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(54) 名稱

具有增強之組織分布之雙特異性單鏈抗體構築體

BISPECIFIC SINGLE CHAIN ANTIBODY CONSTRUCT WITH ENHANCED TISSUE DISTRIBUTION

(57) 摘要

本發明提供一種經由第一結合結構域結合於標靶細胞表面抗原且經由第二結合結構域結合於 T 細胞表面抗原 CD3 的雙特異性單鏈抗體構築體，該構築體包含兩個 FcRn 結合肽。此外，本發明提供一種編碼該抗體構築體之核酸分子、包含該核酸分子之載體及用該載體轉型或轉染之宿主細胞。此外，本發明提供一種製備本發明之抗體構築體之方法、該抗體構築體之醫療用途及包含該抗體構築體之套組。

The present invention provides to a bispecific single chain antibody construct binding to a target cell surface antigen via a first binding domain and to the T cell surface antigen CD3 via a second binding domain, the construct comprising two FcRn binding peptides. Moreover, the invention provides a nucleic acid molecule encoding the antibody construct, a vector comprising said nucleic acid molecule and a host cell transformed or transfected with said vector. Furthermore, the invention provides a process for the production of the antibody construct of the invention, a medical use of said antibody construct and a kit comprising said antibody construct.

指定代表圖：

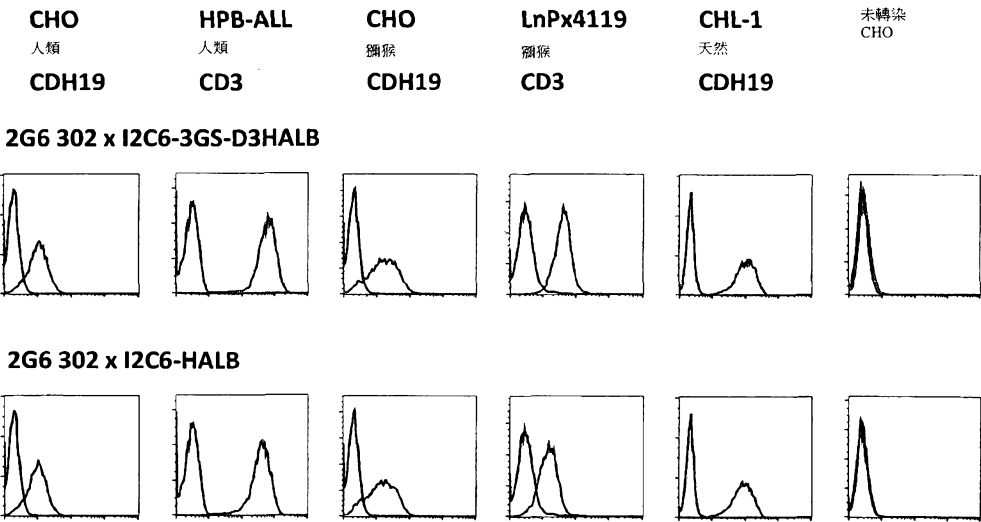


圖2(1)

發明專利說明書

(本說明書格式、順序，請勿任意更動)

【發明名稱】

具有增強之組織分布之雙特異性單鏈抗體構築體

BISPECIFIC SINGLE CHAIN ANTIBODY CONSTRUCT WITH
ENHANCED TISSUE DISTRIBUTION

【技術領域】

本發明係關於一種經由第一結合結構域結合於標靶細胞表面抗原且經由第二結合結構域結合於T細胞表面抗原CD3的雙特異性單鏈抗體構築體，該構築體包含兩個FcRn結合肽。此外，本發明提供一種編碼該抗體構築體之核酸分子、包含該核酸分子之載體及用該載體轉型或轉染之宿主細胞。此外，本發明提供一種製備本發明之抗體構築體之方法、該抗體構築體之醫療用途及包含該抗體構築體之套組。

【先前技術】

在開發醫藥組合物期間之決定性問題為一定數量之活性化化合物是否到達其標靶以展示功效。對於例如在治療癌症、病毒或發炎性疾病中利用雙特異性T細胞接合抗體衍化之化合物的治療方法，相應問題為抗體衍化之化合物是否在標靶細胞之區室中達到足夠濃度。雙特異性分子(諸如BiTE[®] (雙特異性T細胞接合分子)抗體)為由兩個可撓性連接之抗體衍化之結合結構域組成的重組蛋白質構築體。BiTE[®]抗體之一個結合結構域特異於標靶細胞上之所選腫瘤相關表面抗原；第二結合結構域特異於CD3，即T細胞上T細胞受體複合物之次單位。藉由其特定設計，BiTE[®]抗體特別適合短暫連接具有標靶細胞之T細胞，且同時強力活化T細胞抗標靶細胞之固有細胞溶解潛力。BiTE[®]抗體為小蛋白質，其分子量使得彼等類型之化合物經由旁細胞擴散滲入內

皮障壁後之區室中。然而，小蛋白質(諸如BiTE[®]抗體)之不利方面為低於腎截止值之分子量，其可能使半衰期較短，此為BiTE[®]抗體與多種其他抗體形式共有的特徵。

延長之半衰期通常適用於活體內應用免疫球蛋白、尤其抗體且最尤其小尺寸之抗體片段。儘管此類基於抗體片段之抗體構築體(Fv、二硫化物鍵結之Fv、Fab、scFv、dAb)能夠快速到達身體之大多數部分，但彼等抗體構築體很可能遭受自身體快速清除。此項技術中描述之用於延長抗體構築體(諸如單鏈雙功能抗體)之半衰期的策略包括結合聚乙二醇鏈(聚乙二醇化)、融合於IgG Fc區或來自鏈球菌蛋白G之白蛋白結合結構域(參見Stork 2009, JBC 284(38), 第25612頁)。所有彼等方法具有不同問題，必須分別解決。聚乙二醇化可能不可逆，或該方法可能損害抗體構築體之生物活性及/或組織分布。雙特異性抗體構築體與IgG Fc區融合可獲得三功能分子，如對於卡托莫西單抗(Catumaxomab)所述，其能夠經由Fc-FcR功能募集另一細胞類型。此外，融合細菌來源之白蛋白結合結構域可提高抗體構築體之免疫原性，且此項技術中通常認可免疫原性必須減至最小以在患者中獲得基於蛋白質之化合物的持久功效。

因此，一方面需要具有小結合分子，因為其可例如快速到達其在體內之指定位置且亦可到達身體之大多數部分，另一方面此類結合分子之小「尺寸」在尤其腎清除率方面非有利的。使抗體構築體之分子量增大至高於腎清除率之臨限值的策略的代價可為所瞭解之組織分布受損或抗體功能之空間損害。因此，其為小尺寸、腎清除率、穩定性/功能及組織分布之間的平衡作用。

定義

必須注意，如本文中所用，除非上下文另外明確指明，否則單數形式「一(a)」、「一(an)」及「該(the)」包括複數個參考物。因此，

例如提及「試劑」包括此類不同試劑中之一或多者，且提及「方法」包括提及一般技術者已知的可針對本文中所述之方法修改或取代的等效步驟及方法。

除非另外指明，否則在一系列要素之前的術語「至少」應理解為指系列中之每個元素。僅僅使用常規實驗，熟習此項技術者將認識到或能夠確定本文所述之本發明之特定實施例的多個等效物。此類等效物意欲由本發明涵蓋。

本文各處所用之術語「及/或」包括含義「及」、「或」及「由該術語連接之要素之所有或任何其他組合」。

如本文中所用，術語「約(about)」或「約(approximately)」意謂在既定值或範圍之 $\pm 20\%$ 內、較佳 $\pm 15\%$ 內、更佳 $\pm 10\%$ 內且最佳 $\pm 5\%$ 內。

在本說明書及隨後之申請專利範圍全文中，除非上下文另外需要，否則詞語「包含(comprise)」及變化形式(諸如「包含(comprises)」及「包含(comprising)」)應理解為暗示包括所述整數或步驟或整數或步驟之群，但不排除任何其他整數或步驟或整數或步驟之群。當在本文中使用時，術語「包含」可經術語「含有」或「包括」取代，或有時當在本文中使用時，經術語「具有」取代。

當在本文中使用時，「由...組成」排除所主張要素中未規定之任何要素、步驟或成分。在本文中使用時，「基本上由...組成」不排除本質上不影響技術方案之基本及新穎特徵的材料或步驟。

在本文各狀況下，任何術語「包含」、「基本上由...組成」及「由...組成」可用另外兩個術語中之任一者替代。

【發明內容】

如上文所述，提高雙特異性單鏈抗體構築體之分布量的較佳策略為連接小肽結構域，其獲得較佳組織分布特徵，而避免由於空間作

用損害分子之T細胞接合功能。在此情形下，Sokolosky (PNAS 2012, 109(40), 第16095頁))針對球形螢光重組蛋白描述一種可能方法。此方法描述結合於新生兒Fc受體(FcRn)之短末端肽延伸部分之融合物。Sokolosky所用之重組蛋白(mKate)經修飾以藉由利用FcRn介導之再循環及穿胞運輸系統延長彼等蛋白質之半衰期。然而，使用mKate，一種海葵奶嘴珊瑚(*Entacmaea quadricolor*)之遠紅色螢光蛋白與FcRn結合肽之組合，為極簡化模型系統。與mKate蛋白質相比，T細胞接合雙特異性抗體構築體為複雜得多的結構，為了其功能，其需要正確形成結合結構域以使得可結合於其特異性抗原決定基。此結合為接合患者自身T細胞之前提條件，其中彼等細胞帶有標靶抗原決定基(其為標靶結合結構域之抗原決定基)，從而使得標靶細胞之細胞毒性去除。當然，雙特異性T細胞接合抗體構築體之功能的另一決定性因素為是否仍可產生符合醫藥效用之行業標準之構築體的問題。鑒於上述技術領域，本發明之潛在問題為提供相較於此項技術中已知之雙特異性T細胞接合抗體構築體展示增強之組織分布的功能性雙特異性單鏈抗體構築體。

本發明提供一種經由第一結合結構域結合於標靶細胞表面抗原且經由第二結合結構域結合於T細胞表面抗原CD3的雙特異性單鏈抗體構築體，該構築體包含兩個FcRn結合肽，其中：

(a) 第一FcRn結合肽包含胺基酸序列**QRFVTGHFGGLX₁PANG** (SEQ ID NO: 1)，其中X₁為Y或H；且

(b) 第二FcRn結合肽包含胺基酸序列**TGHFGGLHP** (SEQ ID NO: 4)；

其中該雙特異性單鏈抗體構築體不具有SEQ ID NO: 132-135中所描繪之胺基酸序列。

在本發明抗體構築體之一個實施例中，第二FcRn結合肽包含胺

基 酸 序 列 **QRFVTGHFGGLHPANG** (SEQ ID NO: 3) 或 **QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)。

術語「抗體構築體」指如下分子，其中結構及/或功能基於抗體(例如全長或完整免疫球蛋白分子)之結構及/或功能。因此，抗體構築體能夠結合於其特異性標靶或抗原。此外，本發明之抗體構築體包含抗體之允許標靶結合之最小結構需要。此最小需要可例如藉由存在至少三個輕鏈CDR (亦即VL區之CDR1、CDR2及CDR3)及/或三個重鏈CDR (亦即VH區之CDR1、CDR2及CDR3)定義。本發明之構築體所基於之抗體包括例如單株、重組、嵌合、去免疫、人類化及人類抗體。

