Ala Ile Leu Val Phe Leu Ile Asn Cys Ile Val Phe

900 905 910

Val Leu Arg Tyr Arg His Lys Arg Ile Pro Pro Glu Gly Gln Thr Ser

915 920 925

Met Asp His Ser His His Trp Val Phe Leu Gly Asn Gly Gln Pro Leu

930 935 940

Arg Val Gln Gly Glu Leu Ser Pro Pro Ala Gly Asn Pro Leu Glu Thr

945 950 955 960

Val Pro Ala Phe Cys His Gly Asp His His Ser Ser Gly Ser Ser Gln

965 970 975

Thr Ser Val Gln Ser Gln Val His Gly Arg Gly Asp Gly Ser Ser Gly

980 985 990

Gly Ser Ala Arg Asp Gln Ala Glu Asp Pro Ala Ser Ser Pro Thr Ser

995 1000 1005

Lys Arg Lys Arg Val Lys Phe Thr Thr Phe Thr Thr Leu Pro Ser

1010 1015 1020

Glu Glu Leu Ala Tyr Asp Ser Val Pro Ala Gly Glu Glu Asp Glu

1025 1030 1035

Glu Glu Glu Glu Asp Leu Gly Trp Gly Cys Pro Asp Val Ala Gly

1040 1045 1050

Pro Thr Arg Pro Thr Ala Pro Pro Asp Leu His Asn Tyr Met Arg

1055 1060 1065

Arg Ile Lys Glu Ile Ala

1070

<210> 107

<211> 931

<212> PRT

<213> Homo sapiens

<400> 107

Met Arg Lys Gly Leu Arg Ala Thr Ala Ala Arg Cys Gly Leu Gly Leu
1 5 10 15

Gly Tyr Leu Leu Gln Met Leu Val Leu Pro Ala Leu Ala Leu Leu Ser
20 25 30

Ala Ser Gly Thr Gly Ser Ala Ala Gln Asp Asp Asp Phe Phe His Glu
35 40 45

Leu Pro Glu Thr Phe Pro Ser Asp Pro Pro Glu Pro Leu Pro His Phe
50 55 60

Leu Ile Glu Pro Glu Glu Ala Tyr Ile Val Lys Asn Lys Pro Val Asn
65 70 75 80

Leu Tyr Cys Lys Ala Ser Pro Ala Thr Gln Ile Tyr Phe Lys Cys Asn
85 90 95

Ser Glu Trp Val His Gln Lys Asp His Ile Val Asp Glu Arg Val Asp
100 105 110

Glu Thr Ser Gly Leu Ile Val Arg Glu Val Ser Ile Glu Ile Ser Arg
115 120 125

Gln Gln Val Glu Glu Leu Phe Gly Pro Glu Asp Tyr Trp Cys Gln Cys
130 135 140

Val Ala Trp Ser Ser Ala Gly Thr Thr Lys Ser Arg Lys Ala Tyr Val
145 150 155 160

Arg Ile Ala Tyr Leu Arg Lys Thr Phe Glu Gln Glu Pro Leu Gly Lys
165 170 175

Glu Val Ser Leu Glu Gln Glu Val Leu Leu Gln Cys Arg Pro Pro Glu
180 185 190

Gly Ile Pro Val Ala Glu Val Glu Trp Leu Lys Asn Glu Asp Ile Ile
195 200 205

Asp Pro Val Glu Asp Arg Asn Phe Tyr Ile Thr Ile Asp His Asn Leu
210 215 220

Ile Ile Lys Gln Ala Arg Leu Ser Asp Thr Ala Asn Tyr Thr Cys Val

225 230 235 240

Ala Lys Asn Ile Val Ala Lys Arg Lys Ser Thr Thr Ala Thr Val Ile

245 250 255

Val Tyr Val Asn Gly Gly Trp Ser Thr Trp Thr Glu Trp Ser Val Cys

260 265 270

Asn Ser Arg Cys Gly Arg Gly Tyr Gln Lys Arg Thr Arg Thr Cys Thr

275 280 285

Asn Pro Ala Pro Leu Asn Gly Gly Ala Phe Cys Glu Gly Gln Ser Val

290 295 300

Gln Lys Ile Ala Cys Thr Thr Leu Cys Pro Val Asp Gly Arg Trp Thr

305 310 315 320

Pro Trp Ser Lys Trp Ser Thr Cys Gly Thr Glu Cys Thr His Trp Arg

325 330 335

Arg Arg Glu Cys Thr Ala Pro Ala Pro Lys Asn Gly Gly Lys Asp Cys

340 345 350

Asp Gly Leu Val Leu Gln Ser Lys Asn Cys Thr Asp Gly Leu Cys Met

355 360 365

Gln Thr Ala Pro Asp Ser Asp Asp Val Ala Leu Tyr Val Gly Ile Val

370 375 380

Ile Ala Val Ile Val Cys Leu Ala Ile Ser Val Val Val Ala Leu Phe

385 390 395 400

Val Tyr Arg Lys Asn His Arg Asp Phe Glu Ser Asp Ile Ile Asp Ser

405 410 415

Ser Ala Leu Asn Gly Gly Phe Gln Pro Val Asn Ile Lys Ala Ala Arg

420 425 430

Gln Asp Leu Leu Ala Val Pro Pro Asp Leu Thr Ser Ala Ala Ala Met

435 440 445

Tyr Arg Gly Pro Val Tyr Ala Leu His Asp Val Ser Asp Lys Ile Pro

450 455 460

Met Thr Asn Ser Pro Ile Leu Asp Pro Leu Pro Asn Leu Lys Ile Lys

465 470 475 480

Val Tyr Asn Thr Ser Gly Ala Val Thr Pro Gln Asp Asp Leu Ser Glu

485 490 495

Phe Thr Ser Lys Leu Ser Pro Gln Met Thr Gln Ser Leu Leu Glu Asn

500 505 510

Glu Ala Leu Ser Leu Lys Asn Gln Ser Leu Ala Arg Gln Thr Asp Pro

515 520 525

Ser Cys Thr Ala Phe Gly Ser Phe Asn Ser Leu Gly Gly His Leu Ile

530 535 540

Val Pro Asn Ser Gly Val Ser Leu Leu Ile Pro Ala Gly Ala Ile Pro

545 550 555 560

Gln Gly Arg Val Tyr Glu Met Tyr Val Thr Val His Arg Lys Glu Thr

565 570 575

Met Arg Pro Pro Met Asp Asp Ser Gln Thr Leu Leu Thr Pro Val Val

580 585 590

Ser Cys Gly Pro Pro Gly Ala Leu Leu Thr Arg Pro Val Val Leu Thr

595 600 605

Met His His Cys Ala Asp Pro Asn Thr Glu Asp Trp Lys Ile Leu Leu

610 615 620

Lys Asn Gln Ala Ala Gln Gly Gln Trp Glu Asp Val Val Val Val Gly

625 630 635 640

Glu Glu Asn Phe Thr Thr Pro Cys Tyr Ile Gln Leu Asp Ala Glu Ala

645 650 655

Cys His Ile Leu Thr Glu Asn Leu Ser Thr Tyr Ala Leu Val Gly His

660 665 670

Ser Thr Thr Lys Ala Ala Ala Lys Arg Leu Lys Leu Ala Ile Phe Gly

675 680 685

Pro Leu Cys Cys Ser Ser Leu Glu Tyr Ser Ile Arg Val Tyr Cys Leu

690 695 700

Asp Asp Thr Gln Asp Ala Leu Lys Glu Ile Leu His Leu Glu Arg Gln

705 710 715 720

Met Gly Gly Gln Leu Leu Glu Glu Pro Lys Ala Leu His Phe Lys Gly
725 730 735
Ser Thr His Asn Leu Arg Leu Ser Ile His Asp Ile Ala His Ser Leu

740 745 750
Trp Lys Ser Lys Leu Leu Ala Lys Tyr Gln Glu Ile Pro Phe Tyr His
755 760 765
Val Trp Ser Gly Ser Gln Arg Asn Leu His Cys Thr Phe Thr Leu Glu
770 775 780
Arg Phe Ser Leu Asn Thr Val Glu Leu Val Cys Lys Leu Cys Val Arg
785 790 795 800
Gln Val Glu Gly Glu Gly Gln Ile Phe Gln Leu Asn Cys Thr Val Ser

805 810 815
Glu Glu Pro Thr Gly Ile Asp Leu Pro Leu Leu Asp Pro Ala Asn Thr
820 825 830
Ile Thr Thr Val Thr Gly Pro Ser Ala Phe Ser Ile Pro Leu Pro Ile
835 840 845
Arg Gln Lys Leu Cys Ser Ser Leu Asp Ala Pro Gln Thr Arg Gly His
850 855 860
Asp Trp Arg Met Leu Ala His Lys Leu Asn Leu Asp Arg Tyr Leu Asn

865 870 875 880
Tyr Phe Ala Thr Lys Ser Ser Pro Thr Gly Val Ile Leu Asp Leu Trp
885 890 895
Glu Ala Gln Asn Phe Pro Asp Gly Asn Leu Ser Met Leu Ala Ala Val
900 905 910
Leu Glu Glu Met Gly Arg His Glu Thr Val Val Ser Leu Ala Ala Glu
915 920 925
Gly Gln Tyr
930
<210> 108
<211> 552

<212> PRT

<213> Homo sapiens

<400> 108

Met Gly Cys Ser Ala Lys Ala Arg Trp Ala Ala Gly Ala Leu Gly Val
1 5 10 15

Ala Gly Leu Leu Cys Ala Val Leu Gly Ala Val Met Ile Val Met Val
20 25 30

Pro Ser Leu Ile Lys Gln Gln Val Leu Lys Asn Val Arg Ile Asp Pro
35 40 45

Ser Ser Leu Ser Phe Asn Met Trp Lys Glu Ile Pro Ile Pro Phe Tyr
50 55 60

Leu Ser Val Tyr Phe Phe Asp Val Met Asn Pro Ser Glu Ile Leu Lys
65 70 75 80

Gly Glu Lys Pro Gln Val Arg Glu Arg Gly Pro Tyr Val Tyr Arg Glu
85 90 95

Phe Arg His Lys Ser Asn Ile Thr Phe Asn Asn Asn Asp Thr Val Ser
100 105 110

Phe Leu Glu Tyr Arg Thr Phe Gln Phe Gln Pro Ser Lys Ser His Gly
115 120 125

Ser Glu Ser Asp Tyr Ile Val Met Pro Asn Ile Leu Val Leu Gly Ala
130 135 140

Ala Val Met Met Glu Asn Lys Pro Met Thr Leu Lys Leu Ile Met Thr
145 150 155 160

Leu Ala Phe Thr Thr Leu Gly Glu Arg Ala Phe Met Asn Arg Thr Val
165 170 175

Gly Glu Ile Met Trp Gly Tyr Lys Asp Pro Leu Val Asn Leu Ile Asn
180 185 190

Lys Tyr Phe Pro Gly Met Phe Pro Phe Lys Asp Lys Phe Gly Leu Phe
195 200 205

Ala Glu Leu Asn Asn Ser Asp Ser Gly Leu Phe Thr Val Phe Thr Gly
210 215 220

Val Gln Asn Ile Ser Arg Ile His Leu Val Asp Lys Trp Asn Gly Leu
225 230 235 240

Ser Lys Val Asp Phe Trp His Ser Asp Gln Cys Asn Met Ile Asn Gly

245 250 255

Thr Ser Gly Gln Met Trp Pro Pro Phe Met Thr Pro Glu Ser Ser Leu

260 265 270

Glu Phe Tyr Ser Pro Glu Ala Cys Arg Ser Met Lys Leu Met Tyr Lys

275 280 285

Glu Ser Gly Val Phe Glu Gly Ile Pro Thr Tyr Arg Phe Val Ala Pro

290 295 300

Lys Thr Leu Phe Ala Asn Gly Ser Ile Tyr Pro Pro Asn Glu Gly Phe

305 310 315 320

Cys Pro Cys Leu Glu Ser Gly Ile Gln Asn Val Ser Thr Cys Arg Phe

325 330 335

Ser Ala Pro Leu Phe Leu Ser His Pro His Phe Leu Asn Ala Asp Pro

340 345 350

Val Leu Ala Glu Ala Val Thr Gly Leu His Pro Asn Gln Glu Ala His

355 360 365

Ser Leu Phe Leu Asp Ile His Pro Val Thr Gly Ile Pro Met Asn Cys

370 375 380

Ser Val Lys Leu Gln Leu Ser Leu Tyr Met Lys Ser Val Ala Gly Ile

385 390 395 400

Gly Gln Thr Gly Lys Ile Glu Pro Val Val Leu Pro Leu Leu Trp Phe

405 410 415

Ala Glu Ser Gly Ala Met Glu Gly Glu Thr Leu His Thr Phe Tyr Thr

420 425 430

Gln Leu Val Leu Met Pro Lys Val Met His Tyr Ala Gln Tyr Val Leu

435 440 445

Leu Ala Leu Gly Cys Val Leu Leu Leu Val Pro Val Ile Cys Gln Ile

450 455 460

Arg Ser Gln Val Gly Ala Gly Gln Arg Ala Ala Arg Ala Asp Ser His

465 470 475 480

Ser Leu Ala Cys Trp Gly Lys Gly Ala Ser Asp Arg Thr Leu Trp Pro

485 490 495

Thr Ala Ala Trp Ser Pro Pro Pro Ala Ala Val Leu Arg Leu Cys Arg

500 505 510

Ser Gly Ser Gly His Cys Trp Gly Leu Arg Ser Thr Leu Ala Ser Phe

515 520 525

Ala Cys Arg Val Ala Thr Thr Leu Pro Val Leu Glu Gly Leu Gly Pro

530 535 540

Ser Leu Gly Gly Gly Thr Gly Ser

545 550

<210> 109

<211> 755

<212> PRT

<213> Homo sapiens

<400> 109

Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu Thr Phe Ala Leu Ser

1 5 10 15

Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala Ala Phe Pro Gln Thr

20 25 30

Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu

35 40 45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr

50 55 60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln

65 70 75 80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His

85 90 95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser

100 105 110

Asp His Glu His His Ser Glu His Glu His His Ser Asp His Asp His

115 120 125

His Ser His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala

130 135 140

Leu Cys Pro Asp His Asp Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn

145 150 155 160

Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg

165 170 175

Asn Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr

180 185 190

Asn Thr Val Ser Glu Gly Thr His Phe Leu Glu Thr Ile Glu Thr Pro

195 200 205

Arg Pro Gly Lys Leu Phe Pro Lys Asp Val Ser Ser Ser Thr Pro Pro

210 215 220

Ser Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr

225 230 235 240

Asn Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn

245 250 255

Thr Asn Glu Asn Pro Gln Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr

260 265 270

Ser His Gly Met Gly Ile Gln Val Pro Leu Asn Ala Thr Glu Phe Asn

275 280 285

Tyr Leu Cys Pro Ala Ile Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu

290 295 300

Ile His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser

305 310 315 320

Leu Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser

325 330 335

Phe Leu Ser Leu Leu Gly Val Ile Leu Val Pro Leu Met Asn Arg Val

340 345 350

Phe Phe Lys Phe Leu Leu Ser Phe Leu Val Ala Leu Ala Val Gly Thr

355 360 365

Leu Ser Gly Asp Ala Phe Leu His Leu Leu Pro His Ser His Ala Ser

370 375 380

His His His Ser His Ser His Glu Glu Pro Ala Met Glu Met Lys Arg

385 390 395 400

Gly Pro Leu Phe Ser His Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala

405 410 415

Tyr Phe Asp Ser Thr Trp Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr

420 425 430

Phe Met Phe Leu Val Glu His Val Leu Thr Leu Ile Lys Gln Phe Lys

435 440 445

Asp Lys Lys Lys Lys Asn Gln Lys Lys Pro Glu Asn Asp Asp Asp Val

450 455 460

Glu Ile Lys Lys Gln Leu Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn

465 470 475 480

Glu Glu Lys Val Asp Thr Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala

485 490 495

Asp Ser Gln Glu Pro Ser His Phe Asp Ser Gln Gln Pro Ala Val Leu

500 505 510

Glu Glu Glu Glu Val Met Ile Ala His Ala His Pro Gln Glu Val Tyr

515 520 525

Asn Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe

530 535 540

His Asp Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp

545 550 555 560

Tyr His His Ile Leu His His His His His His Gln Asn His His Pro His

565 570 575

Ser His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val

580 585 590

Ala Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe

595 600 605

Ser Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser

610 615 620

Gly Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu

625 630 635 640

Leu Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln

645 650 655

Ala Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met

660 665 670

Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp

675 680 685

Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp

690 695 700

Met Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser

705 710 715 720

Arg Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe

725 730 735

Gly Ile Met Leu Leu Ile Ser Ile Phe Glu His Lys Ile Val Phe Arg

740 745 750

Ile Asn Phe

755

<210> 110

<211> 937

<212> PRT

<213> Homo sapiens

<400> 110

Met His Arg Pro Arg Arg Arg Gly Thr Arg Pro Pro Leu Leu Ala Leu

1 5 10 15

Leu Ala Ala Leu Leu Leu Ala Ala Arg Gly Ala Ala Ala Gln Glu Thr

20 25 30

Glu Leu Ser Val Ser Ala Glu Leu Val Pro Thr Ser Ser Trp Asn Ile

35 40 45

Ser Ser Glu Leu Asn Lys Asp Ser Tyr Leu Thr Leu Asp Glu Pro Met

50 55 60

Asn Asn Ile Thr Thr Ser Leu Gly Gln Thr Ala Glu Leu His Cys Lys

65 70 75 80

Val Ser Gly Asn Pro Pro Pro Thr Ile Arg Trp Phe Lys Asn Asp Ala
85 90 95
Pro Val Val Gln Glu Pro Arg Arg Leu Ser Phe Arg Ser Thr Ile Tyr
100 105 110
Gly Ser Arg Leu Arg Ile Arg Asn Leu Asp Thr Thr Asp Thr Gly Tyr
115 120 125
Phe Gln Cys Val Ala Thr Asn Gly Lys Glu Val Val Ser Ser Thr Gly
130 135 140

Val Leu Phe Val Lys Phe Gly Pro Pro Pro Thr Ala Ser Pro Gly Tyr
145 150 155 160
Ser Asp Glu Tyr Glu Glu Asp Gly Phe Cys Gln Pro Tyr Arg Gly Ile
165 170 175
Ala Cys Ala Arg Phe Ile Gly Asn Arg Thr Val Tyr Met Glu Ser Leu
180 185 190
His Met Gln Gly Glu Ile Glu Asn Gln Ile Thr Ala Ala Phe Thr Met
195 200 205

Ile Gly Thr Ser Ser His Leu Ser Asp Lys Cys Ser Gln Phe Ala Ile
210 215 220
Pro Ser Leu Cys His Tyr Ala Phe Pro Tyr Cys Asp Glu Thr Ser Ser
225 230 235 240
Val Pro Lys Pro Arg Asp Leu Cys Arg Asp Glu Cys Glu Ile Leu Glu
245 250 255
Asn Val Leu Cys Gln Thr Glu Tyr Ile Phe Ala Arg Ser Asn Pro Met
260 265 270

Ile Leu Met Arg Leu Lys Leu Pro Asn Cys Glu Asp Leu Pro Gln Pro
275 280 285
Glu Ser Pro Glu Ala Ala Asn Cys Ile Arg Ile Gly Ile Pro Met Ala
290 295 300
Asp Pro Ile Asn Lys Asn His Lys Cys Tyr Asn Ser Thr Gly Val Asp
305 310 315 320

Tyr Arg Gly Thr Val Ser Val Thr Lys Ser Gly Arg Gln Cys Gln Pro
325 330 335

Trp Asn Ser Gln Tyr Pro His Thr His Thr Phe Thr Ala Leu Arg Phe
340 345 350
Pro Glu Leu Asn Gly Gly His Ser Tyr Cys Arg Asn Pro Gly Asn Gln
355 360 365
Lys Glu Ala Pro Trp Cys Phe Thr Leu Asp Glu Asn Phe Lys Ser Asp
370 375 380
Leu Cys Asp Ile Pro Ala Cys Asp Ser Lys Asp Ser Lys Glu Lys Asn
385 390 395 400

Lys Met Glu Ile Leu Tyr Ile Leu Val Pro Ser Val Ala Ile Pro Leu
405 410 415
Ala Ile Ala Leu Leu Phe Phe Phe Ile Cys Val Cys Arg Asn Asn Gln
420 425 430
Lys Ser Ser Ser Ala Pro Val Gln Arg Gln Pro Lys His Val Arg Gly
435 440 445
Gln Asn Val Glu Met Ser Met Leu Asn Ala Tyr Lys Pro Lys Ser Lys
450 455 460

Ala Lys Glu Leu Pro Leu Ser Ala Val Arg Phe Met Glu Glu Leu Gly
465 470 475 480
Glu Cys Ala Phe Gly Lys Ile Tyr Lys Gly His Leu Tyr Leu Pro Gly
485 490 495
Met Asp His Ala Gln Leu Val Ala Ile Lys Thr Leu Lys Asp Tyr Asn
500 505 510
Asn Pro Gln Gln Trp Thr Glu Phe Gln Gln Glu Ala Ser Leu Met Ala
515 520 525

Glu Leu His His Pro Asn Ile Val Cys Leu Leu Gly Ala Val Thr Gln
530 535 540
Glu Gln Pro Val Cys Met Leu Phe Glu Tyr Ile Asn Gln Gly Asp Leu
545 550 555 560
His Glu Phe Leu Ile Met Arg Ser Pro His Ser Asp Val Gly Cys Ser

565 570 575

Ser Asp Glu Asp Gly Thr Val Lys Ser Ser Leu Asp His Gly Asp Phe

580 585 590

Leu His Ile Ala Ile Gln Ile Ala Ala Gly Met Glu Tyr Leu Ser Ser

595 600 605

His Phe Phe Val His Lys Asp Leu Ala Ala Arg Asn Ile Leu Ile Gly

610 615 620

Glu Gln Leu His Val Lys Ile Ser Asp Leu Gly Leu Ser Arg Glu Ile

625 630 635 640

Tyr Ser Ala Asp Tyr Tyr Arg Val Gln Ser Lys Ser Leu Leu Pro Ile

645 650 655

Arg Trp Met Pro Pro Glu Ala Ile Met Tyr Gly Lys Phe Ser Ser Asp

660 665 670

Ser Asp Ile Trp Ser Phe Gly Val Val Leu Trp Glu Ile Phe Ser Phe

675 680 685

Gly Leu Gln Pro Tyr Tyr Gly Phe Ser Asn Gln Glu Val Ile Glu Met

690 695 700

Val Arg Lys Arg Gln Leu Leu Pro Cys Ser Glu Asp Cys Pro Pro Arg

705 710 715 720

Met Tyr Ser Leu Met Thr Glu Cys Trp Asn Glu Ile Pro Ser Arg Arg

725 730 735

Pro Arg Phe Lys Asp Ile His Val Arg Leu Arg Ser Trp Glu Gly Leu

740 745 750

Ser Ser His Thr Ser Ser Thr Thr Pro Ser Gly Gly Asn Ala Thr Thr

755 760 765

Gln Thr Thr Ser Leu Ser Ala Ser Pro Val Ser Asn Leu Ser Asn Pro

770 775 780

Arg Tyr Pro Asn Tyr Met Phe Pro Ser Gln Gly Ile Thr Pro Gln Gly

785 790 795 800

Gln Ile Ala Gly Phe Ile Gly Pro Pro Ile Pro Gln Asn Gln Arg Phe

805 810 815

Ile Pro Ile Asn Gly Tyr Pro Ile Pro Pro Gly Tyr Ala Ala Phe Pro
820 825 830
Ala Ala His Tyr Gln Pro Thr Gly Pro Pro Arg Val Ile Gln His Cys
835 840 845

Pro Pro Pro Lys Ser Arg Ser Pro Ser Ser Ala Ser Gly Ser Thr Ser
850 855 860
Thr Gly His Val Thr Ser Leu Pro Ser Ser Gly Ser Asn Gln Glu Ala
865 870 875 880
Asn Ile Pro Leu Leu Pro His Met Ser Ile Pro Asn His Pro Gly Gly
885 890 895
Met Gly Ile Thr Val Phe Gly Asn Lys Ser Gln Lys Pro Tyr Lys Ile
900 905 910

Asp Ser Lys Gln Ala Ser Leu Leu Gly Asp Ala Asn Ile His Gly His
915 920 925
Thr Glu Ser Met Ile Ser Ala Glu Leu
930 935

<210> 111
<211> 759
<212> PRT
<213> Homo sapiens
<400> 111
Met Gly Leu Ala Asp Ala Ser Gly Pro Arg Asp Thr Gln Ala Leu Leu
1 5 10 15
Ser Ala Thr Gln Ala Met Asp Leu Arg Arg Arg Asp Tyr His Met Glu
20 25 30

Arg Pro Leu Leu Asn Gln Glu His Leu Glu Glu Leu Gly Arg Trp Gly
35 40 45
Ser Ala Pro Arg Thr His Gln Trp Arg Thr Trp Leu Gln Cys Ser Arg
50 55 60
Ala Arg Ala Tyr Ala Leu Leu Leu Gln His Leu Pro Val Leu Val Trp
65 70 75 80
Leu Pro Arg Tyr Pro Val Arg Asp Trp Leu Leu Gly Asp Leu Leu Ser

85 90 95

Gly Leu Ser Val Ala Ile Met Gln Leu Pro Gln Gly Leu Ala Tyr Ala
100 105 110
Leu Leu Ala Gly Leu Pro Pro Val Phe Gly Leu Tyr Ser Ser Phe Tyr
115 120 125
Pro Val Phe Ile Tyr Phe Leu Phe Gly Thr Ser Arg His Ile Ser Val
130 135 140
Gly Thr Phe Ala Val Met Ser Val Met Val Gly Ser Val Thr Glu Ser
145 150 155 160

Leu Ala Pro Gln Ala Leu Asn Asp Ser Met Ile Asn Glu Thr Ala Arg
165 170 175
Asp Ala Ala Arg Val Gln Val Ala Ser Thr Leu Ser Val Leu Val Gly
180 185 190
Leu Phe Gln Val Gly Leu Gly Leu Ile His Phe Gly Phe Val Val Thr
195 200 205
Tyr Leu Ser Glu Pro Leu Val Arg Gly Tyr Thr Thr Ala Ala Ala Val
210 215 220

Gln Val Phe Val Ser Gln Leu Lys Tyr Val Phe Gly Leu His Leu Ser
225 230 235 240
Ser His Ser Gly Pro Leu Ser Leu Ile Tyr Thr Val Leu Glu Val Cys
245 250 255
Trp Lys Leu Pro Gln Ser Lys Val Gly Thr Val Val Thr Ala Ala Val
260 265 270
Ala Gly Val Val Leu Val Val Val Lys Leu Leu Asn Asp Lys Leu Gln
275 280 285

Gln Gln Leu Pro Met Pro Ile Pro Gly Glu Leu Leu Thr Leu Ile Gly
290 295 300
Ala Thr Gly Ile Ser Tyr Gly Met Gly Leu Lys His Arg Phe Glu Val
305 310 315 320
Asp Val Val Gly Asn Ile Pro Ala Gly Leu Val Pro Pro Val Ala Pro
325 330 335

Asn Thr Gln Leu Phe Ser Lys Leu Val Gly Ser Ala Phe Thr Ile Ala
340 345 350

Val Val Gly Phe Ala Ile Ala Ile Ser Leu Gly Lys Ile Phe Ala Leu
355 360 365

Arg His Gly Tyr Arg Val Asp Ser Asn Gln Glu Leu Val Ala Leu Gly
370 375 380

Leu Ser Asn Leu Ile Gly Gly Ile Phe Gln Cys Phe Pro Val Ser Cys
385 390 395 400

Ser Met Ser Arg Ser Leu Val Gln Glu Ser Thr Gly Gly Asn Ser Gln
405 410 415

Val Ala Gly Ala Ile Ser Ser Leu Phe Ile Leu Leu Ile Ile Val Lys
420 425 430

Leu Gly Glu Leu Phe His Asp Leu Pro Lys Ala Val Leu Ala Ala Ile
435 440 445

Ile Ile Val Asn Leu Lys Gly Met Leu Arg Gln Leu Ser Asp Met Arg
450 455 460

Ser Leu Trp Lys Ala Asn Arg Ala Asp Leu Leu Ile Trp Leu Val Thr
465 470 475 480

Phe Thr Ala Thr Ile Leu Leu Asn Leu Asp Leu Gly Leu Val Val Ala
485 490 495

Val Ile Phe Ser Leu Leu Leu Val Val Val Arg Thr Gln Met Pro His
500 505 510

Tyr Ser Val Leu Gly Gln Val Pro Asp Thr Asp Ile Tyr Arg Asp Val
515 520 525

Ala Glu Tyr Ser Glu Ala Lys Glu Val Arg Gly Val Lys Val Phe Arg
530 535 540

Ser Ser Ala Thr Val Tyr Phe Ala Asn Ala Glu Phe Tyr Ser Asp Ala
545 550 555 560

Leu Lys Gln Arg Cys Gly Val Asp Val Asp Phe Leu Ile Ser Gln Lys
565 570 575

Lys Lys Leu Leu Lys Lys Gln Glu Gln Leu Lys Leu Lys Gln Leu Gln

580 585 590

Lys Glu Glu Lys Leu Arg Lys Gln Ala Ala Ser Pro Lys Gly Ala Ser

595 600 605

Val Ser Ile Asn Val Asn Thr Ser Leu Glu Asp Met Arg Ser Asn Asn

610 615 620

Val Glu Asp Cys Lys Met Met Gln Val Ser Ser Gly Asp Lys Met Glu

625 630 635 640

Asp Ala Thr Ala Asn Gly Gln Glu Asp Ser Lys Ala Pro Asp Gly Ser

645 650 655

Thr Leu Lys Ala Leu Gly Leu Pro Gln Pro Asp Phe His Ser Leu Ile

660 665 670

Leu Asp Leu Gly Ala Leu Ser Phe Val Asp Thr Val Cys Leu Lys Ser

675 680 685

Leu Lys Asn Ile Phe His Asp Phe Arg Glu Ile Glu Val Glu Val Tyr

690 695 700

Met Ala Ala Cys His Ser Pro Val Val Ser Gln Leu Glu Ala Gly His

705 710 715 720

Phe Phe Asp Ala Ser Ile Thr Lys Lys His Leu Phe Ala Ser Val His

725 730 735

Asp Ala Val Thr Phe Ala Leu Gln His Pro Arg Pro Val Pro Asp Ser

740 745 750

Pro Val Ser Val Thr Arg Leu

755

<210> 112

<211> 958

<212> PRT

<213> Homo sapiens

<400> 112

Met His Thr Cys Cys Pro Pro Val Thr Leu Glu Gln Asp Leu His Arg

1 5 10 15

Lys Met His Ser Trp Met Leu Gln Thr Leu Ala Phe Ala Val Thr Ser

20 25 30

Leu Val Leu Ser Cys Ala Glu Thr Ile Asp Tyr Tyr Gly Glu Ile Cys
35 40 45
Asp Asn Ala Cys Pro Cys Glu Glu Lys Asp Gly Ile Leu Thr Val Ser
50 55 60
Cys Glu Asn Arg Gly Ile Ile Ser Leu Ser Glu Ile Ser Pro Pro Arg
65 70 75 80
Phe Pro Ile Tyr His Leu Leu Leu Ser Gly Asn Leu Leu Asn Arg Leu
85 90 95

Tyr Pro Asn Glu Phe Val Asn Tyr Thr Gly Ala Ser Ile Leu His Leu
100 105 110
Gly Ser Asn Val Ile Gln Asp Ile Glu Thr Gly Ala Phe His Gly Leu
115 120 125
Arg Gly Leu Arg Arg Leu His Leu Asn Asn Asn Lys Leu Glu Leu Leu
130 135 140
Arg Asp Asp Thr Phe Leu Gly Leu Glu Asn Leu Glu Tyr Leu Gln Val
145 150 155 160

Asp Tyr Asn Tyr Ile Ser Val Ile Glu Pro Asn Ala Phe Gly Lys Leu
165 170 175
His Leu Leu Gln Val Leu Ile Leu Asn Asp Asn Leu Leu Ser Ser Leu
180 185 190
Pro Asn Asn Leu Phe Arg Phe Val Pro Leu Thr His Leu Asp Leu Arg
195 200 205
Gly Asn Arg Leu Lys Leu Leu Pro Tyr Val Gly Leu Leu Gln His Met
210 215 220

Asp Lys Val Val Glu Leu Gln Leu Glu Glu Asn Pro Trp Asn Cys Ser
225 230 235 240
Cys Glu Leu Ile Ser Leu Lys Asp Trp Leu Asp Ser Ile Ser Tyr Ser
245 250 255
Ala Leu Val Gly Asp Val Val Cys Glu Thr Pro Phe Arg Leu His Gly
260 265 270

Arg Asp Leu Asp Glu Val Ser Lys Gln Glu Leu Cys Pro Arg Arg Leu
275 280 285

Ile Ser Asp Tyr Glu Met Arg Pro Gln Thr Pro Leu Ser Thr Thr Gly
290 295 300
Tyr Leu His Thr Thr Pro Ala Ser Val Asn Ser Val Ala Thr Ser Ser
305 310 315 320
Ser Ala Val Tyr Lys Pro Pro Leu Lys Pro Pro Lys Gly Thr Arg Gln
325 330 335
Pro Asn Lys Pro Arg Val Arg Pro Thr Ser Arg Gln Pro Ser Lys Asp
340 345 350

Leu Gly Tyr Ser Asn Tyr Gly Pro Ser Ile Ala Tyr Gln Thr Lys Ser
355 360 365
Pro Val Pro Leu Glu Cys Pro Thr Ala Cys Ser Cys Asn Leu Gln Ile
370 375 380
Ser Asp Leu Gly Leu Asn Val Asn Cys Gln Glu Arg Lys Ile Glu Ser
385 390 395 400
Ile Ala Glu Leu Gln Pro Lys Pro Tyr Asn Pro Lys Lys Met Tyr Leu
405 410 415

Thr Glu Asn Tyr Ile Ala Val Val Arg Arg Thr Asp Phe Leu Glu Ala
420 425 430
Thr Gly Leu Asp Leu Leu His Leu Gly Asn Asn Arg Ile Ser Met Ile
435 440 445
Gln Asp Arg Ala Phe Gly Asp Leu Thr Asn Leu Arg Arg Leu Tyr Leu
450 455 460
Asn Gly Asn Arg Ile Glu Arg Leu Ser Pro Glu Leu Phe Tyr Gly Leu
465 470 475 480

Gln Ser Leu Gln Tyr Leu Phe Leu Gln Tyr Asn Leu Ile Arg Glu Ile
485 490 495
Gln Ser Gly Thr Phe Asp Pro Val Pro Asn Leu Gln Leu Leu Phe Leu
500 505 510
Asn Asn Asn Leu Leu Gln Ala Met Pro Ser Gly Val Phe Ser Gly Leu

515 520 525

Thr Leu Leu Arg Leu Asn Leu Arg Ser Asn His Phe Thr Ser Leu Pro

530 535 540

Val Ser Gly Val Leu Asp Gln Leu Lys Ser Leu Ile Gln Ile Asp Leu

545 550 555 560

His Asp Asn Pro Trp Asp Cys Thr Cys Asp Ile Val Gly Met Lys Leu

565 570 575

Trp Val Glu Gln Leu Lys Val Gly Val Leu Val Asp Glu Val Ile Cys

580 585 590

Lys Ala Pro Lys Lys Phe Ala Glu Thr Asp Met Arg Ser Ile Lys Ser

595 600 605

Glu Leu Leu Cys Pro Asp Tyr Ser Asp Val Val Val Ser Thr Pro Thr

610 615 620

Pro Ser Ser Ile Gln Val Pro Ala Arg Thr Ser Ala Val Thr Pro Ala

625 630 635 640

Val Arg Leu Asn Ser Thr Gly Ala Pro Ala Ser Leu Gly Ala Gly Gly

645 650 655

Gly Ala Ser Ser Val Pro Leu Ser Val Leu Ile Leu Ser Leu Leu Leu

660 665 670

Val Phe Ile Met Ser Val Phe Val Ala Ala Gly Leu Phe Val Leu Val

675 680 685

Met Lys Arg Arg Lys Lys Asn Gln Ser Asp His Thr Ser Thr Asn Asn

690 695 700

Ser Asp Val Ser Ser Phe Asn Met Gln Tyr Ser Val Tyr Gly Gly Gly

705 710 715 720

Gly Gly Thr Gly Gly His Pro His Ala His Val His His Arg Gly Pro

725 730 735

Ala Leu Pro Lys Val Lys Thr Pro Ala Gly His Val Tyr Glu Tyr Ile

740 745 750

Pro His Pro Leu Gly His Met Cys Lys Asn Pro Ile Tyr Arg Ser Arg

755 760 765

Glu Gly Asn Ser Val Glu Asp Tyr Lys Asp Leu His Glu Leu Lys Val
770 775 780
Thr Tyr Ser Ser Asn His His Leu Gln Gln Gln Gln Gln Pro Pro Pro
785 790 795 800

Pro Pro Gln Gln Pro Gln Gln Gln Pro Pro Pro Gln Leu Gln Leu Gln
805 810 815
Pro Gly Glu Glu Glu Arg Arg Glu Ser His His Leu Arg Ser Pro Ala
820 825 830
Tyr Ser Val Ser Thr Ile Glu Pro Arg Glu Asp Leu Leu Ser Pro Val
835 840 845
Gln Asp Ala Asp Arg Phe Tyr Arg Gly Ile Leu Glu Pro Asp Lys His
850 855 860

Cys Ser Thr Thr Pro Ala Gly Asn Ser Leu Pro Glu Tyr Pro Lys Phe
865 870 875 880
Pro Cys Ser Pro Ala Ala Tyr Thr Phe Ser Pro Asn Tyr Asp Leu Arg
885 890 895
Arg Pro His Gln Tyr Leu His Pro Gly Ala Gly Asp Ser Arg Leu Arg
900 905 910
Glu Pro Val Leu Tyr Ser Pro Pro Ser Ala Val Phe Val Glu Pro Asn
915 920 925

Arg Asn Glu Tyr Leu Glu Leu Lys Ala Lys Leu Asn Val Glu Pro Asp
930 935 940
Tyr Leu Glu Val Leu Glu Lys Gln Thr Thr Phe Ser Gln Phe
945 950 955
<210> 113
<211> 325
<212> PRT
<213> Homo sapiens
<400> 113
Met Leu Cys Pro Trp Arg Thr Ala Asn Leu Gly Leu Leu Leu Ile Leu
1 5 10 15

Thr Ile Phe Leu Val Ala Ala Ser Ser Ser Leu Cys Met Asp Glu Lys

20 25 30

Gln Ile Thr Gln Asn Tyr Ser Lys Val Leu Ala Glu Val Asn Thr Ser

35 40 45

Trp Pro Val Lys Met Ala Thr Asn Ala Val Leu Cys Cys Pro Pro Ile

50 55 60

Ala Leu Arg Asn Leu Ile Ile Ile Thr Trp Glu Ile Ile Leu Arg Gly

65 70 75 80

Gln Pro Ser Cys Thr Lys Ala Tyr Arg Lys Glu Thr Asn Glu Thr Lys

85 90 95

Glu Thr Asn Cys Thr Asp Glu Arg Ile Thr Trp Val Ser Arg Pro Asp

100 105 110

Gln Asn Ser Asp Leu Gln Ile Arg Pro Val Ala Ile Thr His Asp Gly

115 120 125

Tyr Tyr Arg Cys Ile Met Val Thr Pro Asp Gly Asn Phe His Arg Gly

130 135 140

Tyr His Leu Gln Val Leu Val Thr Pro Glu Val Thr Leu Phe Gln Asn

145 150 155 160

Arg Asn Arg Thr Ala Val Cys Lys Ala Val Ala Gly Lys Pro Ala Ala

165 170 175

Gln Ile Ser Trp Ile Pro Glu Gly Asp Cys Ala Thr Lys Gln Glu Tyr

180 185 190

Trp Ser Asn Gly Thr Val Thr Val Lys Ser Thr Cys His Trp Glu Val

195 200 205

His Asn Val Ser Thr Val Thr Cys His Val Ser His Leu Thr Gly Asn

210 215 220

Lys Ser Leu Tyr Ile Glu Leu Leu Pro Val Pro Gly Ala Lys Lys Ser

225 230 235 240

Ala Lys Leu Tyr Ile Pro Tyr Ile Ile Leu Thr Ile Ile Ile Leu Thr

245 250 255

Ile Val Gly Phe Ile Trp Leu Leu Lys Val Asn Gly Cys Arg Lys Tyr

260 265 270

Lys Leu Asn Lys Thr Glu Ser Thr Pro Val Val Glu Glu Asp Glu Met

275 280 285

Gln Pro Tyr Ala Ser Tyr Thr Glu Lys Asn Asn Pro Leu Tyr Asp Thr

290 295 300

Thr Asn Lys Val Lys Ala Ser Glu Ala Leu Gln Ser Glu Val Asp Thr

305 310 315 320

Asp Leu His Thr Leu

325

<210> 114

<211> 715

<212> PRT

<213> Homo sapiens

<400> 114

Met Val Pro Gly Ala Arg Gly Gly Gly Ala Leu Ala Arg Ala Ala Gly

1 5 10 15

Arg Gly Leu Leu Ala Leu Leu Leu Ala Val Ser Ala Pro Leu Arg Leu

20 25 30

Gln Ala Glu Glu Leu Gly Asp Gly Cys Gly His Leu Val Thr Tyr Gln

35 40 45

Asp Ser Gly Thr Met Thr Ser Lys Asn Tyr Pro Gly Thr Tyr Pro Asn

50 55 60

His Thr Val Cys Glu Lys Thr Ile Thr Val Pro Lys Gly Lys Arg Leu

65 70 75 80

Ile Leu Arg Leu Gly Asp Leu Asp Ile Glu Ser Gln Thr Cys Ala Ser

85 90 95

Asp Tyr Leu Leu Phe Thr Ser Ser Ser Asp Gln Tyr Gly Pro Tyr Cys

100 105 110

Gly Ser Met Thr Val Pro Lys Glu Leu Leu Leu Asn Thr Ser Glu Val

115 120 125

Thr Val Arg Phe Glu Ser Gly Ser His Ile Ser Gly Arg Gly Phe Leu

130 135 140

Leu Thr Tyr Ala Ser Ser Asp His Pro Asp Leu Ile Thr Cys Leu Glu

145 150 155 160

Arg Ala Ser His Tyr Leu Lys Thr Glu Tyr Ser Lys Phe Cys Pro Ala

165 170 175

Gly Cys Arg Asp Val Ala Gly Asp Ile Ser Gly Asn Met Val Asp Gly

180 185 190

Tyr Arg Asp Thr Ser Leu Leu Cys Lys Ala Ala Ile His Ala Gly Ile

195 200 205

Ile Ala Asp Glu Leu Gly Gly Gln Ile Ser Val Leu Gln Arg Lys Gly

210 215 220

Ile Ser Arg Tyr Glu Gly Ile Leu Ala Asn Gly Val Leu Ser Arg Asp

225 230 235 240

Gly Ser Leu Ser Asp Lys Arg Phe Leu Phe Thr Ser Asn Gly Cys Ser

245 250 255

Arg Ser Leu Ser Phe Glu Pro Asp Gly Gln Ile Arg Ala Ser Ser Ser

260 265 270

Trp Gln Ser Val Asn Glu Ser Gly Asp Gln Val His Trp Ser Pro Gly

275 280 285

Gln Ala Arg Leu Gln Asp Gln Gly Pro Ser Trp Ala Ser Gly Asp Ser

290 295 300

Ser Asn Asn His Lys Pro Arg Glu Trp Leu Glu Ile Asp Leu Gly Glu

305 310 315 320

Lys Lys Lys Ile Thr Gly Ile Arg Thr Thr Gly Ser Thr Gln Ser Asn

325 330 335

Phe Asn Phe Tyr Val Lys Ser Phe Val Met Asn Phe Lys Asn Asn Asn

340 345 350

Ser Lys Trp Lys Thr Tyr Lys Gly Ile Val Asn Asn Glu Glu Lys Val

355 360 365

Phe Gln Gly Asn Ser Asn Phe Arg Asp Pro Val Gln Asn Asn Phe Ile

370 375 380

Pro Pro Ile Val Ala Arg Tyr Val Arg Val Val Pro Gln Thr Trp His

385 390 395 400

Gln Arg Ile Ala Leu Lys Val Glu Leu Ile Gly Cys Gln Ile Thr Gln

405 410 415

Gly Asn Asp Ser Leu Val Trp Arg Lys Thr Ser Gln Ser Thr Ser Val

420 425 430

Ser Thr Lys Lys Glu Asp Glu Thr Ile Thr Arg Pro Ile Pro Ser Glu

435 440 445

Glu Thr Ser Thr Gly Ile Asn Ile Thr Thr Val Ala Ile Pro Leu Val

450 455 460

Leu Leu Val Val Leu Val Phe Ala Gly Met Gly Ile Phe Ala Ala Phe

465 470 475 480

Arg Lys Lys Lys Lys Lys Gly Ser Pro Tyr Gly Ser Ala Glu Ala Gln

485 490 495

Lys Thr Asp Cys Trp Lys Gln Ile Lys Tyr Pro Phe Ala Arg His Gln

500 505 510

Ser Ala Glu Phe Thr Ile Ser Tyr Asp Asn Glu Lys Glu Met Thr Gln

515 520 525

Lys Leu Asp Leu Ile Thr Ser Asp Met Ala Asp Tyr Gln Gln Pro Leu

530 535 540

Met Ile Gly Thr Gly Thr Val Thr Arg Lys Gly Ser Thr Phe Arg Pro

545 550 555 560

Met Asp Thr Asp Ala Glu Glu Ala Gly Val Ser Thr Asp Ala Gly Gly

565 570 575

His Tyr Asp Cys Pro Gln Arg Ala Gly Arg His Glu Tyr Ala Leu Pro

580 585 590

Leu Ala Pro Pro Glu Pro Glu Tyr Ala Thr Pro Ile Val Glu Arg His

595 600 605

Val Leu Arg Ala His Thr Phe Ser Ala Gln Ser Gly Tyr Arg Val Pro

610 615 620

Gly Pro Gln Pro Gly His Lys His Ser Leu Ser Ser Gly Gly Phe Ser

625 630 635 640

Pro Val Ala Gly Val Gly Ala Gln Asp Gly Asp Tyr Gln Arg Pro His

645 650 655

Ser Ala Gln Pro Ala Asp Arg Gly Tyr Asp Arg Pro Lys Ala Val Ser

660 665 670

Ala Leu Ala Thr Glu Ser Gly His Pro Asp Ser Gln Lys Pro Pro Thr

675 680 685

His Pro Gly Thr Ser Asp Ser Tyr Ser Ala Pro Arg Asp Cys Leu Thr

690 695 700

Pro Leu Asn Gln Thr Ala Met Thr Ala Leu Leu

705 710 715

<210> 115

<211> 1445

<212> PRT

<213> Homo sapiens

<400> 115

Met Gln Gly Pro Pro Leu Leu Thr Ala Ala His Leu Leu Cys Val Cys

1 5 10 15

Thr Ala Ala Leu Ala Val Ala Pro Gly Pro Arg Phe Leu Val Thr Ala

20 25 30

Pro Gly Ile Ile Arg Pro Gly Gly Asn Val Thr Ile Gly Val Glu Leu

35 40 45

Leu Glu His Cys Pro Ser Gln Val Thr Val Lys Ala Glu Leu Leu Lys

50 55 60

Thr Ala Ser Asn Leu Thr Val Ser Val Leu Glu Ala Glu Gly Val Phe

65 70 75 80

Glu Lys Gly Ser Phe Lys Thr Leu Thr Leu Pro Ser Leu Pro Leu Asn

85 90 95

Ser Ala Asp Glu Ile Tyr Glu Leu Arg Val Thr Gly Arg Thr Gln Asp

100 105 110

Glu Ile Leu Phe Ser Asn Ser Thr Arg Leu Ser Phe Glu Thr Lys Arg

115 120 125

Ile Ser Val Phe Ile Gln Thr Asp Lys Ala Leu Tyr Lys Pro Lys Gln

130 135 140

Glu Val Lys Phe Arg Ile Val Thr Leu Phe Ser Asp Phe Lys Pro Tyr

145 150 155 160

Lys Thr Ser Leu Asn Ile Leu Ile Lys Asp Pro Lys Ser Asn Leu Ile

165 170 175

Gln Gln Trp Leu Ser Gln Gln Ser Asp Leu Gly Val Ile Ser Lys Thr

180 185 190

Phe Gln Leu Ser Ser His Pro Ile Leu Gly Asp Trp Ser Ile Gln Val

195 200 205

Gln Val Asn Asp Gln Thr Tyr Tyr Gln Ser Phe Gln Val Ser Glu Tyr

210 215 220

Val Leu Pro Lys Phe Glu Val Thr Leu Gln Thr Pro Leu Tyr Cys Ser

225 230 235 240

Met Asn Ser Lys His Leu Asn Gly Thr Ile Thr Ala Lys Tyr Thr Tyr

245 250 255

Gly Lys Pro Val Lys Gly Asp Val Thr Leu Thr Phe Leu Pro Leu Ser

260 265 270

Phe Trp Gly Lys Lys Lys Asn Ile Thr Lys Thr Phe Lys Ile Asn Gly

275 280 285

Ser Ala Asn Phe Ser Phe Asn Asp Glu Glu Met Lys Asn Val Met Asp

290 295 300

Ser Ser Asn Gly Leu Ser Glu Tyr Leu Asp Leu Ser Ser Pro Gly Pro

305 310 315 320

Val Glu Ile Leu Thr Thr Val Thr Glu Ser Val Thr Gly Ile Ser Arg

325 330 335

Asn Val Ser Thr Asn Val Phe Phe Lys Gln His Asp Tyr Ile Ile Glu

340 345 350

Phe Phe Asp Tyr Thr Thr Val Leu Lys Pro Ser Leu Asn Phe Thr Ala

355 360 365

Thr Val Lys Val Thr Arg Ala Asp Gly Asn Gln Leu Thr Leu Glu Glu

370 375 380

Arg Arg Asn Asn Val Val Ile Thr Val Thr Gln Arg Asn Tyr Thr Glu

385 390 395 400

Tyr Trp Ser Gly Ser Asn Ser Gly Asn Gln Lys Met Glu Ala Val Gln

405 410 415

Lys Ile Asn Tyr Thr Val Pro Gln Ser Gly Thr Phe Lys Ile Glu Phe

420 425 430

Pro Ile Leu Glu Asp Ser Ser Glu Leu Gln Leu Lys Ala Tyr Phe Leu

435 440 445

Gly Ser Lys Ser Ser Met Ala Val His Ser Leu Phe Lys Ser Pro Ser

450 455 460

Lys Thr Tyr Ile Gln Leu Lys Thr Arg Asp Glu Asn Ile Lys Val Gly

465 470 475 480

Ser Pro Phe Glu Leu Val Val Ser Gly Asn Lys Arg Leu Lys Glu Leu

485 490 495

Ser Tyr Met Val Val Ser Arg Gly Gln Leu Val Ala Val Gly Lys Gln

500 505 510

Asn Ser Thr Met Phe Ser Leu Thr Pro Glu Asn Ser Trp Thr Pro Lys

515 520 525

Ala Cys Val Ile Val Tyr Tyr Ile Glu Asp Asp Gly Glu Ile Ile Ser

530 535 540

Asp Val Leu Lys Ile Pro Val Gln Leu Val Phe Lys Asn Lys Ile Lys

545 550 555 560

Leu Tyr Trp Ser Lys Val Lys Ala Glu Pro Ser Glu Lys Val Ser Leu

565 570 575

Arg Ile Ser Val Thr Gln Pro Asp Ser Ile Val Gly Ile Val Ala Val

580 585 590

Asp Lys Ser Val Asn Leu Met Asn Ala Ser Asn Asp Ile Thr Met Glu

595 600 605

Asn Val Val His Glu Leu Glu Leu Tyr Asn Thr Gly Tyr Tyr Leu Gly

610 615 620

Met Phe Met Asn Ser Phe Ala Val Phe Gln Glu Cys Gly Leu Trp Val

625 630 635 640

Leu Thr Asp Ala Asn Leu Thr Lys Asp Tyr Ile Asp Gly Val Tyr Asp

645 650 655

Asn Ala Glu Tyr Ala Glu Arg Phe Met Glu Glu Asn Glu Gly His Ile

660 665 670

Val Asp Ile His Asp Phe Ser Leu Gly Ser Ser Pro His Val Arg Lys

675 680 685

His Phe Pro Glu Thr Trp Ile Trp Leu Asp Thr Asn Met Gly Tyr Arg

690 695 700

Ile Tyr Gln Glu Phe Glu Val Thr Val Pro Asp Ser Ile Thr Ser Trp

705 710 715 720

Val Ala Thr Gly Phe Val Ile Ser Glu Asp Leu Gly Leu Gly Leu Thr

725 730 735

Thr Thr Pro Val Glu Leu Gln Ala Phe Gln Pro Phe Phe Ile Phe Leu

740 745 750

Asn Leu Pro Tyr Ser Val Ile Arg Gly Glu Glu Phe Ala Leu Glu Ile

755 760 765

Thr Ile Phe Asn Tyr Leu Lys Asp Ala Thr Glu Val Lys Val Ile Ile

770 775 780

Glu Lys Ser Asp Lys Phe Asp Ile Leu Met Thr Ser Asn Glu Ile Asn

785 790 795 800

Ala Thr Gly His Gln Gln Thr Leu Leu Val Pro Ser Glu Asp Gly Ala

805 810 815

Thr Val Leu Phe Pro Ile Arg Pro Thr His Leu Gly Glu Ile Pro Ile

820 825 830

Thr Val Thr Ala Leu Ser Pro Thr Ala Ser Asp Ala Val Thr Gln Met

835 840 845

Ile Leu Val Lys Ala Glu Gly Ile Glu Lys Ser Tyr Ser Gln Ser Ile

850 855 860

Leu Leu Asp Leu Thr Asp Asn Arg Leu Gln Ser Thr Leu Lys Thr Leu
865 870 875 880
Ser Phe Ser Phe Pro Pro Asn Thr Val Thr Gly Ser Glu Arg Val Gln