包括駱駝抗體及藉由生物技術或蛋白質工程改造方法或製程產生之其他免疫球蛋白抗體之全長或完整抗體在本發明之「抗體構築體」之定義內。此等全長抗體可為例如單株、重組、嵌合、去免疫、人類化及人類抗體。全長抗體之片段(諸如VH、VHH、VL、(s)dAb、Fv、Fd、Fab、Fab'、F(ab')₂或「r IgG」(「半抗體」))亦在「抗體構築體」之定義內。本發明之抗體構築體亦可為抗體之經修飾片段，亦稱為抗體變異體，諸如scFv；di-scFv或bi(s)-scFv；scFv-Fc；scFv拉鏈；scFab；Fab₂；Fab₃；雙功能抗體；單鏈雙功能抗體；串聯雙功能抗體(Tandab)；串聯di-scFv；串聯tri-scFv；「微型抗體」，其由如下結構例示：(VH-VL-CH₃)₂、(scFv-CH₃)₂或(scFv-CH₃-scFv)₂；多功能抗體，諸如三功能抗體或四功能抗體；及單結構域抗體，諸如奈米抗體；或僅包含一個可變結構域(其可為VHH、VH或VL)之獨立於其他V區或結構域特異性結合抗原或抗原決定基的單可變結構域抗體。

此外，術語「抗體構築體」之定義包括單價、二價及多價(polyvalent/multivalent)構築體，且因此包括特異性結合於僅一種抗原結構之單特異性構築體以及經由不同結合結構域特異性結合超過一種抗原結構(例如兩種、三種或三種以上)之雙特異性及多特異性

(polyspecific/multispecific)構築體。此外，術語「抗體構築體」之定義包括僅由一個多肽鏈組成之分子以及由超過一個多肽鏈組成之分子，該等鏈可相同(均二聚體、均三聚體或均寡聚物)或不同(雜二聚體、雜三聚體或雜寡聚物)。以上鑑別之抗體及其變異體或衍生物之實例尤其描述於Harlow及Lane, *Antibodies a laboratory manual*, CSHL Press (1988)；及Using *Antibodies: a laboratory manual*, CSHL Press (1999)；Kontermann及Dübel, *Antibody Engineering*, Springer, 第2版, 2010；及Little, *Recombinant Antibodies for Immunotherapy*, Cambridge University Press 2009中。

本發明之抗體構築體較佳為「活體外產生之抗體構築體」。此術語指根據上述定義之抗體構築體，其中所有或一部分可變區(例如至少一個CDR)在非免疫細胞選擇(例如活體外噬菌體呈現)蛋白晶片或候選序列可測試其結合於抗原之能力的任何其他方法中產生。因此，此術語較佳排除僅藉由在動物中在免疫細胞中進行基因組重排產生的序列。「重組抗體」為經由使用重組DNA技術或遺傳工程改造製備之抗體。

本發明係針對「單鏈抗體構築體」。因此，彼等單鏈抗體構築體僅包括上述由單一多肽鏈組成之抗體構築體的彼等實施例。

如本文所用，術語「單株抗體」(mAb)或單株抗體構築體係指獲自實質上均質抗體之群的抗體，亦即，構成該群之個別抗體除可少量存在之可能天然存在之突變及/或轉譯後修飾(例如異構、醯胺化)以外為相同的。與通常包括針對不同決定子(或抗原決定基)之不同抗體的習知(多株)抗體製劑相比，單株抗體對抗原上之單一抗原位點或決定子具有高度特異性。除其特異性之外，單株抗體之有利之處在於其藉由融合瘤培養合成，因此未受其他免疫球蛋白污染。修飾語「單株」表明抗體係自實質上均質之抗體群獲得之特徵，且不應理解為需要藉

由任何特定方法產生該抗體。

為製備單株抗體，可使用提供藉由藉由連續細胞株培養物製備之抗體的任何技術。舉例而言，欲使用之單株抗體可藉由首先由Kohler等人，Nature, 256:495(1975)描述之融合瘤方法製得或可藉由重組DNA方法(參見例如美國專利第4,816,567號)製得。製備人類單株抗體之其他技術的實例包括三源雜交瘤技術、人類B細胞融合瘤技術(Kozbor, Immunology Today 4 (1983), 72)及EBV融合瘤技術(Cole等人, Monoclonal Antibodies and Cancer Therapy, Alan R. Liss, Inc. (1985), 77-96)。

融合瘤可隨後使用標準方法篩選，諸如酶聯免疫吸附分析(ELISA)及表面電漿子共振(BIACORE™)分析，以鑑別一或多個產生與特定抗原特異性結合之抗體的融合瘤。相關抗原之任何形式可用作免疫原，例如重組抗原、天然存在形式、其任何變異體或片段以及其抗原肽。BIAcore系統中所用之表面電漿子共振可用於提高結合於標靶抗原(諸如標靶細胞表面抗原或CD3 ϵ)之抗原決定基的噬菌體抗體之效率(Schier, Human Antibodies Hybridomas 7 (1996), 97-105 ; Malmberg, J. Immunol. Methods 183 (1995), 7-13)。

製備單株抗體之另一例示性方法包括篩選蛋白質表現庫，例如噬菌體呈現或核糖體呈現庫。噬菌體呈現例如描述於Ladner等人，美國專利第5,223,409號；Smith (1985) Science 228:1315-1317，Clackson等人，Nature, 352: 624-628 (1991)及Marks等人，J. Mol. Biol., 222: 581-597 (1991)中。

除使用呈現庫以外，可使用相關抗原使非人類動物(例如嚙齒動物(諸如小鼠、倉鼠、兔或大鼠))免疫。在一個實施例中，非人類動物包括人類免疫球蛋白基因之至少一部分。舉例而言，可用人類Ig (免疫球蛋白)基因座之大片段工程改造缺乏小鼠抗體產生之小鼠品系。

使用融合瘤技術，可產生及選擇衍生自具有所要特異性之基因的抗原特異性單株抗體。參見例如 XENOMOUSE™，Green 等人，(1994) Nature Genetics 7:13-21；US 2003-0070185；WO 96/34096；及 WO96/33735。

單株抗體亦可獲自非人類動物，隨後使用此項技術中已知之重組DNA技術修飾，例如人類化、去免疫、使其嵌合等。經修飾之抗體構築體之實例包括非人類抗體、「親和力成熟」抗體之人類化變異體(參見例如Hawkins等人, J. Mol. Biol. 254, 889-896 (1992)及Lowman等人, Biochemistry 30, 10832-10837 (1991))及具有改變之效應功能的抗體突變體(參見例如美國專利5,648,260, Kontermann及Dübel (2010), 上述引文及Little(2009), 上述引文)。

在免疫學中，親和力成熟為如下方法，藉由該方法在免疫反應過程期間B細胞產生對抗原具有增加之親和力的抗體。在重複暴露於相同抗原下，宿主將產生具有相繼增大之親和力的抗體。如天然原型，活體外親和力成熟基於突變及選擇之原理。活體外親和力成熟成功地用於最佳化抗體、抗體構築體及抗體片段。使用輻射、化學誘變劑或易錯PCR在CDR內引入隨機突變。此外，可藉由鏈改組增加遺傳多樣性。使用呈現方法(如噬菌體呈現)之兩或三輪突變及選擇通常產生親和力在低奈莫耳範圍內之抗體片段。

抗體構築體之胺基酸取代變異之較佳類型包括取代親本抗體(例如人類化或人類抗體)之一或多個高變區殘基。一般而言，選用於進一步研究之所得變異體應相對於產生其之親本抗體具有改良之生物特性。產生此類取代變異體之適宜方法包括使用噬菌體呈現之親和力成熟。簡言之，使數個高變區位點(例如6-7個位點)突變以在各位點產生所有可能之胺基酸取代。因此產生之抗體變異體以單價方式自絲狀噬菌體粒子以與包裝在各粒子內之M13的基因III產物的融合物形式呈

現。隨後如本文所揭示將噬菌體呈現之變異體針對其生物活性(例如結合親和力)進行篩選。為鑑別用於修飾之候選高變區位點，可進行丙胺酸掃描突變誘發以鑑別顯著有助於抗原結合之高變區殘基。替代地或另外，可能宜分析抗原-抗體複合物之晶體結構以鑑別結合結構域與例如人類標靶細胞表面抗原之間的接觸點。此類接觸殘基及鄰近殘基為用於根據本文中詳述之技術取代的候選物。在產生此類變異體後，如本文所述對變異體組合進行篩選，且可選擇在一或多個相關分析中具有優良特性之抗體用於進一步研究。

本發明之單株抗體及抗體構築體尤其包括「嵌合」抗體(免疫球蛋白)，其中重鏈及/或輕鏈之一部分與衍生自特定物種或屬於特定抗體類別或子類之抗體中的相應序列一致或同源，而鏈之其餘部分與衍生自另一物種或屬於另一抗體類別或子類之抗體中的相應序列以及此類抗體之片段(只要其展現所需生物活性即可)一致或同源(美國專利第4,816,567號；Morrison等人, *Proc. Natl. Acad. Sci. USA*, 81: 6851-6855 (1984))。本文之相關嵌合抗體包括「靈長化」抗體，其包含衍生自非人類靈長類動物(例如舊世紀猴、猿等)之可變結構域抗原結合序列及人類恆定區序列。已描述多種製備嵌合抗體之方法。參見例如 Morrison等人, *Proc. Natl. Acad. Sci. U.S.A.* 81:6851, 1985；Takeda等人, *Nature* 314:452, 1985，Cabilly等人，美國專利第4,816,567號；Boss等人，美國專利第4,816,397號；Tanaguchi等人，EP 0171496；EP 0173494；及GB 2177096。

An antibody, antibody construct or antibody fragment may also be modified by specific deletion of human T cell epitopes (a method called "deimmunization") by the methods disclosed in WO 98/52976 and WO 00/34317. 簡言之，針對結合於MHC II類之肽分析抗體之重鏈及輕鏈可變結構域；此等肽代表潛在T細胞抗原決定基(如WO 98/52976及

WO 00/34317所定義)。為偵測潛在T細胞抗原決定基，可施用稱為「肽穿針引線法」之電腦模型化法，且另外，可搜索人類MHC II類結合肽之資料庫中的VH及VL序列中所存在之基元，如WO 98/52976及WO 00/34317中所述。此等基元結合於18個主要MHC II類DR異型中之任一者，因此構成潛在T細胞抗原決定基。所偵測之潛在T細胞抗原決定基可藉由取代可變結構域中之少量胺基酸殘基或較佳藉由單一胺基酸取代來消除。通常，進行保守取代。常常但並非排他地，可使用對人類生殖系抗體序列中之位置常見的胺基酸。人類生殖系序列揭示於如下文獻中，例如Tomlinson等人, (1992) J. Mol. Biol. 227:776-798；Cook, G.P.等人, (1995) Immunol. Today 第16卷 (5): 237-242；及Tomlinson等人, (1995) EMBO J. 14: 14:4628-4638。V BASE目錄提供人類免疫球蛋白可變區序列之綜合目錄(由Tomlinson, LA.等人, MRC Centre for Protein Engineering, Cambridge, UK彙編)。此等序列可用作人類序列之來源，例如用於構架區及CDR。亦可使用共同人類構架區，例如如美國專利第6,300,064號中所述。