885 890 895
Ile Thr Ala Ile Gly Asp Val Leu Gly Pro Ser Ile Asn Gly Leu Ala
900 905 910
Ser Leu Ile Arg Met Pro Tyr Gly Cys Gly Glu Gln Asn Met Ile Asn
915 920 925
Phe Ala Pro Asn Ile Tyr Ile Leu Asp Tyr Leu Thr Lys Lys Lys Gln
930 935 940
Leu Thr Asp Asn Leu Lys Glu Lys Ala Leu Ser Phe Met Arg Gln Gly

945 950 955 960
Tyr Gln Arg Glu Leu Leu Tyr Gln Arg Glu Asp Gly Ser Phe Ser Ala
965 970 975
Phe Gly Asn Tyr Asp Pro Ser Gly Ser Thr Trp Leu Ser Ala Phe Val
980 985 990
Leu Arg Cys Phe Leu Glu Ala Asp Pro Tyr Ile Asp Ile Asp Gln Asn
995 1000 1005
Val Leu His Arg Thr Tyr Thr Trp Leu Lys Gly His Gln Lys Ser

1010 1015 1020
Asn Gly Glu Phe Trp Asp Pro Gly Arg Val Ile His Ser Glu Leu
1025 1030 1035
Gln Gly Gly Asn Lys Ser Pro Val Thr Leu Thr Ala Tyr Ile Val
1040 1045 1050
Thr Ser Leu Leu Gly Tyr Arg Lys Tyr Gln Pro Asn Ile Asp Val
1055 1060 1065
Gln Glu Ser Ile His Phe Leu Glu Ser Glu Phe Ser Arg Gly Ile

1070 1075 1080
Ser Asp Asn Tyr Thr Leu Ala Leu Ile Thr Tyr Ala Leu Ser Ser
1085 1090 1095
Val Gly Ser Pro Lys Ala Lys Glu Ala Leu Asn Met Leu Thr Trp

1100 1105 1110

Arg Ala Glu Gln Glu Gly Gly Met Gln Phe Trp Val Ser Ser Glu

1115 1120 1125

Ser Lys Leu Ser Asp Ser Trp Gln Pro Arg Ser Leu Asp Ile Glu

1130 1135 1140

Val Ala Ala Tyr Ala Leu Leu Ser His Phe Leu Gln Phe Gln Thr

1145 1150 1155

Ser Glu Gly Ile Pro Ile Met Arg Trp Leu Ser Arg Gln Arg Asn

1160 1165 1170

Ser Leu Gly Gly Phe Ala Ser Thr Gln Asp Thr Thr Val Ala Leu

1175 1180 1185

Lys Ala Leu Ser Glu Phe Ala Ala Leu Met Asn Thr Glu Arg Thr

1190 1195 1200

Asn Ile Gln Val Thr Val Thr Gly Pro Ser Ser Pro Ser Pro Val

1205 1210 1215

Lys Phe Leu Ile Asp Thr His Asn Arg Leu Leu Leu Gln Thr Ala

1220 1225 1230

Glu Leu Ala Val Val Gln Pro Thr Ala Val Asn Ile Ser Ala Asn

1235 1240 1245

Gly Phe Gly Phe Ala Ile Cys Gln Leu Asn Val Val Tyr Asn Val

1250 1255 1260

Lys Ala Ser Gly Ser Ser Arg Arg Arg Arg Ser Ile Gln Asn Gln

1265 1270 1275

Glu Ala Phe Asp Leu Asp Val Ala Val Lys Glu Asn Lys Asp Asp

1280 1285 1290

Leu Asn His Val Asp Leu Asn Val Cys Thr Ser Phe Ser Gly Pro

1295 1300 1305

Gly Arg Ser Gly Met Ala Leu Met Glu Val Asn Leu Leu Ser Gly

1310 1315 1320

Phe Met Val Pro Ser Glu Ala Ile Ser Leu Ser Glu Thr Val Lys

1325 1330 1335

Lys Val Glu Tyr Asp His Gly Lys Leu Asn Leu Tyr Leu Asp Ser

1340 1345 1350

Val Asn Glu Thr Gln Phe Cys Val Asn Ile Pro Ala Val Arg Asn

1355 1360 1365

Phe Lys Val Ser Asn Thr Gln Asp Ala Ser Val Ser Ile Val Asp

1370 1375 1380

Tyr Tyr Glu Pro Arg Arg Gln Ala Val Arg Ser Tyr Asn Ser Glu

1385 1390 1395

Val Lys Leu Ser Ser Cys Asp Leu Cys Ser Asp Val Gln Gly Cys

1400 1405 1410

Arg Pro Cys Glu Asp Gly Ala Ser Gly Ser His His His Ser Ser

1415 1420 1425

Val Ile Phe Ile Phe Cys Phe Lys Leu Leu Tyr Phe Met Glu Leu

1430 1435 1440

Trp Leu

1445

<210> 116

<211> 482

<212> PRT

<213> Homo sapiens

<400> 116

Met Ala Ser Phe Ser Ala Glu Thr Asn Ser Thr Asp Leu Leu Ser Gln

1 5 10 15

Pro Trp Asn Glu Pro Pro Val Ile Leu Ser Met Val Ile Leu Ser Leu

20 25 30

Thr Phe Leu Leu Gly Leu Pro Gly Asn Gly Leu Val Leu Trp Val Ala

35 40 45

Gly Leu Lys Met Gln Arg Thr Val Asn Thr Ile Trp Phe Leu His Leu

50 55 60

Thr Leu Ala Asp Leu Leu Cys Cys Leu Ser Leu Pro Phe Ser Leu Ala

65 70 75 80

His Leu Ala Leu Gln Gly Gln Trp Pro Tyr Gly Arg Phe Leu Cys Lys

85 90 95

Leu Ile Pro Ser Ile Ile Val Leu Asn Met Phe Ala Ser Val Phe Leu

100 105 110

Leu Thr Ala Ile Ser Leu Asp Arg Cys Leu Val Val Phe Lys Pro Ile

115 120 125

Trp Cys Gln Asn His Arg Asn Val Gly Met Ala Cys Ser Ile Cys Gly

130 135 140

Cys Ile Trp Val Val Ala Phe Val Met Cys Ile Pro Val Phe Val Tyr

145 150 155 160

Arg Glu Ile Phe Thr Thr Asp Asn His Asn Arg Cys Gly Tyr Lys Phe

165 170 175

Gly Leu Ser Ser Ser Leu Asp Tyr Pro Asp Phe Tyr Gly Asp Pro Leu

180 185 190

Glu Asn Arg Ser Leu Glu Asn Ile Val Gln Pro Pro Gly Glu Met Asn

195 200 205

Asp Arg Leu Asp Pro Ser Ser Phe Gln Thr Asn Asp His Pro Trp Thr

210 215 220

Val Pro Thr Val Phe Gln Pro Gln Thr Phe Gln Arg Pro Ser Ala Asp

225 230 235 240

Ser Leu Pro Arg Gly Ser Ala Arg Leu Thr Ser Gln Asn Leu Tyr Ser

245 250 255

Asn Val Phe Lys Pro Ala Asp Val Val Ser Pro Lys Ile Pro Ser Gly

260 265 270

Phe Pro Ile Glu Asp His Glu Thr Ser Pro Leu Asp Asn Ser Asp Ala

275 280 285

Phe Leu Ser Thr His Leu Lys Leu Phe Pro Ser Ala Ser Ser Asn Ser

290 295 300

Phe Tyr Glu Ser Glu Leu Pro Gln Gly Phe Gln Asp Tyr Tyr Asn Leu

305 310 315 320

Gly Gln Phe Thr Asp Asp Asp Gln Val Pro Thr Pro Leu Val Ala Ile

325 330 335

Thr Ile Thr Arg Leu Val Val Gly Phe Leu Leu Pro Ser Val Ile Met
340 345 350
Ile Ala Cys Tyr Ser Phe Ile Val Phe Arg Met Gln Arg Gly Arg Phe
355 360 365

Ala Lys Ser Gln Ser Lys Thr Phe Arg Val Ala Val Val Val Val Ala
370 375 380
Val Phe Leu Val Cys Trp Thr Pro Tyr His Ile Phe Gly Val Leu Ser
385 390 395 400
Leu Leu Thr Asp Pro Glu Thr Pro Leu Gly Lys Thr Leu Met Ser Trp
405 410 415
Asp His Val Cys Ile Ala Leu Ala Ser Ala Asn Ser Cys Phe Asn Pro
420 425 430

Phe Leu Tyr Ala Leu Leu Gly Lys Asp Phe Arg Lys Lys Ala Arg Gln
435 440 445
Ser Ile Gln Gly Ile Leu Glu Ala Ala Phe Ser Glu Glu Leu Thr Arg
450 455 460
Ser Thr His Cys Pro Ser Asn Asn Val Ile Ser Glu Arg Asn Ser Thr
465 470 475 480
Thr Val

<210> 117
<211> 193
<212> PRT
<213> Homo sapiens
<400> 117
Met Pro Glu Glu Gly Ser Gly Cys Ser Val Arg Arg Arg Pro Tyr Gly

1 5 10 15
Cys Val Leu Arg Ala Ala Leu Val Pro Leu Val Ala Gly Leu Val Ile
20 25 30
Cys Leu Val Val Cys Ile Gln Arg Phe Ala Gln Ala Gln Gln Gln Leu
35 40 45
Pro Leu Glu Ser Leu Gly Trp Asp Val Ala Glu Leu Gln Leu Asn His

50 55 60

Thr Gly Pro Gln Gln Asp Pro Arg Leu Tyr Trp Gln Gly Gly Pro Ala

65 70 75 80

Leu Gly Arg Ser Phe Leu His Gly Pro Glu Leu Asp Lys Gly Gln Leu

85 90 95

Arg Ile His Arg Asp Gly Ile Tyr Met Val His Ile Gln Val Thr Leu

100 105 110

Ala Ile Cys Ser Ser Thr Thr Ala Ser Arg His His Pro Thr Thr Leu

115 120 125

Ala Val Gly Ile Cys Ser Pro Ala Ser Arg Ser Ile Ser Leu Leu Arg

130 135 140

Leu Ser Phe His Gln Gly Cys Thr Ile Ala Ser Gln Arg Leu Thr Pro

145 150 155 160

Leu Ala Arg Gly Asp Thr Leu Cys Thr Asn Leu Thr Gly Thr Leu Leu

165 170 175

Pro Ser Arg Asn Thr Asp Glu Thr Phe Phe Gly Val Gln Trp Val Arg

180 185 190

Pro

<210> 118

<211> 569

<212> PRT

<213> Homo sapiens

<400> 118

Met Ala Pro Thr Leu Ala Thr Ala His Arg Arg Arg Trp Trp Met Ala

1 5 10 15

Cys Thr Ala Val Leu Glu Asn Leu Leu Phe Ser Ala Val Leu Leu Gly

20 25 30

Trp Gly Ser Leu Leu Ile Met Leu Lys Ser Glu Gly Phe Tyr Ser Tyr

35 40 45

Leu Cys Thr Glu Pro Glu Asn Val Thr Asn Gly Thr Val Gly Gly Thr

50 55 60

Ala Glu Pro Gly His Glu Glu Val Ser Trp Met Asn Gly Trp Leu Ser
65 70 75 80
Cys Gln Ala Gln Asp Glu Met Leu Asn Leu Ala Phe Thr Val Gly Ser
85 90 95
Phe Leu Leu Ser Ala Ile Thr Leu Pro Leu Gly Ile Val Met Asp Lys
100 105 110
Tyr Gly Pro Arg Lys Leu Arg Leu Leu Gly Ser Ala Cys Phe Ala Val
115 120 125

Ser Cys Leu Leu Ile Ala Tyr Gly Ala Ser Lys Pro Asn Ala Leu Ser
130 135 140
Val Leu Ile Phe Ile Ala Leu Ala Leu Asn Gly Phe Gly Gly Met Cys
145 150 155 160
Met Thr Phe Thr Ser Leu Thr Leu Pro Asn Met Phe Gly Asp Leu Arg
165 170 175
Ser Thr Phe Ile Ala Leu Met Ile Gly Ser Tyr Ala Ser Ser Ala Val
180 185 190

Thr Phe Pro Gly Ile Lys Leu Ile Tyr Asp Ala Gly Val Ser Phe Ile
195 200 205
Val Val Leu Val Val Trp Ala Gly Cys Ser Gly Leu Val Phe Leu Asn
210 215 220
Cys Phe Phe Asn Trp Pro Leu Glu Pro Phe Pro Gly Pro Glu Asp Met
225 230 235 240
Asp Tyr Ser Val Lys Ile Lys Phe Ser Trp Leu Gly Phe Asp His Lys
245 250 255

Ile Thr Gly Lys Gln Phe Tyr Lys Gln Val Thr Thr Val Gly Arg Arg
260 265 270
Leu Ser Val Gly Ser Ser Met Arg Ser Ala Lys Glu Gln Val Ala Leu
275 280 285
Gln Glu Gly His Lys Leu Cys Leu Ser Thr Val Asp Leu Glu Val Lys
290 295 300

Cys Gln Pro Asp Ala Ala Val Ala Pro Ser Phe Met His Ser Val Phe
305 310 315 320

Ser Pro Ile Leu Leu Leu Ser Leu Val Thr Met Cys Val Thr Gln Leu
325 330 335

Arg Leu Ile Phe Tyr Met Gly Ala Met Asn Asn Ile Leu Lys Phe Leu
340 345 350

Val Ser Gly Asp Gln Lys Thr Val Gly Leu Tyr Thr Ser Ile Phe Gly
355 360 365

Val Leu Gln Leu Leu Cys Leu Leu Thr Ala Pro Val Ile Gly Tyr Ile
370 375 380

Met Asp Trp Arg Leu Lys Glu Cys Glu Asp Ala Ser Glu Glu Pro Glu
385 390 395 400

Glu Lys Asp Ala Asn Gln Gly Glu Lys Lys Lys Lys Lys Arg Asp Arg
405 410 415

Gln Ile Gln Lys Ile Thr Asn Ala Met Arg Ala Phe Ala Phe Thr Asn
420 425 430

Leu Leu Leu Val Gly Phe Gly Val Thr Cys Leu Ile Pro Asn Leu Pro
435 440 445

Leu Gln Ile Leu Ser Phe Ile Leu His Thr Ile Val Arg Gly Phe Ile
450 455 460

His Ser Ala Val Gly Gly Leu Tyr Ala Ala Val Tyr Pro Ser Thr Gln
465 470 475 480

Phe Gly Ser Leu Thr Gly Leu Gln Ser Leu Ile Ser Ala Leu Phe Ala
485 490 495

Leu Leu Gln Gln Pro Leu Phe Leu Ala Met Met Gly Pro Leu Gln Gly
500 505 510

Asp Pro Leu Trp Val Asn Val Gly Leu Leu Leu Leu Ser Leu Leu Gly
515 520 525

Phe Cys Leu Pro Leu Tyr Leu Ile Cys Tyr Arg Arg Gln Leu Glu Arg
530 535 540

Gln Leu Gln Gln Arg Gln Glu Asp Asp Lys Leu Phe Leu Lys Ile Asn

545 550 555 560

Gly Ser Ser Asn Gln Glu Ala Phe Val

565

<210> 119

<211> 266

<212> PRT

<213> Homo sapiens

<400> 119

Met Val Cys Leu Lys Leu Pro Gly Gly Ser Tyr Met Ala Lys Leu Thr

1 5 10 15

Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr

20 25 30

Arg Pro Arg Phe Leu Gln Gln Asp Lys Tyr Glu Cys His Phe Phe Asn

35 40 45

Gly Thr Glu Arg Val Arg Phe Leu His Arg Asp Ile Tyr Asn Gln Glu

50 55 60

Glu Asp Leu Arg Phe Asp Ser Asp Val Gly Glu Tyr Arg Ala Val Thr

65 70 75 80

Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp Phe

85 90 95

Leu Glu Asp Arg Arg Ala Ala Val Asp Thr Tyr Cys Arg His Asn Tyr

100 105 110

Gly Val Gly Glu Ser Phe Thr Val Gln Arg Arg Val Glu Pro Lys Val

115 120 125

Thr Val Tyr Pro Ala Arg Thr Gln Thr Leu Gln His His Asn Leu Leu

130 135 140

Val Cys Ser Val Asn Gly Phe Tyr Pro Gly Ser Ile Glu Val Arg Trp

145 150 155 160

Phe Arg Asn Ser Gln Glu Glu Lys Ala Gly Val Val Ser Thr Gly Leu

165 170 175

Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu Val Met Leu Glu Thr

180 185 190

Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln Val Glu His Pro Ser
195 200 205
Val Thr Ser Pro Leu Thr Val Glu Trp Arg Ala Gln Ser Glu Ser Ala
210 215 220
Gln Ser Lys Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu Leu
225 230 235 240
Phe Leu Gly Ala Gly Leu Phe Ile Tyr Phe Lys Asn Gln Lys Gly His
245 250 255

Ser Gly Leu His Pro Thr Gly Leu Val Ser
260 265

<210> 120
<211> 1037
<212> PRT
<213> Homo sapiens
<400> 120
Met Arg Gly Ser Gly Pro Arg Gly Ala Gly Arg Arg Arg Pro Pro Ser
1 5 10 15
Gly Gly Gly Asp Thr Pro Ile Thr Pro Ala Ser Leu Ala Gly Cys Tyr
20 25 30
Ser Ala Pro Arg Arg Ala Pro Leu Trp Thr Cys Leu Leu Leu Cys Ala
35 40 45

Ala Leu Arg Thr Leu Leu Ala Ser Pro Ser Asn Glu Val Asn Leu Leu
50 55 60
Asp Ser Arg Thr Val Met Gly Asp Leu Gly Trp Ile Ala Phe Pro Lys
65 70 75 80
Asn Gly Trp Glu Glu Ile Gly Glu Val Asp Glu Asn Tyr Ala Pro Ile
85 90 95
His Thr Tyr Gln Val Cys Lys Val Met Glu Gln Asn Gln Asn Asn Trp
100 105 110

Leu Leu Thr Ser Trp Ile Ser Asn Glu Gly Ala Ser Arg Ile Phe Ile

115 120 125

Glu Leu Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Gly Leu

130 135 140

Gly Thr Cys Lys Glu Thr Phe Asn Met Tyr Tyr Phe Glu Ser Asp Asp

145 150 155 160

Gln Asn Gly Arg Asn Ile Lys Glu Asn Gln Tyr Ile Lys Ile Asp Thr

165 170 175

Ile Ala Ala Asp Glu Ser Phe Thr Glu Leu Asp Leu Gly Asp Arg Val

180 185 190

Met Lys Leu Asn Thr Glu Val Arg Asp Val Gly Pro Leu Ser Lys Lys

195 200 205

Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val

210 215 220

Ser Val Arg Val Tyr Tyr Lys Lys Cys Pro Ser Val Val Arg His Leu

225 230 235 240

Ala Val Phe Pro Asp Thr Ile Thr Gly Ala Asp Ser Ser Gln Leu Leu

245 250 255

Glu Val Ser Gly Ser Cys Val Asn His Ser Val Thr Asp Glu Pro Pro

260 265 270

Lys Met His Cys Ser Ala Glu Gly Glu Trp Leu Val Pro Ile Gly Lys

275 280 285

Cys Met Cys Lys Ala Gly Tyr Glu Glu Lys Asn Gly Thr Cys Gln Val

290 295 300

Cys Arg Pro Gly Phe Phe Lys Ala Ser Pro His Ile Gln Ser Cys Gly

305 310 315 320

Lys Cys Pro Pro His Ser Tyr Thr His Glu Glu Ala Ser Thr Ser Cys

325 330 335

Val Cys Glu Lys Asp Tyr Phe Arg Arg Glu Ser Asp Pro Pro Thr Met

340 345 350

Ala Cys Thr Arg Pro Pro Ser Ala Pro Arg Asn Ala Ile Ser Asn Val

355 360 365

Asn Glu Thr Ser Val Phe Leu Glu Trp Ile Pro Pro Ala Asp Thr Gly
370 375 380
Gly Arg Lys Asp Val Ser Tyr Tyr Ile Ala Cys Lys Lys Cys Asn Ser
385 390 395 400
His Ala Gly Val Cys Glu Glu Cys Gly Gly His Val Arg Tyr Leu Pro
405 410 415
Arg Gln Ser Gly Leu Lys Asn Thr Ser Val Met Met Val Asp Leu Leu
420 425 430

Ala His Thr Asn Tyr Thr Phe Glu Ile Glu Ala Val Asn Gly Val Ser
435 440 445
Asp Leu Ser Pro Gly Ala Arg Gln Tyr Val Ser Val Asn Val Thr Thr
450 455 460
Asn Gln Ala Ala Pro Ser Pro Val Thr Asn Val Lys Lys Gly Lys Ile
465 470 475 480
Ala Lys Asn Ser Ile Ser Leu Ser Trp Gln Glu Pro Asp Arg Pro Asn
485 490 495

Gly Ile Ile Leu Glu Tyr Glu Ile Lys Tyr Phe Glu Lys Asp Gln Glu
500 505 510
Thr Ser Tyr Thr Ile Ile Lys Ser Lys Glu Thr Thr Ile Thr Ala Glu
515 520 525
Gly Leu Lys Pro Ala Ser Val Tyr Val Phe Gln Ile Arg Ala Arg Thr
530 535 540
Ala Ala Gly Tyr Gly Val Phe Ser Arg Arg Phe Glu Phe Glu Thr Thr
545 550 555 560

Pro Val Phe Ala Ala Ser Ser Asp Gln Ser Gln Ile Pro Val Ile Ala
565 570 575
Val Ser Val Thr Val Gly Val Ile Leu Leu Ala Val Val Ile Gly Val
580 585 590
Leu Leu Ser Gly Ser Cys Cys Glu Cys Gly Cys Gly Arg Ala Ser Ser
595 600 605
Leu Cys Ala Val Ala His Pro Ser Leu Ile Trp Arg Cys Gly Tyr Ser

610 615 620

Lys Ala Lys Gln Asp Pro Glu Glu Glu Lys Met His Phe His Asn Gly
625 630 635 640
His Ile Lys Leu Pro Gly Val Arg Thr Tyr Ile Asp Pro His Thr Tyr
645 650 655
Glu Asp Pro Asn Gln Ala Val His Glu Phe Ala Lys Glu Ile Glu Ala
660 665 670
Ser Cys Ile Thr Ile Glu Arg Val Ile Gly Ala Gly Glu Phe Gly Glu
675 680 685

Val Cys Ser Gly Arg Leu Lys Leu Pro Gly Lys Arg Glu Leu Pro Val
690 695 700
Ala Ile Lys Thr Leu Lys Val Gly Tyr Thr Glu Lys Gln Arg Arg Asp
705 710 715 720
Phe Leu Gly Glu Ala Ser Ile Met Gly Gln Phe Asp His Pro Asn Ile
725 730 735
Ile His Leu Glu Gly Val Val Thr Lys Ser Lys Pro Val Met Ile Val
740 745 750

Thr Glu Tyr Met Glu Asn Gly Ser Leu Asp Thr Phe Leu Lys Lys Asn
755 760 765
Asp Gly Gln Phe Thr Val Ile Gln Leu Val Gly Met Leu Arg Gly Ile
770 775 780
Ser Ala Gly Met Lys Tyr Leu Ser Asp Met Gly Tyr Val His Arg Asp
785 790 795 800
Leu Ala Ala Arg Asn Ile Leu Ile Asn Ser Asn Leu Val Cys Lys Val
805 810 815

Ser Asp Phe Gly Leu Ser Arg Val Leu Glu Asp Asp Pro Glu Ala Ala
820 825 830
Tyr Thr Thr Arg Gly Gly Lys Ile Pro Ile Arg Trp Thr Ala Pro Glu
835 840 845
Ala Ile Ala Phe Arg Lys Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr
850 855 860

Gly Ile Val Met Trp Glu Val Val Ser Tyr Gly Glu Arg Pro Tyr Trp
865 870 875 880

Glu Met Thr Asn Gln Asp Val Ile Lys Ala Val Glu Glu Gly Tyr Arg
885 890 895
Leu Pro Ser Pro Met Asp Cys Pro Ala Ala Leu Tyr Gln Leu Met Leu
900 905 910
Asp Cys Trp Gln Lys Glu Arg Asn Ser Arg Pro Lys Phe Asp Glu Ile
915 920 925
Val Asn Met Leu Asp Lys Leu Ile Arg Asn Pro Ser Ser Leu Lys Thr
930 935 940

Leu Val Asn Ala Ser Cys Arg Val Ser Asn Leu Leu Ala Glu His Ser
945 950 955 960
Pro Leu Gly Ser Gly Ala Tyr Arg Ser Val Gly Glu Trp Leu Glu Ala
965 970 975
Ile Lys Met Gly Arg Tyr Thr Glu Ile Phe Met Glu Asn Gly Tyr Ser
980 985 990
Ser Met Asp Ala Val Ala Gln Val Thr Leu Glu Asp Leu Arg Arg Leu
995 1000 1005

Gly Val Thr Leu Val Gly His Gln Lys Lys Ile Met Asn Ser Leu
1010 1015 1020
Gln Glu Met Lys Val Gln Leu Val Asn Gly Met Val Pro Leu
1025 1030 1035
<210> 121
<211> 478
<212> PRT
<213> Homo sapiens
<400> 121
Met Pro Pro Met Pro Ser Ala Pro Pro Val His Pro Pro Pro Asp Gly
1 5 10 15
Gly Trp Gly Trp Ile Val Val Gly Ala Ala Phe Ile Ser Ile Gly Phe

20 25 30

Ser Tyr Ala Phe Pro Lys Ala Val Thr Val Phe Phe Lys Glu Ile Gln
35 40 45
Gln Ile Phe His Thr Thr Tyr Ser Glu Ile Ala Trp Ile Ser Ser Ile
50 55 60
Met Leu Ala Val Met Tyr Ala Gly Gly Pro Val Ser Ser Val Leu Val
65 70 75 80
Asn Lys Tyr Gly Ser Arg Pro Val Val Ile Ala Gly Gly Leu Leu Cys

85 90 95
Cys Leu Gly Met Val Leu Ala Ser Phe Ser Ser Ser Val Val Gln Leu
100 105 110
Tyr Leu Thr Met Gly Phe Ile Thr Gly Leu Gly Leu Ala Phe Asn Leu
115 120 125
Gln Pro Ala Leu Thr Ile Ile Gly Lys Tyr Phe Tyr Arg Lys Arg Pro
130 135 140
Met Ala Asn Gly Leu Ala Met Ala Gly Ser Pro Val Phe Leu Ser Ser

145 150 155 160
Leu Ala Pro Phe Asn Gln Tyr Leu Phe Asn Thr Phe Gly Trp Lys Gly
165 170 175
Ser Phe Leu Ile Leu Gly Ser Leu Leu Leu Asn Ala Cys Val Ala Gly
180 185 190
Ser Leu Met Arg Pro Leu Gly Pro Asn Gln Thr Thr Ser Lys Ser Lys
195 200 205
Asn Lys Thr Gly Lys Thr Glu Asp Asp Ser Ser Pro Lys Lys Ile Lys

210 215 220
Thr Lys Lys Ser Thr Trp Glu Lys Val Asn Lys Tyr Leu Asp Phe Ser
225 230 235 240
Leu Phe Lys His Arg Gly Phe Leu Ile Tyr Leu Ser Gly Asn Val Ile
245 250 255
Met Phe Leu Gly Phe Phe Ala Pro Ile Ile Phe Leu Ala Pro Tyr Ala
260 265 270
Lys Asp Gln Gly Ile Asp Glu Tyr Ser Ala Ala Phe Leu Leu Ser Val

275 280 285

Met Ala Phe Val Asp Met Phe Ala Arg Pro Ser Val Gly Leu Ile Ala

290 295 300

Asn Ser Lys Tyr Ile Arg Pro Arg Ile Gln Tyr Phe Phe Ser Phe Ala

305 310 315 320

Ile Met Phe Asn Gly Val Cys His Leu Leu Cys Pro Leu Ala Gln Asp

325 330 335

Tyr Thr Ser Leu Val Leu Tyr Ala Val Phe Phe Gly Leu Gly Phe Gly

340 345 350

Ser Val Ser Ser Val Leu Phe Glu Thr Leu Met Asp Leu Val Gly Ala

355 360 365

Pro Arg Phe Ser Ser Ala Val Gly Leu Val Thr Ile Val Glu Cys Gly

370 375 380

Pro Val Leu Leu Gly Pro Pro Leu Ala Gly Lys Leu Val Asp Leu Thr

385 390 395 400

Gly Glu Tyr Lys Tyr Met Tyr Met Ser Cys Gly Ala Ile Val Val Ala

405 410 415

Ala Ser Val Trp Leu Leu Ile Gly Asn Ala Ile Asn Tyr Arg Leu Leu

420 425 430

Ala Lys Glu Arg Lys Glu Glu Asn Ala Arg Gln Lys Thr Arg Glu Ser

435 440 445

Glu Pro Leu Ser Lys Ser Lys His Ser Glu Asp Val Asn Val Lys Val

450 455 460

Ser Asn Ala Gln Ser Val Thr Ser Glu Arg Glu Thr Asn Ile

465 470 475

<210> 122

<211> 1036

<212> PRT

<213> Homo sapiens

<400> 122

Met Tyr Leu Val Ala Gly Asp Arg Gly Leu Ala Gly Cys Gly His Leu

1 5 10 15

Leu Val Ser Leu Leu Gly Leu Leu Leu Leu Leu Ala Arg Ser Gly Thr
20 25 30
Arg Ala Leu Val Cys Leu Pro Cys Asp Glu Ser Lys Cys Glu Glu Pro
35 40 45

Arg Asn Cys Pro Gly Ser Ile Val Gln Gly Val Cys Gly Cys Cys Tyr
50 55 60
Thr Cys Ala Ser Gln Arg Asn Glu Ser Cys Gly Gly Thr Phe Gly Ile
65 70 75 80
Tyr Gly Thr Cys Asp Arg Gly Leu Arg Cys Val Ile Arg Pro Pro Leu
85 90 95
Asn Gly Asp Ser Leu Thr Glu Tyr Glu Ala Gly Val Cys Glu Asp Glu
100 105 110

Asn Trp Thr Asp Asp Gln Leu Leu Gly Phe Lys Pro Cys Asn Glu Asn
115 120 125
Leu Ile Ala Gly Cys Asn Ile Ile Asn Gly Lys Cys Glu Cys Asn Thr
130 135 140
Ile Arg Thr Cys Ser Asn Pro Phe Glu Phe Pro Ser Gln Asp Met Cys
145 150 155 160
Leu Ser Ala Leu Lys Arg Ile Glu Glu Glu Lys Pro Asp Cys Ser Lys
165 170 175

Ala Arg Cys Glu Val Gln Phe Ser Pro Arg Cys Pro Glu Asp Ser Val
180 185 190
Leu Ile Glu Gly Tyr Ala Pro Pro Gly Glu Cys Cys Pro Leu Pro Ser
195 200 205
Arg Cys Val Cys Asn Pro Ala Gly Cys Leu Arg Lys Val Cys Gln Pro
210 215 220
Gly Asn Leu Asn Ile Leu Val Ser Lys Ala Ser Gly Lys Pro Gly Glu
225 230 235 240

Cys Cys Asp Leu Tyr Glu Cys Lys Pro Val Phe Gly Val Asp Cys Arg
245 250 255
Thr Val Glu Cys Pro Pro Val Gln Gln Thr Ala Cys Pro Pro Asp Ser

260 265 270

Tyr Glu Thr Gln Val Arg Leu Thr Ala Asp Gly Cys Cys Thr Leu Pro

275 280 285

Thr Arg Cys Glu Cys Leu Ser Gly Leu Cys Gly Phe Pro Val Cys Glu

290 295 300

Val Gly Ser Thr Pro Arg Ile Val Ser Arg Gly Asp Gly Thr Pro Gly

305 310 315 320

Lys Cys Cys Asp Val Phe Glu Cys Val Asn Asp Thr Lys Pro Ala Cys

325 330 335

Val Phe Asn Asn Val Glu Tyr Tyr Asp Gly Asp Met Phe Arg Met Asp

340 345 350

Asn Cys Arg Phe Cys Arg Cys Gln Gly Gly Val Ala Ile Cys Phe Thr

355 360 365

Ala Gln Cys Gly Glu Ile Asn Cys Glu Arg Tyr Tyr Val Pro Glu Gly

370 375 380

Glu Cys Cys Pro Val Cys Glu Asp Pro Val Tyr Pro Phe Asn Asn Pro

385 390 395 400

Ala Gly Cys Tyr Ala Asn Gly Leu Ile Leu Ala His Gly Asp Arg Trp

405 410 415

Arg Glu Asp Asp Cys Thr Phe Cys Gln Cys Val Asn Gly Glu Arg His

420 425 430

Cys Val Ala Thr Val Cys Gly Gln Thr Cys Thr Asn Pro Val Lys Val

435 440 445

Pro Gly Glu Cys Cys Pro Val Cys Glu Glu Pro Thr Ile Ile Thr Val

450 455 460

Asp Pro Pro Ala Cys Gly Glu Leu Ser Asn Cys Thr Leu Thr Gly Lys

465 470 475 480

Asp Cys Ile Asn Gly Phe Lys Arg Asp His Asn Gly Cys Arg Thr Cys

485 490 495

Gln Cys Ile Asn Thr Glu Glu Leu Cys Ser Glu Arg Lys Gln Gly Cys

500 505 510

Thr Leu Asn Cys Pro Phe Gly Phe Leu Thr Asp Ala Gln Asn Cys Glu
515 520 525

Ile Cys Glu Cys Arg Pro Arg Pro Lys Lys Cys Arg Pro Ile Ile Cys
530 535 540

Asp Lys Tyr Cys Pro Leu Gly Leu Leu Lys Asn Lys His Gly Cys Asp
545 550 555 560

Ile Cys Arg Cys Lys Lys Cys Pro Glu Leu Ser Cys Ser Lys Ile Cys
565 570 575

Pro Leu Gly Phe Gln Gln Asp Ser His Gly Cys Leu Ile Cys Lys Cys
580 585 590

Arg Glu Ala Ser Ala Ser Ala Gly Pro Pro Ile Leu Ser Gly Thr Cys
595 600 605

Leu Thr Val Asp Gly His His His Lys Asn Glu Glu Ser Trp His Asp
610 615 620

Gly Cys Arg Glu Cys Tyr Cys Leu Asn Gly Arg Glu Met Cys Ala Leu
625 630 635 640

Ile Thr Cys Pro Val Pro Ala Cys Gly Asn Pro Thr Ile His Pro Gly
645 650 655

Gln Cys Cys Pro Ser Cys Ala Asp Asp Phe Val Val Gln Lys Pro Glu
660 665 670

Leu Ser Thr Pro Ser Ile Cys His Ala Pro Gly Gly Glu Tyr Phe Val
675 680 685

Glu Gly Glu Thr Trp Asn Ile Asp Ser Cys Thr Gln Cys Thr Cys His
690 695 700

Ser Gly Arg Val Leu Cys Glu Thr Glu Val Cys Pro Pro Leu Leu Cys
705 710 715 720

Gln Asn Pro Ser Arg Thr Gln Asp Ser Cys Cys Pro Gln Cys Thr Asp
725 730 735

Gln Pro Phe Arg Pro Ser Leu Ser Arg Asn Asn Ser Val Pro Asn Tyr
740 745 750

Cys Lys Asn Asp Glu Gly Asp Ile Phe Leu Ala Ala Glu Ser Trp Lys

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        755                 760                 765
Pro Asp Val Cys Thr Ser Cys Ile Cys Ile Asp Ser Val Ile Ser Cys
    770                 775                 780
Phe Ser Glu Ser Cys Pro Ser Val Ser Cys Glu Arg Pro Val Leu Arg
785                 790                 795                 800
Lys Gly Gln Cys Cys Pro Tyr Cys Ile Glu Asp Thr Ile Pro Lys Lys
                805                 810                 815

Val Val Cys His Phe Ser Gly Lys Ala Tyr Ala Asp Glu Glu Arg Trp
            820                 825                 830
Asp Leu Asp Ser Cys Thr His Cys Tyr Cys Leu Gln Gly Gln Thr Leu
        835                 840                 845
Cys Ser Thr Val Ser Cys Pro Pro Leu Pro Cys Val Glu Pro Ile Asn
    850                 855                 860
Val Glu Gly Ser Cys Cys Pro Met Cys Pro Glu Met Tyr Val Pro Glu
865                 870                 875                 880

Pro Thr Asn Ile Pro Ile Glu Lys Thr Asn His Arg Gly Glu Val Asp
                885                 890                 895
Leu Glu Val Pro Leu Trp Pro Thr Pro Ser Glu Asn Asp Ile Val His
            900                 905                 910
Leu Pro Arg Asp Met Gly His Leu Gln Val Asp Tyr Arg Asp Asn Arg
        915                 920                 925
Leu His Pro Ser Glu Asp Ser Ser Leu Asp Ser Ile Ala Ser Val Val
    930                 935                 940

Val Pro Ile Ile Ile Cys Leu Ser Ile Ile Ile Ala Phe Leu Phe Ile
945                 950                 955                 960
Asn Gln Lys Lys Gln Trp Ile Pro Leu Leu Cys Trp Tyr Arg Thr Pro
                965                 970                 975
Thr Lys Pro Ser Ser Leu Asn Asn Gln Leu Val Ser Val Asp Cys Lys
            980                 985                 990
Lys Gly Thr Arg Val Gln Val Asp  Ser Ser Gln Arg Met  Leu Arg Ile
        995                 1000                1005
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Ala Glu Pro Asp Ala Arg Phe Ser Gly Phe Tyr Ser Met Gln Lys

1010 1015 1020

Gln Asn His Leu Gln Ala Asp Asn Phe Tyr Gln Thr Val

1025 1030 1035

<210> 123

<211> 444

<212> PRT

<213> Homo sapiens

<400> 123

Met Ala Gly Gly Met Lys Val Ala Val Ser Pro Ala Val Gly Pro Gly

1 5 10 15

Pro Trp Gly Ser Gly Val Gly Gly Gly Gly Thr Val Arg Leu Leu Leu

20 25 30

Ile Leu Ser Gly Cys Leu Val Tyr Gly Thr Ala Glu Thr Asp Val Asn

35 40 45

Val Val Met Leu Gln Glu Ser Gln Val Cys Glu Lys Arg Ala Ser Gln

50 55 60

Gln Phe Cys Tyr Thr Asn Val Leu Ile Pro Lys Trp His Asp Ile Trp

65 70 75 80

Thr Arg Ile Gln Ile Arg Val Asn Ser Ser Arg Leu Val Arg Val Thr

85 90 95

Gln Val Glu Asn Glu Glu Lys Leu Lys Glu Leu Glu Gln Phe Ser Ile

100 105 110

Trp Asn Phe Phe Ser Ser Phe Leu Lys Glu Lys Leu Asn Asp Thr Tyr

115 120 125

Val Asn Val Gly Leu Tyr Ser Thr Lys Thr Cys Leu Lys Val Glu Ile

130 135 140

Ile Glu Lys Asp Thr Lys Tyr Ser Val Ile Val Ile Arg Arg Phe Asp

145 150 155 160

Pro Lys Leu Phe Leu Val Phe Leu Leu Gly Leu Met Leu Phe Phe Cys

165 170 175

Gly Asp Leu Leu Ser Arg Ser Gln Ile Phe Tyr Tyr Ser Thr Gly Met

180 185 190

Thr Val Gly Ile Val Ala Ser Leu Leu Ile Ile Ile Phe Ile Leu Ser

195 200 205

Lys Phe Met Pro Lys Lys Ser Pro Ile Tyr Val Ile Leu Val Gly Gly

210 215 220

Trp Ser Phe Ser Leu Tyr Leu Ile Gln Leu Val Phe Lys Asn Leu Gln

225 230 235 240

Glu Ile Trp Arg Cys Tyr Trp Gln Tyr Leu Leu Ser Tyr Val Leu Thr

245 250 255

Val Gly Phe Met Ser Phe Ala Val Cys Tyr Lys Tyr Gly Pro Leu Glu

260 265 270

Asn Glu Arg Ser Ile Asn Leu Leu Thr Trp Thr Leu Gln Leu Met Gly

275 280 285

Leu Cys Phe Met Tyr Ser Gly Ile Gln Ile Pro His Ile Ala Leu Ala

290 295 300

Ile Ile Ile Ile Ala Leu Cys Thr Lys Asn Leu Glu His Pro Ile Gln

305 310 315 320

Trp Leu Tyr Ile Thr Cys Arg Lys Val Cys Lys Gly Ala Glu Lys Pro

325 330 335

Val Pro Pro Arg Leu Leu Thr Glu Glu Glu Tyr Arg Ile Gln Gly Glu

340 345 350

Val Glu Thr Arg Lys Ala Leu Glu Glu Leu Arg Glu Phe Cys Asn Ser

355 360 365

Pro Asp Cys Ser Ala Trp Lys Thr Val Ser Arg Ile Gln Ser Pro Lys

370 375 380

Arg Phe Ala Asp Phe Val Glu Gly Ser Ser His Leu Thr Pro Asn Glu

385 390 395 400

Val Ser Val His Glu Gln Glu Tyr Gly Leu Gly Ser Ile Ile Ala Gln

405 410 415

Asp Glu Ile Tyr Glu Glu Ala Ser Ser Glu Glu Glu Asp Ser Tyr Ser

420 425 430

Arg Cys Pro Ala Ile Thr Gln Asn Asn Phe Leu Thr

435 440

<210> 124

<211> 266

<212> PRT

<213> Homo sapiens

<400> 124

Met Val Cys Leu Lys Leu Pro Gly Gly Ser Cys Met Ala Ala Leu Thr

1 5 10 15

Val Thr Leu Thr Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr

20 25 30

Gln Pro Arg Phe Leu Glu Gln Ala Lys Cys Glu Cys His Phe Leu Asn

35 40 45

Gly Thr Glu Arg Val Trp Asn Leu Ile Arg Tyr Ile Tyr Asn Gln Glu

50 55 60

Glu Tyr Ala Arg Tyr Asn Ser Asp Leu Gly Glu Tyr Gln Ala Val Thr

65 70 75 80

Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp Leu

85 90 95

Leu Glu Arg Arg Arg Ala Glu Val Asp Thr Tyr Cys Arg Tyr Asn Tyr

100 105 110

Gly Val Val Glu Ser Phe Thr Val Gln Arg Arg Val Gln Pro Lys Val

115 120 125

Thr Val Tyr Pro Ser Lys Thr Gln Pro Leu Gln His His Asn Leu Leu

130 135 140

Val Cys Ser Val Asn Gly Phe Tyr Pro Gly Ser Ile Glu Val Arg Trp

145 150 155 160

Phe Arg Asn Gly Gln Glu Glu Lys Ala Gly Val Val Ser Thr Gly Leu

165 170 175

Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu Val Met Leu Glu Thr

180 185 190

Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln Val Glu His Pro Ser

195 200 205

Met Met Ser Pro Leu Thr Val Gln Trp Ser Ala Arg Ser Glu Ser Ala

210 215 220

Gln Ser Lys Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu Leu

225 230 235 240

Phe Leu Gly Thr Gly Leu Phe Ile Tyr Phe Arg Asn Gln Lys Gly His

245 250 255

Ser Gly Leu Gln Pro Thr Gly Leu Leu Ser

260 265

<210> 125

<211> 658

<212> PRT

<213> Homo sapiens

<400> 125

Met Ile Pro Cys Arg Ala Ala Leu Thr Phe Ala Arg Cys Leu Ile Arg

1 5 10 15

Arg Lys Ile Val Thr Leu Asp Ser Leu Glu Asp Thr Lys Leu Cys Arg

20 25 30

Cys Leu Ser Thr Met Asp Leu Ile Ala Leu Gly Val Gly Ser Thr Leu

35 40 45

Gly Ala Gly Val Tyr Val Leu Ala Gly Glu Val Ala Lys Ala Asp Ser

50 55 60

Gly Pro Ser Ile Val Val Ser Phe Leu Ile Ala Ala Leu Ala Ser Val

65 70 75 80

Met Ala Gly Leu Cys Tyr Ala Glu Phe Gly Ala Arg Val Pro Lys Thr

85 90 95

Gly Ser Ala Tyr Leu Tyr Thr Tyr Val Thr Val Gly Glu Leu Trp Ala

100 105 110

Phe Ile Thr Gly Trp Asn Leu Ile Leu Ser Tyr Val Ile Gly Thr Ser

115 120 125

Ser Val Ala Arg Ala Trp Ser Gly Thr Phe Asp Glu Leu Leu Ser Lys

130 135 140

Gln Ile Gly Gln Phe Leu Arg Thr Tyr Phe Arg Met Asn Tyr Thr Gly

145 150 155 160

Leu Ala Glu Tyr Pro Asp Phe Phe Ala Val Cys Leu Ile Leu Leu Leu

165 170 175

Ala Gly Leu Leu Ser Phe Gly Val Lys Glu Ser Ala Trp Val Asn Lys

180 185 190

Val Phe Thr Ala Val Asn Ile Leu Val Leu Leu Phe Val Met Val Ala

195 200 205

Gly Phe Val Lys Gly Asn Val Ala Asn Trp Lys Ile Ser Glu Glu Phe

210 215 220

Leu Lys Asn Ile Ser Ala Ser Ala Arg Glu Pro Pro Ser Glu Asn Gly

225 230 235 240

Thr Ser Ile Tyr Gly Ala Gly Gly Phe Met Pro Tyr Gly Phe Thr Gly

245 250 255

Thr Leu Ala Gly Ala Ala Thr Cys Phe Tyr Ala Phe Val Gly Phe Asp

260 265 270

Cys Ile Ala Thr Thr Gly Glu Glu Val Arg Asn Pro Gln Lys Ala Ile

275 280 285

Pro Ile Gly Ile Val Thr Ser Leu Leu Val Cys Phe Met Ala Tyr Phe

290 295 300

Gly Val Ser Ala Ala Leu Thr Leu Met Met Pro Tyr Tyr Leu Leu Asp

305 310 315 320

Glu Lys Ser Pro Leu Pro Val Ala Phe Glu Tyr Val Gly Trp Gly Pro

325 330 335

Ala Lys Tyr Val Val Ala Ala Gly Ser Leu Cys Ala Leu Ser Thr Ser

340 345 350

Leu Leu Gly Ser Ile Phe Pro Met Pro Arg Val Ile Tyr Ala Met Ala

355 360 365

Glu Asp Gly Leu Leu Phe Lys Cys Leu Ala Gln Ile Asn Ser Lys Thr

370 375 380

Lys Thr Pro Ile Ile Ala Thr Leu Ser Ser Gly Ala Val Ala Ala Leu

385 390 395 400

Met Ala Phe Leu Phe Asp Leu Lys Ala Leu Val Asp Met Met Ser Ile

405 410 415

Gly Thr Leu Met Ala Tyr Ser Leu Val Ala Ala Cys Val Leu Ile Leu

420 425 430

Arg Tyr Gln Pro Gly Leu Ser Tyr Asp Gln Pro Lys Cys Ser Pro Glu

435 440 445

Lys Asp Gly Leu Gly Ser Ser Pro Arg Val Thr Ser Lys Ser Glu Ser

450 455 460

Gln Val Thr Met Leu Gln Arg Gln Gly Phe Ser Met Arg Thr Leu Phe

465 470 475 480

Cys Pro Ser Leu Leu Pro Thr Gln Gln Ser Ala Ser Leu Val Ser Phe

485 490 495

Leu Val Gly Phe Leu Ala Phe Leu Val Leu Gly Leu Ser Val Leu Thr

500 505 510

Thr Tyr Gly Val His Ala Ile Thr Arg Leu Glu Ala Trp Ser Leu Ala

515 520 525

Leu Leu Ala Leu Phe Leu Val Leu Phe Val Ala Ile Val Leu Thr Ile

530 535 540

Trp Arg Gln Pro Gln Asn Gln Gln Lys Val Ala Phe Met Val Pro Phe

545 550 555 560

Leu Pro Phe Leu Pro Ala Phe Ser Ile Leu Val Asn Ile Tyr Leu Met

565 570 575

Val Gln Leu Ser Ala Asp Thr Trp Val Arg Phe Ser Ile Trp Met Ala

580 585 590

Ile Gly Phe Leu Ile Tyr Phe Ser Tyr Gly Ile Arg His Ser Leu Glu

595 600 605

Gly His Leu Arg Asp Glu Asn Asn Glu Glu Asp Ala Tyr Pro Asp Asn

610 615 620

Val His Ala Ala Ala Glu Glu Lys Ser Ala Ile Gln Ala Asn Asp His

625 630 635 640

His Pro Arg Asn Leu Ser Ser Pro Phe Ile Phe His Glu Lys Thr Ser

645 650 655

Glu Phe

<210> 126

<211> 267

<212> PRT

<213> Homo sapiens

<400> 126

Met Val Lys Ile Ser Phe Gln Pro Ala Val Ala Gly Ile Lys Gly Asp

1 5 10 15

Lys Ala Asp Lys Ala Ser Ala Ser Ala Pro Ala Pro Ala Ser Ala Thr

20 25 30

Glu Ile Leu Leu Thr Pro Ala Arg Glu Glu Gln Pro Pro Gln His Arg

35 40 45

Ser Lys Arg Gly Gly Ser Val Gly Gly Val Cys Tyr Leu Ser Met Gly

50 55 60

Met Val Val Leu Leu Met Gly Leu Val Phe Ala Ser Val Tyr Ile Tyr

65 70 75 80

Arg Tyr Phe Phe Leu Ala Gln Leu Ala Arg Asp Asn Phe Phe Arg Cys

85 90 95

Gly Val Leu Tyr Glu Asp Ser Leu Ser Ser Gln Val Arg Thr Gln Met

100 105 110

Glu Leu Glu Glu Asp Val Lys Ile Tyr Leu Asp Glu Asn Tyr Glu Arg

115 120 125

Ile Asn Val Pro Val Pro Gln Phe Gly Gly Gly Asp Pro Ala Asp Ile

130 135 140

Ile His Asp Phe Gln Arg Gly Leu Thr Ala Tyr His Asp Ile Ser Leu

145 150 155 160

Asp Lys Cys Tyr Val Ile Glu Leu Asn Thr Thr Ile Val Leu Pro Pro

165 170 175

Arg Asn Phe Trp Glu Leu Leu Met Asn Val Lys Arg Gly Thr Tyr Leu
180 185 190
Pro Gln Thr Tyr Ile Ile Gln Glu Glu Met Val Val Thr Glu His Val
195 200 205
Ser Asp Lys Glu Ala Leu Gly Ser Phe Ile Tyr His Leu Cys Asn Gly
210 215 220
Lys Asp Thr Tyr Arg Leu Arg Arg Arg Ala Thr Arg Arg Arg Ile Asn
225 230 235 240

Lys Arg Gly Ala Lys Asn Cys Asn Ala Ile Arg His Phe Glu Asn Thr
245 250 255
Phe Val Val Glu Thr Leu Ile Cys Gly Val Val
260 265

<210> 127
<211> 983
<212> PRT
<213> Homo sapiens
<400> 127

Met Asp Cys Gln Leu Ser Ile Leu Leu Leu Leu Ser Cys Ser Val Leu
1 5 10 15
Asp Ser Phe Gly Glu Leu Ile Pro Gln Pro Ser Asn Glu Val Asn Leu
20 25 30

Leu Asp Ser Lys Thr Ile Gln Gly Glu Leu Gly Trp Ile Ser Tyr Pro
35 40 45
Ser His Gly Trp Glu Glu Ile Ser Gly Val Asp Glu His Tyr Thr Pro
50 55 60
Ile Arg Thr Tyr Gln Val Cys Asn Val Met Asp His Ser Gln Asn Asn
65 70 75 80
Trp Leu Arg Thr Asn Trp Val Pro Arg Asn Ser Ala Gln Lys Ile Tyr
85 90 95

Val Glu Leu Lys Phe Thr Leu Arg Asp Cys Asn Ser Ile Pro Leu Val

100 105 110

Leu Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Met Glu Ser Asp

115 120 125

Asp Asp His Gly Val Lys Phe Arg Glu His Gln Phe Thr Lys Ile Asp

130 135 140

Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Met Asp Leu Gly Asp Arg

145 150 155 160

Ile Leu Lys Leu Asn Thr Glu Ile Arg Glu Val Gly Pro Val Asn Lys

165 170 175

Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Val Ala Leu

180 185 190

Val Ser Val Arg Val Tyr Phe Lys Lys Cys Pro Phe Thr Val Lys Asn

195 200 205

Leu Ala Met Phe Pro Asp Thr Val Pro Met Asp Ser Gln Ser Leu Val

210 215 220

Glu Val Arg Gly Ser Cys Val Asn Asn Ser Lys Glu Glu Asp Pro Pro

225 230 235 240

Arg Met Tyr Cys Ser Thr Glu Gly Glu Trp Leu Val Pro Ile Gly Lys

245 250 255

Cys Ser Cys Asn Ala Gly Tyr Glu Glu Arg Gly Phe Met Cys Gln Ala

260 265 270

Cys Arg Pro Gly Phe Tyr Lys Ala Leu Asp Gly Asn Met Lys Cys Ala

275 280 285

Lys Cys Pro Pro His Ser Ser Thr Gln Glu Asp Gly Ser Met Asn Cys

290 295 300

Arg Cys Glu Asn Asn Tyr Phe Arg Ala Asp Lys Asp Pro Pro Ser Met

305 310 315 320

Ala Cys Thr Arg Pro Pro Ser Ser Pro Arg Asn Val Ile Ser Asn Ile

325 330 335

Asn Glu Thr Ser Val Ile Leu Asp Trp Ser Trp Pro Leu Asp Thr Gly

340 345 350

Gly Arg Lys Asp Val Thr Phe Asn Ile Ile Cys Lys Lys Cys Gly Trp
355 360 365
Asn Ile Lys Gln Cys Glu Pro Cys Ser Pro Asn Val Arg Phe Leu Pro
370 375 380
Arg Gln Phe Gly Leu Thr Asn Thr Thr Val Thr Val Thr Asp Leu Leu
385 390 395 400
Ala His Thr Asn Tyr Thr Phe Glu Ile Asp Ala Val Asn Gly Val Ser
405 410 415

Glu Leu Ser Ser Pro Pro Arg Gln Phe Ala Ala Val Ser Ile Thr Thr
420 425 430
Asn Gln Ala Ala Pro Ser Pro Val Leu Thr Ile Lys Lys Asp Arg Thr
435 440 445
Ser Arg Asn Ser Ile Ser Leu Ser Trp Gln Glu Pro Glu His Pro Asn
450 455 460
Gly Ile Ile Leu Asp Tyr Glu Val Lys Tyr Tyr Glu Lys Gln Glu Gln
465 470 475 480

Glu Thr Ser Tyr Thr Ile Leu Arg Ala Arg Gly Thr Asn Val Thr Ile
485 490 495
Ser Ser Leu Lys Pro Asp Thr Ile Tyr Val Phe Gln Ile Arg Ala Arg
500 505 510
Thr Ala Ala Gly Tyr Gly Thr Asn Ser Arg Lys Phe Glu Phe Glu Thr
515 520 525
Ser Pro Asp Ser Phe Ser Ile Ser Gly Glu Ser Ser Gln Val Val Met
530 535 540

Ile Ala Ile Ser Ala Ala Val Ala Ile Ile Leu Leu Thr Val Val Ile
545 550 555 560
Tyr Val Leu Ile Gly Arg Phe Cys Gly Tyr Lys Ser Lys His Gly Ala
565 570 575
Asp Glu Lys Arg Leu His Phe Gly Asn Gly His Leu Lys Leu Pro Gly
580 585 590
Leu Arg Thr Tyr Val Asp Pro His Thr Tyr Glu Asp Pro Thr Gln Ala

595 600 605

Val His Glu Phe Ala Lys Glu Leu Asp Ala Thr Asn Ile Ser Ile Asp
610 615 620
Lys Val Val Gly Ala Gly Glu Phe Gly Glu Val Cys Ser Gly Arg Leu
625 630 635 640
Lys Leu Pro Ser Lys Lys Glu Ile Ser Val Ala Ile Lys Thr Leu Lys
645 650 655
Val Gly Tyr Thr Glu Lys Gln Arg Arg Asp Phe Leu Gly Glu Ala Ser
660 665 670

Ile Met Gly Gln Phe Asp His Pro Asn Ile Ile Arg Leu Glu Gly Val
675 680 685
Val Thr Lys Ser Lys Pro Val Met Ile Val Thr Glu Tyr Met Glu Asn
690 695 700
Gly Ser Leu Asp Ser Phe Leu Arg Lys His Asp Ala Gln Phe Thr Val
705 710 715 720
Ile Gln Leu Val Gly Met Leu Arg Gly Ile Ala Ser Gly Met Lys Tyr
725 730 735

Leu Ser Asp Met Gly Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile
740 745 750
Leu Ile Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Leu Ser
755 760 765
Arg Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr Arg Gly Gly
770 775 780
Lys Ile Pro Ile Arg Trp Thr Ser Pro Glu Ala Ile Ala Tyr Arg Lys
785 790 795 800

Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Leu Trp Glu
805 810 815
Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Glu Met Ser Asn Gln Asp
820 825 830
Val Ile Lys Ala Val Asp Glu Gly Tyr Arg Leu Pro Pro Pro Met Asp
835 840 845

Cys Pro Ala Ala Leu Tyr Gln Leu Met Leu Asp Cys Trp Gln Lys Asp
850 855 860

Arg Asn Asn Arg Pro Lys Phe Glu Gln Ile Val Ser Ile Leu Asp Lys
865 870 875 880
Leu Ile Arg Asn Pro Gly Ser Leu Lys Ile Ile Thr Ser Ala Ala Ala
885 890 895
Arg Pro Ser Asn Leu Leu Leu Asp Gln Ser Asn Val Asp Ile Thr Thr
900 905 910
Phe Arg Thr Thr Gly Asp Trp Leu Asn Gly Val Trp Thr Ala His Cys
915 920 925

Lys Glu Ile Phe Thr Gly Val Glu Tyr Ser Ser Cys Asp Thr Ile Ala
930 935 940
Lys Ile Ser Thr Asp Asp Met Lys Lys Val Gly Val Thr Val Val Gly
945 950 955 960
Pro Gln Lys Lys Ile Ile Ser Ser Ile Lys Ala Leu Glu Thr Gln Ser
965 970 975
Lys Asn Gly Pro Val Pro Val
980

<210> 128
<211> 280
<212> PRT
<213> Homo sapiens

<400> 128
Met Asp Leu Gln Gly Arg Gly Val Pro Ser Ile Asp Arg Leu Arg Val
1 5 10 15
Leu Leu Met Leu Phe His Thr Met Ala Gln Ile Met Ala Glu Gln Glu
20 25 30
Val Glu Asn Leu Ser Gly Leu Ser Thr Asn Pro Glu Lys Asp Ile Phe
35 40 45
Val Val Arg Glu Asn Gly Thr Thr Cys Leu Met Ala Glu Phe Ala Ala
50 55 60

Lys Phe Ile Val Pro Tyr Asp Val Trp Ala Ser Asn Tyr Val Asp Leu
65 70 75 80
Ile Thr Glu Gln Ala Asp Ile Ala Leu Thr Arg Gly Ala Glu Val Lys
85 90 95
Gly Arg Cys Gly His Ser Gln Ser Glu Leu Gln Val Phe Trp Val Asp
100 105 110
Arg Ala Tyr Ala Leu Lys Met Leu Phe Val Lys Glu Ser His Asn Met
115 120 125

Ser Lys Gly Pro Glu Ala Thr Trp Arg Leu Ser Lys Val Gln Phe Val
130 135 140
Tyr Asp Ser Ser Glu Lys Thr His Phe Lys Asp Ala Val Ser Ala Gly
145 150 155 160
Lys His Thr Ala Asn Ser His His Leu Ser Ala Leu Val Thr Pro Ala
165 170 175
Gly Lys Ser Tyr Glu Cys Gln Ala Gln Gln Thr Ile Ser Leu Ala Ser
180 185 190

Ser Asp Pro Gln Lys Thr Val Thr Met Ile Leu Ser Ala Val His Ile
195 200 205
Gln Pro Phe Asp Ile Ile Ser Asp Phe Val Phe Ser Glu Glu His Lys
210 215 220
Cys Pro Val Asp Glu Arg Glu Gln Leu Glu Glu Thr Leu Pro Leu Ile
225 230 235 240
Leu Gly Leu Ile Leu Gly Leu Val Ile Met Val Thr Leu Ala Ile Tyr
245 250 255

His Val His His Lys Met Thr Ala Asn Gln Val Gln Ile Pro Arg Asp
260 265 270
Arg Ser Gln Tyr Lys His Met Gly
275 280

<210> 129
<211> 875
<212> PRT
<213> Homo sapiens

<400> 129

Met Ile Gly Cys Gly Ala Cys Glu Pro Lys Val Lys Met Ala Gly Gly
1 5 10 15

Gln Ala Ala Ala Ala Leu Pro Thr Trp Lys Met Ala Ala Arg Arg Ser
20 25 30

Leu Ser Ala Arg Gly Arg Gly Ile Leu Gln Ala Ala Ala Gly Arg Leu
35 40 45

Leu Pro Leu Leu Leu Leu Ser Cys Cys Cys Gly Ala Gly Gly Cys Ala
50 55 60

Ala Val Gly Glu Asn Glu Glu Thr Val Ile Ile Gly Leu Arg Leu Glu
65 70 75 80

Asp Thr Asn Asp Val Ser Phe Met Glu Gly Gly Ala Leu Arg Val Ser
85 90 95

Glu Arg Thr Arg Val Lys Leu Arg Val Tyr Gly Gln Asn Ile Asn Asn
100 105 110

Glu Thr Trp Ser Arg Ile Ala Phe Thr Glu His Glu Arg Arg Arg His
115 120 125

Ser Pro Gly Glu Arg Gly Leu Gly Gly Pro Ala Pro Pro Glu Pro Asp
130 135 140

Ser Gly Pro Gln Arg Cys Gly Ile Arg Thr Ser Asp Ile Ile Ile Leu
145 150 155 160

Pro His Ile Ile Leu Asn Arg Arg Thr Ser Gly Ile Ile Glu Ile Glu
165 170 175

Ile Lys Pro Leu Arg Lys Met Glu Lys Ser Lys Ser Tyr Tyr Leu Cys
180 185 190

Thr Ser Leu Ser Thr Pro Ala Leu Gly Ala Gly Gly Ser Gly Ser Thr
195 200 205

Gly Gly Ala Val Gly Gly Lys Gly Gly Ser Gly Val Ala Gly Leu Pro
210 215 220

Pro Pro Pro Trp Ala Glu Thr Thr Trp Ile Tyr His Asp Gly Glu Asp
225 230 235 240

Thr Lys Met Ile Val Gly Glu Glu Lys Lys Phe Leu Leu Pro Phe Trp
245 250 255
Leu Gln Val Ile Phe Ile Ser Leu Leu Leu Cys Leu Ser Gly Met Phe
260 265 270
Ser Gly Leu Asn Leu Gly Leu Met Ala Leu Asp Pro Met Glu Leu Arg
275 280 285

Ile Val Gln Asn Cys Gly Thr Glu Lys Glu Lys Asn Tyr Ala Lys Arg
290 295 300
Ile Glu Pro Val Arg Arg Gln Gly Asn Tyr Leu Leu Cys Ser Leu Leu
305 310 315 320
Leu Gly Asn Val Leu Val Asn Thr Thr Leu Thr Ile Leu Leu Asp Asp
325 330 335
Ile Ala Gly Ser Gly Leu Val Ala Val Val Val Ser Thr Ile Gly Ile
340 345 350

Val Ile Phe Gly Glu Ile Val Pro Gln Ala Ile Cys Ser Arg His Gly
355 360 365
Leu Ala Val Gly Ala Asn Thr Ile Phe Leu Thr Lys Phe Phe Met Met
370 375 380
Met Thr Phe Pro Ala Ser Tyr Pro Val Ser Lys Leu Leu Asp Cys Val
385 390 395 400
Leu Gly Gln Glu Ile Gly Thr Val Tyr Asn Arg Glu Lys Leu Leu Glu
405 410 415

Met Leu Arg Val Thr Asp Pro Tyr Asn Asp Leu Val Lys Glu Glu Leu
420 425 430
Asn Ile Ile Gln Gly Ala Leu Glu Leu Arg Thr Lys Thr Val Glu Asp
435 440 445
Val Met Thr Pro Leu Arg Asp Cys Phe Met Ile Thr Gly Glu Ala Ile
450 455 460
Leu Asp Phe Asn Thr Met Ser Glu Ile Met Glu Ser Gly Tyr Thr Arg
465 470 475 480

Ile Pro Val Phe Glu Gly Glu Arg Ser Asn Ile Val Asp Leu Leu Phe

485 490 495

Val Lys Asp Leu Ala Phe Val Asp Pro Asp Asp Cys Thr Pro Leu Lys

500 505 510

Thr Ile Thr Lys Phe Tyr Asn His Pro Leu His Phe Val Phe Asn Asp

515 520 525

Thr Lys Leu Asp Ala Met Leu Glu Glu Phe Lys Lys Gly Lys Ser His

530 535 540

Leu Ala Ile Val Gln Arg Val Asn Asn Glu Gly Glu Gly Asp Pro Phe

545 550 555 560

Tyr Glu Val Leu Gly Ile Val Thr Leu Glu Asp Val Ile Glu Glu Ile

565 570 575

Ile Lys Ser Glu Ile Leu Asp Glu Thr Asp Leu Tyr Thr Asp Asn Arg

580 585 590

Thr Lys Lys Lys Val Ala His Arg Glu Arg Lys Gln Asp Phe Ser Ala

595 600 605

Phe Lys Gln Thr Asp Ser Glu Met Lys Val Lys Ile Ser Pro Gln Leu

610 615 620

Leu Leu Ala Met His Arg Phe Leu Ala Thr Glu Val Glu Ala Phe Ser

625 630 635 640

Pro Ser Gln Met Ser Glu Lys Ile Leu Leu Arg Leu Leu Lys His Pro

645 650 655

Asn Val Ile Gln Glu Leu Lys Tyr Asp Glu Lys Asn Lys Lys Ala Pro

660 665 670

Glu Tyr Tyr Leu Tyr Gln Arg Asn Lys Pro Val Asp Tyr Phe Val Leu

675 680 685

Ile Leu Gln Gly Lys Val Glu Val Glu Ala Gly Lys Glu Gly Met Lys

690 695 700

Phe Glu Ala Ser Ala Phe Ser Tyr Tyr Gly Val Met Ala Leu Thr Ala

705 710 715 720

Ser Pro Val Pro Leu Ser Leu Ser Arg Thr Phe Val Val Ser Arg Thr

725 730 735

Glu Leu Leu Ala Ala Gly Ser Pro Gly Glu Asn Lys Ser Pro Pro Arg
740 745 750

Pro Cys Gly Leu Asn His Ser Asp Ser Leu Ser Arg Ser Asp Arg Ile
755 760 765

Asp Ala Val Thr Pro Thr Leu Gly Ser Ser Asn Asn Gln Leu Asn Ser
770 775 780

Ser Leu Leu Gln Val Tyr Ile Pro Asp Tyr Ser Val Arg Ala Leu Ser
785 790 795 800

Asp Leu Gln Phe Val Lys Ile Ser Arg Gln Gln Tyr Gln Asn Ala Leu
805 810 815

Met Ala Ser Arg Met Asp Lys Thr Pro Gln Ser Ser Asp Ser Glu Asn
820 825 830

Thr Lys Ile Glu Leu Thr Leu Thr Glu Leu His Asp Gly Leu Pro Asp
835 840 845

Glu Thr Ala Asn Leu Leu Asn Glu Gln Asn Cys Val Thr His Ser Lys
850 855 860

Ala Asn His Ser Leu His Asn Glu Gly Ala Ile
865 870 875

<210> 130
<211> 437
<212> PRT
<213> Homo sapiens
<400> 130

Met Ser Ala Val Leu Leu Leu Ala Leu Leu Gly Phe Ile Leu Pro Leu
1 5 10 15

Pro Gly Val Gln Ala Leu Leu Cys Gln Phe Gly Thr Val Gln His Val
20 25 30

Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys Asn Thr Ser
35 40 45

Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met Leu Ile Glu Ser
50 55 60

Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly Cys Thr Glu Ala Lys

65 70 75 80

Asp Gln Glu Pro Arg Val Thr Glu His Arg Met Gly Pro Gly Leu Ser

85 90 95

Leu Ile Ser Tyr Thr Phe Val Cys Arg Gln Glu Asp Phe Cys Asn Asn

100 105 110

Leu Val Asn Ser Leu Pro Leu Trp Ala Pro Gln Pro Pro Ala Asp Pro

115 120 125

Gly Ser Leu Arg Cys Pro Val Cys Leu Ser Met Glu Gly Cys Leu Glu

130 135 140

Gly Thr Thr Glu Glu Ile Cys Pro Lys Gly Thr Thr His Cys Tyr Asp

145 150 155 160

Gly Leu Leu Arg Leu Arg Gly Gly Gly Ile Phe Ser Asn Leu Arg Val

165 170 175

Gln Gly Cys Met Pro Gln Pro Gly Cys Asn Leu Leu Asn Gly Thr Gln

180 185 190

Glu Ile Gly Pro Val Gly Met Thr Glu Asn Cys Asn Arg Lys Asp Phe

195 200 205

Leu Thr Cys His Arg Gly Thr Thr Ile Met Thr His Gly Asn Leu Ala

210 215 220

Gln Glu Pro Thr Asp Trp Thr Thr Ser Asn Thr Glu Met Cys Glu Val

225 230 235 240

Gly Gln Val Cys Gln Glu Thr Leu Leu Leu Leu Asp Val Gly Leu Thr

245 250 255

Ser Thr Leu Val Gly Thr Lys Gly Cys Ser Thr Val Gly Ala Gln Asn

260 265 270

Ser Gln Lys Thr Thr Ile His Ser Ala Pro Pro Gly Val Leu Val Ala

275 280 285

Ser Tyr Thr His Phe Cys Ser Ser Asp Leu Cys Asn Ser Ala Ser Ser

290 295 300

Ser Ser Val Leu Leu Asn Ser Leu Pro Pro Gln Ala Ala Pro Val Pro

305 310 315 320

Gly Asp Arg Gln Cys Pro Thr Cys Val Gln Pro Leu Gly Thr Cys Ser
325 330 335
Ser Gly Ser Pro Arg Met Thr Cys Pro Arg Gly Ala Thr His Cys Tyr
340 345 350
Asp Gly Tyr Ile His Leu Ser Gly Gly Gly Leu Ser Thr Lys Met Ser
355 360 365

Ile Gln Gly Cys Val Ala Gln Pro Ser Ser Phe Leu Leu Asn His Thr
370 375 380
Arg Gln Ile Gly Ile Phe Ser Ala Arg Glu Lys Arg Asp Val Gln Pro
385 390 395 400
Pro Ala Ser Gln His Glu Gly Gly Gly Ala Glu Gly Leu Glu Ser Leu
405 410 415
Thr Trp Gly Val Gly Leu Ala Leu Ala Pro Ala Leu Trp Trp Gly Val
420 425 430

Val Cys Pro Ser Cys
435
<210> 131
<211> 831
<212> PRT
<213> Homo sapiens
<400> 131
Met Lys Val His Met His Thr Lys Phe Cys Leu Ile Cys Leu Leu Thr
1 5 10 15
Phe Ile Phe His His Cys Asn His Cys His Glu Glu His Asp His Gly
20 25 30
Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro
35 40 45

Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile
50 55 60
Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe
65 70 75 80
Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val

85 90 95

Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu

100 105 110

Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His

115 120 125

Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser

130 135 140

Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val

145 150 155 160

Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His

165 170 175

Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn

180 185 190

Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu

195 200 205

Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser

210 215 220

Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser

225 230 235 240

Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp

245 250 255

Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val

260 265 270

His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His

275 280 285

Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu

290 295 300

Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala

305 310 315 320

Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu

325 330 335

Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr Gly His Gly Ala Asn
340 345 350
Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu
355 360 365

Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu
370 375 380
Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val Pro Glu Asp Glu Ala
385 390 395 400
Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile Ile Ser Ile Thr Val
405 410 415
Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn
420 425 430

Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val
435 440 445
Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu Leu Pro His Ser Gln
450 455 460
Gly Gly His Asp His Ser His Gln His Ala His Gly His Gly His Ser
465 470 475 480
His Gly His Glu Ser Asn Lys Phe Leu Glu Glu Tyr Asp Ala Val Leu
485 490 495

Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu Leu Phe Ile Ile Glu
500 505 510
His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln
515 520 525
Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser Thr Ile Gly Arg Lys
530 535 540
Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp Ser Asp Trp Leu Gln
545 550 555 560

Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg
565 570 575
Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro

580 585 590

Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser

595 600 605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala

610 615 620

Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn

625 630 635 640

His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His

645 650 655

Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met

660 665 670

Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile

675 680 685

Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser Thr Ser Ile

690 695 700

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val

705 710 715 720

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Ile Val Tyr Asn Leu

725 730 735

Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val

740 745 750

Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala

755 760 765

Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu

770 775 780

His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln

785 790 795 800

Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu

805 810 815

Val Ile Ala Leu Tyr Glu Asp Lys Ile Val Phe Asp Ile Gln Phe

820 825 830

<210> 132

<211> 1871

<212> PRT

<213> Homo sapiens

<400> 132

Met Pro Ser Val Cys Leu Leu Leu Leu Leu Phe Leu Ala Val Gly Gly
1 5 10 15

Ala Leu Gly Asn Arg Pro Phe Arg Ala Phe Val Val Thr Asp Thr Thr
20 25 30

Leu Thr His Leu Ala Val His Arg Val Thr Gly Glu Val Phe Val Gly
35 40 45

Ala Val Asn Arg Val Phe Lys Leu Ala Pro Asn Leu Thr Glu Leu Arg
50 55 60

Ala His Val Thr Gly Pro Val Glu Asp Asn Ala Arg Cys Tyr Pro Pro
65 70 75 80

Pro Ser Met Arg Val Cys Ala His Arg Leu Ala Pro Val Asp Asn Ile
85 90 95

Asn Lys Leu Leu Leu Ile Asp Tyr Ala Ala Arg Arg Leu Val Ala Cys
100 105 110

Gly Ser Ile Trp Gln Gly Ile Cys Gln Phe Leu Arg Leu Asp Asp Leu
115 120 125

Phe Lys Leu Gly Glu Pro His His Arg Lys Glu His Tyr Leu Ser Gly
130 135 140

Ala Gln Glu Pro Asp Ser Met Ala Gly Val Ile Val Glu Gln Gly Gln
145 150 155 160

Gly Pro Ser Lys Leu Phe Val Gly Thr Ala Val Asp Gly Lys Ser Glu
165 170 175

Tyr Phe Pro Thr Leu Ser Ser Arg Lys Leu Ile Ser Asp Glu Asp Ser
180 185 190

Ala Asp Met Phe Ser Leu Val Tyr Gln Asp Glu Phe Val Ser Ser Gln
195 200 205

Ile Lys Ile Pro Ser Asp Thr Leu Ser Leu Tyr Pro Ala Phe Asp Ile

210 215 220

Tyr Tyr Ile Tyr Gly Phe Val Ser Ala Ser Phe Val Tyr Phe Leu Thr

225 230 235 240

Leu Gln Leu Asp Thr Gln Gln Thr Leu Leu Asp Thr Ala Gly Glu Lys

245 250 255

Phe Phe Thr Ser Lys Ile Val Arg Met Cys Ala Gly Asp Ser Glu Phe

260 265 270

Tyr Ser Tyr Val Glu Phe Pro Ile Gly Cys Ser Trp Arg Gly Val Glu

275 280 285

Tyr Arg Leu Val Gln Ser Ala His Leu Ala Lys Pro Gly Leu Leu Leu

290 295 300

Ala Gln Ala Leu Gly Val Pro Ala Asp Glu Asp Val Leu Phe Thr Ile

305 310 315 320

Phe Ser Gln Gly Gln Lys Asn Arg Ala Ser Pro Pro Arg Gln Thr Ile

325 330 335

Leu Cys Leu Phe Thr Leu Ser Asn Ile Asn Ala His Ile Arg Arg Arg

340 345 350

Ile Gln Ser Cys Tyr Arg Gly Glu Gly Thr Leu Ala Leu Pro Trp Leu

355 360 365

Leu Asn Lys Glu Leu Pro Cys Ile Asn Thr Pro Met Gln Ile Asn Gly

370 375 380

Asn Phe Cys Gly Leu Val Leu Asn Gln Pro Leu Gly Gly Leu His Val

385 390 395 400

Ile Glu Gly Leu Pro Leu Leu Ala Asp Ser Thr Asp Gly Met Ala Ser

405 410 415

Val Ala Ala Tyr Thr Tyr Arg Gln His Ser Val Val Phe Ile Gly Thr

420 425 430

Arg Ser Gly Ser Leu Lys Lys Val Arg Val Asp Gly Phe Gln Asp Ala

435 440 445

His Leu Tyr Glu Thr Val Pro Val Val Asp Gly Ser Pro Ile Leu Arg

450 455 460

Asp Leu Leu Phe Ser Pro Asp His Arg His Ile Tyr Leu Leu Ser Glu

465 470 475 480

Lys Gln Val Ser Gln Leu Pro Val Glu Thr Cys Glu Gln Tyr Gln Ser

485 490 495

Cys Ala Ala Cys Leu Gly Ser Gly Asp Pro His Cys Gly Trp Cys Val

500 505 510

Leu Arg His Arg Cys Cys Arg Glu Gly Ala Cys Leu Gly Ala Ser Ala

515 520 525

Pro His Gly Phe Ala Glu Glu Leu Ser Lys Cys Val Gln Val Arg Val

530 535 540

Arg Pro Asn Asn Val Ser Val Thr Ser Pro Gly Val Gln Leu Thr Val

545 550 555 560

Thr Leu His Asn Val Pro Asp Leu Ser Ala Gly Val Ser Cys Ala Phe

565 570 575

Glu Ala Ala Ala Glu Asn Glu Ala Val Leu Leu Pro Ser Gly Glu Leu

580 585 590

Leu Cys Pro Ser Pro Ser Leu Gln Glu Leu Arg Ala Leu Thr Arg Gly

595 600 605

His Gly Ala Thr Arg Thr Val Arg Leu Gln Leu Leu Ser Lys Glu Thr

610 615 620

Gly Val Arg Phe Ala Gly Ala Asp Phe Val Phe Tyr Asn Cys Ser Val

625 630 635 640

Leu Gln Ser Cys Met Ser Cys Val Gly Ser Pro Tyr Pro Cys His Trp

645 650 655

Cys Lys Tyr Arg His Thr Cys Thr Ser Arg Pro His Glu Cys Ser Phe

660 665 670

Gln Glu Gly Arg Val His Ser Pro Glu Gly Cys Pro Glu Ile Leu Pro

675 680 685

Ser Gly Asp Leu Leu Ile Pro Val Gly Val Met Gln Pro Leu Thr Leu

690 695 700

Arg Ala Lys Asn Leu Pro Gln Pro Gln Ser Gly Gln Lys Asn Tyr Glu

705 710 715 720

Cys Val Val Arg Val Gln Gly Arg Gln Gln Arg Val Pro Ala Val Arg

725 730 735

Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Ala Ser Tyr Ser Tyr Glu

740 745 750

Gly Asp Glu His Gly Asp Thr Glu Leu Asp Phe Ser Val Val Trp Asp

755 760 765

Gly Asp Phe Pro Ile Asp Lys Pro Pro Ser Phe Arg Ala Leu Leu Tyr

770 775 780

Lys Cys Trp Ala Gln Arg Pro Ser Cys Gly Leu Cys Leu Lys Ala Asp

785 790 795 800

Pro Arg Phe Asn Cys Gly Trp Cys Ile Ser Glu His Arg Cys Gln Leu

805 810 815

Arg Thr His Cys Pro Ala Pro Lys Thr Asn Trp Met His Leu Ser Gln

820 825 830

Lys Gly Thr Arg Cys Ser His Pro Arg Ile Thr Gln Ile His Pro Leu

835 840 845

Val Gly Pro Lys Glu Gly Gly Thr Arg Val Thr Ile Val Gly Asp Asn

850 855 860

Leu Gly Leu Leu Ser Arg Glu Val Gly Leu Arg Val Ala Gly Val Arg

865 870 875 880

Cys Asn Ser Ile Pro Ala Glu Tyr Ile Ser Ala Glu Arg Ile Val Cys

885 890 895

Glu Met Glu Glu Ser Leu Val Pro Ser Pro Pro Pro Gly Pro Val Glu

900 905 910

Leu Cys Val Gly Asp Cys Ser Ala Asp Phe Arg Thr Gln Ser Glu Gln

915 920 925

Val Tyr Ser Phe Val Thr Pro Thr Phe Asp Gln Val Ser Pro Ser Arg

930 935 940

Gly Pro Ala Ser Gly Gly Thr Arg Leu Thr Ile Ser Gly Ser Ser Leu

945 950 955 960

Asp Ala Gly Ser Arg Val Thr Val Thr Val Arg Asp Ser Glu Cys Gln

965 970 975

Phe Val Arg Arg Asp Ala Lys Ala Ile Val Cys Ile Ser Pro Leu Ser

980 985 990

Thr Leu Gly Pro Ser Gln Ala Pro Ile Thr Leu Ala Ile Asp Arg Ala

995 1000 1005

Asn Ile Ser Ser Pro Gly Leu Ile Tyr Thr Tyr Thr Gln Asp Pro

1010 1015 1020

Thr Val Thr Arg Leu Glu Pro Thr Trp Ser Ile Ile Asn Gly Ser

1025 1030 1035

Thr Ala Ile Thr Val Ser Gly Thr His Leu Leu Thr Val Gln Glu

1040 1045 1050

Pro Arg Val Arg Ala Lys Tyr Arg Gly Ile Glu Thr Thr Asn Thr

1055 1060 1065

Cys Gln Val Ile Asn Asp Thr Ala Met Leu Cys Lys Ala Pro Gly

1070 1075 1080

Ile Phe Leu Gly Arg Pro Gln Pro Arg Ala Gln Gly Glu His Pro

1085 1090 1095

Asp Glu Phe Gly Phe Leu Leu Asp His Val Gln Thr Ala Arg Ser

1100 1105 1110

Leu Asn Arg Ser Ser Phe Thr Tyr Tyr Pro Asp Pro Ser Phe Glu

1115 1120 1125

Pro Leu Gly Pro Ser Gly Val Leu Asp Val Lys Pro Gly Ser His

1130 1135 1140

Val Val Leu Lys Gly Lys Asn Leu Ile Pro Ala Ala Ala Gly Ser

1145 1150 1155

Ser Arg Leu Asn Tyr Thr Val Leu Ile Gly Gly Gln Pro Cys Ser

1160 1165 1170

Leu Thr Val Ser Asp Thr Gln Leu Leu Cys Asp Ser Pro Ser Gln

1175 1180 1185

Thr Gly Arg Gln Pro Val Met Val Leu Val Gly Gly Leu Glu Phe

1190 1195 1200

Trp Leu Gly Thr Leu His Ile Ser Ala Glu Arg Ala Leu Thr Leu

1205 1210 1215

Pro Ala Met Met Gly Leu Ala Ala Gly Gly Gly Leu Leu Leu Leu

1220 1225 1230

Ala Ile Thr Ala Val Leu Val Ala Tyr Lys Arg Lys Thr Gln Asp

1235 1240 1245

Ala Asp Arg Thr Leu Lys Arg Leu Gln Leu Gln Met Asp Asn Leu

1250 1255 1260

Glu Ser Arg Val Ala Leu Glu Cys Lys Glu Ala Phe Ala Glu Leu

1265 1270 1275

Gln Thr Asp Ile Asn Glu Leu Thr Asn His Met Asp Glu Val Gln

1280 1285 1290

Ile Pro Phe Leu Asp Tyr Arg Thr Tyr Ala Val Arg Val Leu Phe

1295 1300 1305

Pro Gly Ile Glu Ala His Pro Val Leu Lys Glu Leu Asp Thr Pro

1310 1315 1320

Pro Asn Val Glu Lys Ala Leu Arg Leu Phe Gly Gln Leu Leu His

1325 1330 1335

Ser Arg Ala Phe Val Leu Thr Phe Ile His Thr Leu Glu Ala Gln

1340 1345 1350

Ser Ser Phe Ser Met Arg Asp Arg Gly Thr Val Ala Ser Leu Thr

1355 1360 1365

Met Val Ala Leu Gln Ser Arg Leu Asp Tyr Ala Thr Gly Leu Leu

1370 1375 1380

Lys Gln Leu Leu Ala Asp Leu Ile Glu Lys Asn Leu Glu Ser Lys

1385 1390 1395

Asn His Pro Lys Leu Leu Leu Arg Arg Thr Glu Ser Val Ala Glu

1400 1405 1410

Lys Met Leu Thr Asn Trp Phe Thr Phe Leu Leu His Lys Phe Leu

1415 1420 1425

Lys Glu Cys Ala Gly Glu Pro Leu Phe Leu Leu Tyr Cys Ala Ile
1430 1435 1440
Lys Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly Glu
1445 1450 1455
Ala Arg Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile
1460 1465 1470
Asp Tyr Lys Thr Leu Thr Leu His Cys Val Cys Pro Glu Asn Glu

1475 1480 1485
Gly Ser Ala Gln Val Pro Val Lys Val Leu Asn Cys Asp Ser Ile
1490 1495 1500
Thr Gln Ala Lys Asp Lys Leu Leu Asp Thr Val Tyr Lys Gly Ile
1505 1510 1515
Pro Tyr Ser Gln Arg Pro Lys Ala Glu Asp Met Asp Leu Glu Trp
1520 1525 1530
Arg Gln Gly Arg Met Thr Arg Ile Ile Leu Gln Asp Glu Asp Val

1535 1540 1545
Thr Thr Lys Ile Glu Cys Asp Trp Lys Arg Leu Asn Ser Leu Ala
1550 1555 1560
His Tyr Gln Val Thr Asp Gly Ser Leu Val Ala Leu Val Pro Lys
1565 1570 1575
Gln Val Ser Ala Tyr Asn Met Ala Asn Ser Phe Thr Phe Thr Arg
1580 1585 1590
Ser Leu Ser Arg Tyr Glu Ser Leu Leu Arg Thr Ala Ser Ser Pro

1595 1600 1605
Asp Ser Leu Arg Ser Arg Ala Pro Met Ile Thr Pro Asp Gln Glu
1610 1615 1620
Thr Gly Thr Lys Leu Trp His Leu Val Lys Asn His Asp His Ala
1625 1630 1635
Asp His Arg Glu Gly Asp Arg Gly Ser Lys Met Val Ser Glu Ile
1640 1645 1650
Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu Gln Lys Phe

1655 1660 1665

Val Asp Asp Leu Phe Glu Thr Val Phe Ser Thr Ala His Arg Gly

1670 1675 1680

Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu Asp

1685 1690 1695

Glu Gln Ala Asp Gln Arg Gln Ile Ser Asp Pro Asp Val Arg His

1700 1705 1710

Thr Trp Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val

1715 1720 1725

Ile Lys Asn Pro Gln Phe Val Phe Asp Ile His Lys Asn Ser Ile

1730 1735 1740

Thr Asp Ala Cys Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser

1745 1750 1755

Cys Ser Thr Ser Glu His Arg Leu Gly Lys Asp Ser Pro Ser Asn

1760 1765 1770

Lys Leu Leu Tyr Ala Lys Asp Ile Pro Asn Tyr Lys Ser Trp Val

1775 1780 1785

Glu Arg Tyr Tyr Arg Asp Ile Ala Lys Met Ala Ser Ile Ser Asp

1790 1795 1800

Gln Asp Met Asp Ala Tyr Leu Val Glu Gln Ser Arg Leu His Ala

1805 1810 1815

Ser Asp Phe Ser Val Leu Ser Ala Leu Asn Glu Leu Tyr Phe Tyr

1820 1825 1830

Val Thr Lys Tyr Arg Gln Glu Ile Leu Thr Ala Leu Asp Arg Asp

1835 1840 1845

Ala Ser Cys Arg Lys His Lys Leu Arg Gln Lys Leu Glu Gln Ile

1850 1855 1860

Ile Ser Leu Val Ser Ser Asp Ser

1865 1870

<210> 133

<211> 288

<212> PRT

<213> Homo sapiens

<400> 133

Met Gln Arg Arg Trp Val Phe Val Leu Leu Asp Val Leu Cys Leu Leu
1 5 10 15
Val Ala Ser Leu Pro Phe Ala Ile Leu Thr Leu Val Asn Ala Pro Tyr

20 25 30
Lys Arg Gly Phe Tyr Cys Gly Asp Asp Ser Ile Arg Tyr Pro Tyr Arg
35 40 45
Pro Asp Thr Ile Thr His Gly Leu Met Ala Gly Val Thr Ile Thr Ala
50 55 60
Thr Val Ile Leu Val Ser Ala Gly Glu Ala Tyr Leu Val Tyr Thr Asp
65 70 75 80
Arg Leu Tyr Ser Arg Ser Asp Phe Asn Asn Tyr Val Ala Ala Val Tyr

85 90 95
Lys Val Leu Gly Thr Phe Leu Phe Gly Ala Ala Val Ser Gln Ser Leu
100 105 110
Thr Asp Leu Ala Lys Tyr Met Ile Gly Arg Leu Arg Pro Asn Phe Leu
115 120 125
Ala Val Cys Asp Pro Asp Trp Ser Arg Val Asn Cys Ser Val Tyr Val
130 135 140
Gln Leu Glu Lys Val Cys Arg Gly Asn Pro Ala Asp Val Thr Glu Ala

145 150 155 160
Arg Leu Ser Phe Tyr Ser Gly His Ser Ser Phe Gly Met Tyr Cys Met
165 170 175
Val Phe Leu Ala Leu Tyr Val Gln Ala Arg Leu Cys Trp Lys Trp Ala
180 185 190
Arg Leu Leu Arg Pro Thr Val Gln Phe Phe Leu Val Ala Phe Ala Leu
195 200 205
Tyr Val Gly Tyr Thr Arg Val Ser Asp Tyr Lys His His Trp Ser Asp