「人類化」抗體、抗體構築體或其片段(諸如Fv, Fab, Fab', F(ab')₂或抗體之其他抗原結合子序列)為主要為人類序列之抗體或免疫球蛋白，其含有衍生自非人類免疫球蛋白之最小序列。在極大程度上，人類化抗體為人類免疫球蛋白(接受者抗體)，其中來自接受者之高變區(亦為CDR)之殘基經來自非人類(例如啮齒動物)物種(供體抗體)(諸如具有所要特異性、親和力及能力之小鼠、大鼠、倉鼠或兔)的高變區之殘基置換。在某些情況下，人類免疫球蛋白之Fv構架區(FR)殘基經對應非人類殘基置換。此外，如本文中所用之「人類化抗體」亦可包含未在接受者抗體抑或供體抗體中發現之殘基。進行此等修飾以進一步改進及最佳化抗體效能。人類化抗體亦可包含免疫球蛋白恆定區(Fc)的至少一部分、通常人類免疫球蛋白之恆定區的至少一部

分。對於其他細節，參見Jones等人，*Nature*, 321: 522-525 (1986)；Reichmann等人，*Nature*, 332: 323-329 (1988)；及Presta, *Curr. Op. Struct. Biol.*, 2: 593-596 (1992)。

人類化抗體或其片段可藉由用人類Fv可變結構域之等效序列置換不直接參與抗原結合之Fv可變結構域之序列產生。產生人類化抗體或其片段之例示性方法由以下文獻提供：Morrison (1985) *Science* 229:1202-1207；Oi等人，(1986) *BioTechniques* 4:214；及US 5,585,089；US 5,693,761；US 5,693,762；US 5,859,205；及US 6,407,213。彼等方法包括分離、操作及表現編碼來自重鏈或輕鏈中之至少一者的免疫球蛋白Fv可變結構域之所有或一部分的核酸分子。此類核酸可獲自產生針對上述預定標靶之抗體的融合瘤以及來自其他來源。可接著將編碼人類化抗體之重組DNA選殖至適當表現載體中。

人類化抗體亦可使用表現人類重鏈及輕鏈基因但不能表現內源小鼠免疫球蛋白重鏈及輕鏈基因之轉殖基因動物(諸如小鼠)產生。Winter描述可用於製備本文所述之人類化抗體的例示性CDR移植法(美國專利第5,225,539號)。特定人類抗體之全部CDR可經非人類CDR之至少一部分置換，或僅一些CDR可經非人類CDR置換。僅需要置換人類化抗體結合於預定抗原所需數目的CDR。

人類化抗體可藉由引入保守取代、共同序列取代、生殖系取代及/或回復突變最佳化。此類經改變之免疫球蛋白分子可藉由此項技術中已知之數個技術中之任一者製備(例如Teng等人，*Proc. Natl. Acad. Sci. U.S.A.*, 80: 7308-7312, 1983；Kozbor等人，*Immunology Today*, 4: 7279, 1983；Olsson等人，*Meth. Enzymol.*, 92: 3-16, 1982及EP 239 400)。

術語「人類抗體」、「人類抗體構築體」及「人類結合結構域」包括具有實質上對應於此項技術中已知之人類生殖系免疫球蛋白序列

之抗體區(諸如可變及恆定區或結構域)的抗體、抗體構築體及結合結構域，包括例如Kabat等人，(1991) (上述引文)所述者。本發明之人類抗體、抗體構築體或結合結構域可例如在CDR及尤其在CDR3中包括並非由人類生殖系免疫球蛋白序列編碼之胺基酸殘基(例如藉由活體外隨機或位點特異性突變誘發或藉由活體內體細胞突變引入的突變)。人類抗體、抗體構築體或結合結構域可有至少一個、兩個、三個、四個、五個或五個以上位置經不由人類生殖系免疫球蛋白序列編碼之胺基酸殘基置換。如本文所用之人類抗體、抗體構築體及結合結構域之定義亦涵蓋全人類抗體，其僅包括抗體之非人工及/或遺傳改變之人類序列，其可藉由使用諸如Xenomouse之技術或系統獲得。

在一些實施例中，本發明之抗體構築體為「經分離」或「實質上純」的抗體構築體。「經分離」或「實質上純」在用於描述本文所揭示之抗體構築體時意謂抗體構築體已自其製備環境之組分鑑別、分離及/或回收。抗體構築體較佳不或實質上不與來自其製備環境的所有其他組分締合。其製備環境之污染物組分(諸如由經重組轉染細胞產生的污染物組分)為通常干擾多肽之診斷性或治療性用途之物質，且可包括酶、激素及其他蛋白質或非蛋白質溶質。抗體構築體可例如佔既定樣品中總蛋白質之至少約5重量%或至少約50重量%。應瞭解，經分離蛋白質可視情況而定佔總蛋白質含量之5重量%至99.9重量%。多肽可經由使用誘導性啟動子或高表現啟動子以顯著較高濃度製備，以使得其以增加之濃度水準製備。定義包括在此項技術中已知之多種生物體及/或宿主細胞中製備抗體構築體。在較佳實施例中，抗體構築體(1)藉由使用轉杯式測序儀純化至一定程度以足以獲得N端或內部胺基酸序列之至少15個殘基，或(2)藉由SDS-PAGE在非還原或還原條件下使用考馬斯藍(Coomassie blue)或較佳銀染色純化至均質。通常，然而，經分離抗體構築體藉由至少一個純化步驟製備。

根據本發明，術語「結合結構域」特徵在於分別(特異性)結合於標靶分子(抗原)上之既定標靶抗原決定基或既定標靶位點及CD3/與其相互作用/識別其的結構域。第一結合結構域(識別標靶細胞表面抗原)之結構及功能及亦較佳第二結合結構域(CD3)之結構及/或功能基於抗體、例如全長或完整免疫球蛋白分子之結構及/或功能。根據本發明，第一結合結構域之特徵為存在三個輕鏈CDR(亦即VL區之CDR1、CDR2及CDR3)及三個重鏈CDR(亦即VH區之CDR1、CDR2及CDR3)。第二結合結構域較佳亦包含抗體之允許標靶結合之最小結構需要。更佳地，第二結合結構域包含至少三個輕鏈CDR(亦即VL區之CDR1、CDR2及CDR3)及/或三個重鏈CDR(亦即VH區之CDR1、CDR2及CDR3)。據設想，第一及/或第二結合結構域藉由噬菌體呈現或庫篩選方法產生或獲得而非藉由將來自預先存在之(單株)抗體之CDR序列移植於骨架中產生或獲得。

根據本發明，結合結構域較佳為多肽形式。此類多肽可包括蛋白質部分及非蛋白質部分(例如化學連接子或化學交聯劑，諸如戊二醛)。蛋白質(包括其片段，較佳生物活性片段及肽，通常具有少於30個胺基酸)包含兩個或兩個以上經由共價肽鍵彼此偶合之胺基酸(得到胺基酸之鏈)。如本文所用之術語「多肽」描述分子之群，其通常由超過30個胺基酸組成。多肽可進一步形成多聚體，諸如二聚體、三聚體以及更高級寡聚物，亦即由超過一個多肽分子組成。形成此類二聚體、三聚體等之多肽分子可相同或不相同。此類多聚體之相應高級結構因此稱為均二聚體或雜二聚體、均三聚體或雜三聚體等。雜多聚體之一實例為抗體分子，其在其天然存在之形式下由兩個相同多肽輕鏈及兩個相同多肽重鏈組成。術語「肽」、「多肽」及「蛋白質」亦指經天然修飾之肽/多肽/蛋白質，其中修飾例如藉由轉譯後修飾(如糖基化、乙醯化、磷酸化及其類似修飾)進行。「肽」、「多肽」或「蛋白

質」在本文提及時亦可經化學修飾，諸如聚乙二醇化。此類修飾在此項技術中為吾人所熟知且描述於下文中。

如上文所提及，結合結構域通常可包含抗體輕鏈可變區(VL)及抗體重鏈可變區(VH)；然而其不必包含兩者。Fd片段例如具有兩個VH區且通常保留完整抗原結合結構域之一些抗原結合功能。(經修飾之)抗原結合抗體片段的實例包括(1) Fab片段，即具有VL、VH、CL及CH1結構域之單價片段；(2) F(ab')₂片段，即具有兩個在鉸鏈區由二硫橋連接之Fab片段的二價片段；(3)具有兩個VH及CH1結構域之Fd片段；(4) 具有抗體之單臂的VL及VH結構域的Fv片段；(5) dAb片段(Ward等人, (1989) Nature 341:544-546)，其具有VH結構域；(6) 經分離之互補決定區(CDR)，及(7)單鏈Fv (scFv)，後者為較佳(例如衍生自scFV庫)。

包含至少一個人類結合結構域之抗體及抗體構築體避免一些與具有非人類(諸如嚙齒動物，例如鼠類、大鼠、倉鼠或兔)可變及/或恆定區之抗體或抗體構築體有關的問題。此類衍生自嚙齒動物之蛋白質的存在可引起抗體或抗體構築體之快速清除或可引起患者針對抗體或抗體構築體產生免疫反應。為避免使用衍生自嚙齒動物之抗體或抗體構築體，人類或全人類抗體/抗體構築體可經由向嚙齒動物中引入人類抗體功能以使得嚙齒動物產生全人類抗體來產生。

在YAC中選殖及重建構兆鹼基大小之人類基因座且將其引入小鼠生殖系中的能力提供一種闡明極大或粗略定位之基因座之功能組分以及產生人類疾病之適用模型的有力方法。此外，使用此類技術用人類等效物取代小鼠基因座可對開發期間人類基因產物之表現及調節、其與其他系統之聯繫及其參與疾病誘發及進展提供獨特洞察力。

此類策略之一重要實際應用為「人類化」小鼠體液免疫系統。於內源Ig基因已不活化之小鼠中引入人類免疫球蛋白(Ig)基因座提供

研究漸進式表現及組裝抗體之潛在機制以及其在B細胞產生中之作用的機會。此外，此類策略可提供產生全人類單株抗體(mAb)的理想來源，其為朝向實現人類疾病之抗體療法之前景的里程碑。全人類抗體或抗體構築體預期使小鼠mAb或衍生自小鼠之mAb固有的免疫原性及過敏反應達最小，因此提高所投與抗體/抗體構築體之功效及安全性。使用全人類抗體或抗體構築體可預期在治療需要重複化合物投藥之慢性及復發性人類疾病(諸如發炎、自體免疫及癌症)中提供實質性優點。