210 215 220
Val Leu Val Gly Leu Leu Gln Gly Ala Leu Val Ala Ala Leu Thr Val

225 230 235 240

Cys Tyr Ile Ser Asp Phe Phe Lys Ala Arg Pro Pro Gln His Cys Leu

245 250 255

Lys Glu Glu Glu Leu Glu Arg Lys Pro Ser Leu Ser Leu Thr Leu Thr

260 265 270

Leu Gly Glu Ala Asp His Asn His Tyr Gly Tyr Pro His Ser Ser Ser

275 280 285

<210> 134

<211> 473

<212> PRT

<213> Homo sapiens

<400> 134

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> 135

<211> 1400

<212> PRT

<213> Homo sapiens

<400> 135

Met Arg Ala Val Leu Asp Thr Ala Asp Ile Ala Ile Val Ala Leu Tyr

1 5 10 15

Phe Ile Leu Val Met Cys Ile Gly Phe Phe Ala Met Trp Lys Ser Asn

20 25 30

Arg Ser Thr Val Ser Gly Tyr Phe Leu Ala Gly Arg Ser Met Thr Trp

35 40 45

Val Thr Ile Gly Ala Ser Leu Phe Val Ser Asn Ile Gly Ser Glu His

50 55 60

Phe Ile Gly Leu Ala Gly Ser Gly Ala Ala Ser Gly Phe Ala Val Gly

65 70 75 80

Ala Trp Glu Phe Asn Ala Leu Leu Leu Leu Gln Leu Leu Gly Trp Val

85 90 95

Phe Ile Pro Ile Tyr Ile Arg Ser Gly Val Tyr Thr Met Pro Glu Tyr

100 105 110

Leu Ser Lys Arg Phe Gly Gly His Arg Ile Gln Val Tyr Phe Ala Ala

115 120 125

Leu Ser Leu Ile Leu Tyr Ile Phe Thr Lys Leu Ser Val Asp Leu Tyr

130 135 140

Ser Gly Ala Leu Phe Ile Gln Glu Ser Leu Gly Trp Asn Leu Tyr Val
145 150 155 160
Ser Val Ile Leu Leu Ile Gly Met Thr Ala Leu Leu Thr Val Thr Gly
165 170 175
Gly Leu Val Ala Val Ile Tyr Thr Asp Thr Leu Gln Ala Leu Leu Met
180 185 190
Ile Ile Gly Ala Leu Thr Leu Met Ile Ile Ser Ile Met Glu Ile Gly
195 200 205

Gly Phe Glu Glu Val Lys Arg Arg Tyr Met Leu Ala Ser Pro Asp Val
210 215 220
Thr Ser Ile Leu Leu Thr Tyr Asn Leu Ser Asn Thr Asn Ser Cys Asn
225 230 235 240
Val Ser Pro Lys Lys Glu Ala Leu Lys Met Leu Arg Asn Pro Thr Asp
245 250 255
Glu Asp Val Pro Trp Pro Gly Phe Ile Leu Gly Gln Thr Pro Ala Ser
260 265 270

Val Trp Tyr Trp Cys Ala Asp Gln Val Ile Val Gln Arg Val Leu Ala
275 280 285
Ala Lys Asn Ile Ala His Ala Lys Gly Ser Thr Leu Met Ala Gly Phe
290 295 300
Leu Lys Leu Leu Pro Met Phe Ile Ile Val Val Pro Gly Met Ile Ser
305 310 315 320
Arg Ile Leu Phe Thr Asp Asp Ile Ala Cys Ile Asn Pro Glu His Cys
325 330 335

Met Leu Val Cys Gly Ser Arg Ala Gly Cys Ser Asn Ile Ala Tyr Pro
340 345 350
Arg Leu Val Met Lys Leu Val Pro Val Gly Leu Arg Gly Leu Met Met
355 360 365
Ala Val Met Ile Ala Ala Leu Met Ser Asp Leu Asp Ser Ile Phe Asn
370 375 380

Ser Ala Ser Thr Ile Phe Thr Leu Asp Val Tyr Lys Leu Ile Arg Lys
385 390 395 400

Ser Ala Ser Ser Arg Glu Leu Met Ile Val Gly Arg Ile Phe Val Ala
405 410 415
Phe Met Val Val Ile Ser Ile Ala Trp Val Pro Ile Ile Val Glu Met
420 425 430
Gln Gly Gly Gln Met Tyr Leu Tyr Ile Gln Glu Val Ala Asp Tyr Leu
435 440 445
Thr Pro Pro Val Ala Ala Leu Phe Leu Leu Ala Ile Phe Trp Lys Arg
450 455 460

Cys Asn Glu Gln Gly Ala Phe Tyr Gly Gly Met Ala Gly Phe Val Leu
465 470 475 480
Gly Ala Val Arg Leu Ile Leu Ala Phe Ala Tyr Arg Ala Pro Glu Cys
485 490 495
Asp Gln Pro Asp Asn Arg Pro Gly Phe Ile Lys Asp Ile His Tyr Met
500 505 510
Tyr Val Ala Thr Gly Leu Phe Trp Val Thr Gly Leu Ile Thr Val Ile
515 520 525

Val Ser Leu Leu Thr Pro Pro Pro Thr Lys Glu Gln Ile Arg Thr Thr
530 535 540
Thr Phe Trp Ser Lys Lys Asn Leu Val Val Lys Glu Asn Cys Ser Pro
545 550 555 560
Lys Glu Glu Pro Tyr Gln Met Gln Glu Lys Ser Ile Leu Arg Cys Ser
565 570 575
Glu Asn Asn Glu Thr Ile Asn His Ile Ile Pro Asn Gly Lys Ser Glu
580 585 590

Asp Ser Ile Lys Gly Leu Gln Pro Glu Asp Val Asn Leu Leu Val Thr
595 600 605
Cys Arg Glu Glu Gly Asn Pro Val Ala Ser Leu Gly His Ser Glu Ala
610 615 620
Glu Thr Pro Val Asp Ala Tyr Ser Asn Gly Gln Ala Ala Leu Met Gly

625 630 635 640

Glu Lys Glu Arg Lys Lys Glu Thr Asp Asp Gly Gly Arg Tyr Trp Lys

645 650 655

Phe Ile Asp Trp Phe Cys Gly Phe Lys Ser Lys Ser Leu Ser Lys Arg

660 665 670

Ser Leu Arg Asp Leu Met Glu Glu Glu Ala Val Cys Leu Gln Met Leu

675 680 685

Glu Glu Thr Arg Gln Val Lys Val Ile Leu Asn Ile Gly Leu Phe Ala

690 695 700

Val Cys Ser Leu Gly Ile Phe Met Phe Val Tyr Phe Ser Leu Asp Tyr

705 710 715 720

Ser Tyr Asp Asn Ser Phe Arg Val Thr Ser Met Gln Gly Val Ile Asn

725 730 735

Glu Thr Pro Leu Pro Ile Asp Leu Tyr Gln Phe Asp Asp Ile Ser Gly

740 745 750

Lys Val Glu Gln Phe Gly Lys Phe Gly Val Ile Tyr Tyr Asp Ile Asn

755 760 765

Gln Ile Ile Ser Thr Ala Val Met Thr Tyr Thr Lys His Phe Asp Ala

770 775 780

His Gly Arg Ile Lys Glu Ile Gln Tyr Glu Ile Phe Arg Ser Leu Met

785 790 795 800

Tyr Trp Ile Thr Ile Gln Tyr Asp Asn Met Gly Arg Val Thr Lys Arg

805 810 815

Glu Ile Lys Ile Gly Pro Phe Ala Asn Thr Thr Lys Tyr Ala Tyr Glu

820 825 830

Tyr Asp Val Asp Gly Gln Leu Gln Thr Val Tyr Leu Asn Glu Lys Ile

835 840 845

Met Trp Arg Tyr Asn Tyr Asp Leu Asn Gly Asn Leu His Leu Leu Asn

850 855 860

Pro Ser Asn Ser Ala Arg Leu Thr Pro Leu Arg Tyr Asp Leu Arg Asp

865 870 875 880

Arg Ile Thr Arg Leu Gly Asp Val Gln Tyr Arg Leu Asp Glu Asp Gly
885 890 895
Phe Leu Arg Gln Arg Gly Thr Glu Ile Phe Glu Tyr Ser Ser Lys Gly
900 905 910

Leu Leu Thr Arg Val Tyr Ser Lys Gly Ser Gly Trp Thr Val Ile Tyr
915 920 925
Arg Tyr Asp Gly Leu Gly Arg Arg Val Ser Ser Lys Thr Ser Leu Gly
930 935 940
Gln His Leu Gln Phe Phe Tyr Ala Asp Leu Thr Tyr Pro Thr Arg Ile
945 950 955 960
Thr His Val Tyr Asn His Ser Ser Ser Glu Ile Thr Ser Leu Tyr Tyr
965 970 975

Asp Leu Gln Gly His Leu Phe Ala Met Glu Ile Ser Ser Gly Asp Glu
980 985 990
Phe Tyr Ile Ala Ser Asp Asn Thr Gly Thr Pro Leu Ala Val Phe Ser
995 1000 1005
Ser Asn Gly Leu Met Leu Lys Gln Ile Gln Tyr Thr Ala Tyr Gly
1010 1015 1020
Glu Ile Tyr Phe Asp Ser Asn Ile Asp Phe Gln Leu Val Ile Gly
1025 1030 1035

Phe His Gly Gly Leu Tyr Asp Pro Leu Thr Lys Leu Ile His Phe
1040 1045 1050
Gly Glu Arg Asp Tyr Asp Ile Leu Ala Gly Arg Trp Thr Thr Pro
1055 1060 1065
Asp Ile Glu Ile Trp Lys Arg Ile Gly Lys Asp Pro Ala Pro Phe
1070 1075 1080
Asn Leu Tyr Met Phe Arg Asn Asn Asn Pro Ala Ser Lys Ile His
1085 1090 1095

Asp Val Lys Asp Tyr Ile Thr Asp Val Asn Ser Trp Leu Val Thr
1100 1105 1110
Phe Gly Phe His Leu His Asn Ala Ile Pro Gly Phe Pro Val Pro

1115 1120 1125

Lys Phe Asp Leu Thr Glu Pro Ser Tyr Glu Leu Val Lys Ser Gln

1130 1135 1140

Gln Trp Asp Asp Ile Pro Pro Ile Phe Gly Val Gln Gln Gln Val

1145 1150 1155

Ala Arg Gln Ala Lys Ala Phe Leu Ser Leu Gly Lys Met Ala Glu

1160 1165 1170

Val Gln Val Ser Arg Arg Arg Ala Gly Gly Ala Gln Ser Trp Leu

1175 1180 1185

Trp Phe Ala Thr Val Lys Ser Leu Ile Gly Lys Gly Val Met Leu

1190 1195 1200

Ala Val Ser Gln Gly Arg Val Gln Thr Asn Val Leu Asn Ile Ala

1205 1210 1215

Asn Glu Asp Cys Ile Lys Val Ala Ala Val Leu Asn Asn Ala Phe

1220 1225 1230

Tyr Leu Glu Asn Leu His Phe Thr Ile Glu Gly Lys Asp Thr His

1235 1240 1245

Tyr Phe Ile Lys Thr Thr Thr Pro Glu Ser Asp Leu Gly Thr Leu

1250 1255 1260

Arg Leu Thr Ser Gly Arg Lys Ala Leu Glu Asn Gly Ile Asn Val

1265 1270 1275

Thr Val Ser Gln Ser Thr Thr Val Val Asn Gly Arg Thr Arg Arg

1280 1285 1290

Phe Ala Asp Val Glu Met Gln Phe Gly Ala Leu Ala Leu His Val

1295 1300 1305

Arg Tyr Gly Met Thr Leu Asp Glu Glu Lys Ala Arg Ile Leu Glu

1310 1315 1320

Gln Ala Arg Gln Arg Ala Leu Ala Arg Ala Trp Ala Arg Glu Gln

1325 1330 1335

Gln Arg Val Arg Asp Gly Glu Glu Gly Ala Arg Leu Trp Thr Glu

1340 1345 1350

Gly Glu Lys Arg Gln Leu Leu Ser Ala Gly Lys Val Gln Gly Tyr

1355 1360 1365

Asp Gly Tyr Tyr Val Leu Ser Val Glu Gln Tyr Pro Glu Leu Ala

1370 1375 1380

Asp Ser Ala Asn Asn Ile Gln Phe Leu Arg Gln Ser Glu Ile Gly

1385 1390 1395

Arg Arg

1400

<210> 136

<211> 2017

<212> PRT

<213> Homo sapiens

<400> 136

Met Asp Val Lys Glu Arg Arg Pro Tyr Cys Ser Leu Thr Lys Ser Arg

1 5 10 15

Arg Glu Lys Glu Arg Arg Tyr Thr Asn Ser Ser Ala Asp Asn Glu Glu

20 25 30

Cys Arg Val Pro Thr Gln Lys Ser Tyr Ser Ser Ser Glu Thr Leu Lys

35 40 45

Ala Phe Asp His Asp Ser Ser Arg Leu Leu Tyr Gly Asn Arg Val Lys

50 55 60

Asp Leu Val His Arg Glu Ala Asp Glu Phe Thr Arg Gln Gly Gln Asn

65 70 75 80

Phe Thr Leu Arg Gln Leu Gly Val Cys Glu Pro Ala Thr Arg Arg Gly

85 90 95

Leu Ala Phe Cys Ala Glu Met Gly Leu Pro His Arg Gly Tyr Ser Ile

100 105 110

Ser Ala Gly Ser Asp Ala Asp Thr Glu Asn Glu Ala Val Met Ser Pro

115 120 125

Glu His Ala Met Arg Leu Trp Gly Arg Gly Val Lys Ser Gly Arg Ser

130 135 140

Ser Cys Leu Ser Ser Arg Ser Asn Ser Ala Leu Thr Leu Thr Asp Thr

145 150 155 160

Glu His Glu Asn Lys Ser Asp Ser Glu Asn Glu Gln Pro Ala Ser Asn

165 170 175

Gln Gly Gln Ser Thr Leu Gln Pro Leu Pro Pro Ser His Lys Gln His

180 185 190

Ser Ala Gln His His Pro Ser Ile Thr Ser Leu Asn Arg Asn Ser Leu

195 200 205

Thr Asn Arg Arg Asn Gln Ser Pro Ala Pro Pro Ala Ala Leu Pro Ala

210 215 220

Glu Leu Gln Thr Thr Pro Glu Ser Val Gln Leu Gln Asp Ser Trp Val

225 230 235 240

Leu Gly Ser Asn Val Pro Leu Glu Ser Arg His Phe Leu Phe Lys Thr

245 250 255

Gly Thr Gly Thr Thr Pro Leu Phe Ser Thr Ala Thr Pro Gly Tyr Thr

260 265 270

Met Ala Ser Gly Ser Val Tyr Ser Pro Pro Thr Arg Pro Leu Pro Arg

275 280 285

Asn Thr Leu Ser Arg Ser Ala Phe Lys Phe Lys Lys Ser Ser Lys Tyr

290 295 300

Cys Ser Trp Lys Cys Thr Ala Leu Cys Ala Val Gly Val Ser Val Leu

305 310 315 320

Leu Ala Ile Leu Leu Ser Tyr Phe Ile Ala Met His Leu Phe Gly Leu

325 330 335

Asn Trp Gln Leu Gln Gln Thr Glu Asn Asp Thr Phe Glu Asn Gly Lys

340 345 350

Val Asn Ser Asp Thr Met Pro Thr Asn Thr Val Ser Leu Pro Ser Gly

355 360 365

Asp Asn Gly Lys Leu Gly Gly Phe Thr Gln Glu Asn Asn Thr Ile Asp

370 375 380

Ser Gly Glu Leu Asp Ile Gly Arg Arg Ala Ile Gln Glu Ile Pro Pro

385 390 395 400

Gly Ile Phe Trp Arg Ser Gln Leu Phe Ile Asp Gln Pro Gln Phe Leu
405 410 415
Lys Phe Asn Ile Ser Leu Gln Lys Asp Ala Leu Ile Gly Val Tyr Gly
420 425 430
Arg Lys Gly Leu Pro Pro Ser His Thr Gln Tyr Asp Phe Val Glu Leu

435 440 445
Leu Asp Gly Ser Arg Leu Ile Ala Arg Glu Gln Arg Ser Leu Leu Glu
450 455 460
Thr Glu Arg Ala Gly Arg Gln Ala Arg Ser Val Ser Leu His Glu Ala
465 470 475 480
Gly Phe Ile Gln Tyr Leu Asp Ser Gly Ile Trp His Leu Ala Phe Tyr
485 490 495
Asn Asp Gly Lys Asn Ala Glu Gln Val Ser Phe Asn Thr Ile Val Ile

500 505 510
Glu Ser Val Val Glu Cys Pro Arg Asn Cys His Gly Asn Gly Glu Cys
515 520 525
Val Ser Gly Thr Cys His Cys Phe Pro Gly Phe Leu Gly Pro Asp Cys
530 535 540
Ser Arg Ala Ala Cys Pro Val Leu Cys Ser Gly Asn Gly Gln Tyr Ser
545 550 555 560
Lys Gly Arg Cys Leu Cys Phe Ser Gly Trp Lys Gly Thr Glu Cys Asp

565 570 575
Val Pro Thr Thr Gln Cys Ile Asp Pro Gln Cys Gly Gly Arg Gly Ile
580 585 590
Cys Ile Met Gly Ser Cys Ala Cys Asn Ser Gly Tyr Lys Gly Glu Ser
595 600 605
Cys Glu Glu Ala Asp Cys Ile Asp Pro Gly Cys Ser Asn His Gly Val
610 615 620
Cys Ile His Gly Glu Cys His Cys Ser Pro Gly Trp Gly Gly Ser Asn

625 630 635 640
Cys Glu Ile Leu Lys Thr Met Cys Pro Asp Gln Cys Ser Gly His Gly

645 650 655

Thr Tyr Leu Gln Glu Ser Gly Ser Cys Thr Cys Asp Pro Asn Trp Thr

660 665 670

Gly Pro Asp Cys Ser Asn Glu Ile Cys Ser Val Asp Cys Gly Ser His

675 680 685

Gly Val Cys Met Gly Gly Thr Cys Arg Cys Glu Glu Gly Trp Thr Gly

690 695 700

Pro Ala Cys Asn Gln Arg Ala Cys His Pro Arg Cys Ala Glu His Gly

705 710 715 720

Thr Cys Lys Asp Gly Lys Cys Glu Cys Ser Gln Gly Trp Asn Gly Glu

725 730 735

His Cys Thr Ile Glu Gly Cys Pro Gly Leu Cys Asn Ser Asn Gly Arg

740 745 750

Cys Thr Leu Asp Gln Asn Gly Trp His Cys Val Cys Gln Pro Gly Trp

755 760 765

Arg Gly Ala Gly Cys Asp Val Ala Met Glu Thr Leu Cys Thr Asp Ser

770 775 780

Lys Asp Asn Glu Gly Asp Gly Leu Ile Asp Cys Met Asp Pro Asp Cys

785 790 795 800

Cys Leu Gln Ser Ser Cys Gln Asn Gln Pro Tyr Cys Arg Gly Leu Pro

805 810 815

Asp Pro Gln Asp Ile Ile Ser Gln Ser Leu Gln Ser Pro Ser Gln Gln

820 825 830

Ala Ala Lys Ser Phe Tyr Asp Arg Ile Ser Phe Leu Ile Gly Ser Asp

835 840 845

Ser Thr His Val Ile Pro Gly Glu Ser Pro Phe Asn Lys Ser Leu Ala

850 855 860

Ser Val Ile Arg Gly Gln Val Leu Thr Ala Asp Gly Thr Pro Leu Ile

865 870 875 880

Gly Val Asn Val Ser Phe Phe His Tyr Pro Glu Tyr Gly Tyr Thr Ile

885 890 895

Thr Arg Gln Asp Gly Met Phe Asp Leu Val Ala Asn Gly Gly Ala Ser
900 905 910
Leu Thr Leu Val Phe Glu Arg Ser Pro Phe Leu Thr Gln Tyr His Thr
915 920 925
Val Trp Ile Pro Trp Asn Val Phe Tyr Val Met Asp Thr Leu Val Met
930 935 940
Lys Lys Glu Glu Asn Asp Ile Pro Ser Cys Asp Leu Ser Gly Phe Val

945 950 955 960
Arg Pro Asn Pro Ile Ile Val Ser Ser Pro Leu Ser Thr Phe Phe Arg
965 970 975
Ser Ser Pro Glu Asp Ser Pro Ile Ile Pro Glu Thr Gln Val Leu His
980 985 990
Glu Glu Thr Thr Ile Pro Gly Thr Asp Leu Lys Leu Ser Tyr Leu Ser
995 1000 1005
Ser Arg Ala Ala Gly Tyr Lys Ser Val Leu Lys Ile Thr Met Thr

1010 1015 1020
Gln Ser Ile Ile Pro Phe Asn Leu Met Lys Val His Leu Met Val
1025 1030 1035
Ala Val Val Gly Arg Leu Phe Gln Lys Trp Phe Pro Ala Ser Pro
1040 1045 1050
Asn Leu Ala Tyr Thr Phe Ile Trp Asp Lys Thr Asp Ala Tyr Asn
1055 1060 1065
Gln Lys Val Tyr Gly Leu Ser Glu Ala Val Val Ser Val Gly Tyr

1070 1075 1080
Glu Tyr Glu Ser Cys Leu Asp Leu Thr Leu Trp Glu Lys Arg Thr
1085 1090 1095
Ala Ile Leu Gln Gly Tyr Glu Leu Asp Ala Ser Asn Met Gly Gly
1100 1105 1110
Trp Thr Leu Asp Lys His His Val Leu Asp Val Gln Asn Gly Ile
1115 1120 1125
Leu Tyr Lys Gly Asn Gly Glu Asn Gln Phe Ile Ser Gln Gln Pro

1130 1135 1140

Pro Val Val Ser Ser Ile Met Gly Asn Gly Arg Arg Arg Ser Ile

1145 1150 1155

Ser Cys Pro Ser Cys Asn Gly Gln Ala Asp Gly Asn Lys Leu Leu

1160 1165 1170

Ala Pro Val Ala Leu Ala Cys Gly Ile Asp Gly Ser Leu Tyr Val

1175 1180 1185

Gly Asp Phe Asn Tyr Val Arg Arg Ile Phe Pro Ser Gly Asn Val

1190 1195 1200

Thr Ser Val Leu Glu Leu Ser Ser Asn Pro Ala His Arg Tyr Tyr

1205 1210 1215

Leu Ala Thr Asp Pro Val Thr Gly Asp Leu Tyr Val Ser Asp Thr

1220 1225 1230

Asn Thr Arg Arg Ile Tyr Arg Pro Lys Ser Leu Thr Gly Ala Lys

1235 1240 1245

Asp Leu Thr Lys Asn Ala Glu Val Val Ala Gly Thr Gly Glu Gln

1250 1255 1260

Cys Leu Pro Phe Asp Glu Ala Arg Cys Gly Asp Gly Gly Lys Ala

1265 1270 1275

Val Glu Ala Thr Leu Met Ser Pro Lys Gly Met Ala Val Asp Lys

1280 1285 1290

Asn Gly Leu Ile Tyr Phe Val Asp Gly Thr Met Ile Arg Lys Val

1295 1300 1305

Asp Gln Asn Gly Ile Ile Ser Thr Leu Leu Gly Ser Asn Asp Leu

1310 1315 1320

Thr Ser Ala Arg Pro Leu Thr Cys Asp Thr Ser Met His Ile Ser

1325 1330 1335

Gln Val Arg Leu Glu Trp Pro Thr Asp Leu Ala Ile Asn Pro Met

1340 1345 1350

Asp Asn Ser Ile Tyr Val Leu Asp Asn Asn Val Val Leu Gln Ile

1355 1360 1365

Thr Glu Asn Arg Gln Val Arg Ile Ala Ala Gly Arg Pro Met His

1370 1375 1380

Cys Gln Val Pro Gly Val Glu Tyr Pro Val Gly Lys His Ala Val

1385 1390 1395

Gln Thr Thr Leu Glu Ser Ala Thr Ala Ile Ala Val Ser Tyr Ser

1400 1405 1410

Gly Val Leu Tyr Ile Thr Glu Thr Asp Glu Lys Lys Ile Asn Arg

1415 1420 1425

Ile Arg Gln Val Thr Thr Asp Gly Glu Ile Ser Leu Val Ala Gly

1430 1435 1440

Ile Pro Ser Glu Cys Asp Cys Lys Asn Asp Ala Asn Cys Asp Cys

1445 1450 1455

Tyr Gln Ser Gly Asp Gly Tyr Ala Lys Asp Ala Lys Leu Ser Ala

1460 1465 1470

Pro Ser Ser Leu Ala Ala Ser Pro Asp Gly Thr Leu Tyr Ile Ala

1475 1480 1485

Asp Leu Gly Asn Ile Arg Ile Arg Ala Val Ser Lys Asn Lys Pro

1490 1495 1500

Leu Leu Asn Ser Met Asn Phe Tyr Glu Val Ala Ser Pro Thr Asp

1505 1510 1515

Gln Glu Leu Tyr Ile Phe Asp Ile Asn Gly Thr His Gln Tyr Thr

1520 1525 1530

Val Ser Leu Val Thr Gly Asp Tyr Leu Tyr Asn Phe Ser Tyr Ser

1535 1540 1545

Asn Asp Asn Asp Ile Thr Ala Val Thr Asp Ser Asn Gly Asn Thr

1550 1555 1560

Leu Arg Ile Arg Arg Asp Pro Asn Arg Met Pro Val Arg Val Val

1565 1570 1575

Ser Pro Asp Asn Gln Val Ile Trp Leu Thr Ile Gly Thr Asn Gly

1580 1585 1590

Cys Leu Lys Ser Met Thr Ala Gln Gly Leu Glu Leu Val Leu Phe

1595 1600 1605

Thr Tyr His Gly Asn Ser Gly Leu Leu Ala Thr Lys Ser Asp Glu

1610 1615 1620

Thr Gly Trp Thr Thr Phe Phe Asp Tyr Asp Ser Glu Gly Arg Leu

1625 1630 1635

Thr Asn Val Thr Phe Pro Thr Gly Val Val Thr Asn Leu His Gly

1640 1645 1650

Asp Met Asp Lys Ala Ile Thr Val Asp Ile Glu Ser Ser Ser Arg

1655 1660 1665

Glu Glu Asp Val Ser Ile Thr Ser Asn Leu Ser Ser Ile Asp Ser

1670 1675 1680

Phe Tyr Thr Met Val Gln Asp Gln Leu Arg Asn Ser Tyr Gln Ile

1685 1690 1695

Gly Tyr Asp Gly Ser Leu Arg Ile Ile Tyr Ala Ser Gly Leu Asp

1700 1705 1710

Ser His Tyr Gln Thr Glu Pro His Val Leu Ala Gly Thr Ala Asn

1715 1720 1725

Pro Thr Val Ala Lys Arg Asn Met Thr Leu Pro Gly Glu Asn Gly

1730 1735 1740

Gln Asn Leu Val Glu Trp Arg Phe Arg Lys Glu Gln Ala Gln Gly

1745 1750 1755

Lys Val Asn Val Phe Gly Arg Lys Leu Arg Val Asn Gly Arg Asn

1760 1765 1770

Leu Leu Ser Val Asp Phe Asp Arg Thr Thr Lys Thr Glu Lys Ile

1775 1780 1785

Tyr Asp Asp His Arg Lys Phe Leu Leu Arg Ile Ala Tyr Asp Thr

1790 1795 1800

Ser Gly His Pro Thr Leu Trp Leu Pro Ser Ser Lys Leu Met Ala

1805 1810 1815

Val Asn Val Thr Tyr Ser Ser Thr Gly Gln Ile Ala Ser Ile Gln

1820 1825 1830

Arg Gly Thr Thr Ser Glu Lys Val Asp Tyr Asp Gly Gln Gly Arg

1835 1840 1845

Ile Val Ser Arg Val Phe Ala Asp Gly Lys Thr Trp Ser Tyr Thr

1850 1855 1860

Tyr Leu Glu Lys Ser Met Val Leu Leu Leu His Ser Gln Arg Gln

1865 1870 1875

Tyr Ile Phe Glu Tyr Asp Met Trp Asp Arg Leu Ser Ala Ile Thr

1880 1885 1890

Met Pro Ser Val Ala Arg His Thr Met Gln Thr Ile Arg Ser Ile

1895 1900 1905

Gly Tyr Tyr Arg Asn Ile Tyr Asn Pro Pro Glu Ser Asn Ala Ser

1910 1915 1920

Ile Ile Thr Asp Tyr Asn Glu Glu Gly Leu Leu Leu Gln Thr Ala

1925 1930 1935

Phe Leu Gly Thr Ser Arg Arg Val Leu Phe Lys Tyr Arg Arg Gln

1940 1945 1950

Thr Arg Leu Ser Glu Ile Leu Tyr Asp Ser Thr Arg Val Ser Phe

1955 1960 1965

Thr Tyr Asp Glu Thr Ala Gly Val Leu Lys Thr Val Asn Leu Gln

1970 1975 1980

Ser Asp Gly Phe Ile Cys Thr Ile Arg Tyr Arg Gln Ile Gly Pro

1985 1990 1995

Leu Ile Asp Arg Gln Ile Phe Arg Phe Ser Glu Asp Gly Met Val

2000 2005 2010

Asn Ala Arg Phe

2015

<210> 137

<211> 472

<212> PRT

<213> Homo sapiens

<400> 137

Met Glu Leu Gln Asp Pro Lys Met Asn Gly Ala Leu Pro Ser Asp Ala

1 5 10 15

Val Gly Tyr Arg Gln Glu Arg Glu Gly Phe Leu Pro Ser Arg Gly Pro
20 25 30
Ala Pro Gly Ser Lys Pro Val Gln Phe Met Asp Phe Glu Gly Lys Thr
35 40 45
Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile Met Gly Ser
50 55 60
Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala His Thr Gly Val Ile Phe
65 70 75 80

Phe Leu Ala Leu Leu Leu Cys Ile Ala Leu Leu Ser Ser Tyr Ser Ile
85 90 95
His Leu Leu Leu Thr Cys Ala Gly Ile Ala Gly Ile Arg Ala Tyr Glu
100 105 110
Gln Leu Gly Gln Arg Ala Phe Gly Pro Ala Gly Lys Val Val Val Ala
115 120 125
Thr Val Ile Cys Leu His Asn Val Gly Ala Met Ser Ser Tyr Leu Phe
130 135 140

Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gly Thr Phe Leu Tyr Met
145 150 155 160
Asp Pro Glu Gly Asp Trp Phe Leu Lys Gly Asn Leu Leu Ile Ile Ile
165 170 175
Val Ser Val Leu Ile Ile Leu Pro Leu Ala Leu Met Lys His Leu Gly
180 185 190
Tyr Leu Gly Tyr Thr Ser Gly Leu Ser Leu Thr Cys Met Leu Phe Phe
195 200 205

Leu Val Ser Val Ile Tyr Lys Lys Phe Gln Leu Gly Cys Ala Ile Gly
210 215 220
His Asn Glu Thr Ala Met Glu Ser Glu Ala Leu Val Gly Leu Pro Ser
225 230 235 240
Gln Gly Leu Asn Ser Ser Cys Glu Ala Gln Met Phe Thr Val Asp Ser
245 250 255

Gln Met Ser Tyr Thr Val Pro Ile Met Ala Phe Ala Phe Val Cys His
260 265 270

Pro Glu Val Leu Pro Ile Tyr Thr Glu Leu Cys Arg Pro Ser Lys Arg
275 280 285

Arg Met Gln Ala Val Ala Asn Val Ser Ile Gly Ala Met Phe Cys Met
290 295 300

Tyr Gly Leu Thr Ala Thr Phe Gly Tyr Leu Thr Phe Tyr Ser Ser Val
305 310 315 320

Lys Ala Glu Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu
325 330 335

Cys Val Arg Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val
340 345 350

Val Leu Phe Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly
355 360 365

Lys Ala Phe Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu
370 375 380

Val Leu Val Asn Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile
385 390 395 400

Phe Gly Val Ile Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu
405 410 415

Pro Ser Ile Phe Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro Phe
420 425 430

Leu Ser Trp Pro Lys Ile Gln Ala Leu Cys Phe Gly Val Leu Gly Val
435 440 445

Leu Phe Met Ala Val Ser Leu Gly Phe Met Phe Ala Asn Trp Ala Thr
450 455 460

Gly Gln Ser Arg Met Ser Gly His
465 470

<210> 138

<211> 650

<212> PRT

<213> Homo sapiens

<400> 138

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Met Met Gly Ile Gly Lys Asn Thr Thr Ser Lys Ser Met Glu Ala Gly
1               5                  10                  15
Ser Ser Thr Glu Gly Lys Tyr Glu Asp Glu Ala Lys His Pro Ala Phe
            20                  25                  30
Phe Thr Leu Pro Val Val Ile Asn Gly Gly Ala Thr Ser Ser Gly Glu
        35                  40                  45

Gln Asp Asn Glu Asp Thr Glu Leu Met Ala Ile Tyr Thr Thr Glu Asn
    50                  55                  60
Gly Ile Ala Glu Lys Ser Ser Leu Ala Glu Thr Leu Asp Ser Thr Gly
65                  70                  75                  80
Ser Leu Asp Pro Gln Arg Ser Asp Met Ile Tyr Thr Ile Glu Asp Val
                85                  90                  95
Pro Pro Trp Tyr Leu Cys Ile Phe Leu Gly Leu Gln His Tyr Leu Thr
            100                 105                 110

Cys Phe Ser Gly Thr Ile Ala Val Pro Phe Leu Leu Ala Asp Ala Met
        115                 120                 125
Cys Val Gly Tyr Asp Gln Trp Ala Thr Ser Gln Leu Ile Gly Thr Ile
    130                 135                 140
Phe Phe Cys Val Gly Ile Thr Thr Leu Leu Gln Thr Thr Phe Gly Cys
145                 150                 155                 160
Arg Leu Pro Leu Phe Gln Ala Ser Ala Phe Ala Phe Leu Ala Pro Ala
                165                 170                 175