朝向此目標之一種方法為用人類Ig基因座之大片段工程改造缺乏小鼠抗體產生之小鼠品系以預測此類小鼠將產生大的人類抗體譜系而不存在小鼠抗體。大人類Ig片段將保持大可變基因多樣性以及適當調節抗體產生及表現。藉由採用該小鼠機構進行抗體多樣化及選擇及缺乏對人類蛋白之免疫耐受性，此等小鼠品系中再產生之人類抗體譜系應針對任何相關抗原(包括人類抗原)產生高親和力抗體。使用融合瘤技術，具有所要特異性之抗原特異性人類mAb可容易地產生且選擇。此通用策略關於產生第一XenoMouse小鼠品系展現(參見Green等人, *Nature Genetics* 7:13-21 (1994))。用分別含有人類重鏈基因座及 κ 輕鏈基因座之245 kb及190 kb大小之生殖系構型片段的酵母人造染色體(YAC)工程改造XenoMouse品系，該等染色體含有核心可變及恆定區序列。含人類Ig之YAC據證明與小鼠系統相容以用於抗體重排與表現且能夠取代不活化之小鼠Ig基因。此藉由其能夠誘導B細胞產生、產生全人類抗體之成人樣人類譜系及產生抗原特異性人類mAb展現。此等結果亦表明引入含有較大量V基因之人類Ig基因座之較大部分、其他調節元件及人類Ig恆定區可實質上再現特徵為對感染及免疫之人類體液反應的完整譜系。Green等人之研究近年來延伸至經由分別引入人類重鏈基因座及 κ 輕鏈基因座之兆鹼基大小之生殖系構型YAC片段

來引入大於約80%人類抗體譜系。參見Mendez等人, Nature Genetics 15:146-156 (1997)及美國專利申請案第08/759,620號。

XenoMouse小鼠之產生進一步論述且敘述於以下文獻中：美國專利申請案第07/466,008號、第07/610,515號、第07/919,297號、第07/922,649號、第08/031,801號、第08/112,848號、第08/234,145號、第08/376,279號、第08/430,938號、第08/464,584號、第08/464,582號、第08/463,191號、第08/462,837號、第08/486,853號、第08/486,857號、第08/486,859號、第08/462,513號、第08/724,752及第08/759,620號；及美國專利第6,162,963號、第6,150,584號、第6,114,598號、第6,075,181號及第5,939,598號及日本專利第3 068 180 B2號、第3 068 506 B2號及第3 068 507 B2號。亦參見Mendez等人, Nature Genetics 15:146-156 (1997)；及Green及Jakobovits J. Exp. Med. 188:483-495 (1998)；EP 0 463 151 B1、WO 94/02602、WO 96/34096、WO 98/24893、WO 00/76310及WO 03/47336。

在替代方法中，包括GenPharm International, Inc.之其他公司利用「小基因座」方法。在小基因座方法中，經由包括來自Ig基因座之片斷(個別基因)來模擬外生Ig基因座。因此，一或多個VH基因、一或多個DH基因、一或多個JH基因、 μ 恆定區及第二恆定區(較佳為 γ 恆定區)形成用於插入動物中之構築體。此方法描述於Surani等人之美國專利第5,545,807號，及各屬於Lonberg及Kay之美國專利第5,545,806號、第5,625,825號、第5,625,126號、第5,633,425號、第5,661,016號、第5,770,429號、第5,789,650號、第5,814,318號、第5,877,397號、第5,874,299號及第6,255,458號，Krimpenfort及Berns之美國專利第5,591,669號及第6,023,010號，Berns等人之美國專利第5,612,205號、第5,721,367號及第5,789,215號，及Choi及Dunn之美國專利第5,643,763號，及GenPharm International美國專利申請案第07/574,748

號、第 07/575,962 號、第 07/810,279 號、第 07/853,408 號、第 07/904,068 號、第 07/990,860 號、第 08/053,131 號、第 08/096,762 號、第 08/155,301 號、第 08/161,739 號、第 08/165,699 號、第 08/209,741 號。亦參見 EP 0 546 073 B1、WO 92/03918、WO 92/22645、WO 92/22647、WO 92/22670、WO 93/12227、WO 94/00569、WO 94/25585、WO 96/14436、WO 97/13852 及 WO 98/24884 及美國專利第 5,981,175 號。進一步參見 Taylor 等人, (1992); Chen 等人, (1993); Tuailon 等人, (1993); Choi 等人, (1993); Lonberg 等人, (1994); Taylor 等人, (1994); 及 Tuailon 等人, (1995); Fishwild 等人, (1996)。

Kirin 亦展示由小鼠產生人類抗體，其中經由微細胞融合將染色體之大片段或完整染色體引入。參見歐洲專利申請案第 773 288 號及第 843 961 號。Xenerex Biosciences 開發一種可能產生人類抗體之技術。在此技術中，SCID 小鼠用人類淋巴細胞(例如 B 及/或 T 細胞)重建。隨後用抗原使小鼠免疫且該等小鼠可產生針對該抗原之免疫反應。參見美國專利第 5,476,996 號；第 5,698,767 號；及第 5,958,765 號。

人類抗小鼠抗體(HAMA)反應引導工業上製備嵌合或其他人類化抗體。然而，預期將觀察到特定人類抗嵌合抗體(HACA)反應，尤其在長期或多次給與抗體利用中。因此，需要提供包含針對標靶細胞表面抗原之全人類結合結構域及針對 CD3 之全人類結合結構域的抗體構築體以減弱 HAMA 或 HACA 反應之問題及/或作用。

術語「(特異性)結合於」、「(特異性)識別」、「(特異性)針對」及「(特異性)反應」根據本發明意謂結合結構域與位於標靶蛋白或抗原(標靶細胞表面抗原/CD3)上之抗原決定基的一或多個、較佳至少兩個、更佳至少三個且最佳至少四個胺基酸相互作用或特異性相互作用。

術語「抗原決定基」係指抗原上結合結構域(諸如抗體或免疫球蛋白或抗體或免疫球蛋白之衍生物或片段)特異性結合的位點。「抗原決定基」為抗原，因此術語抗原決定基有時在本文中亦稱為「抗原結構」或「抗原決定子」。因此，結合結構域為「抗原相互作用位點」。該結合/相互作用亦理解為定義「特異性識別」。

「抗原決定基」可由藉由蛋白質之三級摺疊並列之鄰接胺基酸或非鄰接胺基酸形成。「線性抗原決定基」為胺基酸一級序列包含識別之抗原決定基的抗原決定基。線性抗原決定基在獨特序列中通常包括至少3個或至少4個、且更通常至少5個或至少6個或至少7個、例如約8至約10個胺基酸。

與線性抗原決定基相比，「構形抗原決定基」為如下抗原決定基，其中構成抗原決定基之胺基酸的一級序列並非所識別抗原決定基之唯一指定組分(例如抗原決定基，其中胺基酸之一級序列並非必須由結合結構域識別)。通常，構形抗原決定基相對於線性抗原決定基包含增加數目之胺基酸。關於識別構形抗原決定基，結合結構域識別抗原、較佳肽或蛋白質或其片段之三維結構(在本發明之情形下，針對結合結構域中之一者的抗原包含在標靶細胞表面抗原蛋白內)。舉例而言，當蛋白質分子摺疊以形成三維結構時，形成構形抗原決定基之某些胺基酸及/或多肽主鏈變得毗鄰，使抗體能夠識別抗原決定基。確定抗原決定基之構形的方法包括(但不限於) x射線結晶學、二維核磁共振(2D-NMR)光譜法及定點旋轉標記及電子順磁共振(EPR)光譜法。

結合結構域與抗原決定基或抗原決定基簇之間的相互作用暗示結合結構域對特定蛋白質或抗原(此處：標靶細胞表面抗原及CD3)上之抗原決定基或抗原決定基展現可觀親和力，且通常不與除標靶細胞表面抗原或CD3以外的蛋白質或抗原展現明顯反應性。「明顯親和

力」包括以約 10^{-6} M (KD)或更強之親和力結合。較佳地，當結合親和力為約 10^{-12} M至 10^{-8} M、 10^{-12} M至 10^{-9} M、 10^{-12} M至 10^{-10} M、 10^{-11} M至 10^{-8} M、較佳約 10^{-11} M至 10^{-9} M時，結合被視為特異的。結合結構域是否與標靶特異性反應或特異性結合於標靶可尤其藉由將該結合結構域與標靶蛋白或抗原之反應與該結合結構域與除標靶細胞表面抗原或CD3以外之蛋白質或抗原的反應比較容易地測試。較佳地，本發明之結合結構域基本上或實質上不結合於除標靶細胞表面抗原或CD3以外的蛋白質或抗原(亦即第一結合結構域不能結合於除標靶細胞表面抗原以外之蛋白質且第二結合結構域不能結合於除CD3以外之蛋白質)。

術語「基本上/實質上不結合」或「不能結合」意謂本發明之結合結構域不結合除標靶細胞表面抗原或CD3以外之蛋白質或抗原，亦即不展示與除標靶細胞表面抗原或CD3以外之蛋白質或抗原超過30%、較佳不超過20%、更佳不超過10%、尤其較佳不超過9%、8%、7%、6%或5%之反應性，其中與標靶細胞表面抗原或CD3之結合分別設定成100%。

特異性結合認為由結合結構域之胺基酸序列中的特定基元及抗原實現。因此，結合藉由其一級、二級及/或三級結構以及該等結構之二級修飾達成。抗原-相互作用-位點與其特異性抗原之特異性相互作用可使該位點與抗原簡單結合。此外，抗原-相互作用-位點與其特異性抗原相互作用特異性相互作用可替代地或另外地使信號開始，例如由於誘導抗原之構形變化、抗原之寡聚等。

術語「可變」係指抗體或免疫球蛋白結構域之部分，其序列展現變化性且其參與確定特定抗體之特異性及結合親和力(亦即「可變結構域」)。可變重鏈(VH)與可變輕鏈(VL)一起配對形成單一抗原結合位點。CH結構域最接近稱為CH1之VH。各輕(L)鏈藉由一個共價二

硫鍵連接於重(H)鏈，而兩個H鏈視H鏈同型而定藉由一或多個二硫鍵彼此連接。

可變性並不均勻分布於抗體之整個可變結構域中；其集中於各重鏈及輕鏈可變區之次結構域中。此等次結構域稱為「高變區」或「互補決定區」(CDR)。可變結構域之較保守(亦即非高變)部分稱為「構架」區(FRM)且提供三維空間中之六個CDR之骨架以形成抗原結合表面。天然存在之重鏈及輕鏈的可變結構域各包含四個FRM區(FR1、FR2、FR3及FR4)，其主要採用 β 片構型，藉由三個高變區連接，從而形成連接 β 片結構且在一些情形下形成 β 片結構之一部分的環。各鏈中之高變區藉由FRM與另一鏈之高變區緊密結合在一起，促成抗原結合位點之形成(參見Kabat等人，上述引文)。恆定結構域不直接參與抗原結合，但展現各種效應功能，諸如抗體依賴性細胞介導之細胞毒性及補體活化。

術語「CDR」及其複數「CDRs」指互補決定區，其中三者構成輕鏈可變區之結合特徵(CDR-L1、CDR-L2及CDR-L3)，且三者構成重鏈可變區之結合特徵(CDR-H1、CDR-H2及CDR-H3)。CDR含有負責抗體與抗原之特異性相互作用之殘基中的大多數，因此促成抗體分子之功能活性：其為抗原特異性之主要決定因素。

對精確定義之CDR界限及長度進行不同分類及編號系統。因此，CDR可藉由Kabat、Chothia、contact或任何其他界限定義(包括本文所述之編號系統)提及。儘管界限不同，但各此等系統在什麼構成可變序列內之所謂「高變區」方面具有一些程度之重疊。因此，根據此等系統之CDR定義的長度及相對於相鄰構架區之界限區域可不同。參見例如Kabat (基於交叉物種序列可變性之方法)，Chothia (基於抗原-抗體複合物之結晶學研究的方法)及/或MacCallum (Kabat等人，上述引文；Chothia等人，J. Mol. Biol, 1987, 196: 901-917；及MacCallum等