Arg Ala Ile Leu Ser Leu Asp Lys Trp Lys Cys Asn Thr Thr Asp Val
            180                 185                 190
Ser Val Ala Asn Gly Thr Ala Glu Leu Leu His Thr Glu His Ile Trp
        195                 200                 205
Tyr Pro Arg Ile Arg Glu Ile Gln Gly Ala Ile Ile Met Ser Ser Leu
    210                 215                 220
Ile Glu Val Val Ile Gly Leu Leu Gly Leu Pro Gly Ala Leu Leu Lys
```

225 230 235 240

Tyr Ile Gly Pro Leu Thr Ile Thr Pro Thr Val Ala Leu Ile Gly Leu
245 250 255
Ser Gly Phe Gln Ala Ala Gly Glu Arg Ala Gly Lys His Trp Gly Ile
260 265 270
Ala Met Leu Thr Ile Phe Leu Val Leu Leu Phe Ser Gln Tyr Ala Arg
275 280 285
Asn Val Lys Phe Pro Leu Pro Ile Tyr Lys Ser Lys Lys Gly Trp Thr
290 295 300

Ala Tyr Lys Leu Gln Leu Phe Lys Met Phe Pro Ile Ile Leu Ala Ile
305 310 315 320
Leu Val Ser Trp Leu Leu Cys Phe Ile Phe Thr Val Thr Asp Val Phe
325 330 335
Pro Pro Asp Ser Thr Lys Tyr Gly Phe Tyr Ala Arg Thr Asp Ala Arg
340 345 350
Gln Gly Val Leu Leu Val Ala Pro Trp Phe Lys Val Pro Tyr Pro Phe
355 360 365

Gln Trp Gly Leu Pro Thr Val Ser Ala Ala Gly Val Ile Gly Met Leu
370 375 380
Ser Ala Val Val Ala Ser Ile Ile Glu Ser Ile Gly Asp Tyr Tyr Ala
385 390 395 400
Cys Ala Arg Leu Ser Cys Ala Pro Pro Pro Pro Ile His Ala Ile Asn
405 410 415
Arg Gly Ile Phe Val Glu Gly Leu Ser Cys Val Leu Asp Gly Ile Phe
420 425 430

Gly Thr Gly Asn Gly Ser Thr Ser Ser Ser Pro Asn Ile Gly Val Leu
435 440 445
Gly Ile Thr Lys Val Gly Ser Arg Arg Val Ile Gln Cys Gly Ala Ala
450 455 460
Leu Met Leu Ala Leu Gly Met Ile Gly Lys Phe Ser Ala Leu Phe Ala
465 470 475 480

Ser Leu Pro Asp Pro Val Leu Gly Ala Leu Phe Cys Thr Leu Phe Gly
485 490 495

Met Ile Thr Ala Val Gly Leu Ser Asn Leu Gln Phe Ile Asp Leu Asn
500 505 510
Ser Ser Arg Asn Leu Phe Val Leu Gly Phe Ser Ile Phe Phe Gly Leu
515 520 525
Val Leu Pro Ser Tyr Leu Arg Gln Asn Pro Leu Val Thr Gly Ile Thr
530 535 540
Gly Ile Asp Gln Val Leu Asn Val Leu Leu Thr Thr Ala Met Phe Val
545 550 555 560

Gly Gly Cys Val Ala Phe Ile Leu Asp Asn Thr Ile Pro Gly Thr Pro
565 570 575
Glu Glu Arg Gly Ile Arg Lys Trp Lys Lys Gly Val Gly Lys Gly Asn
580 585 590
Lys Ser Leu Asp Gly Met Glu Ser Tyr Asn Leu Pro Phe Gly Met Asn
595 600 605
Ile Ile Lys Lys Tyr Arg Cys Phe Ser Tyr Leu Pro Ile Ser Pro Thr
610 615 620

Phe Val Gly Tyr Thr Trp Lys Gly Leu Arg Lys Ser Asp Asn Ser Arg
625 630 635 640
Ser Ser Asp Glu Asp Ser Gln Ala Thr Gly
645 650

<210> 139
<211> 495
<212> PRT
<213> Homo sapiens
<400> 139
Met Arg Ser Pro Val Arg Asp Leu Ala Arg Asn Asp Gly Glu Glu Ser
1 5 10 15
Thr Asp Arg Thr Pro Leu Leu Pro Gly Ala Pro Arg Ala Glu Ala Ala
20 25 30

Pro Val Cys Cys Ser Ala Arg Tyr Asn Leu Ala Ile Leu Ala Phe Phe
35 40 45

Gly Phe Phe Ile Val Tyr Ala Leu Arg Val Asn Leu Ser Val Ala Leu
50 55 60

Val Asp Met Val Asp Ser Asn Thr Thr Leu Glu Asp Asn Arg Thr Ser
65 70 75 80

Lys Ala Cys Pro Glu His Ser Ala Pro Ile Lys Val His His Asn Gln
85 90 95

Thr Gly Lys Lys Tyr Gln Trp Asp Ala Glu Thr Gln Gly Trp Ile Leu
100 105 110

Gly Ser Phe Phe Tyr Gly Tyr Ile Ile Thr Gln Ile Pro Gly Gly Tyr
115 120 125

Val Ala Ser Lys Ile Gly Gly Lys Met Leu Leu Gly Phe Gly Ile Leu
130 135 140

Gly Thr Ala Val Leu Thr Leu Phe Thr Pro Ile Ala Ala Asp Leu Gly
145 150 155 160

Val Gly Pro Leu Ile Val Leu Arg Ala Leu Glu Gly Leu Gly Glu Gly
165 170 175

Val Thr Phe Pro Ala Met His Ala Met Trp Ser Ser Trp Ala Pro Pro
180 185 190

Leu Glu Arg Ser Lys Leu Leu Ser Ile Ser Tyr Ala Gly Ala Gln Leu
195 200 205

Gly Thr Val Ile Ser Leu Pro Leu Ser Gly Ile Ile Cys Tyr Tyr Met
210 215 220

Asn Trp Thr Tyr Val Phe Tyr Phe Phe Gly Thr Ile Gly Ile Phe Trp
225 230 235 240

Phe Leu Leu Trp Ile Trp Leu Val Ser Asp Thr Pro Gln Lys His Lys
245 250 255

Arg Ile Ser His Tyr Glu Lys Glu Tyr Ile Leu Ser Ser Leu Arg Asn
260 265 270

Gln Leu Ser Ser Gln Lys Ser Val Pro Trp Val Pro Ile Leu Lys Ser

275 280 285

Leu Pro Leu Trp Ala Ile Val Val Ala His Phe Ser Tyr Asn Trp Thr
290 295 300
Phe Tyr Thr Leu Leu Thr Leu Leu Pro Thr Tyr Met Lys Glu Ile Leu
305 310 315 320
Arg Phe Asn Val Gln Glu Asn Gly Phe Leu Ser Ser Leu Pro Tyr Leu
325 330 335
Gly Ser Trp Leu Cys Met Ile Leu Ser Gly Gln Ala Ala Asp Asn Leu
340 345 350

Arg Ala Lys Trp Asn Phe Ser Thr Leu Cys Val Arg Arg Ile Phe Ser
355 360 365
Leu Ile Gly Met Ile Gly Pro Ala Val Phe Leu Val Ala Ala Gly Phe
370 375 380
Ile Gly Cys Asp Tyr Ser Leu Ala Val Ala Phe Leu Thr Ile Ser Thr
385 390 395 400
Thr Leu Gly Gly Phe Cys Ser Ser Gly Phe Ser Ile Asn His Leu Asp
405 410 415

Ile Ala Pro Ser Tyr Ala Gly Ile Leu Leu Gly Ile Thr Asn Thr Phe
420 425 430
Ala Thr Ile Pro Gly Met Val Gly Pro Val Ile Ala Lys Ser Leu Thr
435 440 445
Pro Asp Asn Thr Val Gly Glu Trp Gln Thr Val Phe Tyr Ile Ala Ala
450 455 460
Ala Ile Asn Val Phe Gly Ala Ile Phe Phe Thr Leu Phe Ala Lys Gly
465 470 475 480

Glu Val Gln Asn Trp Ala Leu Asn Asp His His Gly His Arg His
485 490 495

<210> 140
<211> 335
<212> PRT
<213> Homo sapiens

<400> 140

Met Gly His Pro Pro Leu Leu Pro Leu Leu Leu Leu Leu His Thr Cys
1 5 10 15

Val Pro Ala Ser Trp Gly Leu Arg Cys Met Gln Cys Lys Thr Asn Gly
20 25 30

Asp Cys Arg Val Glu Glu Cys Ala Leu Gly Gln Asp Leu Cys Arg Thr
35 40 45

Thr Ile Val Arg Leu Trp Glu Glu Gly Glu Glu Leu Glu Leu Val Glu
50 55 60

Lys Ser Cys Thr His Ser Glu Lys Thr Asn Arg Thr Leu Ser Tyr Arg
65 70 75 80

Thr Gly Leu Lys Ile Thr Ser Leu Thr Glu Val Val Cys Gly Leu Asp
85 90 95

Leu Cys Asn Gln Gly Asn Ser Gly Arg Ala Val Thr Tyr Ser Arg Ser
100 105 110

Arg Tyr Leu Glu Cys Ile Ser Cys Gly Ser Ser Asp Met Ser Cys Glu
115 120 125

Arg Gly Arg His Gln Ser Leu Gln Cys Arg Ser Pro Glu Glu Gln Cys
130 135 140

Leu Asp Val Val Thr His Trp Ile Gln Glu Gly Glu Glu Gly Arg Pro
145 150 155 160

Lys Asp Asp Arg His Leu Arg Gly Cys Gly Tyr Leu Pro Gly Cys Pro
165 170 175

Gly Ser Asn Gly Phe His Asn Asn Asp Thr Phe His Phe Leu Lys Cys
180 185 190

Cys Asn Thr Thr Lys Cys Asn Glu Gly Pro Ile Leu Glu Leu Glu Asn
195 200 205

Leu Pro Gln Asn Gly Arg Gln Cys Tyr Ser Cys Lys Gly Asn Ser Thr
210 215 220

His Gly Cys Ser Ser Glu Glu Thr Phe Leu Ile Asp Cys Arg Gly Pro
225 230 235 240

Met Asn Gln Cys Leu Val Ala Thr Gly Thr His Glu Pro Lys Asn Gln
245 250 255
Ser Tyr Met Val Arg Gly Cys Ala Thr Ala Ser Met Cys Gln His Ala
260 265 270
His Leu Gly Asp Ala Phe Ser Met Asn His Ile Asp Val Ser Cys Cys
275 280 285
Thr Lys Ser Gly Cys Asn His Pro Asp Leu Asp Val Gln Tyr Arg Ser

290 295 300
Gly Ala Ala Pro Gln Pro Gly Pro Ala His Leu Ser Leu Thr Ile Thr
305 310 315 320
Leu Leu Met Thr Ala Arg Leu Trp Gly Gly Thr Leu Leu Trp Thr
325 330 335

<210> 141
<211> 672
<212> PRT
<213> Homo sapiens
<400> 141

Met Pro Gly Met Val Leu Phe Gly Arg Arg Trp Ala Ile Ala Ser Asp
1 5 10 15

Asp Leu Val Phe Pro Gly Phe Phe Glu Leu Val Val Arg Val Leu Trp
20 25 30
Trp Ile Gly Ile Leu Thr Leu Tyr Leu Met His Arg Gly Lys Leu Asp
35 40 45
Cys Ala Gly Gly Ala Leu Leu Ser Ser Tyr Leu Ile Val Leu Met Ile
50 55 60
Leu Leu Ala Val Val Ile Cys Thr Val Ser Ala Ile Met Cys Val Ser
65 70 75 80

Met Arg Gly Thr Ile Cys Asn Pro Gly Pro Arg Lys Ser Met Ser Lys
85 90 95
Leu Leu Tyr Ile Arg Leu Ala Leu Phe Phe Pro Glu Met Val Trp Ala
100 105 110
Ser Leu Gly Ala Ala Trp Val Ala Asp Gly Val Gln Cys Asp Arg Thr

115 120 125

Val Val Asn Gly Ile Ile Ala Thr Val Val Val Ser Trp Ile Ile Ile

130 135 140

Ala Ala Thr Val Val Ser Ile Ile Ile Val Phe Asp Pro Leu Gly Gly

145 150 155 160

Lys Met Ala Pro Tyr Ser Ser Ala Gly Pro Ser His Leu Asp Ser His

165 170 175

Asp Ser Ser Gln Leu Leu Asn Gly Leu Lys Thr Ala Ala Thr Ser Val

180 185 190

Trp Glu Thr Arg Ile Lys Leu Leu Cys Cys Cys Ile Gly Lys Asp Asp

195 200 205

His Thr Arg Val Ala Phe Ser Ser Thr Ala Glu Leu Phe Ser Thr Tyr

210 215 220

Phe Ser Asp Thr Asp Leu Val Pro Ser Asp Ile Ala Ala Gly Leu Ala

225 230 235 240

Leu Leu His Gln Gln Gln Asp Asn Ile Arg Asn Asn Gln Glu Pro Ala

245 250 255

Gln Val Val Cys His Ala Pro Gly Ser Ser Gln Glu Ala Asp Leu Asp

260 265 270

Ala Glu Leu Glu Asn Cys His His Tyr Met Gln Phe Ala Ala Ala Ala

275 280 285

Tyr Gly Trp Pro Leu Tyr Ile Tyr Arg Asn Pro Leu Thr Gly Leu Cys

290 295 300

Arg Ile Gly Gly Asp Cys Cys Arg Ser Arg Thr Thr Asp Tyr Asp Leu

305 310 315 320

Val Gly Gly Asp Gln Leu Asn Cys His Phe Gly Ser Ile Leu His Thr

325 330 335

Thr Gly Leu Gln Tyr Arg Asp Phe Ile His Val Ser Phe His Asp Lys

340 345 350

Val Tyr Glu Leu Pro Phe Leu Val Ala Leu Asp His Arg Lys Glu Ser

355 360 365

Val Val Val Ala Val Arg Gly Thr Met Ser Leu Gln Asp Val Leu Thr
370 375 380
Asp Leu Ser Ala Glu Ser Glu Val Leu Asp Val Glu Cys Glu Val Gln
385 390 395 400

Asp Arg Leu Ala His Lys Gly Ile Ser Gln Ala Ala Arg Tyr Val Tyr
405 410 415
Gln Arg Leu Ile Asn Asp Gly Ile Leu Ser Gln Ala Phe Ser Ile Ala
420 425 430
Pro Glu Tyr Arg Leu Val Ile Val Gly His Ser Leu Gly Gly Gly Ala
435 440 445
Ala Ala Leu Leu Ala Thr Met Leu Arg Ala Ala Tyr Pro Gln Val Arg
450 455 460

Cys Tyr Ala Phe Ser Pro Pro Arg Gly Leu Trp Ser Lys Ala Leu Gln
465 470 475 480
Glu Tyr Ser Gln Ser Phe Ile Val Ser Leu Val Leu Gly Lys Asp Val
485 490 495
Ile Pro Arg Leu Ser Val Thr Asn Leu Glu Asp Leu Lys Arg Arg Ile
500 505 510
Leu Arg Val Val Ala His Cys Asn Lys Pro Lys Tyr Lys Ile Leu Leu
515 520 525

His Gly Leu Trp Tyr Glu Leu Phe Gly Gly Asn Pro Asn Asn Leu Pro
530 535 540
Thr Glu Leu Asp Gly Gly Asp Gln Glu Val Leu Thr Gln Pro Leu Leu
545 550 555 560
Gly Glu Gln Ser Leu Leu Thr Arg Trp Ser Pro Ala Tyr Ser Phe Ser
565 570 575
Ser Asp Ser Pro Leu Asp Ser Ser Pro Lys Tyr Pro Pro Leu Tyr Pro
580 585 590

Pro Gly Arg Ile Ile His Leu Gln Glu Glu Gly Ala Ser Gly Arg Phe
595 600 605
Gly Cys Cys Ser Ala Ala His Tyr Ser Ala Lys Trp Ser His Glu Ala

610 615 620

Glu Phe Ser Lys Ile Leu Ile Gly Pro Lys Met Leu Thr Asp His Met

625 630 635 640

Pro Asp Ile Leu Met Arg Ala Leu Asp Ser Val Val Ser Asp Arg Ala

645 650 655

Ala Cys Val Ser Cys Pro Ala Gln Gly Val Ser Ser Val Asp Val Ala

660 665 670

<210> 142

<211> 327

<212> PRT

<213> Homo sapiens

<400> 142

Met Arg Ala Leu Pro Gly Leu Leu Glu Ala Arg Ala Arg Thr Pro Arg

1 5 10 15

Leu Leu Leu Leu Gln Cys Leu Leu Ala Ala Ala Arg Pro Ser Ser Ala

20 25 30

Asp Gly Ser Ala Pro Asp Ser Pro Phe Thr Ser Pro Pro Leu Arg Glu

35 40 45

Glu Ile Met Ala Asn Asn Phe Ser Leu Glu Ser His Asn Ile Ser Leu

50 55 60

Thr Glu His Ser Ser Met Pro Val Glu Lys Asn Ile Thr Leu Glu Arg

65 70 75 80

Pro Ser Asn Val Asn Leu Thr Cys Gln Phe Thr Thr Ser Gly Asp Leu

85 90 95

Asn Ala Val Asn Val Thr Trp Lys Lys Asp Gly Glu Gln Leu Glu Asn

100 105 110

Asn Tyr Leu Val Ser Ala Thr Gly Ser Thr Leu Tyr Thr Gln Tyr Arg

115 120 125

Phe Thr Ile Ile Asn Ser Lys Gln Met Gly Ser Tyr Ser Cys Phe Phe

130 135 140

Arg Glu Glu Lys Glu Gln Arg Gly Thr Phe Asn Phe Lys Val Pro Glu

145 150 155 160

Leu His Gly Lys Asn Lys Pro Leu Ile Ser Tyr Val Gly Asp Ser Thr

165 170 175

Val Leu Thr Cys Lys Cys Gln Asn Cys Phe Pro Leu Asn Trp Thr Trp

180 185 190

Tyr Ser Ser Asn Gly Ser Val Lys Val Pro Val Gly Val Gln Met Asn

195 200 205

Lys Tyr Val Ile Asn Gly Thr Tyr Ala Asn Glu Thr Lys Leu Lys Ile

210 215 220

Thr Gln Leu Leu Glu Glu Asp Gly Glu Ser Tyr Trp Cys Arg Ala Leu

225 230 235 240

Phe Gln Leu Gly Glu Ser Glu Glu His Ile Glu Leu Val Val Leu Ser

245 250 255

Tyr Leu Val Pro Leu Lys Pro Phe Leu Val Ile Val Ala Glu Val Ile

260 265 270

Leu Leu Val Ala Thr Ile Leu Leu Cys Glu Lys Tyr Thr Gln Lys Lys

275 280 285

Lys Lys His Ser Asp Glu Gly Lys Glu Phe Glu Gln Ile Glu Gln Leu

290 295 300

Lys Ser Asp Asp Ser Asn Gly Ile Glu Asn Asn Val Pro Arg His Arg

305 310 315 320

Lys Asn Glu Ser Leu Gly Gln

325

<210> 143

<211> 1381

<212> PRT

<213> Homo sapiens

<400> 143

Met Ala Ser Pro Arg Ala Ser Arg Trp Pro Pro Pro Leu Leu Leu Leu

1 5 10 15

Leu Leu Pro Leu Leu Leu Leu Pro Pro Ala Ala Pro Gly Thr Arg Asp

20 25 30

Pro Pro Pro Ser Pro Ala Arg Arg Ala Leu Ser Leu Ala Pro Leu Ala
35 40 45
Gly Ala Gly Leu Glu Leu Gln Leu Glu Arg Arg Pro Glu Arg Glu Pro
50 55 60
Pro Pro Thr Pro Pro Arg Glu Arg Arg Gly Pro Ala Thr Pro Gly Pro
65 70 75 80
Ser Tyr Arg Ala Pro Glu Pro Gly Ala Ala Thr Gln Arg Gly Pro Ser

85 90 95
Gly Arg Ala Pro Arg Gly Gly Ser Ala Asp Ala Ala Trp Lys His Trp
100 105 110
Pro Glu Ser Asn Thr Glu Ala His Val Glu Asn Ile Thr Phe Tyr Gln
115 120 125
Asn Gln Glu Asp Phe Ser Thr Val Ser Ser Lys Glu Gly Val Met Val
130 135 140
Gln Thr Ser Gly Lys Ser His Ala Ala Ser Asp Ala Pro Glu Asn Leu

145 150 155 160
Thr Leu Leu Ala Glu Thr Ala Asp Ala Arg Gly Arg Ser Gly Ser Ser
165 170 175
Ser Arg Thr Asn Phe Thr Ile Leu Pro Val Gly Tyr Ser Leu Glu Ile
180 185 190
Ala Thr Ala Leu Thr Ser Gln Ser Gly Asn Leu Ala Ser Glu Ser Leu
195 200 205
His Leu Pro Ser Ser Ser Ser Glu Phe Asp Glu Arg Ile Ala Ala Phe

210 215 220
Gln Thr Lys Ser Gly Thr Ala Ser Glu Met Gly Thr Glu Arg Ala Met
225 230 235 240
Gly Leu Ser Glu Glu Trp Thr Val His Ser Gln Glu Ala Thr Thr Ser
245 250 255
Ala Trp Ser Pro Ser Phe Leu Pro Ala Leu Glu Met Gly Glu Leu Thr
260 265 270
Thr Pro Ser Arg Lys Arg Asn Ser Ser Gly Pro Asp Leu Ser Trp Leu

275 280 285

His Phe Tyr Arg Thr Ala Ala Ser Ser Pro Leu Leu Asp Leu Ser Ser

290 295 300

Ser Ser Glu Ser Thr Glu Lys Leu Asn Asn Ser Thr Gly Leu Gln Ser

305 310 315 320

Ser Ser Val Ser Gln Thr Lys Thr Met His Val Ala Thr Val Phe Thr

325 330 335

Asp Gly Gly Pro Arg Thr Leu Arg Ser Leu Thr Val Ser Leu Gly Pro

340 345 350

Val Ser Lys Thr Glu Gly Phe Pro Lys Asp Ser Arg Ile Ala Thr Thr

355 360 365

Ser Ser Ser Val Leu Leu Ser Pro Ser Ala Val Glu Ser Arg Arg Asn

370 375 380

Ser Arg Val Thr Gly Asn Pro Gly Asp Glu Glu Phe Ile Glu Pro Ser

385 390 395 400

Thr Glu Asn Glu Phe Gly Leu Thr Ser Leu Arg Trp Gln Asn Asp Ser

405 410 415

Pro Thr Phe Gly Glu His Gln Leu Ala Ser Ser Ser Glu Val Gln Asn

420 425 430

Gly Ser Pro Met Ser Gln Thr Glu Thr Val Ser Arg Ser Val Ala Pro

435 440 445

Met Arg Gly Gly Glu Ile Thr Ala His Trp Leu Leu Thr Asn Ser Thr

450 455 460

Thr Ser Ala Asp Val Thr Gly Ser Ser Ala Ser Tyr Pro Glu Gly Val

465 470 475 480

Asn Ala Ser Val Leu Thr Gln Phe Ser Asp Ser Thr Val Gln Ser Gly

485 490 495

Gly Ser His Thr Ala Leu Gly Asp Arg Ser Tyr Ser Glu Ser Ser Ser

500 505 510

Thr Ser Ser Ser Glu Ser Leu Asn Ser Ser Ala Pro Arg Gly Glu Arg

515 520 525

Ser Ile Ala Gly Ile Ser Tyr Gly Gln Val Arg Gly Thr Ala Ile Glu

530 535 540

Gln Arg Thr Ser Ser Asp His Thr Asp His Thr Tyr Leu Ser Ser Thr
545 550 555 560
Phe Thr Lys Gly Glu Arg Ala Leu Leu Ser Ile Thr Asp Asn Ser Ser
565 570 575
Ser Ser Asp Ile Val Glu Ser Ser Thr Ser Tyr Ile Lys Ile Ser Asn
580 585 590
Ser Ser His Ser Glu Tyr Ser Ser Phe Phe His Ala Gln Thr Glu Arg

595 600 605

Ser Asn Ile Ser Ser Tyr Asp Gly Glu Tyr Ala Gln Pro Ser Thr Glu
610 615 620
Ser Pro Val Leu His Thr Ser Asn Leu Pro Ser Tyr Thr Pro Thr Ile
625 630 635 640
Asn Met Pro Asn Thr Ser Val Val Leu Asp Thr Asp Ala Glu Phe Val
645 650 655
Ser Asp Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser

660 665 670

Gly Pro Pro Leu Pro Leu Pro Ser Val Ser Gln Ser His His Leu Phe
675 680 685
Ser Ser Ile Leu Pro Ser Thr Arg Ala Ser Val His Leu Leu Lys Ser
690 695 700
Thr Ser Asp Ala Ser Thr Pro Trp Ser Ser Ser Pro Ser Pro Leu Pro
705 710 715 720
Val Ser Leu Thr Thr Ser Thr Ser Ala Pro Leu Ser Val Ser Gln Thr

725 730 735

Thr Leu Pro Gln Ser Ser Ser Thr Pro Val Leu Pro Arg Ala Arg Glu
740 745 750
Thr Pro Val Thr Ser Phe Gln Thr Ser Thr Met Thr Ser Phe Met Thr
755 760 765
Met Leu His Ser Ser Gln Thr Ala Asp Leu Lys Ser Gln Ser Thr Pro

770 775 780

His Gln Glu Lys Val Ile Thr Glu Ser Lys Ser Pro Ser Leu Val Ser

785 790 795 800

Leu Pro Thr Glu Ser Thr Lys Ala Val Thr Thr Asn Ser Pro Leu Pro

805 810 815

Pro Ser Leu Thr Glu Ser Ser Thr Glu Gln Thr Leu Pro Ala Thr Ser

820 825 830

Thr Asn Leu Ala Gln Met Ser Pro Thr Phe Thr Thr Thr Ile Leu Lys

835 840 845

Thr Ser Gln Pro Leu Met Thr Thr Pro Gly Thr Leu Ser Ser Thr Ala

850 855 860

Ser Leu Val Thr Gly Pro Ile Ala Val Gln Thr Thr Ala Gly Lys Gln

865 870 875 880

Leu Ser Leu Thr His Pro Glu Ile Leu Val Pro Gln Ile Ser Thr Glu

885 890 895

Gly Gly Ile Ser Thr Glu Arg Asn Arg Val Ile Val Asp Ala Thr Thr

900 905 910

Gly Leu Ile Pro Leu Thr Ser Val Pro Thr Ser Ala Lys Glu Met Thr

915 920 925

Thr Lys Leu Gly Val Thr Ala Glu Tyr Ser Pro Ala Ser Arg Ser Leu

930 935 940

Gly Thr Ser Pro Ser Pro Gln Thr Thr Val Val Ser Thr Ala Glu Asp

945 950 955 960

Leu Ala Pro Lys Ser Ala Thr Phe Ala Val Gln Ser Ser Thr Gln Ser

965 970 975

Pro Thr Thr Val Ser Ser Ser Ala Ser Val Asn Ser Cys Ala Val Asn

980 985 990

Pro Cys Leu His Asn Gly Glu Cys Val Ala Asp Asn Thr Ser Arg Gly

995 1000 1005

Tyr His Cys Arg Cys Pro Pro Ser Trp Gln Gly Asp Asp Cys Ser

1010 1015 1020

Val Asp Val Asn Glu Cys Leu Ser Asn Pro Cys Pro Ser Thr Ala

1025 1030 1035

Met Cys Asn Asn Thr Gln Gly Ser Phe Ile Cys Lys Cys Pro Val

1040 1045 1050

Gly Tyr Gln Leu Glu Lys Gly Ile Cys Asn Leu Val Arg Thr Phe

1055 1060 1065

Val Thr Glu Phe Lys Leu Lys Arg Thr Phe Leu Asn Thr Thr Val

1070 1075 1080

Glu Lys His Ser Asp Leu Gln Glu Val Glu Asn Glu Ile Thr Lys

1085 1090 1095

Thr Leu Asn Met Cys Phe Ser Ala Leu Pro Ser Tyr Ile Arg Ser

1100 1105 1110

Thr Val His Ala Ser Arg Glu Ser Asn Ala Val Val Ile Ser Leu

1115 1120 1125

Gln Thr Thr Phe Ser Leu Ala Ser Asn Val Thr Leu Phe Asp Leu

1130 1135 1140

Ala Asp Arg Met Gln Lys Cys Val Asn Ser Cys Lys Ser Ser Ala

1145 1150 1155

Glu Val Cys Gln Leu Leu Gly Ser Gln Arg Arg Ile Phe Arg Ala

1160 1165 1170

Gly Ser Leu Cys Lys Arg Lys Ser Pro Glu Cys Asp Lys Asp Thr

1175 1180 1185

Ser Ile Cys Thr Asp Leu Asp Gly Val Ala Leu Cys Gln Cys Lys

1190 1195 1200

Ser Gly Tyr Phe Gln Phe Asn Lys Met Asp His Ser Cys Arg Ala

1205 1210 1215

Cys Glu Asp Gly Tyr Arg Leu Glu Asn Glu Thr Cys Met Ser Cys

1220 1225 1230

Pro Phe Gly Leu Gly Gly Leu Asn Cys Gly Asn Pro Tyr Gln Leu

1235 1240 1245

Ile Thr Val Val Ile Ala Ala Ala Gly Gly Gly Leu Leu Ile

1250 1255 1260

Leu Gly Ile Ala Leu Ile Val Thr Cys Cys Arg Lys Asn Lys Asn

1265 1270 1275

Asp Ile Ser Lys Leu Ile Phe Lys Ser Gly Asp Phe Gln Met Ser

1280 1285 1290

Pro Tyr Ala Glu Tyr Pro Lys Asn Pro Arg Ser Gln Glu Trp Gly

1295 1300 1305

Arg Glu Ala Ile Glu Met His Glu Asn Gly Ser Thr Lys Asn Leu

1310 1315 1320

Leu Gln Met Thr Asp Val Tyr Tyr Ser Pro Thr Ser Val Arg Asn

1325 1330 1335

Pro Glu Leu Glu Arg Asn Gly Leu Tyr Pro Ala Tyr Thr Gly Leu

1340 1345 1350

Pro Gly Ser Arg His Ser Cys Ile Phe Pro Gly Gln Tyr Asn Pro

1355 1360 1365

Ser Phe Ile Ser Asp Glu Ser Arg Arg Arg Asp Tyr Phe

1370 1375 1380

<210> 144

<211> 1894

<212> PRT

<213> Homo sapiens

<400> 144

Met Lys Ala Met Pro Trp Asn Trp Thr Cys Leu Leu Ser His Leu Leu

1 5 10 15

Met Val Gly Met Gly Ser Ser Thr Leu Leu Thr Arg Gln Pro Ala Pro

20 25 30

Leu Ser Gln Lys Gln Arg Ser Phe Val Thr Phe Arg Gly Glu Pro Ala

35 40 45

Glu Gly Phe Asn His Leu Val Val Asp Glu Arg Thr Gly His Ile Tyr

50 55 60

Leu Gly Ala Val Asn Arg Ile Tyr Lys Leu Ser Ser Asp Leu Lys Val

65 70 75 80

Leu Val Thr His Glu Thr Gly Pro Asp Glu Asp Asn Pro Lys Cys Tyr
85 90 95

Pro Pro Arg Ile Val Gln Thr Cys Asn Glu Pro Leu Thr Thr Thr Asn
100 105 110

Asn Val Asn Lys Met Leu Leu Ile Asp Tyr Lys Glu Asn Arg Leu Ile
115 120 125

Ala Cys Gly Ser Leu Tyr Gln Gly Ile Cys Lys Leu Leu Arg Leu Glu
130 135 140

Asp Leu Phe Lys Leu Gly Glu Pro Tyr His Lys Lys Glu His Tyr Leu
145 150 155 160

Ser Gly Val Asn Glu Ser Gly Ser Val Phe Gly Val Ile Val Ser Tyr
165 170 175

Ser Asn Leu Asp Asp Lys Leu Phe Ile Ala Thr Ala Val Asp Gly Lys
180 185 190

Pro Glu Tyr Phe Pro Thr Ile Ser Ser Arg Lys Leu Thr Lys Asn Ser
195 200 205

Glu Ala Asp Gly Met Phe Ala Tyr Val Phe His Asp Glu Phe Val Ala
210 215 220

Ser Met Ile Lys Ile Pro Ser Asp Thr Phe Thr Ile Ile Pro Asp Phe
225 230 235 240

Asp Ile Tyr Tyr Val Tyr Gly Phe Ser Ser Gly Asn Phe Val Tyr Phe
245 250 255

Leu Thr Leu Gln Pro Glu Met Val Ser Pro Pro Gly Ser Thr Thr Lys
260 265 270

Glu Gln Val Tyr Thr Ser Lys Leu Val Arg Leu Cys Lys Glu Asp Thr
275 280 285

Ala Phe Asn Ser Tyr Val Glu Val Pro Ile Gly Cys Glu Arg Ser Gly
290 295 300

Val Glu Tyr Arg Leu Leu Gln Ala Ala Tyr Leu Ser Lys Ala Gly Ala
305 310 315 320

Val Leu Gly Arg Thr Leu Gly Val His Pro Asp Asp Asp Leu Leu Phe
325 330 335

Thr Val Phe Ser Lys Gly Gln Lys Arg Lys Met Lys Ser Leu Asp Glu
340 345 350
Ser Ala Leu Cys Ile Phe Ile Leu Lys Gln Ile Asn Asp Arg Ile Lys
355 360 365
Glu Arg Leu Gln Ser Cys Tyr Arg Gly Glu Gly Thr Leu Asp Leu Ala
370 375 380
Trp Leu Lys Val Lys Asp Ile Pro Cys Ser Ser Ala Leu Leu Thr Ile
385 390 395 400

Asp Asp Asn Phe Cys Gly Leu Asp Met Asn Ala Pro Leu Gly Val Ser
405 410 415
Asp Met Val Arg Gly Ile Pro Val Phe Thr Glu Asp Arg Asp Arg Met
420 425 430
Thr Ser Val Ile Ala Tyr Val Tyr Lys Asn His Ser Leu Ala Phe Val
435 440 445
Gly Thr Lys Ser Gly Lys Leu Lys Lys Ile Arg Val Asp Gly Pro Arg
450 455 460

Gly Asn Ala Leu Gln Tyr Glu Thr Val Gln Val Val Asp Pro Gly Pro
465 470 475 480
Val Leu Arg Asp Met Ala Phe Ser Lys Asp His Glu Gln Leu Tyr Ile
485 490 495
Met Ser Glu Arg Gln Leu Thr Arg Val Pro Val Glu Ser Cys Gly Gln
500 505 510
Tyr Gln Ser Cys Gly Glu Cys Leu Gly Ser Gly Asp Pro His Cys Gly
515 520 525

Trp Cys Val Leu His Asn Thr Cys Thr Arg Lys Glu Arg Cys Glu Arg
530 535 540
Ser Lys Glu Pro Arg Arg Phe Ala Ser Glu Met Lys Gln Cys Val Arg
545 550 555 560
Leu Thr Val His Pro Asn Asn Ile Ser Val Ser Gln Tyr Asn Val Leu

565 570 575

Leu Val Leu Glu Thr Tyr Asn Val Pro Glu Leu Ser Ala Gly Val Asn

580 585 590

Cys Thr Phe Glu Asp Leu Ser Glu Met Asp Gly Leu Val Val Gly Asn

595 600 605

Gln Ile Gln Cys Tyr Ser Pro Ala Ala Lys Glu Val Pro Arg Ile Ile

610 615 620

Thr Glu Asn Gly Asp His His Val Val Gln Leu Gln Leu Lys Ser Lys

625 630 635 640

Glu Thr Gly Met Thr Phe Ala Ser Thr Ser Phe Val Phe Tyr Asn Cys

645 650 655

Ser Val His Asn Ser Cys Leu Ser Cys Val Glu Ser Pro Tyr Arg Cys

660 665 670

His Trp Cys Lys Tyr Arg His Val Cys Thr His Asp Pro Lys Thr Cys

675 680 685

Ser Phe Gln Glu Gly Arg Val Lys Leu Pro Glu Asp Cys Pro Gln Leu

690 695 700

Leu Arg Val Asp Lys Ile Leu Val Pro Val Glu Val Ile Lys Pro Ile

705 710 715 720

Thr Leu Lys Ala Lys Asn Leu Pro Gln Pro Gln Ser Gly Gln Arg Gly

725 730 735

Tyr Glu Cys Ile Leu Asn Ile Gln Gly Ser Glu Gln Arg Val Pro Ala

740 745 750

Leu Arg Phe Asn Ser Ser Ser Val Gln Cys Gln Asn Thr Ser Tyr Ser

755 760 765

Tyr Glu Gly Met Glu Ile Asn Asn Leu Pro Val Glu Leu Thr Val Val

770 775 780

Trp Asn Gly His Phe Asn Ile Asp Asn Pro Ala Gln Asn Lys Val His

785 790 795 800

Leu Tyr Lys Cys Gly Ala Met Arg Glu Ser Cys Gly Leu Cys Leu Lys

805 810 815

Ala Asp Pro Asp Phe Ala Cys Gly Trp Cys Gln Gly Pro Gly Gln Cys
820 825 830
Thr Leu Arg Gln His Cys Pro Ala Gln Glu Ser Gln Trp Leu Glu Leu
835 840 845

Ser Gly Ala Lys Ser Lys Cys Thr Asn Pro Arg Ile Thr Glu Ile Ile
850 855 860
Pro Val Thr Gly Pro Arg Glu Gly Gly Thr Lys Val Thr Ile Arg Gly
865 870 875 880
Glu Asn Leu Gly Leu Glu Phe Arg Asp Ile Ala Ser His Val Lys Val
885 890 895
Ala Gly Val Glu Cys Ser Pro Leu Val Asp Gly Tyr Ile Pro Ala Glu
900 905 910

Gln Ile Val Cys Glu Met Gly Glu Ala Lys Pro Ser Gln His Ala Gly
915 920 925
Phe Val Glu Ile Cys Val Ala Val Cys Arg Pro Glu Phe Met Ala Arg
930 935 940
Ser Ser Gln Leu Tyr Tyr Phe Met Thr Leu Thr Leu Ser Asp Leu Lys
945 950 955 960
Pro Ser Arg Gly Pro Met Ser Gly Gly Thr Gln Val Thr Ile Thr Gly
965 970 975

Thr Asn Leu Asn Ala Gly Ser Asn Val Val Val Met Phe Gly Lys Gln
980 985 990
Pro Cys Leu Phe His Arg Arg Ser Pro Ser Tyr Ile Val Cys Asn Thr
995 1000 1005
Thr Ser Ser Asp Glu Val Leu Glu Met Lys Val Ser Val Gln Val
1010 1015 1020
Asp Arg Ala Lys Ile His Gln Asp Leu Val Phe Gln Tyr Val Glu
1025 1030 1035

Asp Pro Thr Ile Val Arg Ile Glu Pro Glu Trp Ser Ile Val Ser
1040 1045 1050
Gly Asn Thr Pro Ile Ala Val Trp Gly Thr His Leu Asp Leu Ile

1055 1060 1065

Gln Asn Pro Gln Ile Arg Ala Lys His Gly Gly Lys Glu His Ile

1070 1075 1080

Asn Ile Cys Glu Val Leu Asn Ala Thr Glu Met Thr Cys Gln Ala

1085 1090 1095

Pro Ala Leu Ala Leu Gly Pro Asp His Gln Ser Asp Leu Thr Glu

1100 1105 1110

Arg Pro Glu Glu Phe Gly Phe Ile Leu Asp Asn Val Gln Ser Leu

1115 1120 1125

Leu Ile Leu Asn Lys Thr Asn Phe Thr Tyr Tyr Pro Asn Pro Val

1130 1135 1140

Phe Glu Ala Phe Gly Pro Ser Gly Ile Leu Glu Leu Lys Pro Gly

1145 1150 1155

Thr Pro Ile Ile Leu Lys Gly Lys Asn Leu Ile Pro Pro Val Ala

1160 1165 1170

Gly Gly Asn Val Lys Leu Asn Tyr Thr Val Leu Val Gly Glu Lys

1175 1180 1185

Pro Cys Thr Val Thr Val Ser Asp Val Gln Leu Leu Cys Glu Ser

1190 1195 1200

Pro Asn Leu Ile Gly Arg His Lys Val Met Ala Arg Val Gly Gly

1205 1210 1215

Met Glu Tyr Ser Pro Gly Met Val Tyr Ile Ala Pro Asp Ser Pro

1220 1225 1230

Leu Ser Leu Pro Ala Ile Val Ser Ile Ala Val Ala Gly Gly Leu

1235 1240 1245

Leu Ile Ile Phe Ile Val Ala Val Leu Ile Ala Tyr Lys Arg Lys

1250 1255 1260

Ser Arg Glu Ser Asp Leu Thr Leu Lys Arg Leu Gln Met Gln Met

1265 1270 1275

Asp Asn Leu Glu Ser Arg Val Ala Leu Glu Cys Lys Glu Ala Phe

1280 1285 1290

Ala Glu Leu Gln Thr Asp Ile His Glu Leu Thr Ser Asp Leu Asp
1295 1300 1305
Gly Ala Gly Ile Pro Phe Leu Asp Tyr Arg Thr Tyr Thr Met Arg
1310 1315 1320
Val Leu Phe Pro Gly Ile Glu Asp His Pro Val Leu Arg Asp Leu
1325 1330 1335

Glu Val Pro Gly Tyr Arg Gln Glu Arg Val Glu Lys Gly Leu Lys
1340 1345 1350
Leu Phe Ala Gln Leu Ile Asn Asn Lys Val Phe Leu Leu Ser Phe
1355 1360 1365
Ile Arg Thr Leu Glu Ser Gln Arg Ser Phe Ser Met Arg Asp Arg
1370 1375 1380
Gly Asn Val Ala Ser Leu Ile Met Thr Val Leu Gln Ser Lys Leu
1385 1390 1395

Glu Tyr Ala Thr Asp Val Leu Lys Gln Leu Leu Ala Asp Leu Ile
1400 1405 1410
Asp Lys Asn Leu Glu Ser Lys Asn His Pro Lys Leu Leu Leu Arg
1415 1420 1425
Arg Thr Glu Ser Val Ala Glu Lys Met Leu Thr Asn Trp Phe Thr
1430 1435 1440
Phe Leu Leu Tyr Lys Phe Leu Lys Glu Cys Ala Gly Glu Pro Leu
1445 1450 1455

Phe Ser Leu Phe Cys Ala Ile Lys Gln Gln Met Glu Lys Gly Pro
1460 1465 1470
Ile Asp Ala Ile Thr Gly Glu Ala Arg Tyr Ser Leu Ser Glu Asp
1475 1480 1485
Lys Leu Ile Arg Gln Gln Ile Asp Tyr Lys Thr Leu Val Leu Ser
1490 1495 1500
Cys Val Ser Pro Asp Asn Ala Asn Ser Pro Glu Val Pro Val Lys
1505 1510 1515

Ile Leu Asn Cys Asp Thr Ile Thr Gln Val Lys Glu Lys Ile Leu

1520 1525 1530

Asp Ala Ile Phe Lys Asn Val Pro Cys Ser His Arg Pro Lys Ala

1535 1540 1545

Ala Asp Met Asp Leu Glu Trp Arg Gln Gly Ser Gly Ala Arg Met

1550 1555 1560

Ile Leu Gln Asp Glu Asp Ile Thr Thr Lys Ile Glu Asn Asp Trp

1565 1570 1575

Lys Arg Leu Asn Thr Leu Ala His Tyr Gln Val Pro Asp Gly Ser

1580 1585 1590

Val Val Ala Leu Val Ser Lys Gln Val Thr Ala Tyr Asn Ala Val

1595 1600 1605

Asn Asn Ser Thr Val Ser Arg Thr Ser Ala Ser Lys Tyr Glu Asn

1610 1615 1620

Met Ile Arg Tyr Thr Gly Ser Pro Asp Ser Leu Arg Ser Arg Thr

1625 1630 1635

Pro Met Ile Thr Pro Asp Leu Glu Ser Gly Val Lys Met Trp His

1640 1645 1650

Leu Val Lys Asn His Glu His Gly Asp Gln Lys Glu Gly Asp Arg

1655 1660 1665

Gly Ser Lys Met Val Ser Glu Ile Tyr Leu Thr Arg Leu Leu Ala

1670 1675 1680

Thr Lys Gly Thr Leu Gln Lys Phe Val Asp Asp Leu Phe Glu Thr

1685 1690 1695

Ile Phe Ser Thr Ala His Arg Gly Ser Ala Leu Pro Leu Ala Ile

1700 1705 1710

Lys Tyr Met Phe Asp Phe Leu Asp Glu Gln Ala Asp Lys His Gly

1715 1720 1725

Ile His Asp Pro His Val Arg His Thr Trp Lys Ser Asn Cys Leu

1730 1735 1740

Pro Leu Arg Phe Trp Val Asn Met Ile Lys Asn Pro Gln Phe Val

1745 1750 1755

Phe Asp Ile His Lys Asn Ser Ile Thr Asp Ala Cys Leu Ser Val
1760 1765 1770
Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr Ser Glu His Arg
1775 1780 1785
Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr Ala Lys Asp
1790 1795 1800
Ile Pro Ser Tyr Lys Asn Trp Val Glu Arg Tyr Tyr Ser Asp Ile
1805 1810 1815

Gly Lys Met Pro Ala Ile Ser Asp Gln Asp Met Asn Ala Tyr Leu
1820 1825 1830
Ala Glu Gln Ser Arg Met His Met Asn Glu Phe Asn Thr Met Ser
1835 1840 1845
Ala Leu Ser Glu Ile Phe Ser Tyr Val Gly Lys Tyr Ser Glu Glu
1850 1855 1860
Ile Leu Gly Pro Leu Asp His Asp Asp Gln Cys Gly Lys Gln Lys
1865 1870 1875

Leu Ala Tyr Lys Leu Glu Gln Val Ile Thr Leu Met Ser Leu Asp
1880 1885 1890
Ser

<210> 145
<211> 828
<212> PRT
<213> Homo sapiens
<400> 145
Met Ala Gly Arg Gly Trp Gly Ala Leu Trp Val Cys Val Ala Ala Ala
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Thr Leu Leu His Ala Gly Gly Leu Ala Arg Ala Asp Cys Trp Leu Ile
20 25 30
Glu Gly Asp Lys Gly Phe Val Trp Leu Ala Ile Cys Ser Gln Asn Gln

35 40 45
Pro Pro Tyr Glu Ala Ile Pro Gln Gln Ile Asn Ser Thr Ile Val Asp

50 55 60

Leu Arg Leu Asn Glu Asn Arg Ile Arg Ser Val Gln Tyr Ala Ser Leu

65 70 75 80

Ser Arg Phe Gly Asn Leu Thr Tyr Leu Asn Leu Thr Lys Asn Glu Ile

85 90 95

Gly Tyr Ile Glu Asp Gly Ala Phe Ser Gly Gln Phe Asn Leu Gln Val

100 105 110

Leu Gln Leu Gly Tyr Asn Arg Leu Arg Asn Leu Thr Glu Gly Met Leu

115 120 125

Arg Gly Leu Gly Lys Leu Glu Tyr Leu Tyr Leu Gln Ala Asn Leu Ile

130 135 140

Glu Val Val Met Ala Ser Ser Phe Trp Glu Cys Pro Asn Ile Val Asn

145 150 155 160

Ile Asp Leu Ser Met Asn Arg Ile Gln Gln Leu Asn Ser Gly Thr Phe

165 170 175

Ala Gly Leu Ala Lys Leu Ser Val Cys Glu Leu Tyr Ser Asn Pro Phe

180 185 190

Tyr Cys Ser Cys Glu Leu Leu Gly Phe Leu Arg Trp Leu Ala Ala Phe

195 200 205

Thr Asn Ala Thr Gln Thr Tyr Asp Arg Met Gln Cys Glu Ser Pro Pro

210 215 220

Val Tyr Ser Gly Tyr Tyr Leu Leu Gly Gln Gly Arg Arg Gly His Arg

225 230 235 240

Ser Ile Leu Ser Lys Leu Gln Ser Val Cys Thr Glu Asp Ser Tyr Ala

245 250 255

Ala Glu Val Val Gly Pro Pro Arg Pro Ala Ser Gly Arg Ser Gln Pro

260 265 270

Gly Arg Ser Pro Pro Pro Pro Pro Pro Pro Pro Glu Pro Ser Asp Met Pro

275 280 285

Cys Ala Asp Asp Glu Cys Phe Ser Gly Asp Gly Thr Thr Pro Leu Val

290 295 300

Ala Leu Pro Thr Leu Ala Thr Gln Ala Glu Ala Arg Pro Leu Ile Lys
305 310 315 320
Val Lys Gln Leu Thr Gln Asn Ser Ala Thr Ile Thr Val Gln Leu Pro
325 330 335
Ser Pro Phe His Arg Met Tyr Thr Leu Glu His Phe Asn Asn Ser Lys
340 345 350
Ala Ser Thr Val Ser Arg Leu Thr Lys Ala Gln Glu Glu Ile Arg Leu

355 360 365
Thr Asn Leu Phe Thr Leu Thr Asn Tyr Thr Tyr Cys Val Val Ser Thr
370 375 380
Ser Ala Gly Leu Arg His Asn His Thr Cys Leu Thr Ile Cys Leu Pro
385 390 395 400
Arg Leu Pro Ser Pro Pro Gly Pro Val Pro Ser Pro Ser Thr Ala Thr
405 410 415
His Tyr Ile Met Thr Ile Leu Gly Cys Leu Phe Gly Met Val Leu Val

420 425 430
Leu Gly Ala Val Tyr Tyr Cys Leu Arg Arg Arg Arg Arg Gln Glu Glu
435 440 445
Lys His Lys Lys Ala Ala Ser Ala Ala Ala Ala Gly Ser Leu Lys Lys
450 455 460
Thr Ile Ile Glu Leu Lys Tyr Gly Pro Glu Leu Glu Ala Pro Gly Leu
465 470 475 480
Ala Pro Leu Ser Gln Gly Pro Leu Leu Gly Pro Glu Ala Val Thr Arg

485 490 495
Ile Pro Tyr Leu Pro Ala Ala Gly Glu Val Glu Gln Tyr Lys Leu Val
500 505 510
Glu Ser Ala Asp Thr Pro Lys Ala Ser Lys Gly Ser Tyr Met Glu Val
515 520 525
Arg Thr Gly Asp Pro Pro Glu Arg Arg Asp Cys Glu Leu Gly Arg Pro
530 535 540
Gly Pro Asp Ser Gln Ser Ser Val Ala Glu Ile Ser Thr Ile Ala Lys

545 550 555 560

Glu Val Asp Lys Val Asn Gln Ile Ile Asn Asn Cys Ile Asp Ala Leu

565 570 575

Lys Ser Glu Ser Thr Ser Phe Gln Gly Val Lys Ser Gly Pro Val Ser

580 585 590

Val Ala Glu Pro Pro Leu Val Leu Leu Ser Glu Pro Leu Ala Ala Lys

595 600 605

His Gly Phe Leu Ala Pro Gly Tyr Lys Asp Ala Phe Gly His Ser Leu

610 615 620

Gln Arg His His Ser Val Glu Ala Ala Gly Pro Pro Arg Ala Ser Thr

625 630 635 640

Ser Ser Ser Gly Ser Val Arg Ser Pro Arg Ala Phe Arg Ala Glu Ala

645 650 655

Val Gly Val His Lys Ala Ala Ala Ala Glu Ala Lys Tyr Ile Glu Lys

660 665 670

Gly Ser Pro Ala Ala Asp Ala Ile Leu Thr Val Thr Pro Ala Ala Ala

675 680 685

Val Leu Arg Ala Glu Ala Glu Lys Gly Arg Gln Tyr Gly Glu His Arg

690 695 700

His Ser Tyr Pro Gly Ser His Pro Ala Glu Pro Pro Ala Pro Pro Gly

705 710 715 720

Pro Pro Pro Pro Pro Pro His Glu Gly Leu Gly Arg Lys Ala Ser Ile

725 730 735

Leu Glu Pro Leu Thr Arg Pro Arg Pro Arg Asp Leu Ala Tyr Ser Gln

740 745 750

Leu Ser Pro Gln Tyr His Ser Leu Ser Tyr Ser Ser Ser Pro Glu Tyr

755 760 765

Thr Cys Arg Ala Ser Gln Ser Ile Trp Glu Arg Phe Arg Leu Ser Arg

770 775 780

Arg Arg His Lys Glu Glu Glu Glu Phe Met Ala Ala Gly His Ala Leu

785 790 795 800

Arg Lys Lys Val Gln Phe Ala Lys Asp Glu Asp Leu His Asp Ile Leu

805 810 815

Asp Tyr Trp Lys Gly Val Ser Ala Gln His Lys Ser

820 825

<210> 146

<211> 528

<212> PRT

<213> Homo sapiens

<400> 146

Met Asp His Cys Gly Ala Leu Phe Leu Cys Leu Cys Leu Leu Thr Leu

1 5 10 15

Gln Asn Ala Thr Thr Glu Thr Trp Glu Glu Leu Leu Ser Tyr Met Glu

20 25 30

Asn Met Gln Val Ser Arg Gly Arg Ser Ser Val Phe Ser Ser Arg Gln

35 40 45

Leu His Gln Leu Glu Gln Met Leu Leu Asn Thr Ser Phe Pro Gly Tyr

50 55 60

Asn Leu Thr Leu Gln Thr Pro Thr Ile Gln Ser Leu Ala Phe Lys Leu

65 70 75 80

Ser Cys Asp Phe Ser Gly Leu Ser Leu Thr Ser Ala Thr Leu Lys Arg

85 90 95

Val Pro Gln Ala Gly Gly Gln His Ala Arg Gly Gln His Ala Met Gln

100 105 110

Phe Pro Ala Glu Leu Thr Arg Asp Ala Cys Lys Thr Arg Pro Arg Glu

115 120 125

Leu Arg Leu Ile Cys Ile Tyr Phe Ser Asn Thr His Phe Phe Lys Asp

130 135 140

Glu Asn Asn Ser Ser Leu Leu Asn Asn Tyr Val Leu Gly Ala Gln Leu

145 150 155 160

Ser His Gly His Val Asn Asn Leu Arg Asp Pro Val Asn Ile Ser Phe

165 170 175

Trp His Asn Gln Ser Leu Glu Gly Tyr Thr Leu Thr Cys Val Phe Trp
180 185 190
Lys Glu Gly Ala Arg Lys Gln Pro Trp Gly Gly Trp Ser Pro Glu Gly
195 200 205
Cys Arg Thr Glu Gln Pro Ser His Ser Gln Val Leu Cys Arg Cys Asn
210 215 220
His Leu Thr Tyr Phe Ala Val Leu Met Gln Leu Ser Pro Ala Leu Val

225 230 235 240
Pro Ala Glu Leu Leu Ala Pro Leu Thr Tyr Ile Ser Leu Val Gly Cys
245 250 255
Ser Ile Ser Ile Val Ala Ser Leu Ile Thr Val Leu Leu His Phe His
260 265 270
Phe Arg Lys Gln Ser Asp Ser Leu Thr Arg Ile His Met Asn Leu His
275 280 285
Ala Ser Val Leu Leu Leu Asn Ile Ala Phe Leu Leu Ser Pro Ala Phe

290 295 300
Ala Met Ser Pro Val Pro Gly Ser Ala Cys Thr Ala Leu Ala Ala Ala
305 310 315 320
Leu His Tyr Ala Leu Leu Ser Cys Leu Thr Trp Met Ala Ile Glu Gly
325 330 335
Phe Asn Leu Tyr Leu Leu Leu Gly Arg Val Tyr Asn Ile Tyr Ile Arg
340 345 350
Arg Tyr Val Phe Lys Leu Gly Val Leu Gly Trp Gly Ala Pro Ala Leu

355 360 365
Leu Val Leu Leu Ser Leu Ser Val Lys Ser Ser Val Tyr Gly Pro Cys
370 375 380
Thr Ile Pro Val Phe Asp Ser Trp Glu Asn Gly Thr Gly Phe Gln Asn
385 390 395 400
Met Ser Ile Cys Trp Val Arg Ser Pro Val Val His Ser Val Leu Val
405 410 415
Met Gly Tyr Gly Gly Leu Thr Ser Leu Phe Asn Leu Val Val Leu Ala

420 425 430

Trp Ala Leu Trp Thr Leu Arg Arg Leu Arg Glu Arg Ala Asp Ala Pro

435 440 445

Ser Val Arg Ala Cys His Asp Thr Val Thr Val Leu Gly Leu Thr Val

450 455 460

Leu Leu Gly Thr Thr Trp Ala Leu Ala Phe Phe Ser Phe Gly Val Phe

465 470 475 480

Leu Leu Pro Gln Leu Phe Leu Phe Thr Ile Leu Asn Ser Leu Tyr Gly

485 490 495

Phe Phe Leu Phe Leu Trp Phe Cys Ser Gln Arg Cys Arg Ser Glu Ala

500 505 510

Glu Ala Lys Ala Gln Ile Glu Ala Phe Ser Ser Ser Gln Thr Thr Gln

515 520 525

<210> 147

<211> 771

<212> PRT

<213> Homo sapiens

<400> 147

Met Ala Pro Gly Pro Phe Ser Ser Ala Leu Leu Ser Pro Pro Pro Ala

1 5 10 15

Ala Leu Pro Phe Leu Leu Leu Leu Trp Ala Gly Ala Ser Arg Gly Gln

20 25 30

Pro Cys Pro Gly Arg Cys Ile Cys Gln Asn Val Ala Pro Thr Leu Thr

35 40 45

Met Leu Cys Ala Lys Thr Gly Leu Leu Phe Val Pro Pro Ala Ile Asp

50 55 60

Arg Arg Val Val Glu Leu Arg Leu Thr Asp Asn Phe Ile Ala Ala Val

65 70 75 80

Arg Arg Arg Asp Phe Ala Asn Met Thr Ser Leu Val His Leu Thr Leu

85 90 95

Ser Arg Asn Thr Ile Gly Gln Val Ala Ala Gly Ala Phe Ala Asp Leu

100 105 110

Arg Ala Leu Arg Ala Leu His Leu Asp Ser Asn Arg Leu Ala Glu Val
115 120 125
Arg Gly Asp Gln Leu Arg Gly Leu Gly Asn Leu Arg His Leu Ile Leu
130 135 140

Gly Asn Asn Gln Ile Arg Arg Val Glu Ser Ala Ala Phe Asp Ala Phe
145 150 155 160
Leu Ser Thr Val Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu Ala
165 170 175
Leu Pro Trp Glu Ala Val Gly Gln Met Val Asn Leu Asn Thr Leu Thr
180 185 190
Leu Asp His Asn Leu Ile Asp His Ile Ala Glu Gly Thr Phe Val Gln
195 200 205

Leu His Lys Leu Val Arg Leu Asp Met Thr Ser Asn Arg Leu His Lys
210 215 220
Leu Pro Pro Asp Gly Leu Phe Leu Arg Ser Gln Gly Thr Gly Pro Lys
225 230 235 240
Pro Pro Thr Pro Leu Thr Val Ser Phe Gly Gly Asn Pro Leu His Cys
245 250 255
Asn Cys Glu Leu Leu Trp Leu Arg Arg Leu Thr Arg Glu Asp Asp Leu
260 265 270

Glu Thr Cys Ala Thr Pro Glu His Leu Thr Asp Arg Tyr Phe Trp Ser
275 280 285
Ile Pro Glu Glu Glu Phe Leu Cys Glu Pro Pro Leu Ile Thr Arg Gln
290 295 300
Ala Gly Gly Arg Ala Leu Val Val Glu Gly Gln Ala Val Ser Leu Arg
305 310 315 320
Cys Arg Ala Val Gly Asp Pro Glu Pro Val Val His Trp Val Ala Pro
325 330 335

Asp Gly Arg Leu Leu Gly Asn Ser Ser Arg Thr Arg Val Arg Gly Asp
340 345 350
Gly Thr Leu Asp Val Thr Ile Thr Thr Leu Arg Asp Ser Gly Thr Phe

355 360 365

Thr Cys Ile Ala Ser Asn Ala Ala Gly Glu Ala Thr Ala Pro Val Glu

370 375 380

Val Cys Val Val Pro Leu Pro Leu Met Ala Pro Pro Pro Ala Ala Pro

385 390 395 400

Pro Pro Leu Thr Glu Pro Gly Ser Ser Asp Ile Ala Thr Pro Gly Arg

405 410 415

Pro Gly Ala Asn Asp Ser Ala Ala Glu Arg Arg Leu Val Ala Ala Glu

420 425 430

Leu Thr Ser Asn Ser Val Leu Ile Arg Trp Pro Ala Gln Arg Pro Val

435 440 445

Pro Gly Ile Arg Met Tyr Gln Val Gln Tyr Asn Ser Ser Val Asp Asp

450 455 460

Ser Leu Val Tyr Arg Met Ile Pro Ser Thr Ser Gln Thr Phe Leu Val

465 470 475 480

Asn Asp Leu Ala Ala Gly Arg Ala Tyr Asp Leu Cys Val Leu Ala Val

485 490 495

Tyr Asp Asp Gly Ala Thr Ala Leu Pro Ala Thr Arg Val Val Gly Cys

500 505 510

Val Gln Phe Thr Thr Ala Gly Asp Pro Ala Pro Cys Arg Pro Leu Arg

515 520 525

Ala His Phe Leu Gly Gly Thr Met Ile Ile Ala Ile Gly Gly Val Ile

530 535 540

Val Ala Ser Val Leu Val Phe Ile Val Leu Leu Met Ile Arg Tyr Lys

545 550 555 560

Val Tyr Gly Asp Gly Asp Ser Arg Arg Val Lys Gly Ser Arg Ser Leu

565 570 575

Pro Arg Val Ser His Val Cys Ser Gln Thr Asn Gly Ala Gly Thr Gly

580 585 590

Ala Ala Gln Ala Pro Ala Leu Pro Ala Gln Asp His Tyr Glu Ala Leu

595 600 605

Arg Glu Val Glu Ser Gln Ala Ala Pro Ala Val Ala Val Glu Ala Lys
610 615 620
Ala Met Glu Ala Glu Thr Ala Ser Ala Glu Pro Glu Val Val Leu Gly
625 630 635 640
Arg Ser Leu Gly Gly Ser Ala Thr Ser Leu Cys Leu Leu Pro Ser Glu
645 650 655

Glu Thr Ser Gly Glu Glu Ser Arg Ala Ala Val Gly Pro Arg Arg Ser
660 665 670
Arg Ser Gly Ala Leu Glu Pro Pro Thr Ser Ala Pro Pro Thr Leu Ala
675 680 685
Leu Val Pro Gly Gly Ala Ala Ala Arg Pro Arg Pro Gln Gln Arg Tyr
690 695 700
Ser Phe Asp Gly Asp Tyr Gly Ala Leu Phe Gln Ser His Ser Tyr Pro
705 710 715 720

Arg Arg Ala Arg Arg Thr Lys Arg His Arg Ser Thr Pro His Leu Asp
725 730 735
Gly Ala Gly Gly Gly Ala Ala Gly Glu Asp Gly Asp Leu Gly Leu Gly
740 745 750
Ser Ala Arg Ala Cys Leu Ala Phe Thr Ser Thr Glu Trp Met Leu Glu
755 760 765
Ser Thr Val
770

<210> 148
<211> 181
<212> PRT
<213> Homo sapiens
<400> 148
Met Leu Leu Glu Pro Gly Arg Gly Cys Cys Ala Leu Ala Ile Leu Leu

1 5 10 15
Ala Ile Val Asp Ile Gln Ser Gly Gly Cys Ile Asn Ile Thr Ser Ser
20 25 30
Ala Ser Gln Glu Gly Thr Arg Leu Asn Leu Ile Cys Thr Val Trp His

35 40 45

Lys Lys Glu Glu Ala Glu Gly Phe Val Val Phe Leu Cys Lys Asp Arg

50 55 60

Ser Gly Asp Cys Ser Pro Glu Thr Ser Leu Lys Gln Leu Arg Leu Lys

65 70 75 80

Arg Asp Pro Gly Ile Asp Gly Val Gly Glu Ile Ser Ser Gln Leu Met

85 90 95

Phe Thr Ile Ser Gln Val Thr Pro Leu His Ser Gly Thr Tyr Gln Cys

100 105 110

Cys Ala Arg Ser Gln Lys Ser Gly Ile Arg Leu Gln Gly His Phe Phe

115 120 125

Ser Ile Leu Phe Thr Glu Thr Gly Asn Tyr Thr Val Thr Gly Leu Lys

130 135 140

Gln Arg Gln His Leu Glu Phe Ser His Asn Glu Gly Thr Leu Ser Ser

145 150 155 160

Gly Phe Leu Gln Glu Lys Val Trp Val Met Leu Val Thr Ser Leu Val

165 170 175

Ala Leu Gln Ala Leu

180

<210> 149

<211> 438

<212> PRT

<213> Homo sapiens

<400> 149

Met Gly Gly Cys Ala Gly Ser Arg Arg Arg Phe Ser Asp Ser Glu Gly

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Glu Glu Thr Val Pro Glu Pro Arg Leu Pro Leu Leu Asp His Gln Gly

20 25 30

Ala His Trp Lys Asn Ala Val Gly Phe Trp Leu Leu Gly Leu Cys Asn

35 40 45

Asn Phe Ser Tyr Val Val Met Leu Ser Ala Ala His Asp Ile Leu Ser

50 55 60

His Lys Arg Thr Ser Gly Asn Gln Ser His Val Asp Pro Gly Pro Thr

65 70 75 80

Pro Ile Pro His Asn Ser Ser Ser Arg Phe Asp Cys Asn Ser Val Ser

85 90 95

Thr Ala Ala Val Leu Leu Ala Asp Ile Leu Pro Thr Leu Val Ile Lys

100 105 110

Leu Leu Ala Pro Leu Gly Leu His Leu Leu Pro Tyr Ser Pro Arg Val

115 120 125

Leu Val Ser Gly Ile Cys Ala Ala Gly Ser Phe Val Leu Val Ala Phe

130 135 140

Ser His Ser Val Gly Thr Ser Leu Cys Gly Val Val Phe Ala Ser Ile

145 150 155 160

Ser Ser Gly Leu Gly Glu Val Thr Phe Leu Ser Leu Thr Ala Phe Tyr

165 170 175

Pro Arg Ala Val Ile Ser Trp Trp Ser Ser Gly Thr Gly Gly Ala Gly

180 185 190

Leu Leu Gly Ala Leu Ser Tyr Leu Gly Leu Thr Gln Ala Gly Leu Ser

195 200 205

Pro Gln Gln Thr Leu Leu Ser Met Leu Gly Ile Pro Ala Leu Leu Leu

210 215 220

Ala Ser Tyr Phe Leu Leu Leu Thr Ser Pro Glu Ala Gln Asp Pro Gly

225 230 235 240

Gly Glu Glu Glu Ala Glu Ser Ala Ala Arg Gln Pro Leu Ile Arg Thr

245 250 255

Glu Ala Pro Glu Ser Lys Pro Gly Ser Ser Ser Ser Leu Ser Leu Arg

260 265 270

Glu Arg Trp Thr Val Phe Lys Gly Leu Leu Trp Tyr Ile Val Pro Leu

275 280 285

Val Val Val Tyr Phe Ala Glu Tyr Phe Ile Asn Gln Gly Leu Phe Glu

290 295 300

Leu Leu Phe Phe Trp Asn Thr Ser Leu Ser His Ala Gln Gln Tyr Arg

305 310 315 320

Trp Tyr Gln Met Leu Tyr Gln Ala Gly Val Phe Ala Ser Arg Ser Ser

325 330 335

Leu Arg Cys Cys Arg Ile Arg Phe Thr Trp Ala Leu Ala Leu Leu Gln

340 345 350

Cys Leu Asn Leu Val Phe Leu Leu Ala Asp Val Trp Phe Gly Phe Leu

355 360 365

Pro Ser Ile Tyr Leu Val Phe Leu Ile Ile Leu Tyr Glu Gly Leu Leu

370 375 380

Gly Gly Ala Ala Tyr Val Asn Thr Phe His Asn Ile Ala Leu Glu Thr

385 390 395 400

Ser Asp Glu His Arg Glu Phe Ala Met Ala Ala Thr Cys Ile Ser Asp

405 410 415

Thr Leu Gly Ile Ser Leu Ser Gly Leu Leu Ala Leu Pro Leu His Asp

420 425 430

Phe Leu Cys Gln Leu Ser

435

<210> 150

<211> 294

<212> PRT

<213> Homo sapiens

<400> 150

Met Ala Ala Gly Arg Leu Leu Leu Tyr Thr Gly Leu Ser Leu Ala Leu

1 5 10 15

Cys Ala Leu Gly Met Leu Ala Val Ala Ile Cys Ser Asp His Trp Tyr

20 25 30

Glu Thr Asp Ala Arg Lys His Arg Asp Arg Cys Lys Ala Phe Asn Thr