人, J. Mol. Biol, 1996, 262: 732)。表徵抗原結合位點之另一標準為由 Oxford Molecular之AbM抗體模型化軟體使用的AbM定義。參見例如 Protein Sequence and Structure Analysis of Antibody Variable Domains. Antibody Engineering Lab Manual (編輯: Duebel, S.及Kontermann, R., Springer-Verlag, Heidelberg)。在兩種殘基鑑別技術定義重疊區域但非相同區域之程度上, 其可組合以定義混合CDR。然而, 根據所謂 Kabat系統編號為較佳。

通常, CDR形成可歸類為標準結構的環結構。術語「標準結構」係指由抗原結合(CDR)環採用之主鏈構形。由比較結構研究發現六個抗原結合環中有五個僅具有有限譜系之可用構形。各標準結構之特徵可為多肽主鏈之扭轉角。因此, 抗體之間的相應環可具有極類似三維結構, 但環之大多數部分中具有高胺基酸序列可變性(Chothia及Lesk, J. Mol. Biol., 1987, 196: 901; Chothia等人, Nature, 1989, 342: 877; Martin及Thornton, J. Mol. Biol, 1996, 263: 800)。此外, 在所採用之環結構與其周圍之胺基酸序列之間存在關係。特定標準類別之構形由環之長度及位於環內以及保守構架(亦即環外)內關鍵位置之胺基酸殘基確定。可因此基於此等關鍵胺基酸殘基之存在進行分配至特定標準類別。

術語「標準結構」亦可包括關於例如Kabat (Kabat等人, 上述引文)所編錄之抗體之線性序列的考慮因素。Kabat編號方案(系統)為廣泛採用之以一致方式對抗體可變結構域之胺基酸殘基編號的標準且亦如本文他處所提及為本發明中所用之較佳方案。其他結構考慮因素亦可用於確定抗體之標準結構。舉例而言, Kabat編號不能完全反映之彼等差異可由Chothia等人之編號系統描述及/或由其他技術(例如結晶學及二維或三維電腦模型化)揭示。因此, 既定抗體序列可歸於標準類別, 其尤其允許鑑別適當框架序列(例如基於在庫中包括多種標準

結構的需要)。Chothia等人，上述引文所述的抗體胺基酸序列之Kabat編號及結構考慮因素及其對於抗體結構之構築標準態樣的推論描述於該文獻中。不同類別之免疫球蛋白的次單位結構及三維構型在此項技術中為吾人所熟知。對於抗體結構之評述，參見Antibodies: A Laboratory Manual, Cold Spring Harbor Laboratory, Harlow等人編，1988。

輕鏈之CDR3及尤其重鏈之CDR3可構成輕鏈及重鏈可變區內抗原結合的最重要決定子。在一些抗體構築體中，重鏈CDR3似乎構成抗原與抗體之間之接觸部分的主要區域。可使用僅CDR3變化之活體外選擇方案來改變抗體之結合特性或判定促成抗原結合之殘基。因此，CDR3通常為抗體結合位點內分子多樣性之最大來源。舉例而言，H3可短至兩個胺基酸殘基或大於26個胺基酸。

組裝及體細胞突變後之抗體基因之序列高度變化，且此等變化之基因估計編碼 10^{10} 個不同抗體分子(Immunoglobulin Genes, 第2版, Jonio等人編, Academic Press, San Diego, CA, 1995)。因此，該免疫系統提供免疫球蛋白之譜系。術語「譜系」係指至少一個完全或部分衍生自至少一個編碼至少一種免疫球蛋白之序列的核苷酸序列。該(該等)序列可藉由重鏈之V、D及J區段及輕鏈之V及J區段之活體內重排產生。或者，該(該等)序列可響應於重排發生之因素(例如活體外刺激)自細胞產生。或者，部分或所有序列可藉由DNA拼接、核苷酸合成、突變誘發及其他方法獲得，參見例如美國專利5,565,332。譜系可僅包括一個序列或可包括複數個序列，包括遺傳性多樣之集合中的序列。

如本文所用之術語「雙特異性」係指「至少雙特異性」之抗體構築體，亦即其包含至少一個第一結合結構域及第二結合結構域，其中第一結合結構域結合於一種抗原或標靶，且第二結合結構域結合於

另一抗原或標靶(此處：CD3)。因此，本發明之抗體構築體包含針對至少兩種不同抗原或標靶之特異性。本發明之術語「雙特異性抗體構築體」亦涵蓋多特異性抗體構築體，諸如三特異性抗體構築體，後者包括三個結合結構域，或具有超過三個(例如四個、五個...)特異性之構築體。

倘若本發明之抗體構築體為(至少)雙特異性的，則其不會天然存在且其顯著不同於天然存在之產物。因此，「雙特異性」抗體構築體或免疫球蛋白為具有至少兩個具有不同特異性之不同結合位點的人造混合抗體或免疫球蛋白。雙特異性抗體可通過包括融合瘤融合或Fab'片段連接的多種方法產生。參見例如 Songsivilai & Lachmann, Clin. Exp. Immunol. 79:315-321 (1990)。

本發明抗體構築體之至少兩個結合結構域及可變結構域可包含或可不包含肽連接子(間隔肽)。根據本發明，術語「肽連接子」定義如下胺基酸序列，由此本發明抗體構築體之一個(可變及/或結合)結構域與另一(可變及/或結合)結構域之胺基酸序列彼此連接。此類肽連接子之必需技術特徵為該肽連接子不包含任何聚合活性。適合肽連接子描述於美國專利第4,751,180號及第4,935,233號或WO 88/09344中。

在使用連接子之情況下，此連接子較佳具有一定長度及序列以足以確保第一及第二結構域各自可彼此獨立地保留其不同結合特異性。對於連接本發明抗體構築體中之至少兩個結合結構域(或兩個可變結構域)的肽連接子，僅包含少量胺基酸殘基(例如12個或12個以下胺基酸殘基)之彼等肽連接子較佳。因此，12、11、10、9、8、7、6或5個胺基酸殘基之肽連接子為較佳。設想之具有少於5個胺基酸之肽連接子包含4、3、2或1個胺基酸，其中富含Gly之連接子為較佳。該「肽連接子」之情形下的尤其較佳「單一」胺基酸為Gly。因此，該肽連接子可由單一胺基酸Gly組成。肽連接子另一較佳具體實例另一

較佳實施例之特徵為胺基酸序列 Gly-Gly-Gly-Gly-Ser，亦即 (Gly₄Ser)，或其聚合物，亦即 (Gly₄Ser)_x，其中 x 為 1 或大於 1 之整數。該肽連接子之特徵(其包含促進二級結構之不存在)此項技術中已知且例如描述於 Dall'Acqua 等人，(Biochem. (1998) 37, 9266-9273)，Cheadle 等人，(Mol Immunol (1992) 29, 21-30) 及 Raag 及 Whitlow (FASEB (1995) 9(1), 73-80) 中。亦不促進任何二級結構之肽連接子為較佳。該等結構域彼此之連接可由例如遺傳工程改造提供，如實例中所述。製備融合及操作連接之雙特異性單鏈構築體及在哺乳動物細胞或細菌中表現其之方法為此項技術中熟知的(例如 WO 99/54440 或 Sambrook 等人，Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 2001)。

雙特異性單鏈分子為此項技術中已知且描述於如下文獻中：WO 99/54440，Mack, J. Immunol. (1997), 158, 3965-3970，Mack, PNAS, (1995), 92, 7021-7025，Kufer, Cancer Immunol. Immunother., (1997), 45, 193-197，Löffler, Blood, (2000), 95, 6, 2098-2103，Brühl, Immunol., (2001), 166, 2420-2426，Kipriyanov, J. Mol. Biol., (1999), 293, 41-56。針對產生單鏈抗體所描述之技術(參見尤其美國專利第 4,946,778 號，Kontermann 及 Dübel (2010)，上述引文及 Little (2009)，上述引文)可適合於產生特異性識別所選標靶之單鏈抗體構築體。

二價或雙特異性單鏈可變片段(具有形式 (scFv)₂ 之 bi-scFv 或 di-scFv) 可藉由連接兩個 scFv 分子工程改造。若此兩個 scFv 分子具有相同結合特異性，則所得 (scFv)₂ 分子較佳稱為二價(亦即其對於相同標靶抗原決定基具有兩個價數)。若兩個 scFv 分子具有不同結合特異性，則所得 (scFv)₂ 分子較佳稱為雙特異性的。連接可藉由產生具有兩個 VH 區及兩個 VL 區之單一肽鏈進行，得到串聯 scFv (參見例如 Kufer P. 等人，(2004) Trends in Biotechnology 22(5):238-244)。另一可能性為

產生具有連接肽之scFv分子，該等連接肽對於兩個可變區摺疊在一起過短(例如約五個胺基酸)，從而迫使scFv二聚。此類型稱為雙功能抗體(參見例如Hollinger, Philipp等人, (1993年7月) Proceedings of the National Academy of Sciences of the United States of America 90 (14): 6444-8.)。

單結構域抗體僅包含一個(單體)抗體可變結構域，其能夠獨立於其他V區或結構域選擇性結合於特異性抗原。第一單結構域抗體自駱駝中發現之重鏈抗體工程改造，且其稱為V_HH片段。軟骨魚亦具有重鏈抗體(IgNAR)，可自該等重鏈抗體獲得稱為V_{NAR}片段之單結構域抗體。替代性方法為將來自常見免疫球蛋白(例如來自人類或啮齒動物)之二聚可變結構域分裂為單體，從而獲得單結構域Ab形式之VH或VL。儘管目前對獲得單結構域抗體之大多數研究基於重鏈可變結構域，但衍生自輕鏈之奈米抗體亦展示特異性結合於標靶抗原決定基。單結構域抗體之實例稱為sdAb、奈米抗體或單一可變結構域抗體。

因此，(單結構域mAb)₂為由(至少)兩個單結構域單株抗體構成之單株抗體構築體，該等單結構域單株抗體個別地選自包含VH、VL、V_HH及V_{NAR}之群。連接子較佳為肽連接子形式。類似地，「scFv單結構域mAb」為由至少一個上述單結構域抗體及一個上述scFv分子構成之單株抗體構築體。再次，連接子較佳為肽連接子形式。

亦設想本發明之抗體構築體除其結合於標靶抗原及CD3之功能以外亦具有另一功能。以此形式，抗體構築體為藉由經由結合於標靶抗原而靶向標靶細胞、經由CD3結合而調節細胞毒性T細胞活性、及提供諸如標記物(螢光等)、治療劑(諸如毒素或放射性核素)等其他功能的三功能或多功能抗體構築體。

抗體構築體之共價修飾亦包括在本發明之範疇內，且通常但不一定在轉譯後進行。舉例而言，將抗體構築體之數種類型之共價修飾

藉由使抗體構築體之特定胺基酸殘基與能夠與所選側鏈或N或C端殘基反應的有機衍化劑反應而引入分子中。

最常使半胱胺醯基殘基與 α -鹵基乙酸酯(及相應胺)(諸如氯乙酸、氯乙醯胺)反應，得到羧甲基或羧醯胺基甲基衍生物。半胱胺醯基殘基亦可藉由與溴三氟丙酮、 α -溴- β -(5-咪唑基)丙酸、氯乙醯基磷酸酯、N-烷基順丁烯二醯亞胺、二硫化3-硝基-2-吡啶基、二硫化甲基2-吡啶基、對氯汞苯甲酸鹽、2-氯汞-4-硝基酚或氯-7-硝基苯并-2-噁-1,3-二唑反應來衍化。

組胺醯基殘基係藉由在pH 5.5-7.0下與焦碳酸二乙酯反應而衍化，因為此試劑對組胺醯基側鏈具相對特異性。對溴苯甲醯甲基溴亦適用；反應較佳在pH 6.0之0.1 M二甲胂酸鈉中進行。使離胺醯基及胺基末端殘基與琥珀酸酐或其他羧酸酐反應。用此等試劑進行之衍化作用具有逆轉離胺醯基殘基之電荷的效用。其他用於衍化含有 α -胺基之殘基之適合試劑包括亞胺基酯，諸如吡啶甲醯亞胺酸甲酯、磷酸吡哆醛、吡哆醛、氯硼氫化物、三硝基苯磺酸、O-甲基異脲、2,4-戊二酮及轉胺酶催化之與乙醛酸酯的反應。

精胺醯基殘基藉由與一種或數種習知試劑(尤其苯基乙二醛、2,3-丁二酮、1,2-環己二酮及茚滿三酮)反應而進行修飾。由於胍官能基具有高pKa，因此精胺酸殘基之衍化需要在鹼性條件下進行該反應。此外，此等試劑可與離胺酸之基團以及精胺酸 ϵ -胺基反應。

可對酪胺醯基殘基進行特定修飾，其中尤其關注藉由與芳族重氮鎘化合物或四硝基甲烷反應而將光譜標記物引入酪胺醯基殘基中。最常分別使用N-乙醯基咪唑及四硝基甲烷來形成O-乙醯基酪胺醯基物質及3-硝基衍生物。酪胺醯基殘基使用 ^{125}I 或 ^{131}I 碘化以製備用於放射免疫分析之經標記蛋白質，上述氯胺T方法為適合的。

羧基側基(天冬胺醯基或麩胺醯基)藉由與碳化二亞胺($\text{R}'\text{-N}=\text{C}=\text{N-}$

-R')反應而選擇性地修飾，其中R及R'視情況為不同烷基，諸如1-環己基-3-(2-嗎啉基-4-乙基)碳化二亞胺或1-乙基-3-(4-氮鎗-4,4-二甲基戊基)碳化二亞胺。此外，天冬胺醯基及麩胺醯基殘基藉由與銨離子反應而轉化成天冬醯胺醯基及麩醯胺醯基殘基。

用雙官能試劑衍化適用於使本發明之抗體構築體交聯至多種方法所用的不溶於水的支撐基質或表面。常用交聯劑包括例如1,1-雙(重氮乙醯基)-2-苯基乙烷、戊二醛、N-羥基丁二醯亞胺酯(例如與4-疊氮水楊酸之酯)、同雙官能亞胺基酯(包括二丁二醯亞胺基酯，諸如3,3'-二硫雙(丁二醯亞胺基丙酸酯)及雙官能順丁烯二醯亞胺(諸如雙-N-順丁烯二醯亞胺-1,8-辛烷)。諸如3-[(對疊氮苯基)二硫]丙醯亞胺甲酯之衍化劑產生能夠在光存在下形成交聯之可光活化中間物。或者，不溶於水之活性基質(諸如溴化氰活化之碳水化合物及美國專利第3,969,287號；第3,691,016號；第4,195,128號；第4,247,642號；第4,229,537號；及第4,330,440號中所述之活性基質)用於蛋白質固定。

常使麩醯胺醯基及天冬醯胺醯基殘基去醯胺基以分別形成相應麩胺醯基及天冬胺醯基殘基。或者，在適度酸性條件下將此等殘基去醯胺化。此等殘基之任一形式均屬於本發明範疇。

其他修飾包括：脯胺酸及離胺酸之羥基化；絲胺醯基或酥胺醯基殘基之羥基的磷酸化；離胺酸、精胺酸及組胺酸側鏈之 α -胺基的甲基化(T. E. Creighton, *Proteins: Structure and Molecular Properties*, W. H. Freeman & Co., San Francisco, 1983, 第79-86頁)；N端胺之乙醯化及任何C端羧基之醯胺化。

本發明範疇內包括的抗體構築體之另一類共價修飾包含改變蛋白質之糖基化模式。如此項技術中所已知，糖基化模式可取決於蛋白質之序列(例如存在或不存在以下所論述之特定糖基化胺基酸殘基)或產生蛋白質之宿主細胞或生物體。以下論述特定表現系統。

多肽之糖基化通常為N連接或O連接。N連接型係指碳水化合物部分與天冬醯胺殘基之側鏈連接。三肽序列天冬醯胺酸-X-絲胺酸及天冬醯胺酸-X-蘇胺酸(其中X為除脯胺酸之外的任何胺基酸)為碳水化合物部分酶促結合至天冬醯胺酸側鏈之識別序列。因此，此等三肽序列中之任一者在多肽中的存在產生潛在糖基化位點。O連接之糖基化係指糖N-乙醯基半乳胺糖、半乳糖或木糖中之一者與羥基胺基酸連接，該羥基胺基酸最常為絲胺酸或蘇胺酸，但亦可使用5-羥基脯胺酸或5-羥基離胺酸。

向抗體構築體添加糖基化位點藉由改變胺基酸序列以使得其含有上述三肽序列中之一或多者而便利地實現(對於N連接之糖基化位點)。亦可藉由向起始序列添加一或多個絲胺酸或蘇胺酸殘基或經一或多個絲胺酸或蘇胺酸殘基取代來進行改變(對於O連接之糖基化位點)。出於簡易性，抗體構築體之胺基酸序列較佳經由DNA水準改變，尤其藉由突變預選鹼基處編碼多肽之DNA以使得產生將轉譯為所要胺基酸之密碼子而改變。

增加抗體構築體上碳水化合物部分之數目的另一方式為藉由醣苷與蛋白質之化學或酶促偶合。此等程序之有利之處在於其不需要在具有糖基化能力之宿主細胞中產生蛋白質來進行N連接及O連接之糖基化。視所用偶合模式而定，可將糖連接至(a)精胺酸及組胺酸、(b)游離羧基、(c)游離巰基(諸如半胱胺酸之巰基)、(d)游離羥基(諸如絲胺酸、蘇胺酸、或羥基脯胺酸之羥基)、(e)芳族殘基(諸如苯丙胺酸、酪胺酸或色胺酸之芳族殘基)、或(f)麩醯胺酸之醯胺基。此等方法描述於WO 87/05330及Aplin及Wriston, 1981, CRC Crit. Rev. Biochem., 第259-306頁中。

存在於起始抗體構築體上之碳水化合物部分之移除可以化學或酶促方式實現。化學去糖基化需要將使抗體暴露於化合物三氟甲烷磺

酸或等效化合物。此處理使除連接糖(N-乙醯基葡萄糖胺或N-乙醯基半乳糖胺)之外的大多數或所有糖裂解，而保持抗體完整。化學去糖基化由以下文獻描述：Hakimuddin等人，1987, *Arch. Biochem. Biophys.* 259:52及Edge等人，1981, *Anal. Biochem.* 118:131。多肽上碳水化合物部分之酶促裂解可藉由使用如由Thotakura等人，1987, *Meth. Enzymol.* 138:350所述之各種內醣苷酶及外醣苷酶來達成。在潛在糖基化位點處之糖基化可藉由使用如由Duskin等人，1982, *J. Biol. Chem.* 257:3105所述之化合物衣黴素(tunicamycin)阻止。衣黴素阻斷蛋白質-N-醣苷鍵形成。

抗體構築體之其他修飾涵蓋於本文中。舉例而言，抗體構築體之另一類共價修飾包含將抗體構築體以美國專利第4,640,835號；第4,496,689號；第4,301,144號；第4,670,417號；第4,791,192號或第4,179,337號中所闡述之方式連接於各種非蛋白質聚合物，包括(但不限於)各種多元醇，諸如聚乙二醇、聚丙二醇、聚氧化烯或聚乙二醇與聚丙二醇之共聚物。此外，如此項技術中已知，可在抗體構築體內之各種位置中進行胺基酸取代，例如以促進聚合物(諸如PEG)添加。

在一些實施例中，本發明抗體構築體之共價修飾包含添加一或多個標記物。標記基團可經由各種長度之間隔臂與抗體構築體偶合以降低潛在位阻。標記蛋白質之各種方法為此項技術中已知且可用於執行本發明。術語「標記物」或「標記基團」係指任何可偵測標記物。一般而言，視偵測標記物之分析而定，其屬於多種類別-以下實例包括(但不限於)：

a)同位素標記物，其可為放射性或重同位素，諸如放射性同位素或放射性核素(例如 ^3H 、 ^{14}C 、 ^{15}N 、 ^{35}S 、 ^{89}Zr 、 ^{90}Y 、 ^{99}Tc 、 ^{111}In 、 ^{125}I 、 ^{131}I)

b)磁性標記物(例如磁性粒子)

c)氧化還原活性部分

d)光學染料(包括(但不限於)發色團、磷光體及螢光團)，諸如螢光基團(例如FITC、若丹明(rhodamine)、鐳系磷光體)、化學發光基團及可為「小分子」螢光或蛋白質螢光之螢光團

e)酶學基團(例如辣根過氧化酶、 β -半乳糖、螢光素酶、鹼磷酸酶)

f)生物素標記基團

g)由二級報導子識別的預定多肽抗原決定基(例如白胺酸拉鏈對序列、二級抗體之結合位點、金屬結合結構域、抗原決定基標籤等)。

「螢光標記物」意謂可經由固有螢光特性偵測之任何分子。適合螢光標記物包括(但不限於)螢光素、若丹明、四甲基若丹明、伊紅、赤藻紅、香豆素、甲基香豆素、苾、馬拉賽特綠(Malacite green)、苾、螢光黃(Lucifer Yellow)、卡斯凱德藍J(Cascade BlueJ)、德克薩斯紅(Texas Red)、IAEDANS、EDANS、BODIPY FL、LC紅(LC Red)640、Cy 5、Cy 5.5、LC Red 705、俄勒岡綠(Oregon green)、阿萊克薩螢光染料(Alexa-Fluor dye)(阿萊克薩螢光350、阿萊克薩螢光430、阿萊克薩螢光488、阿萊克薩螢光546、阿萊克薩螢光568、阿萊克薩螢光594、阿萊克薩螢光633、阿萊克薩螢光660、阿萊克薩螢光680)、卡斯凱德藍(Cascade Blue)、卡斯凱德黃(Cascade Yellow)及R-藻紅素(PE)(Molecular Probes, Eugene, OR)、FITC、若丹明及德克薩斯紅(Pierce, Rockford, IL)、Cy5、Cy5.5、Cy7(Amersham Life Science, Pittsburgh, PA)。適合光學染料(包括螢光團)描述於Richard P. Haugland之Molecular Probes Handbook中。

適合蛋白質螢光標記物包括(但不限於)綠色螢光蛋白，包括Renilla、Ptilosarcus或Aequorea類型之GFP (Chalfie等人, 1994, *Science*