35 40 45

Arg Arg Val Asp Pro Gly Phe Ile Tyr Asn Asn Asn Asn Asn Leu Pro

50 55 60

Leu Arg Ala Ser Arg Ser Arg Leu Asp Arg Trp Glu Gly Lys Leu Leu

65 70 75 80

Arg Ala Arg Asn Arg Arg Gln Leu Phe Ala Met Ser Pro Ala Asp Glu

85 90 95

Cys Ser Arg Gln Tyr Asn Ser Thr Asn Met Gly Leu Trp Arg Lys Cys

100 105 110

His Arg Gln Gly Phe Asp Pro Glu Ile Ala Ala Leu Ile Arg Lys Gly

115 120 125

Glu Ile Glu Arg Cys Thr Tyr Ile Lys Tyr His Tyr Ser Ser Ala Thr

130 135 140

Ile Pro Arg Asn Leu Thr Phe Asn Ile Thr Lys Thr Ile Arg Gln Asp

145 150 155 160

Glu Trp His Ala Leu His Leu Arg Arg Met Thr Ala Gly Phe Met Gly

165 170 175

Met Ala Val Ala Ile Ile Leu Phe Gly Trp Ile Ile Gly Val Leu Gly

180 185 190

Cys Cys Trp Asp Arg Gly Leu Met Gln Tyr Val Ala Gly Leu Leu Phe

195 200 205

Leu Met Gly Gly Thr Phe Cys Ile Ile Ser Leu Cys Thr Cys Val Ala

210 215 220

Gly Ile Asn Phe Glu Leu Ser Arg Tyr Pro Arg Tyr Leu Tyr Gly Leu

225 230 235 240

Pro Asp Asp Ile Ser His Gly Tyr Gly Trp Ser Met Phe Cys Ala Trp

245 250 255

Gly Gly Leu Gly Leu Thr Leu Ile Ser Gly Phe Phe Cys Thr Leu Ala

260 265 270

Pro Ser Val Gln Pro Val Pro Arg Thr Asn Tyr Pro Lys Ser Arg Pro

275 280 285

Glu Asn Gly Thr Val Cys

290

<210> 151

<211> 437

<212> PRT

<213> Homo sapiens

<400> 151

Met Gly Leu Arg Ala Ala Pro Ser Ser Ala Ala Ala Ala Ala Ala Glu
1 5 10 15

Val Glu Gln Arg Arg Ser Pro Gly Leu Cys Pro Pro Pro Leu Glu Leu

20 25 30

Leu Leu Leu Leu Leu Phe Ser Leu Gly Leu Leu His Ala Gly Asp Cys
35 40 45

Gln Gln Pro Ala Gln Cys Arg Ile Gln Lys Cys Thr Thr Asp Phe Val
50 55 60

Ser Leu Thr Ser His Leu Asn Ser Ala Val Asp Gly Phe Asp Ser Glu
65 70 75 80

Phe Cys Lys Ala Leu Arg Ala Tyr Ala Gly Cys Thr Gln Arg Thr Ser

85 90 95

Lys Ala Cys Arg Gly Asn Leu Val Tyr His Ser Ala Val Leu Gly Ile
100 105 110

Ser Asp Leu Met Ser Gln Arg Asn Cys Ser Lys Asp Gly Pro Thr Ser
115 120 125

Ser Thr Asn Pro Glu Val Thr His Asp Pro Cys Asn Tyr His Ser His
130 135 140

Ala Gly Ala Arg Glu His Arg Arg Gly Asp Gln Asn Pro Pro Ser Tyr

145 150 155 160

Leu Phe Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Lys Asp
165 170 175

Asn Phe Gln Thr Cys Lys Val Glu Gly Ala Trp Pro Leu Ile Asp Asn
180 185 190

Asn Tyr Leu Ser Val Gln Val Thr Asn Val Pro Val Val Pro Gly Ser
195 200 205

Ser Ala Thr Ala Thr Asn Lys Ile Thr Ile Ile Phe Lys Ala His His

210 215 220

Glu Cys Thr Asp Gln Lys Val Tyr Gln Ala Val Thr Asp Asp Leu Pro

225 230 235 240

Ala Ala Phe Val Asp Gly Thr Thr Ser Gly Gly Asp Ser Asp Ala Lys

245 250 255

Ser Leu Arg Ile Val Glu Arg Glu Ser Gly His Tyr Val Glu Met His

260 265 270

Ala Arg Tyr Ile Gly Thr Thr Val Phe Val Arg Gln Val Gly Arg Tyr

275 280 285

Leu Thr Leu Ala Ile Arg Met Pro Glu Asp Leu Ala Met Ser Tyr Glu

290 295 300

Glu Ser Gln Asp Leu Gln Leu Cys Val Asn Gly Cys Pro Leu Ser Glu

305 310 315 320

Arg Ile Asp Asp Gly Gln Gly Gln Val Ser Ala Ile Leu Gly His Ser

325 330 335

Leu Pro Arg Thr Ser Leu Val Gln Ala Trp Pro Gly Tyr Thr Leu Glu

340 345 350

Thr Ala Asn Thr Gln Cys His Glu Lys Met Pro Val Lys Asp Ile Tyr

355 360 365

Phe Gln Ser Cys Val Phe Asp Leu Leu Thr Thr Gly Asp Ala Asn Phe

370 375 380

Thr Ala Ala Ala His Ser Ala Leu Glu Asp Val Glu Ala Leu His Pro

385 390 395 400

Arg Lys Glu Arg Trp His Ile Phe Pro Ser Ser Gly Asn Gly Thr Pro

405 410 415

Arg Gly Gly Ser Asp Leu Ser Val Ser Leu Gly Leu Thr Cys Leu Ile

420 425 430

Leu Ile Val Phe Leu

435

<210> 152

<211> 971

<212> PRT

<213> Homo sapiens

<400> 152

Met Ala Thr Val Arg Ala Ser Leu Arg Gly Ala Leu Leu Leu Leu Leu
1 5 10 15
Ala Val Ala Gly Val Ala Glu Val Ala Gly Gly Leu Ala Pro Gly Ser

20 25 30
Ala Gly Ala Leu Cys Cys Asn His Ser Lys Asp Asn Gln Met Cys Arg
35 40 45
Asp Val Cys Glu Gln Ile Phe Ser Ser Lys Ser Glu Ser Arg Leu Lys
50 55 60
His Leu Leu Gln Arg Ala Pro Asp Tyr Cys Pro Glu Thr Met Val Glu
65 70 75 80
Ile Trp Asn Cys Met Asn Ser Ser Leu Pro Gly Val Phe Lys Lys Ser

85 90 95
Asp Gly Trp Val Gly Leu Gly Cys Cys Glu Leu Ala Ile Ala Leu Glu
100 105 110
Cys Arg Gln Ala Cys Lys Gln Ala Ser Ser Lys Asn Asp Ile Ser Lys
115 120 125
Val Cys Arg Lys Glu Tyr Glu Asn Ala Leu Phe Ser Cys Ile Ser Arg
130 135 140
Asn Glu Met Gly Ser Val Cys Cys Ser Tyr Ala Gly His His Thr Asn

145 150 155 160
Cys Arg Glu Tyr Cys Gln Ala Ile Phe Arg Thr Asp Ser Ser Pro Gly
165 170 175
Pro Ser Gln Ile Lys Ala Val Glu Asn Tyr Cys Ala Ser Ile Ser Pro
180 185 190
Gln Leu Ile His Cys Val Asn Asn Tyr Thr Gln Ser Tyr Pro Met Arg
195 200 205
Asn Pro Thr Asp Ser Leu Tyr Cys Cys Asp Arg Ala Glu Asp His Ala

210 215 220
Cys Gln Asn Ala Cys Lys Arg Ile Leu Met Ser Lys Lys Thr Glu Met
225 230 235 240
Glu Ile Val Asp Gly Leu Ile Glu Gly Cys Lys Thr Gln Pro Leu Pro

245 250 255

Gln Asp Pro Leu Trp Gln Cys Phe Leu Glu Ser Ser Gln Ser Val His

260 265 270

Pro Gly Val Thr Val His Pro Pro Pro Ser Thr Gly Leu Asp Gly Ala

275 280 285

Lys Leu His Cys Cys Ser Lys Ala Asn Thr Ser Thr Cys Arg Glu Leu

290 295 300

Cys Thr Lys Leu Tyr Ser Met Ser Trp Gly Asn Thr Gln Ser Trp Gln

305 310 315 320

Glu Phe Asp Arg Phe Cys Glu Tyr Asn Pro Val Glu Val Ser Met Leu

325 330 335

Thr Cys Leu Ala Asp Val Arg Glu Pro Cys Gln Leu Gly Cys Arg Asn

340 345 350

Leu Thr Tyr Cys Thr Asn Phe Asn Asn Arg Pro Thr Glu Leu Phe Arg

355 360 365

Ser Cys Asn Ala Gln Ser Asp Gln Gly Ala Met Asn Asp Met Lys Leu

370 375 380

Trp Glu Lys Gly Ser Ile Lys Met Pro Phe Ile Asn Ile Pro Val Leu

385 390 395 400

Asp Ile Lys Lys Cys Gln Pro Glu Met Trp Lys Ala Ile Ala Cys Ser

405 410 415

Leu Gln Ile Lys Pro Cys His Ser Lys Ser Arg Gly Ser Ile Ile Cys

420 425 430

Lys Ser Asp Cys Val Glu Ile Leu Lys Lys Cys Gly Asp Gln Asn Lys

435 440 445

Phe Pro Glu Asp His Thr Ala Glu Ser Ile Cys Glu Leu Leu Ser Pro

450 455 460

Thr Asp Asp Leu Lys Asn Cys Ile Pro Leu Asp Thr Tyr Leu Arg Pro

465 470 475 480

Ser Thr Leu Gly Asn Ile Val Glu Glu Val Thr His Pro Cys Asn Pro

485 490 495

Asn Pro Cys Pro Ala Asn Glu Leu Cys Glu Val Asn Arg Lys Gly Cys
500 505 510
Pro Ser Gly Asp Pro Cys Leu Pro Tyr Phe Cys Val Gln Gly Cys Lys
515 520 525
Leu Gly Glu Ala Ser Asp Phe Ile Val Arg Gln Gly Thr Leu Ile Gln

530 535 540
Val Pro Ser Ser Ala Gly Glu Val Gly Cys Tyr Lys Ile Cys Ser Cys
545 550 555 560
Gly Gln Ser Gly Leu Leu Glu Asn Cys Met Glu Met His Cys Ile Asp
565 570 575
Leu Gln Lys Ser Cys Ile Val Gly Gly Lys Arg Lys Ser His Gly Thr
580 585 590
Ser Phe Ser Ile Asp Cys Asn Val Cys Ser Cys Phe Ala Gly Asn Leu

595 600 605
Val Cys Ser Thr Arg Leu Cys Leu Ser Glu His Ser Ser Glu Asp Asp
610 615 620
Arg Arg Thr Phe Thr Gly Leu Pro Cys Asn Cys Ala Asp Gln Phe Val
625 630 635 640
Pro Val Cys Gly Gln Asn Gly Arg Thr Tyr Pro Ser Ala Cys Ile Ala
645 650 655
Arg Cys Val Gly Leu Gln Asp His Gln Phe Glu Phe Gly Ser Cys Met

660 665 670
Ser Lys Asp Pro Cys Asn Pro Asn Pro Cys Gln Lys Asn Gln Arg Cys
675 680 685
Ile Pro Lys Pro Gln Val Cys Leu Thr Thr Phe Asp Lys Phe Gly Cys
690 695 700
Ser Gln Tyr Glu Cys Val Pro Arg Gln Leu Ala Cys Asp Gln Val Gln
705 710 715 720
Asp Pro Val Cys Asp Thr Asp His Met Glu His Asn Asn Leu Cys Thr

725 730 735
Leu Tyr Gln Arg Gly Lys Ser Leu Ser Tyr Lys Gly Pro Cys Gln Pro

740 745 750

Phe Cys Arg Ala Thr Glu Pro Val Cys Gly His Asn Gly Glu Thr Tyr

755 760 765

Ser Ser Val Cys Ala Ala Tyr Ser Asp Arg Val Ala Val Asp Tyr Tyr

770 775 780

Gly Asp Cys Gln Ala Val Gly Val Leu Ser Glu His Ser Ser Val Ala

785 790 795 800

Glu Cys Ala Ser Val Lys Cys Pro Ser Leu Leu Ala Ala Gly Cys Lys

805 810 815

Pro Ile Ile Pro Pro Gly Ala Cys Cys Pro Leu Cys Ala Gly Met Leu

820 825 830

Arg Val Leu Phe Asp Lys Glu Lys Leu Asp Thr Ile Ala Lys Val Thr

835 840 845

Asn Lys Lys Pro Ile Thr Val Leu Glu Ile Leu Gln Lys Ile Arg Met

850 855 860

His Val Ser Val Pro Gln Cys Asp Val Phe Gly Tyr Phe Ser Ile Glu

865 870 875 880

Ser Glu Ile Val Ile Leu Ile Ile Pro Val Asp His Tyr Pro Lys Ala

885 890 895

Leu Gln Ile Glu Ala Cys Asn Lys Glu Ala Glu Lys Ile Glu Ser Leu

900 905 910

Ile Asn Ser Asp Ser Pro Thr Leu Ala Ser His Val Pro Leu Ser Ala

915 920 925

Leu Ile Ile Ser Gln Val Gln Val Ser Ser Ser Val Pro Ser Ala Gly

930 935 940

Val Arg Ala Arg Pro Ser Cys His Ser Leu Leu Leu Pro Leu Ser Leu

945 950 955 960

Gly Leu Ala Leu His Leu Leu Trp Thr Tyr Asn

965 970

<210> 153

<211> 454

<212> PRT

<213> Homo sapiens

<400> 153

Met Thr Trp Arg Ala Ala Ala Ser Thr Cys Ala Ala Leu Leu Ile Leu

1 5 10 15

Leu Trp Ala Leu Thr Thr Glu Gly Asp Leu Lys Val Glu Met Met Ala

20 25 30

Gly Gly Thr Gln Ile Thr Pro Leu Asn Asp Asn Val Thr Ile Phe Cys

35 40 45

Asn Ile Phe Tyr Ser Gln Pro Leu Asn Ile Thr Ser Met Gly Ile Thr

50 55 60

Trp Phe Trp Lys Ser Leu Thr Phe Asp Lys Glu Val Lys Val Phe Glu

65 70 75 80

Phe Phe Gly Asp His Gln Glu Ala Phe Arg Pro Gly Ala Ile Val Ser

85 90 95

Pro Trp Arg Leu Lys Ser Gly Asp Ala Ser Leu Arg Leu Pro Gly Ile

100 105 110

Gln Leu Glu Glu Ala Gly Glu Tyr Arg Cys Glu Val Val Val Thr Pro

115 120 125

Leu Lys Ala Gln Gly Thr Val Gln Leu Glu Val Val Ala Ser Pro Ala

130 135 140

Ser Arg Leu Leu Leu Asp Gln Val Gly Met Lys Glu Asn Glu Asp Lys

145 150 155 160

Tyr Met Cys Glu Ser Ser Gly Phe Tyr Pro Glu Ala Ile Asn Ile Thr

165 170 175

Trp Glu Lys Gln Thr Gln Lys Phe Pro His Pro Ile Glu Ile Ser Glu

180 185 190

Asp Val Ile Thr Gly Pro Thr Ile Lys Asn Met Asp Gly Thr Phe Asn

195 200 205

Val Thr Ser Cys Leu Lys Leu Asn Ser Ser Gln Glu Asp Pro Gly Thr

210 215 220

Val Tyr Gln Cys Val Val Arg His Ala Ser Leu His Thr Pro Leu Arg

225 230 235 240

Ser Asn Phe Thr Leu Thr Ala Ala Arg His Ser Leu Ser Glu Thr Glu

245 250 255

Lys Thr Asp Asn Phe Ser Ile His Trp Trp Pro Ile Ser Phe Ile Gly

260 265 270

Val Gly Leu Val Leu Leu Ile Val Leu Ile Pro Trp Lys Lys Ile Cys

275 280 285

Asn Lys Ser Ser Ser Ala Tyr Thr Pro Leu Lys Cys Ile Leu Lys His

290 295 300

Trp Asn Ser Phe Asp Thr Gln Thr Leu Lys Lys Glu His Leu Ile Phe

305 310 315 320

Phe Cys Thr Arg Ala Trp Pro Ser Tyr Gln Leu Gln Asp Gly Glu Ala

325 330 335

Trp Pro Pro Glu Gly Ser Val Asn Ile Asn Thr Ile Gln Gln Leu Asp

340 345 350

Val Phe Cys Arg Gln Glu Gly Lys Trp Ser Glu Val Pro Tyr Val Gln

355 360 365

Ala Phe Phe Ala Leu Arg Asp Asn Pro Asp Leu Cys Gln Cys Cys Arg

370 375 380

Ile Asp Pro Ala Leu Leu Thr Val Thr Ser Gly Lys Ser Ile Asp Asp

385 390 395 400

Asn Ser Thr Lys Ser Glu Lys Gln Thr Pro Arg Glu His Ser Asp Ala

405 410 415

Val Pro Asp Ala Pro Ile Leu Pro Val Ser Pro Ile Trp Glu Pro Pro

420 425 430

Pro Ala Thr Thr Ser Thr Thr Pro Val Leu Ser Ser Gln Pro Pro Thr

435 440 445

Leu Leu Leu Pro Leu Gln

450

<210> 154

<211> 314

<212> PRT

<213> Homo sapiens

<400> 154

Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg Ala
1 5 10 15

Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser Gly Pro
20 25 30

Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly Glu Asp Ala
35 40 45

Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg Leu Trp Asp Ser

50 55 60

His Val Cys Gly Val Ser Leu Leu Ser His Arg Trp Ala Leu Thr Ala
65 70 75 80

Ala His Cys Phe Glu Thr Tyr Ser Asp Leu Ser Asp Pro Ser Gly Trp
85 90 95

Met Val Gln Phe Gly Gln Leu Thr Ser Met Pro Ser Phe Trp Ser Leu
100 105 110

Gln Ala Tyr Tyr Thr Arg Tyr Phe Val Ser Asn Ile Tyr Leu Ser Pro

115 120 125

Arg Tyr Leu Gly Asn Ser Pro Tyr Asp Ile Ala Leu Val Lys Leu Ser
130 135 140

Ala Pro Val Thr Tyr Thr Lys His Ile Gln Pro Ile Cys Leu Gln Ala
145 150 155 160

Ser Thr Phe Glu Phe Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp
165 170 175

Gly Tyr Ile Lys Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln

180 185 190

Glu Val Gln Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe
195 200 205

Leu Lys Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala
210 215 220

Gly Asn Ala Gln Gly Gly Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly

225 230 235 240

Pro Leu Ala Cys Asn Lys Asn Gly Leu Trp Tyr Gln Ile Gly Val Val

245 250 255

Ser Trp Gly Val Gly Cys Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr

260 265 270

Asn Ile Ser His His Phe Glu Trp Ile Gln Lys Leu Met Ala Gln Ser

275 280 285

Gly Met Ser Gln Pro Asp Pro Ser Trp Pro Leu Leu Phe Phe Pro Leu

290 295 300

Leu Trp Ala Leu Pro Leu Leu Gly Pro Val

305 310

<210> 155

<211> 244

<212> PRT

<213> Homo sapiens

<400> 155

Met Ala Ala Ala Ala Ser Pro Ala Ile Leu Pro Arg Leu Ala Ile Leu

1 5 10 15

Pro Tyr Leu Leu Phe Asp Trp Ser Gly Thr Gly Arg Ala Asp Ala His

20 25 30

Ser Leu Trp Tyr Asn Phe Thr Ile Ile His Leu Pro Arg His Gly Gln

35 40 45

Gln Trp Cys Glu Val Gln Ser Gln Val Asp Gln Lys Asn Phe Leu Ser

50 55 60

Tyr Asp Cys Gly Ser Asp Lys Val Leu Ser Met Gly His Leu Glu Glu

65 70 75 80

Gln Leu Tyr Ala Thr Asp Ala Trp Gly Lys Gln Leu Glu Met Leu Arg

85 90 95

Glu Val Gly Gln Arg Leu Arg Leu Glu Leu Ala Asp Thr Glu Leu Glu

100 105 110

Asp Phe Thr Pro Ser Gly Pro Leu Thr Leu Gln Val Arg Met Ser Cys

115 120 125

Glu Cys Glu Ala Asp Gly Tyr Ile Arg Gly Ser Trp Gln Phe Ser Phe

130 135 140

Asp Gly Arg Lys Phe Leu Leu Phe Asp Ser Asn Asn Arg Lys Trp Thr

145 150 155 160

Val Val His Ala Gly Ala Arg Arg Met Lys Glu Lys Trp Glu Lys Asp

165 170 175

Ser Gly Leu Thr Thr Phe Phe Lys Met Val Ser Met Arg Asp Cys Lys

180 185 190

Ser Trp Leu Arg Asp Phe Leu Met His Arg Lys Lys Arg Leu Glu Pro

195 200 205

Thr Ala Pro Pro Thr Met Ala Pro Gly Leu Ala Gln Pro Lys Ala Ile

210 215 220

Ala Thr Thr Leu Ser Pro Trp Ser Phe Leu Ile Ile Leu Cys Phe Ile

225 230 235 240

Leu Pro Gly Ile

<210> 156

<211> 6603

<212> DNA

<213> Homo sapiens

<400> 156

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aactgggact ataggtatgt gccatcacct ccgactaatt tttgtacttt ttggtagaga 1980

cagggtttca tcatgttggc caggatggtc tcaagctcct gaccacaagt gatctgcccg 2040

cctcagcttc ccaaagtgct gggattacag gcgtgagcca cagggcccag cacatactca 2100

ttctttttta ctgaaaagat ctgtttcaag ctgggtgtgg tggcatggag ctgtagtccc 2160

gactgctctg taggctaacg tgggaggatt gcttgagccc aggagtttga atgcagcctg 2220

ggcaacacag taagacccca cctctaaaaa atgaaaaaat ctctctcaca ttgctttgag 2280

tcccgatgtg tactgctaag actctcatga ccacattctc tgtgaagttt gggttaatgt 2340

ttccgtttct acataattag gatcaggtct cctgggcatg gctaacattg acctggaaaa 2400

gagcaggact ggtgatgaaa ttattcttcc gagaggcctc gagtacacgg tggaagaatg 2460

cacctgtgaa gactgcatca agagcaaacc gaaggtcgac tctgaccatt gctttccact 2520

cccagctatg gaggaaggcg caaccattct tgtcaccacg aaaacgaatg actattgcaa 2580

gagcctgcca gctgctttga gtgctacgga gatagagaaa tcaatttctg ctaggtaatt 2640

aaccatttcg actcgagcag tgccacttta aaaatctttt gtcagaatag atgatgtgtc 2700

agatctcttt aggatgactg tatttttcag ttgccgatac agctttttgt cctctaactg 2760

tggaaactct ttatgttaga tatatttctc taggttactg ttgggagctt aatggtagaa 2820

acttccttgg tttcatgatt aaactctttt ttttcctga 2859

<210> 168

<211> 355

<212> PRT

<213> Homo sapiens

<400> 168

Met Glu Thr Pro Asn Thr Thr Glu Asp Tyr Asp Thr Thr Thr Glu Phe
1 5 10 15

Asp Tyr Gly Asp Ala Thr Pro Cys Gln Lys Val Asn Glu Arg Ala Phe
20 25 30

Gly Ala Gln Leu Leu Pro Pro Leu Tyr Ser Leu Val Phe Val Ile Gly
35 40 45

Leu Val Gly Asn Ile Leu Val Val Leu Val Leu Val Gln Tyr Lys Arg
50 55 60

Leu Lys Asn Met Thr Ser Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp
65 70 75 80

Leu Leu Phe Leu Phe Thr Leu Pro Phe Trp Ile Asp Tyr Lys Leu Lys
85 90 95

Asp Asp Trp Val Phe Gly Asp Ala Met Cys Lys Ile Leu Ser Gly Phe
100 105 110

Tyr Tyr Thr Gly Leu Tyr Ser Glu Ile Phe Phe Ile Ile Leu Leu Thr
115 120 125

Ile Asp Arg Tyr Leu Ala Ile Val His Ala Val Phe Ala Leu Arg Ala
130 135 140

Arg Thr Val Thr Phe Gly Val Ile Thr Ser Ile Ile Ile Trp Ala Leu
145 150 155 160

Ala Ile Leu Ala Ser Met Pro Gly Leu Tyr Phe Ser Lys Thr Gln Trp
165 170 175

Glu Phe Thr His His Thr Cys Ser Leu His Phe Pro His Glu Ser Leu
180 185 190

Arg Glu Trp Lys Leu Phe Gln Ala Leu Lys Leu Asn Leu Phe Gly Leu
195 200 205

Val Leu Pro Leu Leu Val Met Ile Ile Cys Tyr Thr Gly Ile Ile Lys
210 215 220

Ile Leu Leu Arg Arg Pro Asn Glu Lys Lys Ser Lys Ala Val Arg Leu
225 230 235 240

Ile Phe Val Ile Met Ile Ile Phe Phe Leu Phe Trp Thr Pro Tyr Asn
245 250 255
Leu Thr Ile Leu Ile Ser Val Phe Gln Asp Phe Leu Phe Thr His Glu
260 265 270

Cys Glu Gln Ser Arg His Leu Asp Leu Ala Val Gln Val Thr Glu Val
275 280 285
Ile Ala Tyr Thr His Cys Cys Val Asn Pro Val Ile Tyr Ala Phe Val
290 295 300
Gly Glu Arg Phe Arg Lys Tyr Leu Arg Gln Leu Phe His Arg Arg Val
305 310 315 320
Ala Val His Leu Val Lys Trp Leu Pro Phe Leu Ser Val Asp Arg Leu
325 330 335

Glu Arg Val Ser Ser Thr Ser Pro Ser Thr Gly Glu His Glu Leu Ser
340 345 350
Ala Gly Phe
355
<210> 169
<211> 240
<212> PRT
<213> Homo sapiens
<400> 169
Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
1 5 10 15
Leu Gly Leu Ala Leu Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu
20 25 30
Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly

35 40 45
Ile Glu Pro Cys Thr Gln Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu
50 55 60
Pro Cys Pro Cys Thr Gly Val Ser Asp Cys Ser Gly Gly Thr Asp Lys
65 70 75 80
Lys Leu Arg Asn Cys Ser Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg

85 90 95

Cys Thr Leu Ser Asp Asp Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly

100 105 110

His Pro Asp Cys Pro Asp Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn

115 120 125

Glu Ile Leu Pro Glu Gly Asp Ala Thr Thr Met Gly Pro Pro Val Thr

130 135 140

Leu Glu Ser Val Thr Ser Leu Arg Asn Ala Thr Thr Met Gly Pro Pro

145 150 155 160

Val Thr Leu Glu Ser Val Pro Ser Val Gly Asn Ala Thr Ser Ser Ser

165 170 175

Ala Gly Asp Gln Ser Gly Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala

180 185 190

Ala Ala Val Leu Ser Ala Ser Leu Val Thr Ala Thr Leu Leu Leu Leu

195 200 205

Ser Trp Leu Arg Ala Gln Glu Arg Leu Arg Pro Leu Gly Leu Leu Val

210 215 220

Ala Met Lys Glu Ser Leu Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro

225 230 235 240

<210> 170

<211> 282

<212> PRT

<213> Homo sapiens

<400> 170

Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala

1 5 10 15

Leu Gly Leu Ala Leu Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu

20 25 30

Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly

35 40 45

Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser

50 55 60

Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys
65 70 75 80

Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln
85 90 95

Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly
100 105 110

Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser
115 120 125

Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp
130 135 140

Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp
145 150 155 160

Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly
165 170 175

Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser
180 185 190

Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val
195 200 205

Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly
210 215 220

Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Ala Val Leu Ser Ala
225 230 235 240

Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln
245 250 255

Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu
260 265 270

Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro
275 280

<210> 171

<211> 282

<212> PRT

<213> Homo sapiens

<400> 171

Met Ser Gly Gly Trp Met Ala Gln Val Gly Ala Trp Arg Thr Gly Ala
1 5 10 15

Leu Gly Leu Ala Leu Leu Leu Leu Leu Gly Leu Gly Leu Gly Leu Glu
20 25 30

Ala Ala Ala Ser Pro Leu Ser Thr Pro Thr Ser Ala Gln Ala Ala Gly
35 40 45

Pro Ser Ser Gly Ser Cys Pro Pro Thr Lys Phe Gln Cys Arg Thr Ser
50 55 60

Gly Leu Cys Val Pro Leu Thr Trp Arg Cys Asp Arg Asp Leu Asp Cys
65 70 75 80

Ser Asp Gly Ser Asp Glu Glu Glu Cys Arg Ile Glu Pro Cys Thr Gln
85 90 95

Lys Gly Gln Cys Pro Pro Pro Pro Gly Leu Pro Cys Pro Cys Thr Gly
100 105 110

Val Ser Asp Cys Ser Gly Gly Thr Asp Lys Lys Leu Arg Asn Cys Ser
115 120 125

Arg Leu Ala Cys Leu Ala Gly Glu Leu Arg Cys Thr Leu Ser Asp Asp
130 135 140

Cys Ile Pro Leu Thr Trp Arg Cys Asp Gly His Pro Asp Cys Pro Asp
145 150 155 160

Ser Ser Asp Glu Leu Gly Cys Gly Thr Asn Glu Ile Leu Pro Glu Gly
165 170 175

Asp Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val Thr Ser
180 185 190

Leu Arg Asn Ala Thr Thr Met Gly Pro Pro Val Thr Leu Glu Ser Val
195 200 205

Pro Ser Val Gly Asn Ala Thr Ser Ser Ser Ala Gly Asp Gln Ser Gly
210 215 220

Ser Pro Thr Ala Tyr Gly Val Ile Ala Ala Ala Ala Val Leu Ser Ala

225 230 235 240

Ser Leu Val Thr Ala Thr Leu Leu Leu Leu Ser Trp Leu Arg Ala Gln

245 250 255

Glu Arg Leu Arg Pro Leu Gly Leu Leu Val Ala Met Lys Glu Ser Leu

260 265 270

Leu Leu Ser Glu Gln Lys Thr Ser Leu Pro

275 280

<210> 172

<211> 742

<212> PRT

<213> Homo sapiens

<400> 172

Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln

1 5 10 15

Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asn Pro Pro Trp Ser

20 25 30

Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser

35 40 45

His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu

50 55 60

Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr

65 70 75 80

Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu

85 90 95

Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu

100 105 110

Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr

115 120 125

His Gln Lys Val Tyr Tyr Lys Asp Gly Lys Gln Leu Pro Asn Ser Tyr

130 135 140

Asn Leu Glu Lys Ile Thr Val Asn Ser Val Ser Arg Asp Asn Ser Lys

145 150 155 160

Tyr His Cys Thr Ala Tyr Arg Lys Phe Tyr Ile Leu Asp Ile Glu Val
165 170 175

Thr Ser Lys Pro Leu Asn Ile Gln Val Gln Glu Leu Phe Leu His Pro
180 185 190
Val Leu Arg Ala Ser Ser Ser Thr Pro Ile Glu Gly Ser Pro Met Thr
195 200 205
Leu Thr Cys Glu Thr Gln Leu Ser Pro Gln Arg Pro Asp Val Gln Leu
210 215 220
Gln Phe Ser Leu Phe Arg Asp Ser Gln Thr Leu Gly Leu Gly Trp Ser
225 230 235 240

Arg Ser Pro Arg Leu Gln Ile Pro Ala Met Trp Thr Glu Asp Ser Gly
245 250 255
Ser Tyr Trp Cys Glu Val Glu Thr Val Thr His Ser Ile Lys Lys Arg
260 265 270
Ser Leu Arg Ser Gln Ile Arg Val Gln Arg Val Pro Val Ser Asn Val
275 280 285
Asn Leu Glu Ile Arg Pro Thr Gly Gly Gln Leu Ile Glu Gly Glu Asn
290 295 300

Met Val Leu Ile Cys Ser Val Ala Gln Gly Ser Gly Thr Val Thr Phe
305 310 315 320
Ser Trp His Lys Glu Gly Arg Val Arg Ser Leu Gly Arg Lys Thr Gln
325 330 335
Arg Ser Leu Leu Ala Glu Leu His Val Leu Thr Val Lys Glu Ser Asp
340 345 350
Ala Gly Arg Tyr Tyr Cys Ala Ala Asp Asn Val His Ser Pro Ile Leu
355 360 365

Ser Thr Trp Ile Arg Val Thr Val Arg Ile Pro Val Ser His Pro Val
370 375 380
Leu Thr Phe Arg Ala Pro Arg Ala His Thr Val Val Gly Asp Leu Leu
385 390 395 400
Glu Leu His Cys Glu Ser Leu Arg Gly Ser Pro Pro Ile Leu Tyr Arg

405 410 415

Phe Tyr His Glu Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly

420 425 430

Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn

435 440 445

Tyr Ser Cys Asp Ala Asp Asn Gly Leu Gly Ala Gln His Ser His Gly

450 455 460

Val Ser Leu Arg Val Thr Val Pro Val Ser Arg Pro Val Leu Thr Leu

465 470 475 480

Arg Ala Pro Gly Ala Gln Ala Val Val Gly Asp Leu Leu Glu Leu His

485 490 495

Cys Glu Ser Leu Arg Gly Ser Phe Pro Ile Leu Tyr Trp Phe Tyr His

500 505 510

Glu Asp Asp Thr Leu Gly Asn Ile Ser Ala His Ser Gly Gly Gly Ala

515 520 525

Ser Phe Asn Leu Ser Leu Thr Thr Glu His Ser Gly Asn Tyr Ser Cys

530 535 540

Glu Ala Asp Asn Gly Leu Gly Ala Gln His Ser Lys Val Val Thr Leu

545 550 555 560

Asn Val Thr Gly Thr Ser Arg Asn Arg Thr Gly Leu Thr Ala Ala Gly

565 570 575

Ile Thr Gly Leu Val Leu Ser Ile Leu Val Leu Ala Ala Ala Ala Ala

580 585 590

Leu Leu His Tyr Ala Arg Ala Arg Arg Lys Pro Gly Gly Leu Ser Ala

595 600 605

Thr Gly Thr Ser Ser His Ser Pro Ser Glu Cys Gln Glu Pro Ser Ser

610 615 620

Ser Arg Pro Ser Arg Ile Asp Pro Gln Glu Pro Thr His Ser Lys Pro

625 630 635 640

Leu Ala Pro Met Glu Leu Glu Pro Met Tyr Ser Asn Val Asn Pro Gly

645 650 655

Asp Ser Asn Pro Ile Tyr Ser Gln Ile Trp Ser Ile Gln His Thr Lys
660 665 670
Glu Asn Ser Ala Asn Cys Pro Met Met His Gln Glu His Glu Glu Leu
675 680 685

Thr Val Leu Tyr Ser Glu Leu Lys Lys Thr His Pro Asp Asp Ser Ala
690 695 700
Gly Glu Ala Ser Ser Arg Gly Arg Ala His Glu Glu Asp Asp Glu Glu
705 710 715 720
Asn Tyr Glu Asn Ile Leu Asn Pro Arg Lys Asn Lys Val Gln Asp Phe
725 730 735
Pro Cys Leu Cys Asn Thr
740

<210> 173
<211> 734
<212> PRT
<213> Homo sapiens
<
400> 173
Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln
1 5 10 15
Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asn Pro Pro Trp Ser
20 25 30
Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser
35 40 45
His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu
50 55 60

Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr
65 70 75 80
Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu
85 90 95
Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu
100 105 110
Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr

115 120 125

His Gln Lys Val Tyr Tyr Lys Asp Gly Lys Gln Leu Pro Asn Ser Tyr
130 135 140
Asn Leu Glu Lys Ile Thr Val Asn Ser Val Ser Arg Asp Asn Ser Lys
145 150 155 160
Tyr His Cys Thr Ala Tyr Arg Lys Phe Tyr Ile Leu Asp Ile Glu Val
165 170 175
Thr Ser Lys Pro Leu Asn Ile Gln Val Gln Glu Leu Phe Leu His Pro
180 185 190

Val Leu Arg Ala Ser Ser Ser Thr Pro Ile Glu Gly Ser Pro Met Thr
195 200 205
Leu Thr Cys Glu Thr Gln Leu Ser Pro Gln Arg Pro Asp Val Gln Leu
210 215 220
Gln Phe Ser Leu Phe Arg Asp Ser Gln Thr Leu Gly Leu Gly Trp Ser
225 230 235 240
Arg Ser Pro Arg Leu Gln Ile Pro Ala Met Trp Thr Glu Asp Ser Gly
245 250 255

Ser Tyr Trp Cys Glu Val Glu Thr Val Thr His Ser Ile Lys Lys Arg
260 265 270
Ser Leu Arg Ser Gln Ile Arg Val Gln Arg Val Pro Val Ser Asn Val
275 280 285
Asn Leu Glu Ile Arg Pro Thr Gly Gly Gln Leu Ile Glu Gly Glu Asn
290 295 300
Met Val Leu Ile Cys Ser Val Ala Gln Gly Ser Gly Thr Val Thr Phe
305 310 315 320

Ser Trp His Lys Glu Gly Arg Val Arg Ser Leu Gly Arg Lys Thr Gln
325 330 335
Arg Ser Leu Leu Ala Glu Leu His Val Leu Thr Val Lys Glu Ser Asp
340 345 350
Ala Gly Arg Tyr Tyr Cys Ala Ala Asp Asn Val His Ser Pro Ile Leu
355 360 365

Ser Thr Trp Ile Arg Val Thr Val Arg Ile Pro Val Ser His Pro Val
370 375 380

Leu Thr Phe Arg Ala Pro Arg Ala His Thr Val Val Gly Asp Leu Leu
385 390 395 400
Glu Leu His Cys Glu Ser Leu Arg Gly Ser Pro Pro Ile Leu Tyr Arg
405 410 415
Phe Tyr His Glu Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly
420 425 430
Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn
435 440 445

Tyr Ser Cys Asp Ala Asp Asn Gly Leu Gly Ala Gln His Ser His Gly
450 455 460
Val Ser Leu Arg Val Thr Val Pro Val Ser Arg Pro Val Leu Thr Leu
465 470 475 480
Arg Ala Pro Gly Ala Gln Ala Val Val Gly Asp Leu Leu Glu Leu His
485 490 495
Cys Glu Ser Leu Arg Gly Ser Phe Pro Ile Leu Tyr Trp Phe Tyr His
500 505 510

Glu Asp Asp Thr Leu Gly Asn Ile Ser Ala His Ser Gly Gly Gly Ala
515 520 525
Ser Phe Asn Leu Ser Leu Thr Thr Glu His Ser Gly Asn Tyr Ser Cys
530 535 540
Glu Ala Asp Asn Gly Leu Gly Ala Gln His Ser Lys Val Val Thr Leu
545 550 555 560
Asn Val Thr Gly Thr Ser Arg Asn Arg Thr Gly Leu Thr Ala Ala Gly
565 570 575

Ile Thr Gly Leu Val Leu Ser Ile Leu Val Leu Ala Ala Ala Ala Ala
580 585 590
Leu Leu His Tyr Ala Arg Ala Arg Arg Lys Pro Gly Gly Leu Ser Ala
595 600 605
Thr Gly Thr Ser Ser His Ser Pro Ser Glu Cys Gln Glu Pro Ser Ser

610 615 620

Ser Arg Pro Ser Arg Ile Asp Pro Gln Glu Pro Thr His Ser Lys Pro
625 630 635 640

Leu Ala Pro Met Glu Leu Glu Pro Met Tyr Ser Asn Val Asn Pro Gly
645 650 655

Asp Ser Asn Pro Ile Tyr Ser Gln Ile Trp Ser Ile Gln His Thr Lys
660 665 670

Glu Asn Ser Ala Asn Cys Pro Met Met His Gln Glu His Glu Glu Leu
675 680 685

Thr Val Leu Tyr Ser Glu Leu Lys Lys Thr His Pro Asp Asp Ser Ala
690 695 700

Gly Glu Ala Ser Ser Arg Gly Arg Ala His Glu Glu Asp Asp Glu Glu
705 710 715 720

Asn Tyr Glu Asn Val Pro Arg Val Leu Leu Ala Ser Asp His
725 730

<210> 174

<211> 489

<212> PRT

<213> Homo sapiens

<400> 174

Met Ala Leu Leu Phe Leu Leu Pro Leu Val Met Gln Gly Val Ser Arg
1 5 10 15

Ala Glu Met Gly Thr Ala Asp Leu Gly Pro Ser Ser Val Pro Thr Pro

20 25 30

Thr Asn Val Thr Ile Glu Ser Tyr Asn Met Asn Pro Ile Val Tyr Trp
35 40 45

Glu Tyr Gln Ile Met Pro Gln Val Pro Val Phe Thr Val Glu Val Lys
50 55 60

Asn Tyr Gly Val Lys Asn Ser Glu Trp Ile Asp Ala Cys Ile Asn Ile
65 70 75 80

Ser His His Tyr Cys Asn Ile Ser Asp His Val Gly Asp Pro Ser Asn

85 90 95

Ser Leu Trp Val Arg Val Lys Ala Arg Val Gly Gln Lys Glu Ser Ala

100 105 110

Tyr Ala Lys Ser Glu Glu Phe Ala Val Cys Arg Asp Gly Lys Ile Gly

115 120 125

Pro Pro Lys Leu Asp Ile Arg Lys Glu Glu Lys Gln Ile Met Ile Asp

130 135 140

Ile Phe His Pro Ser Val Phe Val Asn Gly Asp Glu Gln Glu Val Asp

145 150 155 160

Tyr Asp Pro Glu Thr Thr Cys Tyr Ile Arg Val Tyr Asn Val Tyr Val

165 170 175

Arg Met Asn Gly Ser Glu Ile Gln Tyr Lys Ile Leu Thr Gln Lys Glu

180 185 190

Asp Asp Cys Asp Glu Ile Gln Cys Gln Leu Ala Ile Pro Val Ser Ser

195 200 205

Leu Asn Ser Gln Tyr Cys Val Ser Ala Glu Gly Val Leu His Val Trp

210 215 220

Gly Val Thr Thr Glu Lys Ser Lys Glu Val Cys Ile Thr Ile Phe Asn

225 230 235 240

Ser Ser Ile Lys Gly Ser Leu Trp Ile Pro Val Val Ala Ala Leu Leu

245 250 255

Leu Phe Leu Val Leu Ser Leu Val Phe Ile Cys Phe Tyr Ile Lys Lys

260 265 270

Ile Asn Pro Leu Lys Glu Lys Ser Ile Ile Leu Pro Lys Ser Leu Ile

275 280 285

Ser Val Val Arg Ser Ala Thr Leu Glu Thr Lys Pro Glu Ser Lys Tyr

290 295 300

Val Ser Leu Ile Thr Ser Tyr Gln Pro Phe Ser Leu Glu Lys Glu Val

305 310 315 320

Val Cys Glu Glu Pro Leu Ser Pro Ala Thr Val Pro Gly Met His Thr

325 330 335

Glu Asp Asn Pro Gly Lys Val Glu His Thr Glu Glu Leu Ser Ser Ile

340 345 350

Thr Glu Val Val Thr Thr Glu Glu Asn Ile Pro Asp Val Val Pro Gly

355 360 365

Ser His Leu Thr Pro Ile Glu Arg Glu Ser Ser Ser Pro Leu Ser Ser

370 375 380

Asn Gln Ser Glu Pro Gly Ser Ile Ala Leu Asn Ser Tyr His Ser Arg

385 390 395 400

Asn Cys Ser Glu Ser Asp His Ser Arg Asn Gly Phe Asp Thr Asp Ser

405 410 415

Ser Cys Leu Glu Ser His Ser Ser Leu Ser Asp Ser Glu Phe Pro Pro

420 425 430

Asn Asn Lys Gly Glu Ile Lys Thr Glu Gly Gln Glu Leu Ile Thr Val

435 440 445

Ile Lys Ala Pro Thr Ser Phe Gly Tyr Asp Lys Pro His Val Leu Val

450 455 460

Asp Leu Leu Val Asp Asp Ser Gly Lys Glu Ser Leu Ile Gly Tyr Arg

465 470 475 480

Pro Thr Glu Asp Ser Lys Glu Phe Ser

485

<210> 175

<211> 479

<212> PRT

<213> Homo sapiens

<400> 175

Met Leu Leu Lys Ser Pro Glu Asn Ser Leu Leu Gln Phe Gln Phe Lys

1 5 10 15

Tyr Gly Val Pro Thr Pro Thr Asn Val Thr Ile Glu Ser Tyr Asn Met

20 25 30

Asn Pro Ile Val Tyr Trp Glu Tyr Gln Ile Met Pro Gln Val Pro Val

35 40 45

Phe Thr Val Glu Val Lys Asn Tyr Gly Val Lys Asn Ser Glu Trp Ile
50 55 60
Asp Ala Cys Ile Asn Ile Ser His His Tyr Cys Asn Ile Ser Asp His
65 70 75 80
Val Gly Asp Pro Ser Asn Ser Leu Trp Val Arg Val Lys Ala Arg Val
85 90 95
Gly Gln Lys Glu Ser Ala Tyr Ala Lys Ser Glu Glu Phe Ala Val Cys

100 105 110
Arg Asp Gly Lys Ile Gly Pro Pro Lys Leu Asp Ile Arg Lys Glu Glu
115 120 125
Lys Gln Ile Met Ile Asp Ile Phe His Pro Ser Val Phe Val Asn Gly
130 135 140
Asp Glu Gln Glu Val Asp Tyr Asp Pro Glu Thr Thr Cys Tyr Ile Arg
145 150 155 160
Val Tyr Asn Val Tyr Val Arg Met Asn Gly Ser Glu Ile Gln Tyr Lys

165 170 175
Ile Leu Thr Gln Lys Glu Asp Asp Cys Asp Glu Ile Gln Cys Gln Leu
180 185 190
Ala Ile Pro Val Ser Ser Leu Asn Ser Gln Tyr Cys Val Ser Ala Glu
195 200 205
Gly Val Leu His Val Trp Gly Val Thr Thr Glu Lys Ser Lys Glu Val
210 215 220
Cys Ile Thr Ile Phe Asn Ser Ser Ile Lys Gly Ser Leu Trp Ile Pro

225 230 235 240
Val Val Ala Ala Leu Leu Leu Phe Leu Val Leu Ser Leu Val Phe Ile
245 250 255
Cys Phe Tyr Ile Lys Lys Ile Asn Pro Leu Lys Glu Lys Ser Ile Ile
260 265 270
Leu Pro Lys Ser Leu Ile Ser Val Val Arg Ser Ala Thr Leu Glu Thr
275 280 285
Lys Pro Glu Ser Lys Tyr Val Ser Leu Ile Thr Ser Tyr Gln Pro Phe

290 295 300

Ser Leu Glu Lys Glu Val Val Cys Glu Glu Pro Leu Ser Pro Ala Thr

305 310 315 320

Val Pro Gly Met His Thr Glu Asp Asn Pro Gly Lys Val Glu His Thr

325 330 335

Glu Glu Leu Ser Ser Ile Thr Glu Val Val Thr Thr Glu Glu Asn Ile

340 345 350

Pro Asp Val Val Pro Gly Ser His Leu Thr Pro Ile Glu Arg Glu Ser

355 360 365

Ser Ser Pro Leu Ser Ser Asn Gln Ser Glu Pro Gly Ser Ile Ala Leu

370 375 380

Asn Ser Tyr His Ser Arg Asn Cys Ser Glu Ser Asp His Ser Arg Asn

385 390 395 400

Gly Phe Asp Thr Asp Ser Ser Cys Leu Glu Ser His Ser Ser Leu Ser

405 410 415

Asp Ser Glu Phe Pro Pro Asn Asn Lys Gly Glu Ile Lys Thr Glu Gly

420 425 430

Gln Glu Leu Ile Thr Val Ile Lys Ala Pro Thr Ser Phe Gly Tyr Asp

435 440 445

Lys Pro His Val Leu Val Asp Leu Leu Val Asp Asp Ser Gly Lys Glu

450 455 460

Ser Leu Ile Gly Tyr Arg Pro Thr Glu Asp Ser Lys Glu Phe Ser

465 470 475

<210> 176

<211> 448

<212> PRT

<213> Homo sapiens

<400> 176

Met Asn Pro Ile Val Tyr Trp Glu Tyr Gln Ile Met Pro Gln Val Pro

1 5 10 15

Val Phe Thr Val Glu Val Lys Asn Tyr Gly Val Lys Asn Ser Glu Trp

20 25 30

Ile Asp Ala Cys Ile Asn Ile Ser His His Tyr Cys Asn Ile Ser Asp
35 40 45
His Val Gly Asp Pro Ser Asn Ser Leu Trp Val Arg Val Lys Ala Arg
50 55 60

Val Gly Gln Lys Glu Ser Ala Tyr Ala Lys Ser Glu Glu Phe Ala Val
65 70 75 80
Cys Arg Asp Gly Lys Ile Gly Pro Pro Lys Leu Asp Ile Arg Lys Glu
85 90 95
Glu Lys Gln Ile Met Ile Asp Ile Phe His Pro Ser Val Phe Val Asn
100 105 110
Gly Asp Glu Gln Glu Val Asp Tyr Asp Pro Glu Thr Thr Cys Tyr Ile
115 120 125

Arg Val Tyr Asn Val Tyr Val Arg Met Asn Gly Ser Glu Ile Gln Tyr
130 135 140
Lys Ile Leu Thr Gln Lys Glu Asp Asp Cys Asp Glu Ile Gln Cys Gln
145 150 155 160
Leu Ala Ile Pro Val Ser Ser Leu Asn Ser Gln Tyr Cys Val Ser Ala
165 170 175
Glu Gly Val Leu His Val Trp Gly Val Thr Thr Glu Lys Ser Lys Glu
180 185 190

Val Cys Ile Thr Ile Phe Asn Ser Ser Ile Lys Gly Ser Leu Trp Ile
195 200 205
Pro Val Val Ala Ala Leu Leu Leu Phe Leu Val Leu Ser Leu Val Phe
210 215 220
Ile Cys Phe Tyr Ile Lys Lys Ile Asn Pro Leu Lys Glu Lys Ser Ile
225 230 235 240
Ile Leu Pro Lys Ser Leu Ile Ser Val Val Arg Ser Ala Thr Leu Glu
245 250 255

Thr Lys Pro Glu Ser Lys Tyr Val Ser Leu Ile Thr Ser Tyr Gln Pro
260 265 270
Phe Ser Leu Glu Lys Glu Val Val Cys Glu Glu Pro Leu Ser Pro Ala

275 280 285

Thr Val Pro Gly Met His Thr Glu Asp Asn Pro Gly Lys Val Glu His

290 295 300

Thr Glu Glu Leu Ser Ser Ile Thr Glu Val Val Thr Thr Glu Glu Asn

305 310 315 320

Ile Pro Asp Val Val Pro Gly Ser His Leu Thr Pro Ile Glu Arg Glu

325 330 335

Ser Ser Ser Pro Leu Ser Ser Asn Gln Ser Glu Pro Gly Ser Ile Ala

340 345 350

Leu Asn Ser Tyr His Ser Arg Asn Cys Ser Glu Ser Asp His Ser Arg

355 360 365

Asn Gly Phe Asp Thr Asp Ser Ser Cys Leu Glu Ser His Ser Ser Leu

370 375 380

Ser Asp Ser Glu Phe Pro Pro Asn Asn Lys Gly Glu Ile Lys Thr Glu

385 390 395 400

Gly Gln Glu Leu Ile Thr Val Ile Lys Ala Pro Thr Ser Phe Gly Tyr

405 410 415

Asp Lys Pro His Val Leu Val Asp Leu Leu Val Asp Asp Ser Gly Lys

420 425 430

Glu Ser Leu Ile Gly Tyr Arg Pro Thr Glu Asp Ser Lys Glu Phe Ser

435 440 445

<210> 177

<211> 660

<212> PRT

<213> Homo sapiens

<400> 177

Met Glu Pro Leu Val Thr Trp Val Val Pro Leu Leu Phe Leu Phe Leu

1 5 10 15

Leu Ser Arg Gln Gly Ala Ala Cys Arg Thr Ser Glu Cys Cys Phe Gln

20 25 30

Asp Pro Pro Tyr Pro Asp Ala Asp Ser Gly Ser Ala Ser Gly Pro Arg

35 40 45

Asp Leu Arg Cys Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp

50 55 60

Gln Tyr Glu Gly Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys

65 70 75 80

Leu Ser Ser Gly Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg

85 90 95

Leu Gln Phe Ser Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr

100 105 110

Leu Trp Val Glu Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu

115 120 125

Val Thr Leu Gln Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly

130 135 140

Asp Ile Lys Val Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu

145 150 155 160

Thr Pro Asp Asn Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr

165 170 175

Pro Ser Ser Pro Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp

180 185 190

Thr Glu Ser Cys Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe

195 200 205

Gln Leu Arg Arg Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys

210 215 220

Trp Ser Ser Pro Val Cys Val Pro Pro Glu Asn Pro Pro Gln Pro Gln

225 230 235 240

Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu

245 250 255

Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln

260 265 270

Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met

275 280 285

Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly

290 295 300

Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser

305 310 315 320

Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala

325 330 335

Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn

340 345 350

Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys

355 360 365

Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser

370 375 380

Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser

385 390 395 400

Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile

405 410 415

Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr

420 425 430

Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr

435 440 445

Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser Val Ser Val

450 455 460

Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu

465 470 475 480

Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His

485 490 495

Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala

500 505 510

Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg

515 520 525

Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser

530 535 540

Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu
545 550 555 560
Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His

565 570 575
Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe
580 585 590
Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln
595 600 605
Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp
610 615 620
Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly

625 630 635 640
Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp
645 650 655
Arg Cys Asp Arg
660

<210> 178
<211> 702
<212> PRT
<213> Homo sapiens
<400> 178
Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser
1 5 10 15
Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly
20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val
35 40 45
Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys
50 55 60
Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp
65 70 75 80
Ser Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys Tyr Arg Ile Ser

85 90 95

Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly Pro Thr Ala Gly
100 105 110
Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly Arg Cys Cys Tyr
115 120 125
Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser Asp Gln Ala Gly
130 135 140
Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu Ser Trp Ala Arg
145 150 155 160

Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln Leu Tyr Asn Ser
165 170 175
Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val Ser Lys Leu Ala
180 185 190
Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn Gln Val Gly Ala
195 200 205
Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro Trp Lys Leu Gly
210 215 220

Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys Leu Cys Pro Leu
225 230 235 240
Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg Arg Gln Leu Gly
245 250 255
Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro Val Cys Val Pro
260 265 270
Pro Glu Asn Pro Pro Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu
275 280 285

Gly Gln Asp Gly Arg Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln
290 295 300
Leu Glu Leu Pro Glu Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val
305 310 315 320
Thr Tyr Arg Leu Gln Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys
325 330 335

Ala Thr Arg Thr Leu His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala
340 345 350

Ala Tyr Asn Val Ala Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu
355 360 365
Asn Gln Thr Trp His Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala
370 375 380
Leu Asn Ile Ser Val Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala
385 390 395 400
Arg Ala Gln Ser Met Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln
405 410 415

Asp Gly Gly Leu Ala Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp
420 425 430
Pro Ala Gly Met Ala Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met
435 440 445
Gly Gln Glu Lys Cys Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro
450 455 460
Glu Lys Leu Thr Leu Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly
465 470 475 480

Gly Asn Ala Ser Ala Ala Gly Thr Pro His His Val Ser Val Lys Asn
485 490 495
His Ser Leu Asp Ser Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser
500 505 510
Thr Cys Pro Gly Val Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu
515 520 525
Asp Ser Lys Gln Val Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln
530 535 540

Val Thr Leu Ser Gly Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val
545 550 555 560
Arg Ala Asp Thr Ala Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg
565 570 575
Phe Ser Ile Glu Val Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser

580 585 590

Leu Gly Ser Phe Leu Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu

595 600 605

Gly Leu Asn Arg Ala Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro

610 615 620

Cys Ala Ser Ser Ala Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln

625 630 635 640

Trp Ile Asn Pro Val Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala

645 650 655

Leu Val Val Glu Met Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu

660 665 670

Glu Lys Thr Glu Leu Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr

675 680 685

Glu Leu Ser Leu Glu Asp Gly Asp Arg Cys Lys Ala Lys Met

690 695 700

<210> 179

<211> 714

<212> PRT

<213> Homo sapiens

<400> 179

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys Tyr Arg Ile Ser

85 90 95

Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly Pro Thr Ala Gly

100 105 110

Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly Arg Cys Cys Tyr