263:802-805)、EGFP (Clontech Laboratories, Inc., 基因庫登錄號 U55762); 藍色螢光蛋白(BFP, Quantum Biotechnologies, Inc. 1801 de Maisonneuve Blvd. West, 8樓, Montreal, Quebec, Canada H3H 1J9; Stauber, 1998, *Biotechniques* 24:462-471; Heim等人, 1996, *Curr. Biol.* 6:178-182); 增強型黃色螢光蛋白(EYFP, Clontech Laboratories, Inc.); 螢光素酶(Ichiki等人, 1993, *J. Immunol.* 150:5408-5417); β 半乳糖(Nolan等人, 1988, *Proc. Natl. Acad. Sci. U.S.A.* 85:2603-2607)及 Renilla(WO92/15673、WO95/07463、WO98/14605、WO98/26277、WO99/49019、美國專利第5292658號、第5418155號、第5683888號、第5741668號、第5777079號、第5804387號、第5874304號、第5876995號、第5925558號)。

白胺酸拉鏈結構域為促進其所存在之蛋白質寡聚的肽。白胺酸拉鏈最初在數種DNA結合蛋白中鑑別出(Landschulz等人, 1988, *Science* 240:1759), 且隨後在多種不同蛋白質中發現。已知白胺酸拉鏈為天然存在之肽及其二聚或三聚之衍生物。適用於產生可溶性寡聚蛋白之白胺酸拉鏈結構域之實例描述於PCT申請案WO 94/10308中, 且衍生自肺界面活性劑蛋白D(SPD)之白胺酸拉鏈描述於Hoppe等人, 1994, *FEBS Letters* 344:191中。允許融合於其上之異源蛋白質穩定三聚的經修飾白胺酸拉鏈之用途描述於Fanslow等人, 1994, *Semin. Immunol.* 6:267-78中。在一種方法中, 包含與白胺酸拉鏈肽融合之標靶抗原抗體片段或衍生物的重組融合蛋白在適合宿主細胞中表現, 且所形成之可溶性寡聚標靶抗原抗體片段或衍生物自培養物上清液中回收。

本發明之抗體構築體亦可包含其他結構域, 其例如有助於分離分子或與分子之經調適藥物動力學概況有關。有助於分離抗體構築體之結構域可選自肽基元或二次引入之部分, 其可在分離方法(例如分

離管柱)中捕捉。此類其他結構域之非限制性實施例包含如下肽基元，其稱為Myc標籤、HAT標籤、HA標籤、TAP標籤、GST標籤、甲殼素結合結構域(CBD標籤)、麥芽糖結合蛋白(MBP標籤)、Flag標籤、Strep標籤及其變異體(例如StrepII標籤)及His標籤。所有本文中所揭示之特徵為所鑑別之CDR的抗體構築體較佳包含His標籤結構域，其通常稱為分子之胺基酸序列中連續His殘基、較佳六個His殘基之重複序列。

T細胞或T淋巴細胞為一種淋巴細胞(本身為一種白血球)，其在細胞介導之免疫性中起主要作用。存在數種T細胞亞群，各具有不同功能。T細胞可藉由細胞表面上T細胞受體(TCR)之存在而區別於其他淋巴細胞，諸如B細胞及NK細胞。TCR負責識別結合於主要組織相容性複合體(MHC)分子之抗原且由兩個不同蛋白鏈構成。在95% T細胞中，TCR由 α 及 β 鏈組成。在TCR與抗原肽及MHC(肽/MHC複合物)接合時，T淋巴細胞經由相關酶、共受體、特定接附分子及活化或釋放之轉錄因子介導之一系列生物化學事件活化。

CD3受體複合物為一種蛋白複合物且由四個鏈構成。在哺乳動物中，複合物含有CD3 γ 鏈、CD3 δ 鏈及兩個CD3 ϵ 鏈。此等鏈與T細胞受體(TCR)及所謂 ζ 鏈結合以形成T細胞受體CD3複合物且在T淋巴細胞中產生活化信號。CD3 γ 、CD3 δ 及CD3 ϵ 鏈為含有單一胞外免疫球蛋白結構域之免疫球蛋白超家族之高度相關細胞表面蛋白。CD3分子之胞內尾部含有稱為基於免疫受體酪胺酸之活化基元或簡稱為ITAM的單一保守基元，其對TCR之信號傳導能力為至關重要的。CD3 ϵ 分子為如下多肽，其在人類中由位於染色體11上之CD3E基因編碼。較佳人類CD3 ϵ 細胞外結構域之序列以SEQ ID NO: 610展示，且對應於人類CD3 ϵ 細胞外結構域之胺基酸殘基1-27的最佳結合抗原決定基以SEQ ID NO: 7表示。

經由多特異性、至少雙特異性抗體構築體募集T細胞再導引標靶細胞之溶解參與細胞溶解突觸形成及傳遞穿孔素及顆粒酶。接合之T細胞能夠進行連續標靶細胞溶解，且不受干擾肽抗原加工及呈現或選殖之T細胞分化的免疫逃逸機制影響；參見例如WO 2007/042261。

雙特異性抗體構築體介導之細胞毒性可以各種方式量測。效應細胞可為例如經刺激增濃之(人類)CD8陽性T細胞或未刺激(人類)周邊血液單核細胞(PBMC)。若標靶細胞具有獼猴來源或表現獼猴標靶細胞抗原或經獼猴標靶細胞抗原轉染，則效應細胞應亦具有獼猴來源，諸如獼猴T細胞株，例如4119LnPx。標靶細胞應表現標靶細胞抗原(例如人類或獼猴標靶細胞抗原)(之至少細胞外結構域)。標靶細胞可為經標靶細胞抗原(例如人類或獼猴標靶細胞抗原)穩定或短暫轉染之細胞株(諸如CHO)。或者，標靶細胞可為標靶細胞抗原陽性天然表現細胞株，諸如人類癌細胞株。通常，預期細胞表面上表現較高水準之標靶細胞抗原的標靶細胞株的EC50值較低。效應子與標靶細胞(E:T)比率通常為約10:1，但亦可變化。雙特異性抗體構築體之細胞毒性活性可在⁵¹鉻釋放分析(培育時間為約18小時)或基於FACS之細胞毒性分析(培育時間為約48小時)中量測。分析培育時間(細胞毒性反應)亦可變化量測細胞毒性之其他方法為熟習此項技術者熟知且包含MTT或MTS分析、基於ATP之分析，包括生物發光分析、磺醯若丹明B (SRB)分析、WST分析、細胞群落分析及ECIS技術。

本發明之雙特異性抗體構築體介導之細胞毒性活性較佳在基於細胞之細胞毒性分析中量測。其由EC₅₀值表示，該值對應於一半最大有效濃度(誘導為基線與最大值之間的一半的細胞毒性反應的抗體構築體之濃度)。較佳地，雙特異性抗體構築體之EC₅₀值為≤20.000 pg/ml，更佳≤5000 pg/ml，甚至更佳≤1000 pg/ml，甚至更佳≤500 pg/ml，甚至更佳≤350 pg/ml，甚至更佳≤250 pg/ml，甚至更佳≤100

pg/ml，甚至更佳 ≤ 50 pg/ml，甚至更佳 ≤ 10 pg/ml且最佳 ≤ 5 pg/ml。

以上所給之 EC_{50} 值中之任一者可與基於細胞之細胞毒性分析的制定情形中之任一者組合，例如根據隨附實例中所述之方法。舉例而言，在(人類)CD8陽性T細胞或獼猴T細胞株用作效應細胞時，標靶細胞抗原/CD3雙特異性抗體構築體之 EC_{50} 值較佳為 ≤ 1000 pg/ml，更佳 ≤ 500 pg/ml，甚至更佳 ≤ 250 pg/ml，甚至更佳 ≤ 100 pg/ml，甚至更佳 ≤ 50 pg/ml，甚至更佳 ≤ 10 pg/ml且最佳 ≤ 5 pg/ml。若在此分析中標靶細胞為經細胞(諸如CHO細胞)轉染之(人類或獼猴)標靶細胞抗原，則標靶細胞抗原/CD3雙特異性抗體構築體之 EC_{50} 值較佳為 ≤ 150 pg/ml，更佳 ≤ 100 pg/ml，甚至更佳 ≤ 50 pg/ml，甚至更佳 ≤ 30 pg/ml，甚至更佳 ≤ 10 pg/ml且最佳 ≤ 5 pg/ml。若標靶細胞為標靶細胞抗原陽性天然表現細胞株，則 EC_{50} 值較佳為 ≤ 350 pg/ml，更佳 ≤ 250 pg/ml，甚至更佳 ≤ 200 pg/ml，甚至更佳 ≤ 100 pg/ml，甚至更佳 ≤ 150 pg/ml，甚至更佳 ≤ 100 pg/ml，且最佳 ≤ 50 pg/ml，或更低。在(人類用作效應細胞時，標靶細胞抗原/CD3雙特異性抗體構築體之 EC_{50} 值較佳為 ≤ 1000 pg/ml，更佳 ≤ 750 pg/ml，更佳 ≤ 500 pg/ml，甚至更佳 ≤ 350 pg/ml，甚至更佳 ≤ 250 pg/ml，甚至更佳 ≤ 100 pg/ml，且最佳 ≤ 50 pg/ml或更低。

較佳地，本發明之雙特異性抗體構築體不誘導/介導標靶細胞抗原陰性細胞(諸如CHO細胞)之溶解或基本上不誘導/介導其溶解。術語「不誘導溶解」、「基本上不誘導溶解」、「不介導溶解」或「基本上不介導溶解」意謂本發明之抗體構築體不誘導或介導超過30%、較佳不超過20%、更佳不超過10%、尤其較佳不超過9%、8%、7%、6%或5%標靶細胞抗原陰性細胞之溶解，其中將標靶細胞抗原陽性細胞株之溶解設定成100%。此通常適用於高達500 nM之抗體構築體濃度。熟習此項技術者已知如何在無需其他忙亂的情況下量測細胞溶解。此外，本發明教示如何量測細胞溶解之特別說明。

個別雙特異性抗體構築體之單體與二聚同功異型物之間的細胞毒性活性差異稱為「效能差」。此效能差可例如以分子之單體與二聚形式之 EC_{50} 值之間的比率形式計算。本發明之雙特異性抗體構築體之效能差較佳為 ≤ 5 ，更佳 ≤ 4 ，甚至更佳 ≤ 3 ，甚至更佳 ≤ 2 且最佳 ≤ 1 。

本發明之抗體構築體之第一及/或第二(或任何其他)結合結構域較佳為特異於靈長類動物之哺乳動物綱之成員的種間交叉結合結構域。種間交叉特異性CD3結合結構域例如描述於WO 2008/119567中。根據一個實施例，第一及/或第二結合結構域除分別結合於標靶細胞抗原及人類CD3以外亦結合於靈長類動物之標靶細胞抗原/CD3，該等靈長類動物包括(但不限於)新世界靈長類動物(諸如白鬚狨(*Callithrix jacchus*)、棉頂狨(*Saguinus Oedipus*)或松鼠猴(*Saimiri sciureus*))、舊世界靈長類動物(如狒狒及短尾猿)、長臂猿及非人類人亞科。