115 120 125

Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser Asp Gln Ala Gly

130 135 140

Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu Ser Trp Ala Arg

145 150 155 160

Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln Leu Tyr Asn Ser

165 170 175

Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val Ser Lys Leu Ala

180 185 190

Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn Gln Val Gly Ala

195 200 205

Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro Trp Lys Leu Gly

210 215 220

Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys Leu Cys Pro Leu

225 230 235 240

Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg Arg Gln Leu Gly

245 250 255

Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro Val Cys Val Pro

260 265 270

Pro Glu Asn Pro Pro Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu

275 280 285

Gly Gln Asp Gly Arg Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln

290 295 300

Leu Glu Leu Pro Glu Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val

305 310 315 320

Thr Tyr Arg Leu Gln Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys

325 330 335

Ala Thr Arg Thr Leu His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala

340 345 350

Ala Tyr Asn Val Ala Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu

355 360 365

Asn Gln Thr Trp His Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala

370 375 380

Leu Asn Ile Ser Val Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala

385 390 395 400

Arg Ala Gln Ser Met Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln

405 410 415

Asp Gly Gly Leu Ala Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp

420 425 430

Pro Ala Gly Met Ala Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met

435 440 445

Gly Gln Glu Lys Cys Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro

450 455 460

Glu Lys Leu Thr Leu Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly

465 470 475 480

Gly Asn Ala Ser Ala Ala Gly Thr Pro His His Val Ser Val Lys Asn

485 490 495

His Ser Leu Asp Ser Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser

500 505 510

Thr Cys Pro Gly Val Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu

515 520 525

Asp Ser Lys Gln Val Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln

530 535 540

Val Thr Leu Ser Gly Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val

545 550 555 560

Arg Ala Asp Thr Ala Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg

565 570 575

Phe Ser Ile Glu Val Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser

580 585 590

Leu Gly Ser Phe Leu Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu

595 600 605

Gly Leu Asn Arg Ala Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro

610 615 620

Cys Ala Ser Ser Ala Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln

625 630 635 640

Trp Ile Asn Pro Val Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala

645 650 655

Leu Val Val Glu Met Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu

660 665 670

Glu Lys Thr Glu Leu Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr

675 680 685

Glu Leu Ser Leu Glu Asp Gly Asp Arg Cys Lys Ala Lys Thr Arg Arg

690 695 700

Ala Thr Ile Ser Ile Thr Thr Ala Gly Tyr

705 710

<210> 180

<211> 745

<212> PRT

<213> Homo sapiens

<400> 180

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Leu Pro Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys

85 90 95

Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly

100 105 110

Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly

115 120 125

Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser

130 135 140

Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu

145 150 155 160

Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln

165 170 175

Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val

180 185 190

Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn

195 200 205

Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro

210 215 220

Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys

225 230 235 240

Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg

245 250 255

Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro

260 265 270

Val Cys Val Pro Pro Val Gly Leu Val Leu Ile Ala Glu Asn Pro Pro

275 280 285

Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg

290 295 300

Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu

305 310 315 320

Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln

325 330 335

Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu

340 345 350

His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala

355 360 365

Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His

370 375 380

Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val

385 390 395 400

Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met

405 410 415

Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala

420 425 430

Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala

435 440 445

Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys

450 455 460

Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu

465 470 475 480

Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala

485 490 495

Ala Gly Thr Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser

500 505 510

Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val

515 520 525

Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val

530 535 540

Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly

545 550 555 560

Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala

565 570 575

Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val

580 585 590

Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu

595 600 605

Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala

610 615 620

Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala

625 630 635 640

Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val

645 650 655

Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met

660 665 670

Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu

675 680 685

Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu

690 695 700

Asp Gly Asp Arg His Glu Glu Arg Leu Ser Gln Ser Gln Arg Leu Val

705 710 715 720

Ile Lys His Leu Trp His Thr Gln Pro Ile Pro Ser Thr His Met Ile

725 730 735

Pro Tyr Gln Ile Pro Thr Thr Thr Pro

740 745

<210> 181

<211> 741

<212> PRT

<213> Homo sapiens

<400> 181

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys Tyr Arg Ile Ser

85 90 95

Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly Pro Thr Ala Gly

100 105 110

Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly Arg Cys Cys Tyr

115 120 125

Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser Asp Gln Ala Gly

130 135 140

Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu Ser Trp Ala Arg

145 150 155 160

Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln Leu Tyr Asn Ser

165 170 175

Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val Ser Lys Leu Ala

180 185 190

Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn Gln Val Gly Ala

195 200 205

Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro Trp Lys Leu Gly

210 215 220

Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys Leu Cys Pro Leu

225 230 235 240

Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg Arg Gln Leu Gly

245 250 255

Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro Val Cys Val Pro

260 265 270

Pro Val Gly Leu Val Leu Ile Ala Glu Asn Pro Pro Gln Pro Gln Val

275 280 285

Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu Thr

290 295 300

Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln Gly

305 310 315 320

Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met Leu

325 330 335

Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly Lys

340 345 350

Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser Ser

355 360 365

Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala Asp

370 375 380

Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn Gly

385 390 395 400

Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys Ile

405 410 415

Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser Leu

420 425 430

Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser Trp

435 440 445

Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile Thr

450 455 460

Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr Val

465 470 475 480

Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr Pro

485 490 495

His His Val Ser Val Lys Asn His Ser Leu Asp Ser Val Ser Val Asp

500 505 510

Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu Tyr

515 520 525

Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His Pro

530 535 540

Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala Gly

545 550 555 560

Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg Gly

565 570 575

Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser Asp

580 585 590

Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu Leu

595 600 605

Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His Leu

610 615 620

Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe Pro

625 630 635 640

Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln Glu

645 650 655

Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp Lys

660 665 670

Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly Ala

675 680 685

Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp Arg

690 695 700

His Glu Glu Arg Leu Ser Gln Ser Gln Arg Leu Val Ile Lys His Leu

705 710 715 720

Trp His Thr Gln Pro Ile Pro Ser Thr His Met Ile Pro Tyr Gln Ile

725 730 735

Pro Thr Thr Thr Pro

740

<210> 182

<211> 738

<212> PRT

<213> Homo sapiens

<400> 182

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser
1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly
20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val
35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys
50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp
65 70 75 80

Ser Gly Ser Leu Pro Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys
85 90 95

Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly
100 105 110

Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly
115 120 125

Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser
130 135 140

Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu
145 150 155 160

Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln
165 170 175

Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val
180 185 190

Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn
195 200 205

Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro
210 215 220

Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys

225 230 235 240

Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg

245 250 255

Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro

260 265 270

Val Cys Val Pro Pro Glu Asn Pro Pro Gln Pro Gln Val Arg Phe Ser

275 280 285

Val Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu Thr Leu Lys Glu

290 295 300

Gln Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln Gly Leu Ala Pro

305 310 315 320

Gly Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met Leu Ser Cys Pro

325 330 335

Cys Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly Lys Met Pro Tyr

340 345 350

Leu Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser Ser Asn Gln Phe

355 360 365

Gly Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala Asp Thr His Thr

370 375 380

Glu Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn Gly Thr Thr Met

385 390 395 400

Tyr Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys Ile Glu Trp Gln

405 410 415

Pro Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser Leu Thr Ala Pro

420 425 430

Gln Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser Trp Ser Arg Glu

435 440 445

Ser Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile Thr Ile Phe Ala

450 455 460

Ser Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr Val Leu Ser Thr

465 470 475 480

Tyr His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr Pro His His Val

485 490 495

Ser Val Lys Asn His Ser Leu Asp Ser Val Ser Val Asp Trp Ala Pro

500 505 510

Ser Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu Tyr Val Val Arg

515 520 525

Cys Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His Pro Val Gln Pro

530 535 540

Thr Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala Gly Val Ala Tyr

545 550 555 560

Thr Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg Gly Val Trp Ser

565 570 575

Gln Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser Asp Trp Leu Ile

580 585 590

Phe Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu Leu Val Gly Val

595 600 605

Leu Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His Leu Cys Pro Pro

610 615 620

Leu Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe Pro Gly Gly Lys

625 630 635 640

Glu Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln Glu Glu Ala Ser

645 650 655

Leu Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp Lys Gly Glu Arg

660 665 670

Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly Ala Pro Glu Leu

675 680 685

Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp Arg His Glu Glu

690 695 700

Arg Leu Ser Gln Ser Gln Arg Leu Val Ile Lys His Leu Trp His Thr

705 710 715 720

Gln Pro Ile Pro Ser Thr His Met Ile Pro Tyr Gln Ile Pro Thr Thr
725 730 735
Thr Pro

<210> 183
<211> 734
<
212> PRT
<213> Homo sapiens
<400> 183
Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser
1 5 10 15
Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly
20 25 30
Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val
35 40 45
Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys
50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp
65 70 75 80
Ser Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys Tyr Arg Ile Ser
85 90 95
Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly Pro Thr Ala Gly
100 105 110
Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly Arg Cys Cys Tyr
115 120 125

Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser Asp Gln Ala Gly
130 135 140
Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu Ser Trp Ala Arg
145 150 155 160
Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln Leu Tyr Asn Ser
165 170 175
Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val Ser Lys Leu Ala

180 185 190

Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn Gln Val Gly Ala
195 200 205
Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro Trp Lys Leu Gly
210 215 220
Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys Leu Cys Pro Leu
225 230 235 240
Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg Arg Gln Leu Gly
245 250 255

Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro Val Cys Val Pro
260 265 270
Pro Glu Asn Pro Pro Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu
275 280 285
Gly Gln Asp Gly Arg Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln
290 295 300
Leu Glu Leu Pro Glu Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val
305 310 315 320

Thr Tyr Arg Leu Gln Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys
325 330 335
Ala Thr Arg Thr Leu His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala
340 345 350
Ala Tyr Asn Val Ala Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu
355 360 365
Asn Gln Thr Trp His Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala
370 375 380

Leu Asn Ile Ser Val Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala
385 390 395 400
Arg Ala Gln Ser Met Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln
405 410 415
Asp Gly Gly Leu Ala Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp
420 425 430

Pro Ala Gly Met Ala Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met
435 440 445

Gly Gln Glu Lys Cys Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro
450 455 460

Glu Lys Leu Thr Leu Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly
465 470 475 480

Gly Asn Ala Ser Ala Ala Gly Thr Pro His His Val Ser Val Lys Asn
485 490 495

His Ser Leu Asp Ser Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser
500 505 510

Thr Cys Pro Gly Val Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu
515 520 525

Asp Ser Lys Gln Val Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln
530 535 540

Val Thr Leu Ser Gly Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val
545 550 555 560

Arg Ala Asp Thr Ala Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg
565 570 575

Phe Ser Ile Glu Val Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser
580 585 590

Leu Gly Ser Phe Leu Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu
595 600 605

Gly Leu Asn Arg Ala Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro
610 615 620

Cys Ala Ser Ser Ala Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln
625 630 635 640

Trp Ile Asn Pro Val Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala
645 650 655

Leu Val Val Glu Met Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu
660 665 670

Glu Lys Thr Glu Leu Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr

675 680 685

Glu Leu Ser Leu Glu Asp Gly Asp Arg His Glu Glu Arg Leu Ser Gln

690 695 700

Ser Gln Arg Leu Val Ile Lys His Leu Trp His Thr Gln Pro Ile Pro

705 710 715 720

Ser Thr His Met Ile Pro Tyr Gln Ile Pro Thr Thr Thr Pro

725 730

<210> 184

<211> 725

<212> PRT

<213> Homo sapiens

<400> 184

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Leu Pro Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys

85 90 95

Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly

100 105 110

Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly

115 120 125

Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser

130 135 140

Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu

145 150 155 160

Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln

165 170 175

Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val

180 185 190

Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn

195 200 205

Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro

210 215 220

Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys

225 230 235 240

Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg

245 250 255

Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro

260 265 270

Val Cys Val Pro Pro Val Gly Leu Val Leu Ile Ala Glu Asn Pro Pro

275 280 285

Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg

290 295 300

Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu

305 310 315 320

Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln

325 330 335

Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu

340 345 350

His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala

355 360 365

Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His

370 375 380

Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val

385 390 395 400

Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met

405 410 415

Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala

420 425 430

Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala

435 440 445

Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys

450 455 460

Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu

465 470 475 480

Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala

485 490 495

Ala Gly Thr Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser

500 505 510

Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val

515 520 525

Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val

530 535 540

Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly

545 550 555 560

Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala

565 570 575

Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val

580 585 590

Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu

595 600 605

Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala

610 615 620

Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala

625 630 635 640

Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val

645 650 655

Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met

660 665 670

Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu

675 680 685

Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu

690 695 700

Asp Gly Asp Arg Cys Lys Ala Lys Thr Arg Arg Ala Thr Ile Ser Ile

705 710 715 720

Thr Thr Ala Gly Tyr

725

<210

> 185

<211> 713

<212> PRT

<213> Homo sapiens

<400> 185

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Leu Pro Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys

85 90 95

Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly

100 105 110

Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly

115 120 125

Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser

130 135 140

Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu

145 150 155 160

Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln

165 170 175

Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val

180 185 190

Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn

195 200 205

Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro

210 215 220

Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys

225 230 235 240

Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg

245 250 255

Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro

260 265 270

Val Cys Val Pro Pro Val Gly Leu Val Leu Ile Ala Glu Asn Pro Pro

275 280 285

Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg

290 295 300

Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu

305 310 315 320

Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln

325 330 335

Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu

340 345 350

His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala

355 360 365

Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His

370 375 380

Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val

385 390 395 400

Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met

405 410 415

Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala

420 425 430

Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala

435 440 445

Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys

450 455 460

Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu

465 470 475 480

Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala

485 490 495

Ala Gly Thr Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser

500 505 510

Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val

515 520 525

Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val

530 535 540

Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly

545 550 555 560

Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala

565 570 575

Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val

580 585 590

Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu

595 600 605

Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala

610 615 620

Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala

625 630 635 640

Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val

645 650 655

Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met

660 665 670

Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu

675 680 685

Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu

690 695 700

Asp Gly Asp Arg Cys Lys Ala Lys Met

705 710

<210> 186

<211> 711

<212> PRT

<213> Homo sapiens

<400> 186

Met Phe Val Gly Leu Phe Ser Leu Leu Ser Phe Asn Val Phe Arg Ser

1 5 10 15

Gly Asp Gly Val Ala Glu Pro Arg Arg Trp Gln Arg Gly Ser Pro Gly

20 25 30

Ala Val Gly Leu Tyr Val Asp Pro Met Glu Pro Leu Val Thr Trp Val

35 40 45

Val Pro Leu Leu Phe Leu Phe Leu Leu Ser Arg Gln Gly Ala Ala Cys

50 55 60

Arg Thr Ser Glu Cys Cys Phe Gln Asp Pro Pro Tyr Pro Asp Ala Asp

65 70 75 80

Ser Gly Ser Leu Pro Gly Ser Ala Ser Gly Pro Arg Asp Leu Arg Cys

85 90 95

Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp Gln Tyr Glu Gly

100 105 110

Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys Leu Ser Ser Gly

115 120 125

Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg Leu Gln Phe Ser

130 135 140

Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr Leu Trp Val Glu

145 150 155 160

Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu Val Thr Leu Gln

165 170 175

Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly Asp Ile Lys Val

180 185 190

Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu Thr Pro Asp Asn

195 200 205

Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr Pro Ser Ser Pro

210 215 220

Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp Thr Glu Ser Cys

225 230 235 240

Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe Gln Leu Arg Arg

245 250 255

Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys Trp Ser Ser Pro

260 265 270

Val Cys Val Pro Pro Val Gly Leu Val Leu Ile Ala Glu Asn Pro Pro

275 280 285

Gln Pro Gln Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg

290 295 300

Arg Arg Leu Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu

305 310 315 320

Gly Cys Gln Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln

325 330 335

Leu His Met Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu

340 345 350

His Leu Gly Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala

355 360 365

Val Ile Ser Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His

370 375 380

Ile Pro Ala Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val

385 390 395 400

Gly Thr Asn Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met

405 410 415

Thr Tyr Cys Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala

420 425 430

Thr Cys Ser Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala

435 440 445

Thr Tyr Ser Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys

450 455 460

Tyr Tyr Ile Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu

465 470 475 480

Trp Ser Thr Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala

485 490 495

Ala Gly Thr Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser

500 505 510

Val Ser Val Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val

515 520 525

Leu Lys Glu Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val

530 535 540

Ser Glu His Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly

545 550 555 560

Leu Arg Ala Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala

565 570 575

Trp Leu Arg Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val

580 585 590

Gln Val Ser Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu

595 600 605

Ser Ile Leu Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala

610 615 620

Ala Arg His Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala

625 630 635 640

Ile Glu Phe Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val

645 650 655

Asp Phe Gln Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met

660 665 670

Ser Trp Asp Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu

675 680 685

Pro Glu Gly Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu

690 695 700

Asp Gly Asp Arg Cys Asp Arg

705 710

<210> 187

<211> 705

<212> PRT

<213> Homo sapiens

<400> 187

Met Glu Pro Leu Val Thr Trp Val Val Pro Leu Leu Phe Leu Phe Leu

1 5 10 15

Leu Ser Arg Gln Gly Ala Ala Cys Arg Thr Ser Glu Cys Cys Phe Gln

20 25 30

Asp Pro Pro Tyr Pro Asp Ala Asp Ser Gly Ser Leu Pro Gly Ser Ala

35 40 45

Ser Gly Pro Arg Asp Leu Arg Cys Tyr Arg Ile Ser Ser Asp Arg Tyr

50 55 60

Glu Cys Ser Trp Gln Tyr Glu Gly Pro Thr Ala Gly Val Ser His Phe

65 70 75 80

Leu Arg Cys Cys Leu Ser Ser Gly Arg Cys Cys Tyr Phe Ala Ala Gly

85 90 95

Ser Ala Thr Arg Leu Gln Phe Ser Asp Gln Ala Gly Val Ser Val Leu

100 105 110

Tyr Thr Val Thr Leu Trp Val Glu Ser Trp Ala Arg Asn Gln Thr Glu

115 120 125

Lys Ser Pro Glu Val Thr Leu Gln Leu Tyr Asn Ser Val Lys Tyr Glu

130 135 140

Pro Pro Leu Gly Asp Ile Lys Val Ser Lys Leu Ala Gly Gln Leu Arg

145 150 155 160

Met Glu Trp Glu Thr Pro Asp Asn Gln Val Gly Ala Glu Val Gln Phe

165 170 175

Arg His Arg Thr Pro Ser Ser Pro Trp Lys Leu Gly Asp Cys Gly Pro

180 185 190

Gln Asp Asp Asp Thr Glu Ser Cys Leu Cys Pro Leu Glu Met Asn Val

195 200 205

Ala Gln Glu Phe Gln Leu Arg Arg Arg Gln Leu Gly Ser Gln Gly Ser

210 215 220

Ser Trp Ser Lys Trp Ser Ser Pro Val Cys Val Pro Pro Val Gly Leu

225 230 235 240

Val Leu Ile Ala Glu Asn Pro Pro Gln Pro Gln Val Arg Phe Ser Val

245 250 255

Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu Thr Leu Lys Glu Gln

260 265 270

Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln Gly Leu Ala Pro Gly

275 280 285

Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met Leu Ser Cys Pro Cys

290 295 300

Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly Lys Met Pro Tyr Leu

305 310 315 320

Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser Ser Asn Gln Phe Gly

325 330 335

Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala Asp Thr His Thr Glu

340 345 350

Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn Gly Thr Thr Met Tyr

355 360 365

Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys Ile Glu Trp Gln Pro

370 375 380

Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser Leu Thr Ala Pro Gln

385 390 395 400

Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser Trp Ser Arg Glu Ser

405 410 415

Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile Thr Ile Phe Ala Ser

420 425 430

Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr Val Leu Ser Thr Tyr

435 440 445

His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr Pro His His Val Ser

450 455 460

Val Lys Asn His Ser Leu Asp Ser Val Ser Val Asp Trp Ala Pro Ser

465 470 475 480

Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu Tyr Val Val Arg Cys

485 490 495

Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His Pro Val Gln Pro Thr

500 505 510

Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala Gly Val Ala Tyr Thr

515 520 525

Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg Gly Val Trp Ser Gln

530 535 540

Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser Asp Trp Leu Ile Phe

545 550 555 560

Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu Leu Val Gly Val Leu

565 570 575

Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His Leu Cys Pro Pro Leu

580 585 590

Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe Pro Gly Gly Lys Glu

595 600 605

Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln Glu Glu Ala Ser Leu

610 615 620

Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp Lys Gly Glu Arg Thr

625 630 635 640

Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly Ala Pro Glu Leu Ala

645 650 655

Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp Arg His Glu Glu Arg

660 665 670

Leu Ser Gln Ser Gln Arg Leu Val Ile Lys His Leu Trp His Thr Gln

675 680 685

Pro Ile Pro Ser Thr His Met Ile Pro Tyr Gln Ile Pro Thr Thr Thr

690 695 700

Pro

705

<210> 188

<211> 1032

<212> PRT

<213> Homo sapiens

<400> 188

Met Ala Trp Glu Ala Arg Arg Glu Pro Gly Pro Arg Arg Ala Ala Val

1 5 10 15

Arg Glu Thr Val Met Leu Leu Leu Cys Leu Gly Val Pro Thr Gly Arg

20 25 30

Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His

35 40 45

Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn

50 55 60

Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala

65 70 75 80

Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn
85 90 95
Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu
100 105 110
Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly
115 120 125
Val Thr Leu Ser Arg Gln Pro Gly Glu Asn Gly Ser Ile Val Thr Cys
130 135 140

Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu
145 150 155 160
Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu
165 170 175
Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly
180 185 190
Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys
195 200 205

Asp Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser
210 215 220
Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp
225 230 235 240
Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly
245 250 255
Ala Gly His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala
260 265 270

Pro Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu
275 280 285
Lys Glu Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser
290 295 300
Tyr Phe Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe
305 310 315 320

Ser Asp Leu Leu Val Gly Ala Pro Met Gln Ser Thr Ile Arg Glu Glu
325 330 335

Gly Arg Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn
340 345 350
Ala Met Glu Thr Asn Leu Val Gly Ser Asp Lys Tyr Ala Ala Arg Phe
355 360 365
Gly Glu Ser Ile Val Asn Leu Gly Asp Ile Asp Asn Asp Gly Phe Glu
370 375 380
Asp Val Ala Ile Gly Ala Pro Gln Glu Asp Asp Leu Gln Gly Ala Ile
385 390 395 400

Tyr Ile Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln
405 410 415
Arg Ile Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln
420 425 430
Ser Ile Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val
435 440 445
Ala Val Gly Ala Phe Arg Ser Asp Ser Ala Val Leu Leu Arg Thr Arg
450 455 460

Pro Val Val Ile Val Asp Ala Ser Leu Ser His Pro Glu Ser Val Asn
465 470 475 480
Arg Thr Lys Phe Asp Cys Val Glu Asn Gly Trp Pro Ser Val Cys Ile
485 490 495
Asp Leu Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr
500 505 510
Ile Val Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu
515 520 525

Ser Pro Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile
530 535 540
Thr Gly Ser Ile Gln Val Ser Ser Arg Glu Ala Asn Cys Arg Thr His
545 550 555 560
Gln Ala Phe Met Arg Lys Asp Val Arg Asp Ile Leu Thr Pro Ile Gln

565 570 575

Ile Glu Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser

580 585 590

Thr Glu Glu Phe Pro Pro Leu Gln Pro Ile Leu Gln Gln Lys Lys Glu

595 600 605

Lys Asp Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His

610 615 620

Glu Asn Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu

625 630 635 640

Lys Pro His Glu Asn Lys Thr Tyr Leu Ala Val Gly Ser Met Lys Thr

645 650 655

Leu Met Leu Asn Val Ser Leu Phe Asn Ala Gly Asp Asp Ala Tyr Glu

660 665 670

Thr Thr Leu His Val Lys Leu Pro Val Gly Leu Tyr Phe Ile Lys Ile

675 680 685

Leu Glu Leu Glu Glu Lys Gln Ile Asn Cys Glu Val Thr Asp Asn Ser

690 695 700

Gly Val Val Gln Leu Asp Cys Ser Ile Gly Tyr Ile Tyr Val Asp His

705 710 715 720

Leu Ser Arg Ile Asp Ile Ser Phe Leu Leu Asp Val Ser Ser Leu Ser

725 730 735

Arg Ala Glu Glu Asp Leu Ser Ile Thr Val His Ala Thr Cys Glu Asn

740 745 750

Glu Glu Glu Met Asp Asn Leu Lys His Ser Arg Val Thr Val Ala Ile

755 760 765

Pro Leu Lys Tyr Glu Val Lys Leu Thr Val His Gly Phe Val Asn Pro

770 775 780

Thr Ser Phe Val Tyr Gly Ser Asn Asp Glu Asn Glu Pro Glu Thr Cys

785 790 795 800

Met Val Glu Lys Met Asn Leu Thr Phe His Val Ile Asn Thr Gly Asn

805 810 815

Ser Met Ala Pro Asn Val Ser Val Glu Ile Met Val Pro Asn Ser Phe
820 825 830
Ser Pro Gln Thr Asp Lys Leu Phe Asn Ile Leu Asp Val Gln Thr Thr
835 840 845

Thr Gly Glu Cys His Phe Glu Asn Tyr Gln Arg Val Cys Ala Leu Glu
850 855 860
Gln Gln Lys Ser Ala Met Gln Thr Leu Lys Gly Ile Val Arg Phe Leu
865 870 875 880
Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His
885 890 895
Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu
900 905 910

Ala Ser Val His Ile Gln Leu Glu Gly Arg Pro Ser Ile Leu Glu Met
915 920 925
Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro
930 935 940
Glu Pro Asn Pro Arg Val Ile Glu Leu Asn Lys Asp Glu Asn Val Ala
945 950 955 960
His Val Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe
965 970 975

Thr Ile Val Ile Ile Ser Ser Ser Leu Leu Leu Gly Leu Ile Val Leu
980 985 990
Leu Leu Ile Ser Tyr Val Met Trp Lys Ala Gly Phe Phe Lys Arg Gln
995 1000 1005
Tyr Lys Ser Ile Leu Gln Glu Glu Asn Arg Arg Asp Ser Trp Ser
1010 1015 1020
Tyr Ile Asn Ser Lys Ser Asn Asp Asp
1025 1030
<210> 189
<211> 195
<212>
PRT

<213> Homo sapiens

<400> 189

Met Ala Trp Glu Ala Arg Arg Glu Pro Gly Pro Arg Arg Ala Ala Val
1 5 10 15

Arg Glu Thr Val Met Leu Leu Leu Cys Leu Gly Val Pro Thr Gly Arg
20 25 30

Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His
35 40 45

Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn
50 55 60

Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala
65 70 75 80

Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn
85 90 95

Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu
100 105 110

Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly
115 120 125

Val Thr Leu Ser Arg Gln Pro Gly Glu Asn Gly Ser Ile Val Thr Cys
130 135 140

Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu
145 150 155 160

Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu
165 170 175

Ser Lys Arg Ile Ala Pro Cys Tyr Gln Gly Ser Ile Ser Lys Tyr Arg
180 185 190

Ala Arg Thr
195

<210> 190

<211> 382

<212> PRT

<213> Homo sapiens

<400> 190

Met Arg Ser His Phe Leu Gln Trp Ala Leu Ala Thr Ser Arg Asn Lys
1 5 10 15
Asp Gln Ile Thr Asn Ile Phe Ser Gly Phe Ala Gly Leu Leu Ala Ile
20 25 30
Leu Leu Val Val Ala Val Phe Cys Ile Leu Trp Asn Trp Asn Lys Arg
35 40 45
Lys Lys Arg Gln Val Pro Tyr Leu Arg Val Thr Val Met Pro Leu Leu

50 55 60
Thr Leu Pro Gln Thr Arg Gln Arg Ala Lys Asn Ile Tyr Asp Ile Leu
65 70 75 80
Pro Trp Arg Gln Glu Asp Leu Gly Arg His Glu Ser Arg Ser Met Arg
85 90 95
Ile Phe Ser Thr Glu Ser Leu Leu Ser Arg Asn Ser Glu Ser Pro Glu
100 105 110
His Val Pro Ser Gln Ala Gly Asn Ala Phe Gln Glu His Thr Ala His

115 120 125
Ile His Ala Thr Glu Tyr Ala Val Gly Ile Tyr Asp Asn Ala Met Val
130 135 140
Pro Gln Met Cys Gly Asn Leu Thr Pro Ser Ala His Cys Ile Asn Val
145 150 155 160
Arg Ala Ser Arg Asp Cys Ala Ser Ile Ser Ser Glu Asp Ser His Asp
165 170 175
Tyr Val Asn Val Pro Thr Ala Glu Glu Ile Ala Glu Thr Leu Ala Ser

180 185 190
Thr Lys Ser Pro Ser Arg Asn Leu Phe Val Leu Pro Ser Thr Gln Lys
195 200 205
Leu Glu Phe Thr Glu Glu Arg Asp Glu Gly Cys Gly Asp Ala Gly Asp
210 215 220
Cys Thr Ser Leu Tyr Ser Pro Gly Ala Glu Asp Ser Asp Ser Leu Ser
225 230 235 240

Asn Gly Glu Gly Ser Ser Gln Ile Ser Asn Asp Tyr Val Asn Met Thr

245 250 255

Gly Leu Asp Leu Ser Ala Ile Gln Glu Arg Gln Leu Trp Val Ala Phe

260 265 270

Gln Cys Cys Arg Asp Tyr Glu Asn Val Pro Ala Ala Asp Pro Ser Gly

275 280 285

Ser Gln Gln Gln Ala Glu Lys Asp Val Pro Ser Ser Asn Ile Gly His

290 295 300

Val Glu Asp Lys Thr Asp Asp Pro Gly Thr His Val Gln Cys Val Lys

305 310 315 320

Arg Thr Phe Leu Ala Ser Gly Asp Tyr Ala Asp Phe Gln Pro Phe Thr

325 330 335

Gln Ser Glu Asp Ser Gln Met Lys His Arg Glu Glu Met Ser Asn Glu

340 345 350

Asp Ser Ser Asp Tyr Glu Asn Val Leu Thr Ala Lys Leu Gly Gly Arg

355 360 365

Asp Ser Glu Gln Gly Pro Gly Thr Gln Leu Leu Pro Asp Glu

370 375 380

<210> 191

<211> 322

<212> PRT

<213> Homo sapiens

<400> 191

Met Pro Leu Leu Thr Leu Pro Gln Thr Arg Gln Arg Ala Lys Asn Ile

1 5 10 15

Tyr Asp Ile Leu Pro Trp Arg Gln Glu Asp Leu Gly Arg His Glu Ser

20 25 30

Arg Ser Met Arg Ile Phe Ser Thr Glu Ser Leu Leu Ser Arg Asn Ser

35 40 45

Glu Ser Pro Glu His Val Pro Ser Gln Ala Gly Asn Ala Phe Gln Glu

50 55 60

His Thr Ala His Ile His Ala Thr Glu Tyr Ala Val Gly Ile Tyr Asp
65 70 75 80
Asn Ala Met Val Pro Gln Met Cys Gly Asn Leu Thr Pro Ser Ala His
85 90 95
Cys Ile Asn Val Arg Ala Ser Arg Asp Cys Ala Ser Ile Ser Ser Glu
100 105 110

Asp Ser His Asp Tyr Val Asn Val Pro Thr Ala Glu Glu Ile Ala Glu
115 120 125
Thr Leu Ala Ser Thr Lys Ser Pro Ser Arg Asn Leu Phe Val Leu Pro
130 135 140
Ser Thr Gln Lys Leu Glu Phe Thr Glu Glu Arg Asp Glu Gly Cys Gly
145 150 155 160
Asp Ala Gly Asp Cys Thr Ser Leu Tyr Ser Pro Gly Ala Glu Asp Ser
165 170 175

Asp Ser Leu Ser Asn Gly Glu Gly Ser Ser Gln Ile Ser Asn Asp Tyr
180 185 190
Val Asn Met Thr Gly Leu Asp Leu Ser Ala Ile Gln Glu Arg Gln Leu
195 200 205
Trp Val Ala Phe Gln Cys Cys Arg Asp Tyr Glu Asn Val Pro Ala Ala
210 215 220
Asp Pro Ser Gly Ser Gln Gln Gln Ala Glu Lys Asp Val Pro Ser Ser
225 230 235 240

Asn Ile Gly His Val Glu Asp Lys Thr Asp Asp Pro Gly Thr His Val
245 250 255
Gln Cys Val Lys Arg Thr Phe Leu Ala Ser Gly Asp Tyr Ala Asp Phe
260 265 270
Gln Pro Phe Thr Gln Ser Glu Asp Ser Gln Met Lys His Arg Glu Glu
275 280 285
Met Ser Asn Glu Asp Ser Ser Asp Tyr Glu Asn Val Leu Thr Ala Lys
290 295 300

Leu Gly Gly Arg Asp Ser Glu Gln Gly Pro Gly Thr Gln Leu Leu Pro

305 310 315 320

Asp Glu

<210> 192

<211> 398

<212> PRT

<213> Homo sapiens

<400> 192

Met Asp Gly Val Thr Pro Thr Leu Ser Thr Ile Arg Gly Arg Thr Leu

1 5 10 15

Glu Ser Ser Thr Leu His Val Thr Pro Arg Ser Leu Asp Arg Asn Lys

20 25 30

Asp Gln Ile Thr Asn Ile Phe Ser Gly Phe Ala Gly Leu Leu Ala Ile

35 40 45

Leu Leu Val Val Ala Val Phe Cys Ile Leu Trp Asn Trp Asn Lys Arg

50 55 60

Lys Lys Arg Gln Val Pro Tyr Leu Arg Val Thr Val Met Pro Leu Leu

65 70 75 80

Thr Leu Pro Gln Thr Arg Gln Arg Ala Lys Asn Ile Tyr Asp Ile Leu

85 90 95

Pro Trp Arg Gln Glu Asp Leu Gly Arg His Glu Ser Arg Ser Met Arg

100 105 110

Ile Phe Ser Thr Glu Ser Leu Leu Ser Arg Asn Ser Glu Ser Pro Glu

115 120 125

His Val Pro Ser Gln Ala Gly Asn Ala Phe Gln Glu His Thr Ala His

130 135 140

Ile His Ala Thr Glu Tyr Ala Val Gly Ile Tyr Asp Asn Ala Met Val

145 150 155 160

Pro Gln Met Cys Gly Asn Leu Thr Pro Ser Ala His Cys Ile Asn Val

165 170 175

Arg Ala Ser Arg Asp Cys Ala Ser Ile Ser Ser Glu Asp Ser His Asp

180 185 190

Tyr Val Asn Val Pro Thr Ala Glu Glu Ile Ala Glu Thr Leu Ala Ser
195 200 205
Thr Lys Ser Pro Ser Arg Asn Leu Phe Val Leu Pro Ser Thr Gln Lys
210 215 220
Leu Glu Phe Thr Glu Glu Arg Asp Glu Gly Cys Gly Asp Ala Gly Asp

225 230 235 240
Cys Thr Ser Leu Tyr Ser Pro Gly Ala Glu Asp Ser Asp Ser Leu Ser
245 250 255
Asn Gly Glu Gly Ser Ser Gln Ile Ser Asn Asp Tyr Val Asn Met Thr
260 265 270
Gly Leu Asp Leu Ser Ala Ile Gln Glu Arg Gln Leu Trp Val Ala Phe
275 280 285
Gln Cys Cys Arg Asp Tyr Glu Asn Val Pro Ala Ala Asp Pro Ser Gly

290 295 300
Ser Gln Gln Gln Ala Glu Lys Asp Val Pro Ser Ser Asn Ile Gly His
305 310 315 320
Val Glu Asp Lys Thr Asp Asp Pro Gly Thr His Val Gln Cys Val Lys
325 330 335
Arg Thr Phe Leu Ala Ser Gly Asp Tyr Ala Asp Phe Gln Pro Phe Thr
340 345 350
Gln Ser Glu Asp Ser Gln Met Lys His Arg Glu Glu Met Ser Asn Glu

355 360 365
Asp Ser Ser Asp Tyr Glu Asn Val Leu Thr Ala Lys Leu Gly Gly Arg
370 375 380
Asp Ser Glu Gln Gly Pro Gly Thr Gln Leu Leu Pro Asp Glu
385 390 395
<210> 193
<211> 398
<212> PRT
<213> Homo sapiens
<400> 193
Met Asp Gly Val Thr Pro Thr Leu Ser Thr Ile Arg Gly Arg Thr Leu

1 5 10 15

Glu Ser Ser Thr Leu His Val Thr Pro Arg Ser Leu Asp Arg Asn Lys
20 25 30
Asp Gln Ile Thr Asn Ile Phe Ser Gly Phe Ala Gly Leu Leu Ala Ile
35 40 45
Leu Leu Val Val Ala Val Phe Cys Ile Leu Trp Asn Trp Asn Lys Arg
50 55 60
Lys Lys Arg Gln Val Pro Tyr Leu Arg Val Thr Val Met Pro Leu Leu
65 70 75 80

Thr Leu Pro Gln Thr Arg Gln Arg Ala Lys Asn Ile Tyr Asp Ile Leu
85 90 95
Pro Trp Arg Gln Glu Asp Leu Gly Arg His Glu Ser Arg Ser Met Arg
100 105 110
Ile Phe Ser Thr Glu Ser Leu Leu Ser Arg Asn Ser Glu Ser Pro Glu
115 120 125
His Val Pro Ser Gln Ala Gly Asn Ala Phe Gln Glu His Thr Ala His
130 135 140

Ile His Ala Thr Glu Tyr Ala Val Gly Ile Tyr Asp Asn Ala Met Val
145 150 155 160
Pro Gln Met Cys Gly Asn Leu Thr Pro Ser Ala His Cys Ile Asn Val
165 170 175
Arg Ala Ser Arg Asp Cys Ala Ser Ile Ser Ser Glu Asp Ser His Asp
180 185 190
Tyr Val Asn Val Pro Thr Ala Glu Glu Ile Ala Glu Thr Leu Ala Ser
195 200 205

Thr Lys Ser Pro Ser Arg Asn Leu Phe Val Leu Pro Ser Thr Gln Lys
210 215 220
Leu Glu Phe Thr Glu Glu Arg Asp Glu Gly Cys Gly Asp Ala Gly Asp
225 230 235 240
Cys Thr Ser Leu Tyr Ser Pro Gly Ala Glu Asp Ser Asp Ser Leu Ser
245 250 255

Asn Gly Glu Gly Ser Ser Gln Ile Ser Asn Asp Tyr Val Asn Met Thr
260 265 270

Gly Leu Asp Leu Ser Ala Ile Gln Glu Arg Gln Leu Trp Val Ala Phe
275 280 285
Gln Cys Cys Arg Asp Tyr Glu Asn Val Pro Ala Ala Asp Pro Ser Gly
290 295 300
Ser Gln Gln Gln Ala Glu Lys Asp Val Pro Ser Ser Asn Ile Gly His
305 310 315 320
Val Glu Asp Lys Thr Asp Asp Pro Gly Thr His Val Gln Cys Val Lys
325 330 335

Arg Thr Phe Leu Ala Ser Gly Asp Tyr Ala Asp Phe Gln Pro Phe Thr
340 345 350
Gln Ser Glu Asp Ser Gln Met Lys His Arg Glu Glu Met Ser Asn Glu
355 360 365
Asp Ser Ser Asp Tyr Glu Asn Val Leu Thr Ala Lys Leu Gly Gly Arg
370 375 380
Asp Ser Glu Gln Gly Pro Gly Thr Gln Leu Leu Pro Asp Glu
385 390 395

<210> 194
<211> 490
<212> PRT
<213> Homo sapiens
<400> 194
Met Glu Gln Pro His Asp Glu Lys Asp Pro Ala Ser Lys Arg Pro His
1 5 10 15
Pro Val Cys Leu Phe Val Leu Pro Ala Leu Arg Thr His Pro Ser Ala
20 25 30
Gln Leu Gly Pro Leu Gly Gly Asp Ala Met Ile Pro Thr Phe Thr Ala
35 40 45
Leu Leu Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Met Gln Ala

50 55 60

Gly Pro Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile
65 70 75 80
Ser Trp Gly Asn Ser Val Thr Ile Trp Cys Gln Gly Thr Leu Glu Ala
85 90 95
Arg Glu Tyr Arg Leu Asp Lys Glu Glu Ser Pro Ala Pro Trp Asp Arg
100 105 110
Gln Asn Pro Leu Glu Pro Lys Asn Lys Ala Arg Phe Ser Ile Pro Ser

115 120 125
Met Thr Glu Asp Tyr Ala Gly Arg Tyr Arg Cys Tyr Tyr Arg Ser Pro
130 135 140
Val Gly Trp Ser Gln Pro Ser Asp Pro Leu Glu Leu Val Met Thr Gly
145 150 155 160
Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Leu Val Thr
165 170 175
Ser Gly Lys Ser Val Thr Leu Leu Cys Gln Ser Arg Ser Pro Met Asp

180 185 190
Thr Phe Leu Leu Ile Lys Glu Arg Ala Ala His Pro Leu Leu His Leu
195 200 205
Arg Ser Glu His Gly Ala Gln Gln His Gln Ala Glu Phe Pro Met Ser
210 215 220
Pro Val Thr Ser Val His Gly Gly Thr Tyr Arg Cys Phe Ser Ser His
225 230 235 240
Gly Phe Ser His Tyr Leu Leu Ser His Pro Ser Asp Pro Leu Glu Leu

245 250 255
Ile Val Ser Gly Ser Leu Glu Gly Pro Arg Pro Ser Pro Thr Arg Ser
260 265 270
Val Ser Thr Ala Ala Gly Pro Glu Asp Gln Pro Leu Met Pro Thr Gly
275 280 285
Ser Val Pro His Ser Gly Leu Arg Arg His Trp Glu Val Leu Ile Gly
290 295 300
Val Leu Val Val Ser Ile Leu Leu Leu Ser Leu Leu Leu Phe Leu Leu

305 310 315 320

Leu Gln His Trp Arg Gln Gly Lys His Arg Thr Leu Ala Gln Arg Gln

325 330 335

Ala Asp Phe Gln Arg Pro Pro Gly Ala Ala Glu Pro Glu Pro Lys Asp

340 345 350

Gly Gly Leu Gln Arg Arg Ser Ser Pro Ala Ala Asp Val Gln Gly Glu

355 360 365

Asn Phe Ser Gly Ala Ala Val Lys Asn Thr Gln Pro Glu Asp Gly Val

370 375 380

Glu Met Asp Thr Arg Gln Ser Pro His Asp Glu Asp Pro Gln Ala Val

385 390 395 400

Thr Tyr Ala Lys Val Lys His Ser Arg Pro Arg Arg Glu Met Ala Ser

405 410 415

Pro Pro Ser Pro Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln

420 425 430

Ala Glu Glu Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala

435 440 445

Pro Gln Asp Val Thr Tyr Ala Arg Leu His Ser Phe Thr Leu Arg Gln

450 455 460

Lys Ala Thr Glu Pro Pro Pro Ser Gln Glu Gly Ala Ser Pro Ala Glu

465 470 475 480

Pro Ser Val Tyr Ala Thr Leu Ala Ile His

485 490

<210> 195

<211> 489

<212> PRT

<213> Homo sapiens

<400> 195

Met Glu Gln Pro His Asp Glu Lys Asp Pro Ala Ser Lys Arg Pro His

1 5 10 15

Pro Val Cys Leu Phe Val Leu Pro Ala Leu Arg Thr His Pro Ser Ala

20 25 30

Gln Leu Gly Pro Leu Gly Gly Asp Ala Met Ile Pro Thr Phe Thr Ala
35 40 45
Leu Leu Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Met Gln Ala
50 55 60
Gly Pro Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile

65 70 75 80
Ser Trp Gly Asn Ser Val Thr Ile Trp Cys Gln Gly Thr Leu Glu Ala
85 90 95
Arg Glu Tyr Arg Leu Asp Lys Glu Glu Ser Pro Ala Pro Trp Asp Arg
100 105 110
Gln Asn Pro Leu Glu Pro Lys Asn Lys Ala Arg Phe Ser Ile Pro Ser
115 120 125
Met Thr Glu Asp Tyr Ala Gly Arg Tyr Arg Cys Tyr Tyr Arg Ser Pro

130 135 140
Val Gly Trp Ser Gln Pro Ser Asp Pro Leu Glu Leu Val Met Thr Gly
145 150 155 160
Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Leu Val Thr
165 170 175
Ser Gly Lys Ser Val Thr Leu Leu Cys Gln Ser Arg Ser Pro Met Asp
180 185 190
Thr Phe Leu Leu Ile Lys Glu Arg Ala Ala His Pro Leu Leu His Leu

195 200 205
Arg Ser Glu His Gly Ala Gln Gln His Gln Ala Glu Phe Pro Met Ser
210 215 220
Pro Val Thr Ser Val His Gly Gly Thr Tyr Arg Cys Phe Ser Ser His
225 230 235 240
Gly Phe Ser His Tyr Leu Leu Ser His Pro Ser Asp Pro Leu Glu Leu
245 250 255
Ile Val Ser Gly Ser Leu Glu Gly Pro Arg Pro Ser Pro Thr Arg Ser

260 265 270
Val Ser Thr Ala Gly Pro Glu Asp Gln Pro Leu Met Pro Thr Gly Ser

275 280 285

Val Pro His Ser Gly Leu Arg Arg His Trp Glu Val Leu Ile Gly Val

290 295 300

Leu Val Val Ser Ile Leu Leu Leu Ser Leu Leu Leu Phe Leu Leu Leu

305 310 315 320

Gln His Trp Arg Gln Gly Lys His Arg Thr Leu Ala Gln Arg Gln Ala

325 330 335

Asp Phe Gln Arg Pro Pro Gly Ala Ala Glu Pro Glu Pro Lys Asp Gly

340 345 350

Gly Leu Gln Arg Arg Ser Ser Pro Ala Ala Asp Val Gln Gly Glu Asn

355 360 365

Phe Ser Gly Ala Ala Val Lys Asn Thr Gln Pro Glu Asp Gly Val Glu

370 375 380

Met Asp Thr Arg Gln Ser Pro His Asp Glu Asp Pro Gln Ala Val Thr

385 390 395 400

Tyr Ala Lys Val Lys His Ser Arg Pro Arg Arg Glu Met Ala Ser Pro

405 410 415

Pro Ser Pro Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln Ala

420 425 430

Glu Glu Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala Pro

435 440 445

Gln Asp Val Thr Tyr Ala Arg Leu His Ser Phe Thr Leu Arg Gln Lys

450 455 460

Ala Thr Glu Pro Pro Pro Ser Gln Glu Gly Ala Ser Pro Ala Glu Pro

465 470 475 480

Ser Val Tyr Ala Thr Leu Ala Ile His

485

<210> 196

<211> 487

<212> PRT

<213> Homo sapiens

<400> 196

Met Glu Gln Pro His Asp Glu Lys Asp Pro Ala Ser Lys Arg Pro His
1 5 10 15
Pro Val Cys Leu Phe Val Leu Pro Ala Leu Arg Thr His Pro Ser Ala

20 25 30
Gln Leu Gly Pro Leu Gly Gly Asp Ala Met Ile Pro Thr Phe Thr Ala
35 40 45
Leu Leu Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Met Gln Ala
50 55 60
Gly Pro Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile
65 70 75 80
Ser Trp Gly Asn Ser Val Thr Ile Trp Cys Gln Gly Thr Leu Glu Ala

85 90 95
Arg Glu Tyr Arg Leu Asp Lys Glu Glu Ser Pro Ala Pro Trp Asp Arg
100 105 110
Gln Asn Pro Leu Glu Pro Lys Asn Lys Ala Arg Phe Ser Ile Pro Ser
115 120 125
Met Thr Glu Asp Tyr Ala Gly Arg Tyr Arg Cys Tyr Tyr Arg Ser Pro
130 135 140
Val Gly Trp Ser Gln Pro Ser Asp Pro Leu Glu Leu Val Met Thr Gly

145 150 155 160
Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Leu Val Thr
165 170 175
Ser Gly Lys Ser Val Thr Leu Leu Cys Gln Ser Arg Ser Pro Met Asp
180 185 190
Thr Phe Leu Leu Ile Lys Glu Arg Ala Ala His Pro Leu Leu His Leu
195 200 205
Arg Ser Glu His Gly Ala Gln Gln His Gln Ala Glu Phe Pro Met Ser

210 215 220
Pro Val Thr Ser Val His Gly Gly Thr Tyr Arg Cys Phe Ser Ser His
225 230 235 240
Gly Phe Ser His Tyr Leu Leu Ser His Pro Ser Asp Pro Leu Glu Leu

245 250 255

Ile Val Ser Gly Ser Leu Glu Gly Pro Arg Pro Ser Pro Thr Arg Ser

260 265 270

Val Ser Thr Ala Gly Pro Glu Asp Gln Pro Leu Met Pro Thr Gly Ser

275 280 285

Val Pro His Ser Gly Leu Arg Arg His Trp Glu Val Leu Ile Gly Val

290 295 300

Leu Val Val Ser Ile Leu Leu Leu Ser Leu Leu Leu Phe Leu Leu Leu

305 310 315 320

Gln His Trp Arg Gln Gly Lys His Arg Thr Leu Ala Gln Arg Gln Ala

325 330 335

Asp Phe Gln Arg Pro Pro Gly Ala Ala Glu Pro Glu Pro Lys Asp Gly

340 345 350

Gly Leu Gln Arg Arg Ser Ser Pro Ala Ala Asp Val Gln Gly Glu Asn

355 360 365

Phe Cys Ala Ala Val Lys Asn Thr Gln Pro Glu Asp Gly Val Glu Met

370 375 380

Asp Thr Arg Ser Pro His Asp Glu Asp Pro Gln Ala Val Thr Tyr Ala

385 390 395 400

Lys Val Lys His Ser Arg Pro Arg Arg Glu Met Ala Ser Pro Pro Ser

405 410 415

Pro Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln Ala Glu Glu

420 425 430

Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala Pro Gln Asp

435 440 445

Val Thr Tyr Ala Arg Leu His Ser Phe Thr Leu Arg Gln Lys Ala Thr

450 455 460

Glu Pro Pro Pro Ser Gln Glu Gly Ala Ser Pro Ala Glu Pro Ser Val

465 470 475 480

Tyr Ala Thr Leu Ala Ile His

485

<210> 197

<211> 488

<212> PRT

<213> Homo sapiens

<400> 197

Met Glu Gln Pro His Asp Glu Lys Asp Pro Ala Ser Lys Arg Pro His
1 5 10 15

Pro Val Cys Leu Phe Val Leu Pro Ala Leu Arg Thr His Pro Ser Ala
20 25 30

Gln Leu Gly Pro Leu Gly Gly Asp Ala Met Ile Pro Thr Phe Thr Ala
35 40 45

Leu Leu Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Met Gln Ala
50 55 60

Gly Pro Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile
65 70 75 80

Ser Trp Gly Asn Ser Val Thr Ile Trp Cys Gln Gly Thr Leu Glu Ala
85 90 95

Arg Glu Tyr Arg Leu Asp Lys Glu Glu Ser Pro Ala Pro Trp Asp Arg
100 105 110

Gln Asn Pro Leu Glu Pro Lys Asn Lys Ala Arg Phe Ser Ile Pro Ser
115 120 125

Met Thr Glu Asp Tyr Ala Gly Arg Tyr Arg Cys Tyr Tyr Arg Ser Pro
130 135 140

Val Gly Trp Ser Gln Pro Ser Asp Pro Leu Glu Leu Val Met Thr Gly
145 150 155 160

Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Leu Val Thr
165 170 175

Ser Gly Lys Ser Val Thr Leu Leu Cys Gln Ser Arg Ser Pro Met Asp
180 185 190

Thr Phe Leu Leu Ile Lys Glu Arg Ala Ala His Pro Leu Leu His Leu
195 200 205

Arg Ser Glu His Gly Ala Gln Gln His Gln Ala Glu Phe Pro Met Ser

210 215 220

Pro Val Thr Ser Val His Gly Gly Thr Tyr Arg Cys Phe Ser Ser His

225 230 235 240

Gly Phe Ser His Tyr Leu Leu Ser His Pro Ser Asp Pro Leu Glu Leu

245 250 255

Ile Val Ser Gly Ser Leu Glu Gly Pro Arg Pro Ser Pro Thr Arg Ser

260 265 270

Val Ser Thr Ala Gly Pro Glu Asp Gln Pro Leu Met Pro Thr Gly Ser

275 280 285

Val Pro His Ser Gly Leu Arg Arg His Trp Glu Val Leu Ile Gly Val

290 295 300

Leu Val Val Ser Ile Leu Leu Leu Ser Leu Leu Leu Phe Leu Leu Leu

305 310 315 320

Gln His Trp Arg Gln Gly Lys His Arg Thr Leu Ala Gln Arg Gln Ala

325 330 335

Asp Phe Gln Arg Pro Pro Gly Ala Ala Glu Pro Glu Pro Lys Asp Gly

340 345 350

Gly Leu Gln Arg Arg Ser Ser Pro Ala Ala Asp Val Gln Gly Glu Asn

355 360 365

Phe Cys Ala Ala Val Lys Asn Thr Gln Pro Glu Asp Gly Val Glu Met

370 375 380

Asp Thr Arg Gln Ser Pro His Asp Glu Asp Pro Gln Ala Val Thr Tyr

385 390 395 400

Ala Lys Val Lys His Ser Arg Pro Arg Arg Glu Met Ala Ser Pro Pro

405 410 415

Ser Pro Leu Ser Gly Glu Phe Leu Asp Thr Lys Asp Arg Gln Ala Glu

420 425 430

Glu Asp Arg Gln Met Asp Thr Glu Ala Ala Ala Ser Glu Ala Pro Gln

435 440 445

Asp Val Thr Tyr Ala Arg Leu His Ser Phe Thr Leu Arg Gln Lys Ala

450 455 460

Thr Glu Pro Pro Pro Ser Gln Glu Gly Ala Ser Pro Ala Glu Pro Ser
465 470 475 480
Val Tyr Ala Thr Leu Ala Ile His
485

<210> 198
<211> 858
<212> PRT
<213> Homo sapiens
<400> 198
Met Phe Thr Leu Ala Glu Val Ala Ser Leu Asn Asp Ile Gln Pro Thr
1 5 10 15
Tyr Arg Ile Leu Lys Pro Trp Trp Asp Val Phe Met Asp Tyr Leu Ala
20 25 30
Val Val Met Leu Met Val Ala Ile Phe Ala Gly Thr Met Gln Leu Thr
35 40 45
Lys Asp Gln Val Val Cys Leu Pro Val Leu Pro Ser Pro Val Asn Ser

50 55 60
Lys Ala His Thr Pro Pro Gly Asn Ala Glu Val Thr Thr Asn Ile Pro
65 70 75 80
Lys Met Glu Ala Ala Thr Asn Gln Asp Gln Asp Gly Arg Thr Thr Asn
85 90 95
Asp Ile Ser Phe Gly Thr Ser Ala Val Thr Pro Asp Ile Pro Leu Arg
100 105 110
Ala Thr Tyr Pro Arg Thr Asp Phe Ala Leu Pro Asn Gln Glu Ala Lys

115 120 125
Lys Glu Lys Lys Asp Pro Thr Gly Arg Lys Thr Asn Leu Asp Phe Gln
130 135 140
Gln Tyr Val Phe Ile Asn Gln Met Cys Tyr His Leu Ala Leu Pro Trp
145 150 155 160
Tyr Ser Lys Tyr Phe Pro Tyr Leu Ala Leu Ile His Thr Ile Ile Leu
165 170 175

Met Val Ser Ser Asn Phe Trp Phe Lys Tyr Pro Lys Thr Cys Ser Lys

180 185 190

Val Glu His Phe Val Ser Ile Leu Gly Lys Cys Phe Glu Ser Pro Trp

195 200 205

Thr Thr Lys Ala Leu Ser Glu Thr Ala Cys Glu Asp Ser Glu Glu Asn

210 215 220

Lys Gln Arg Ile Thr Gly Ala Gln Thr Leu Pro Lys His Val Ser Thr

225 230 235 240

Ser Ser Asp Glu Gly Ser Pro Ser Ala Ser Thr Pro Met Ile Asn Lys

245 250 255

Thr Gly Phe Lys Phe Ser Ala Glu Lys Pro Val Ile Glu Val Pro Ser

260 265 270

Met Thr Ile Leu Asp Lys Lys Asp Gly Glu Gln Ala Lys Ala Leu Phe

275 280 285

Glu Lys Val Arg Lys Phe Arg Ala His Val Glu Asp Ser Asp Leu Ile

290 295 300

Tyr Lys Leu Tyr Val Val Gln Thr Val Ile Lys Thr Ala Lys Phe Ile

305 310 315 320

Phe Ile Leu Cys Tyr Thr Ala Asn Phe Val Asn Ala Ile Ser Phe Glu

325 330 335

His Val Cys Lys Pro Lys Val Glu His Leu Ile Gly Tyr Glu Val Phe

340 345 350

Glu Cys Thr His Asn Met Ala Tyr Met Leu Lys Lys Leu Leu Ile Ser

355 360 365

Tyr Ile Ser Ile Ile Cys Val Tyr Gly Phe Ile Cys Leu Tyr Thr Leu

370 375 380

Phe Trp Leu Phe Arg Ile Pro Leu Lys Glu Tyr Ser Phe Glu Lys Val

385 390 395 400

Arg Glu Glu Ser Ser Phe Ser Asp Ile Pro Asp Val Lys Asn Asp Phe

405 410 415

Ala Phe Leu Leu His Met Val Asp Gln Tyr Asp Gln Leu Tyr Ser Lys

420 425 430

Arg Phe Gly Val Phe Leu Ser Glu Val Ser Glu Asn Lys Leu Arg Glu

435 440 445

Ile Ser Leu Asn His Glu Trp Thr Phe Glu Lys Leu Arg Gln His Ile

450 455 460

Ser Arg Asn Ala Gln Asp Lys Gln Glu Leu His Leu Phe Met Leu Ser

465 470 475 480

Gly Val Pro Asp Ala Val Phe Asp Leu Thr Asp Leu Asp Val Leu Lys

485 490 495

Leu Glu Leu Ile Pro Glu Ala Lys Ile Pro Ala Lys Ile Ser Gln Met

500 505 510

Thr Asn Leu Gln Glu Leu His Leu Cys His Cys Pro Ala Lys Val Glu

515 520 525

Gln Thr Ala Phe Ser Phe Leu Arg Asp His Leu Arg Cys Leu His Val

530 535 540

Lys Phe Thr Asp Val Ala Glu Ile Pro Ala Trp Val Tyr Leu Leu Lys

545 550 555 560

Asn Leu Arg Glu Leu Tyr Leu Ile Gly Asn Leu Asn Ser Glu Asn Asn

565 570 575

Lys Met Ile Gly Leu Glu Ser Leu Arg Glu Leu Arg His Leu Lys Ile

580 585 590

Leu His Val Lys Ser Asn Leu Thr Lys Val Pro Ser Asn Ile Thr Asp

595 600 605

Val Ala Pro His Leu Thr Lys Leu Val Ile His Asn Asp Gly Thr Lys

610 615 620

Leu Leu Val Leu Asn Ser Leu Lys Lys Met Met Asn Val Ala Glu Leu

625 630 635 640

Glu Leu Gln Asn Cys Glu Leu Glu Arg Ile Pro His Ala Ile Phe Ser

645 650 655

Leu Ser Asn Leu Gln Glu Leu Asp Leu Lys Ser Asn Asn Ile Arg Thr

660 665 670

Ile Glu Glu Ile Ile Ser Phe Gln His Leu Lys Arg Leu Thr Cys Leu

675 680 685

Lys Leu Trp His Asn Lys Ile Val Thr Ile Pro Pro Ser Ile Thr His

690 695 700

Val Lys Asn Leu Glu Ser Leu Tyr Phe Ser Asn Asn Lys Leu Glu Ser

705 710 715 720

Leu Pro Val Ala Val Phe Ser Leu Gln Lys Leu Arg Cys Leu Asp Val

725 730 735

Ser Tyr Asn Asn Ile Ser Met Ile Pro Ile Glu Ile Gly Leu Leu Gln

740 745 750

Asn Leu Gln His Leu His Ile Thr Gly Asn Lys Val Asp Ile Leu Pro

755 760 765

Lys Gln Leu Phe Lys Cys Ile Lys Leu Arg Thr Leu Asn Leu Gly Gln

770 775 780

Asn Cys Ile Thr Ser Leu Pro Glu Lys Val Gly Gln Leu Ser Gln Leu

785 790 795 800

Thr Gln Leu Glu Leu Lys Gly Asn Cys Leu Asp Arg Leu Pro Ala Gln

805 810 815

Leu Gly Gln Cys Arg Met Leu Lys Lys Ser Gly Leu Val Val Glu Asp

820 825 830

His Leu Phe Asp Thr Leu Pro Leu Glu Val Lys Glu Ala Leu Asn Gln

835 840 845

Asp Ile Asn Ile Pro Phe Ala Asn Gly Ile

850 855

<210> 199

<211> 629

<212> PRT

<213> Homo sapiens

<400> 199

Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe

1 5 10 15

Lys Lys Lys Ser Asn Glu Glu Leu Gln Asp Ser Tyr Leu Leu Pro Ile

20 25 30

Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp Pro

35 40 45

Ala His Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser Gly

50 55 60

Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg Thr Leu

65 70 75 80

Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg Trp Leu His

85 90 95

His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr Gln Val Val Tyr

100 105 110

Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe Phe Glu Arg Leu

115 120 125

His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp Val Gly Gly Glu

130 135 140

Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys Ala Gln Leu Leu

145 150 155 160

Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile Arg His Ala Val

165 170 175

Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile Tyr Ala Val Phe

180 185 190

Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser Ala Val Cys Ala

195 200 205

Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys Glu

210 215 220

Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu Thr

225 230 235 240

Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser Ser Asp Lys Ala

245 250 255

Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu Gln Val Val Gly

260 265 270

Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala Val

275 280 285

Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu Val Met Tyr Leu

290 295 300

Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val Ser Gly Asp Ser

305 310 315 320

Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro Asp Pro Glu Pro

325 330 335

Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala Val Phe Val Gly

340 345 350

Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn Cys Ser Val Tyr

355 360 365

Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro His Cys Ala Trp

370 375 380

Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala Pro Asn Leu Asn

385 390 395 400

Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp Ala Cys Ala

405 410 415

Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser Arg Pro Gln Ile

420 425 430

Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu Glu Leu Pro Cys

435 440 445

Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro Ala

450 455 460

Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu Leu

465 470 475 480

Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr Glu

485 490 495

Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln Asp

500 505 510

Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu His

515 520 525

Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala Ala

530 535 540

Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu Phe Ala

545 550 555 560

Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser Pro Leu Arg

565 570 575

Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu Thr Leu Arg Pro

580 585 590

Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu Gln Ser Pro Lys

595 600 605

Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn Asn Cys Leu

610 615 620

Gly Thr Glu Val Ala

625

<210> 200

<211> 662

<212> PRT

<213> Homo sapiens

<400> 200

Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe

1 5 10 15

Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile Arg Val Leu

20 25 30

Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr Phe Ala Phe

35 40 45

Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr Leu Leu Pro

50 55 60

Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp

65 70 75 80

Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser

85 90 95

Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg Thr

100 105 110

Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg Trp Leu

115 120 125

His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr Gln Val Val

130 135 140

Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe Phe Glu Arg

145 150 155 160

Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp Val Gly Gly

165 170 175

Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys Ala Gln Leu

180 185 190

Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile Arg His Ala

195 200 205

Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile Tyr Ala Val

210 215 220

Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser Ala Val Cys

225 230 235 240

Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys

245 250 255

Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu

260 265 270

Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser Ser Asp Lys

275 280 285

Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu Gln Val Val

290 295 300

Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala

305 310 315 320

Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu Val Met Tyr

325 330 335

Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val Ser Gly Asp

340 345 350

Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro Asp Pro Glu

355 360 365

Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala Val Phe Val

370 375 380

Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn Cys Ser Val

385 390 395 400

Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro His Cys Ala

405 410 415

Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala Pro Asn Leu

420 425 430

Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp Ala Cys

435 440 445

Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser Arg Pro Gln

450 455 460

Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu Glu Leu Pro

465 470 475 480

Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro

485 490 495

Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu

500 505 510

Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr

515 520 525

Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln

530 535 540

Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu

545 550 555 560

His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala

565 570 575

Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu Phe
580 585 590
Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser Pro Leu

595 600 605
Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu Thr Leu Arg
610 615 620
Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu Gln Ser Pro
625 630 635 640
Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn Asn Cys
645 650 655
Leu Gly Thr Glu Val Ala
660

<210> 201
<211> 592
<212> PRT
<213> Homo sapiens
<400> 201
Met Glu Gly Lys Gly Gln Ser Pro Phe Asp Pro Ala His Lys His Thr
1 5 10 15
Ala Val Leu Val Asp Gly Met Leu Tyr Ser Gly Thr Met Asn Asn Phe
20 25 30
Leu Gly Ser Glu Pro Ile Leu Met Arg Thr Leu Gly Ser Gln Pro Val
35 40 45
Leu Lys Thr Asp Asn Phe Leu Arg Trp Leu His His Asp Ala Ser Phe

50 55 60
Val Ala Ala Ile Pro Ser Thr Gln Val Val Tyr Phe Phe Phe Glu Glu
65 70 75 80
Thr Ala Ser Glu Phe Asp Phe Phe Glu Arg Leu His Thr Ser Arg Val
85 90 95
Ala Arg Val Cys Lys Asn Asp Val Gly Gly Glu Lys Leu Leu Gln Lys
100 105 110

Lys Trp Thr Thr Phe Leu Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly

115 120 125

Gln Leu Pro Phe Asn Val Ile Arg His Ala Val Leu Leu Pro Ala Asp

130 135 140

Ser Pro Thr Ala Pro His Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln

145 150 155 160

Val Gly Gly Thr Arg Ser Ser Ala Val Cys Ala Phe Ser Leu Leu Asp

165 170 175

Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr

180 185 190

Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly

195 200 205

Ser Cys Ser Val Gly Pro Ser Ser Asp Lys Ala Leu Thr Phe Met Lys

210 215 220

Asp His Phe Leu Met Asp Glu Gln Val Val Gly Thr Pro Leu Leu Val

225 230 235 240

Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala Val Glu Thr Ala Gln Gly

245 250 255

Leu Asp Gly His Ser His Leu Val Met Tyr Leu Gly Thr Thr Thr Gly

260 265 270

Ser Leu His Lys Ala Val Val Ser Gly Asp Ser Ser Ala His Leu Val

275 280 285

Glu Glu Ile Gln Leu Phe Pro Asp Pro Glu Pro Val Arg Asn Leu Gln

290 295 300

Leu Ala Pro Thr Gln Gly Ala Val Phe Val Gly Phe Ser Gly Gly Val

305 310 315 320

Trp Arg Val Pro Arg Ala Asn Cys Ser Val Tyr Glu Ser Cys Val Asp

325 330 335

Cys Val Leu Ala Arg Asp Pro His Cys Ala Trp Asp Pro Glu Ser Arg

340 345 350

Thr Cys Cys Leu Leu Ser Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp

355 360 365

Met Glu Arg Gly Asn Pro Glu Trp Ala Cys Ala Ser Gly Pro Met Ser

370 375 380

Arg Ser Leu Arg Pro Gln Ser Arg Pro Gln Ile Ile Lys Glu Val Leu

385 390 395 400

Ala Val Pro Asn Ser Ile Leu Glu Leu Pro Cys Pro His Leu Ser Ala

405 410 415

Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro Ala Ala Val Pro Glu Ala

420 425 430

Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu Leu Ile Val Gln Asp Gly

435 440 445

Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr

450 455 460

Pro Val Ile Ser Tyr Trp Val Asp Ser Gln Asp Gln Thr Leu Ala Leu

465 470 475 480

Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu His Val Lys Val Pro Leu

485 490 495

Thr Arg Val Ser Gly Gly Ala Ala Leu Ala Ala Gln Gln Ser Tyr Trp

500 505 510

Pro His Phe Val Thr Val Thr Val Leu Phe Ala Leu Val Leu Ser Gly

515 520 525

Ala Leu Ile Ile Leu Val Ala Ser Pro Leu Arg Ala Leu Arg Ala Arg

530 535 540

Gly Lys Val Gln Gly Cys Glu Thr Leu Arg Pro Gly Glu Lys Ala Pro

545 550 555 560

Leu Ser Arg Glu Gln His Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser

565 570 575

Ala Ser Asp Val Asp Ala Asp Asn Asn Cys Leu Gly Thr Glu Val Ala

580 585 590

<210> 202

<211> 723

<212> PRT

<213> Homo sapiens

<400> 202

Met Cys Thr Val Val Pro Ala Glu Gly Asp Glu Arg Arg Ala Leu Ser
1 5 10 15

Phe Phe His Gln Lys Gly Leu Gln Asp Phe Asp Thr Leu Leu Leu Ser
20 25 30

Gly Asp Gly Asn Thr Leu Tyr Val Gly Ala Arg Glu Ala Ile Leu Ala
35 40 45

Leu Asp Ile Gln Asp Pro Gly Val Pro Arg Leu Lys Asn Met Ile Pro
50 55 60

Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe Lys Lys Lys
65 70 75 80

Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile Arg Val Leu Val Ser Tyr
85 90 95

Asn Val Thr His Leu Tyr Thr Cys Gly Thr Phe Ala Phe Ser Pro Ala
100 105 110

Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr Leu Leu Pro Ile Ser Glu
115 120 125

Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp Pro Ala His
130 135 140

Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser Gly Thr Met
145 150 155 160

Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg Thr Leu Gly Ser
165 170 175

Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg Trp Leu His His Asp
180 185 190

Ala Ser Phe Val Ala Ala Ile Pro Ser Thr Gln Val Val Tyr Phe Phe
195 200 205

Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe Phe Glu Arg Leu His Thr
210 215 220

Ser Arg Val Ala Arg Val Cys Lys Asn Asp Val Gly Gly Glu Lys Leu
225 230 235 240
Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys Ala Gln Leu Leu Cys Thr
245 250 255
Gln Pro Gly Gln Leu Pro Phe Asn Val Ile Arg His Ala Val Leu Leu
260 265 270
Pro Ala Asp Ser Pro Thr Ala Pro His Ile Tyr Ala Val Phe Thr Ser
275 280 285

Gln Trp Gln Val Gly Gly Thr Arg Ser Ser Ala Val Cys Ala Phe Ser
290 295 300
Leu Leu Asp Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys Glu Leu Asn
305 310 315 320
Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu Thr Asn Pro
325 330 335
Arg Pro Gly Ser Cys Ser Val Gly Pro Ser Ser Asp Lys Ala Leu Thr
340 345 350

Phe Met Lys Asp His Phe Leu Met Asp Glu Gln Val Val Gly Thr Pro
355 360 365
Leu Leu Val Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala Val Glu Thr
370 375 380
Ala Gln Gly Leu Asp Gly His Ser His Leu Val Met Tyr Leu Gly Thr
385 390 395 400
Thr Thr Gly Ser Leu His Lys Ala Val Val Ser Gly Asp Ser Ser Ala
405 410 415

His Leu Val Glu Glu Ile Gln Leu Phe Pro Asp Pro Glu Pro Val Arg
420 425 430
Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala Val Phe Val Gly Phe Ser
435 440 445
Gly Gly Val Trp Arg Val Pro Arg Ala Asn Cys Ser Val Tyr Glu Ser
450 455 460
Cys Val Asp Cys Val Leu Ala Arg Asp Pro His Cys Ala Trp Asp Pro

465 470 475 480

Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala Pro Asn Leu Asn Ser Trp
485 490 495
Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp Ala Cys Ala Ser Gly
500 505 510
Pro Met Ser Arg Ser Leu Arg Pro Gln Ser Arg Pro Gln Ile Ile Lys
515 520 525
Glu Val Leu Ala Val Pro Asn Ser Ile Leu Glu Leu Pro Cys Pro His
530 535 540

Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro Ala Ala Val
545 550 555 560
Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu Leu Ile Val
565 570 575
Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr Glu Asn Gly
580 585 590
Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln Asp Gln Thr
595 600 605

Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu His Val Lys
610 615 620
Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala Ala Gln Gln
625 630 635 640
Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu Phe Ala Leu Val
645 650 655
Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser Pro Leu Arg Ala Leu
660 665 670

Arg Ala Arg Gly Lys Val Gln Gly Cys Glu Thr Leu Arg Pro Gly Glu
675 680 685
Lys Ala Pro Leu Ser Arg Glu Gln His Leu Gln Ser Pro Lys Glu Cys
690 695 700
Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn Asn Cys Leu Gly Thr
705 710 715 720

Glu Val Ala

<210> 203

<211> 761

<212> PRT

<213> Homo sapiens

<400> 203

Met Ala Leu Pro Ala Leu Gly Leu Asp Pro Trp Ser Leu Leu Gly Leu

1 5 10 15

Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr Ala Gly

20 25 30

Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly Asp

35 40 45

Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp Phe

50 55 60

Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly Ala

65 70 75 80

Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro Arg

85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu

100 105 110

Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile

115 120 125

Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr

130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr

145 150 155 160

Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser

165 170 175

Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met

180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu

195 200 205

Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu

210 215 220

Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr

225 230 235 240

Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe

245 250 255

Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp

260 265 270

Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys

275 280 285

Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile

290 295 300

Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile

305 310 315 320

Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser

325 330 335

Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly

340 345 350

Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg

355 360 365

Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser

370 375 380

Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu

385 390 395 400

Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr

405 410 415

Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu

420 425 430

Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val

435 440 445

Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro

450 455 460

Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala

465 470 475 480

Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn

485 490 495

Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro

500 505 510

His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala

515 520 525

Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu

530 535 540

Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser

545 550 555 560

Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu

565 570 575

Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser

580 585 590

His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly

595 600 605

Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys

610 615 620

Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val

625 630 635 640

Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile

645 650 655

Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala

660 665 670

Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr

675 680 685

Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala

690 695 700

Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu

705 710 715 720

Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu

725 730 735

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp

740 745 750

Asn Asn Cys Leu Gly Thr Glu Val Ala

755 760

<210> 204

<211> 662

<212> PRT

<213> Homo sapiens

<400> 204

Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu Cys Ala Phe

1 5 10 15

Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile Arg Val Leu

20 25 30

Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr Phe Ala Phe

35 40 45

Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr Leu Leu Pro

50 55 60

Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser Pro Phe Asp

65 70 75 80

Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met Leu Tyr Ser

85 90 95

Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu Met Arg Thr

100 105 110

Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu Arg Trp Leu

115 120 125

His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr Gln Val Val

130 135 140

Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe Phe Glu Arg

145 150 155 160

Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn Asp Val Gly Gly

165 170 175

Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys Ala Gln Leu

180 185 190

Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val Ile Arg His Ala

195 200 205

Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His Ile Tyr Ala Val

210 215 220

Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser Ala Val Cys

225 230 235 240

Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys Gly Lys Tyr Lys

245 250 255

Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg Gly Pro Glu

260 265 270

Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro Ser Ser Asp Lys

275 280 285

Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu Gln Val Val

290 295 300

Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr Arg Leu Ala

305 310 315 320

Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His Leu Val Met Tyr

325 330 335

Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val Val Ser Gly Asp

340 345 350

Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe Pro Asp Pro Glu

355 360 365

Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly Ala Val Phe Val

370 375 380

Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala Asn Cys Ser Val

385 390 395 400

Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro His Cys Ala

405 410 415

Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala Pro Asn Leu

420 425 430

Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp Ala Cys

435 440 445

Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser Arg Pro Gln

450 455 460

Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu Glu Leu Pro

465 470 475 480

Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser His Gly Pro

485 490 495

Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly Ser Leu Leu

500 505 510

Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Trp Ala Thr

515 520 525

Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val Asp Ser Gln

530 535 540

Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile Pro Arg Glu

545 550 555 560

His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala Ala Leu Ala

565 570 575

Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr Val Leu Phe

580 585 590

Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala Ser Pro Leu

595 600 605

Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu Thr Leu Arg

610 615 620

Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu Gln Ser Pro
625 630 635 640
Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn Asn Cys

645 650 655
Leu Gly Thr Glu Val Ala
660

<210> 205
<211> 335
<212> PRT
<213> Homo sapiens
<400> 205

Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro
1 5 10 15
Gly Asn Val Val Ser Gln Ser Ser Leu Thr Pro Leu Met Val Asn Gly
20 25 30
Ile Leu Gly Glu Ser Val Thr Leu Pro Leu Glu Phe Pro Ala Gly Glu

35 40 45
Lys Val Asn Phe Ile Thr Trp Leu Phe Asn Glu Thr Ser Leu Ala Phe
50 55 60
Ile Val Pro His Glu Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro
65 70 75 80
Lys Gln Gly Lys Arg Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu
85 90 95
Ser Asn Leu Lys Met Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser

100 105 110
Thr Lys Thr Ser Ala Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Arg
115 120 125
Gln Leu Arg Asn Ile Gln Val Thr Asn His Ser Gln Leu Phe Gln Asn
130 135 140
Met Thr Cys Glu Leu His Leu Thr Cys Ser Val Glu Asp Ala Asp Asp
145 150 155 160

Asn Val Ser Phe Arg Trp Glu Ala Leu Gly Asn Thr Leu Ser Ser Gln

165 170 175

Pro Asn Leu Thr Val Ser Trp Asp Pro Arg Ile Ser Ser Glu Gln Asp

180 185 190

Tyr Thr Cys Ile Ala Glu Asn Ala Val Ser Asn Leu Ser Phe Ser Val

195 200 205

Ser Ala Gln Lys Leu Cys Glu Asp Val Lys Ile Gln Tyr Thr Asp Thr

210 215 220

Lys Met Ile Leu Phe Met Val Ser Gly Ile Cys Ile Val Phe Gly Phe

225 230 235 240

Ile Ile Leu Leu Leu Leu Val Leu Arg Lys Arg Arg Asp Ser Leu Ser

245 250 255

Leu Ser Thr Gln Arg Thr Gln Gly Pro Ala Glu Ser Ala Arg Asn Leu

260 265 270

Glu Tyr Val Ser Val Ser Pro Thr Asn Asn Thr Val Tyr Ala Ser Val

275 280 285

Thr His Ser Asn Arg Glu Thr Glu Ile Trp Thr Pro Arg Glu Asn Asp

290 295 300

Thr Ile Thr Ile Tyr Ser Thr Ile Asn His Ser Lys Glu Val Ser Pro

305 310 315 320

Arg Leu Leu His Val Phe Ile Phe Leu Pro Leu Ser Thr Asp Leu

325 330 335

<210> 206

<211> 283

<212> PRT

<213> Homo sapiens

<400> 206

Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro

1 5 10 15

Val Pro His Glu Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro Lys

20 25 30

Gln Gly Lys Arg Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu Ser
35 40 45
Asn Leu Lys Met Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser Thr
50 55 60
Lys Thr Ser Ala Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Arg Gln
65 70 75 80

Leu Arg Asn Ile Gln Val Thr Asn His Ser Gln Leu Phe Gln Asn Met
85 90 95
Thr Cys Glu Leu His Leu Thr Cys Ser Val Glu Asp Ala Asp Asp Asn
100 105 110
Val Ser Phe Arg Trp Glu Ala Leu Gly Asn Thr Leu Ser Ser Gln Pro
115 120 125
Asn Leu Thr Val Ser Trp Asp Pro Arg Ile Ser Ser Glu Gln Asp Tyr
130 135 140

Thr Cys Ile Ala Glu Asn Ala Val Ser Asn Leu Ser Phe Ser Val Ser
145 150 155 160
Ala Gln Lys Leu Cys Glu Asp Val Lys Ile Gln Tyr Thr Asp Thr Lys
165 170 175
Met Ile Leu Phe Met Val Ser Gly Ile Cys Ile Val Phe Gly Phe Ile
180 185 190
Ile Leu Leu Leu Leu Val Leu Arg Lys Arg Arg Asp Ser Leu Ser Leu
195 200 205

Ser Thr Gln Arg Thr Gln Gly Pro Ala Glu Ser Ala Arg Asn Leu Glu
210 215 220
Tyr Val Ser Val Ser Pro Thr Asn Asn Thr Val Tyr Ala Ser Val Thr
225 230 235 240
His Ser Asn Arg Glu Thr Glu Ile Trp Thr Pro Arg Glu Asn Asp Thr
245 250 255
Ile Thr Ile Tyr Ser Thr Ile Asn His Ser Lys Glu Ser Lys Pro Thr
260 265 270

Phe Ser Arg Ala Thr Ala Leu Asp Asn Val Val

275 280

<210> 207

<211> 220

<212> PRT

<213> Homo sapiens

<400> 207

Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro
1 5 10 15

Gly Gln Leu Arg Asn Ile Gln Val Thr Asn His Ser Gln Leu Phe Gln
20 25 30

Asn Met Thr Cys Glu Leu His Leu Thr Cys Ser Val Glu Asp Ala Asp
35 40 45

Asp Asn Val Ser Phe Arg Trp Glu Ala Leu Gly Asn Thr Leu Ser Ser
50 55 60

Gln Pro Asn Leu Thr Val Ser Trp Asp Pro Arg Ile Ser Ser Glu Gln
65 70 75 80

Asp Tyr Thr Cys Ile Ala Glu Asn Ala Val Ser Asn Leu Ser Phe Ser
85 90 95

Val Ser Ala Gln Lys Leu Cys Glu Asp Val Lys Ile Gln Tyr Thr Asp
100 105 110

Thr Lys Met Ile Leu Phe Met Val Ser Gly Ile Cys Ile Val Phe Gly
115 120 125

Phe Ile Ile Leu Leu Leu Leu Val Leu Arg Lys Arg Arg Asp Ser Leu
130 135 140

Ser Leu Ser Thr Gln Arg Thr Gln Gly Pro Glu Ser Ala Arg Asn Leu
145 150 155 160

Glu Tyr Val Ser Val Ser Pro Thr Asn Asn Thr Val Tyr Ala Ser Val
165 170 175

Thr His Ser Asn Arg Glu Thr Glu Ile Trp Thr Pro Arg Glu Asn Asp
180 185 190

Thr Ile Thr Ile Tyr Ser Thr Ile Asn His Ser Lys Glu Ser Lys Pro
195 200 205

Thr Phe Ser Arg Ala Thr Ala Leu Asp Asn Val Val
210 215 220

<210> 208

<211> 184

<212> PRT

<213> Homo sapiens

<400> 208

Met Leu Gln Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser
1 5 10 15

Leu Leu His Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr
20 25 30

Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser
35 40 45

Val Lys Gly Thr Asn Ala Ile Leu Trp Thr Cys Leu Gly Leu Ser Leu
50 55 60

Ile Ile Ser Leu Ala Val Phe Val Leu Met Phe Leu Leu Arg Lys Ile
65 70 75 80

Asn Ser Glu Pro Leu Lys Asp Glu Phe Lys Asn Thr Gly Ser Gly Leu
85 90 95

Leu Gly Met Ala Asn Ile Asp Leu Glu Lys Ser Arg Thr Gly Asp Glu
100 105 110

Ile Ile Leu Pro Arg Gly Leu Glu Tyr Thr Val Glu Glu Cys Thr Cys
115 120 125

Glu Asp Cys Ile Lys Ser Lys Pro Lys Val Asp Ser Asp His Cys Phe
130 135 140

Pro Leu Pro Ala Met Glu Glu Gly Ala Thr Ile Leu Val Thr Thr Lys
145 150 155 160

Thr Asn Asp Tyr Cys Lys Ser Leu Pro Ala Ala Leu Ser Ala Thr Glu
165 170 175

Ile Glu Lys Ser Ile Ser Ala Arg
180