在本發明之一個態樣中，第一結合結構域結合於人類CDH19 (SEQ ID NO:611)且另外結合於獼猴CDH19，諸如食蟹獼猴(*Macaca fascicularis*)之CDH19 (SEQ ID NO:612)。獼猴CDH19之第一結合結構域之親和力較佳為 ≤ 15 nM，更佳 ≤ 10 nM，甚至更佳 ≤ 5 nM，甚至更佳 ≤ 1 nM，甚至更佳 ≤ 0.5 nM，甚至更佳 ≤ 0.1 nM，且最佳 ≤ 0.05 nM或甚至 ≤ 0.01 nM。

較佳地，本發明抗體構築體關於結合於其特異性獼猴與人類標靶抗原(例如獼猴CDH19與人類CDH19)之親和力差[maCDH19:huCDH19]為0.1至10，更佳0.2至5，甚至更佳0.3至2.5，甚至更佳0.4至2，且最佳0.5至1。

在本發明抗體構築體之另一實施例中，抗體構築體包含選自由以下組成之群的N端之FcRn結合肽及C端之FcRn結合肽：

(a) N端之FcRn結合肽包含胺基酸序列QRFVTGHFGGLYPANG (SEQ ID NO: 2)，且C端之FcRn結合肽包含

胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)；

(b) N 端之 FcRn 結合肽包含胺基酸序列**QRFVTGHFGGLYPANG** (SEQ ID NO: 2)，且C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)；

(c) N 端之 FcRn 結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)，且C端之FcRn結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)；

(d) N 端之 FcRn 結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)，且C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)；

(e) N 端之 FcRn 結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)，且C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLYPANG** (SEQ ID NO: 2)；及

(f) N 端之 FcRn 結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)，且C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)。

如由實例1中所呈現之資料顯而易見，已意外地發現環肽(亦即包含cys環之肽)一方面對於雙特異性單鏈構築體例如於細胞培養物中之產生(上游製備標準)及其分離(下游製備標準)很關鍵。另一方面，實例展示此類環肽在蛋白鏈內之位置對於雙特異性單鏈構築體之產生及分離為決定性的。在構築體之N端及C端包含FcRn結合肽之所鑑別組合的本發明雙特異性單鏈抗體構築體使得可向抗體構築體提供較佳組織分布特徵，同時保持其工業上可接受之上游及下游製備標準。

在本發明抗體構築體之另一實施例中，FcRn結合肽經由肽連接子連接於抗體構築體。肽連接子較佳具有胺基酸序列(GGGGS)_n (SEQ ID NO: 6)_n，其中「n」為在1至5範圍內之整數。更佳為在1至3範圍內

之整數「n」，且最佳「n」為1或2。

在本發明的一個實施例中，構築體包含結合於血清白蛋白之另一結構域。

尤其較佳白蛋白結合結構域為例如具有序列 RDWDFDVFGGGTPVGG (SEQ ID NO:609)之肽。然而，具有線性結構且不包含如cys環之結構的結合於白蛋白的結構域為較佳，因為假定本發明之抗體構築體中此類另一cys環結構與製備問題關聯。

此外，在本發明抗體構築體之一個實施例中，標靶細胞表面抗原為腫瘤抗原。較佳地，此腫瘤抗原選自由以下組成之群：CDH19 (鈣黏素19)、MSLN(間皮素，亦描述為巨核細胞增強因子[MPF])、DLL3、FLT3 (FMS相關之酪胺酸激酶3，亦描述為幹細胞酪胺酸激酶1[STK1]或FLK2)、CD33 (亦稱為唾液酸結合性免疫球蛋白樣凝集素3[SIGLEC3])、CD20 (亦稱為B淋巴細胞表面抗原B1[B1]或MS4A1)及EGFRvIII。

在本發明抗體構築體之一個實施例中，第二結合結構域結合於人類及白鬚獾、棉頂獾或松鼠猴CD3 ϵ 鏈之抗原決定基，其中該抗原決定基為包含於由以下組成之群中之胺基酸序列之一部分：SEQ ID NO: 7 (人類)、SEQ ID NO: 8 (白鬚獾)、SEQ ID NO: 9 (棉頂獾)及SEQ ID NO: 10 (松鼠猴)，且包含至少胺基酸序列Gln-Asp-Gly-Asn-Glu (SEQ ID NO: 11)。白鬚獾及棉頂獾均為屬於獾猴科的新世界靈長類動物，而松鼠猴為屬於卷尾猴科之新世界靈長類動物。

在一個實施例中，第二結合結構域包含具有CDR-L1-L3之VL區及具有CDR-H1-H3之VH區，該CDR-L1-L3及CDR-H1-H3選自由以下組成之群：

(a) SEQ ID NO: 12-14中所描繪之CDR-L1-L3及SEQ ID NO: 15-17中所描繪之CDR-H1-H3；

(b) SEQ ID NO: 24-26中所描繪之CDR-L1-L3及SEQ ID NO: 27-29中所描繪之CDR-H1-H3；

(c) SEQ ID NO: 36-38中所描繪之CDR-L1-L3及SEQ ID NO: 39-41中所描繪之CDR-H1-H3；

(d) SEQ ID NO: 48-50中所描繪之CDR-L1-L3及SEQ ID NO: 51-53中所描繪之CDR-H1-H3；

(e) SEQ ID NO: 60-62中所描繪之CDR-L1-L3及SEQ ID NO: 63-65中所描繪之CDR-H1-H3；

(f) SEQ ID NO: 72-74中所描繪之CDR-L1-L3及SEQ ID NO: 75-77中所描繪之CDR-H1-H3；

(g) SEQ ID NO: 84-86中所描繪之CDR-L1-L3及SEQ ID NO: 87-89中所描繪之CDR-H1-H3；

(h) SEQ ID NO: 96-98中所描繪之CDR-L1-L3及SEQ ID NO: 99-101中所描繪之CDR-H1-H3；

(i) SEQ ID NO: 108-110中所描繪之CDR-L1-L3及SEQ ID NO: 111-113中所描繪之CDR-H1-H3；

(j) SEQ ID NO: 120-122中所描繪之CDR-L1-L3及SEQ ID NO: 123-125中所描繪之CDR-H1-H3；

(k) SEQ ID NO: 616-618中所描繪之CDR-L1-L3及SEQ ID NO: 613-615中所描繪之CDR-H1-H3；

(l) SEQ ID NO: 626-628中所描繪之CDR-L1-L3及SEQ ID NO: 623-625中所描繪之CDR-H1-H3；

(m) SEQ ID NO: 636-638中所描繪之CDR-L1-L3及SEQ ID NO: 633-635中所描繪之CDR-H1-H3；

(n) SEQ ID NO: 646-648中所描繪之CDR-L1-L3及SEQ ID NO: 643-645中所描繪之CDR-H1-H3；

(o) SEQ ID NO: 656-658中所描繪之CDR-L1-L3及SEQ ID NO: 653-655中所描繪之CDR-H1-H3；

(p) SEQ ID NO: 666-668中所描繪之CDR-L1-L3及SEQ ID NO: 663-665中所描繪之CDR-H1-H3；

(q) SEQ ID NO: 676-678中所描繪之CDR-L1-L3及SEQ ID NO: 673-675中所描繪之CDR-H1-H3；及

(r) SEQ ID NO: 686-688中所描繪之CDR-L1-L3及SEQ ID NO: 683-685中所描繪之CDR-H1-H3。

在一個實施例中，第二結合結構域包含選自由以下組成之群之成對VH及VL鏈：

(a) SEQ ID NO: 18中所描繪之VH鏈及SEQ ID NO: 20中所描繪之VL鏈；

(b) SEQ ID NO: 30中所描繪之VH鏈及SEQ ID NO: 32中所描繪之VL鏈；

(c) SEQ ID NO: 42中所描繪之VH鏈及SEQ ID NO: 44中所描繪之VL鏈；

(d) SEQ ID NO: 54中所描繪之VH鏈及SEQ ID NO: 56中所描繪之VL鏈；

(e) SEQ ID NO: 66中所描繪之VH鏈及SEQ ID NO: 68中所描繪之VL鏈；

(f) SEQ ID NO: 78中所描繪之VH鏈及SEQ ID NO: 80中所描繪之VL鏈；

(g) SEQ ID NO: 90中所描繪之VH鏈及SEQ ID NO: 92中所描繪之VL鏈；

(h) SEQ ID NO: 102中所描繪之VH鏈及SEQ ID NO: 104中所描繪之VL鏈；

(i) SEQ ID NO: 114中所描繪之VH鏈及SEQ ID NO: 116中所描繪之VL鏈；

(j) SEQ ID NO: 126中所描繪之VH鏈及SEQ ID NO: 128中所描繪之VL鏈；

(k) SEQ ID NO: 619中所描繪之VH鏈及SEQ ID NO: 620中所描繪之VL鏈；

(l) SEQ ID NO: 629中所描繪之VH鏈及SEQ ID NO: 630中所描繪之VL鏈；

(m) SEQ ID NO: 639中所描繪之VH鏈及SEQ ID NO: 640中所描繪之VL鏈；

(n) SEQ ID NO: 649中所描繪之VH鏈及SEQ ID NO: 650中所描繪之VL鏈；

(o) SEQ ID NO: 659中所描繪之VH鏈及SEQ ID NO: 660中所描繪之VL鏈；

(p) SEQ ID NO: 669中所描繪之VH鏈及SEQ ID NO: 670中所描繪之VL鏈；

(q) SEQ ID NO: 679中所描繪之VH鏈及SEQ ID NO: 680中所描繪之VL鏈；及

(r) SEQ ID NO: 689中所描繪之VH鏈及SEQ ID NO: 690中所描繪之VL鏈。

此外，在本發明抗體構築體之一個實施例中，第二結合結構域包含SEQ ID NO: 22、SEQ ID NO: 34、SEQ ID NO: 46、SEQ ID NO: 58、SEQ ID NO: 70、SEQ ID NO: 82、SEQ ID NO: 94、SEQ ID NO: 106、SEQ ID NO: 118、SEQ ID NO: 130、SEQ ID NO: 621、SEQ ID NO: 631、SEQ ID NO: 641、SEQ ID NO: 651、SEQ ID NO: 661、SEQ ID NO: 671、SEQ ID NO: 681或SEQ ID NO: 691中所描繪之胺基酸序

列。

在本發明抗體構築體之一較佳實施例中，結構域自N端至C端排列如下：

(包含SEQ ID NO: 1之FcRn結合肽)-(第一結合結構域之VH鏈)-(第一結合結構域之VL鏈)-(第二結合結構域之VH鏈)-(第二結合結構域之VL鏈)-(包含SEQ ID NO: 4之FcRn結合肽)

或

(包含SEQ ID NO: 4之FcRn結合肽)-(第一結合結構域之VH鏈)-(第一結合結構域之VL鏈)-(第二結合結構域之VH鏈)-(第二結合結構域之VL鏈)-(包含SEQ ID NO: 1之FcRn結合肽)。

亦涵蓋本文所述之抗體構築體的胺基酸序列修飾。舉例而言，可能需要改良抗體構築體之結合親和力及/或其他生物學特性。抗體構築體之胺基酸序列變異體藉由向抗體構築體核酸中引入適當核苷酸變化或藉由肽合成來製備。所有下述胺基序列修飾應得到抗體構築體，其仍保留未經修飾親本分子之所要生物活性(結合於標靶細胞抗原及結合於CD3)。

術語「胺基酸」或「胺基酸殘基」通常指具有此項技術中認可之定義的胺基酸，諸如選自由以下組成之群的胺基酸：丙胺酸(Ala或A)；精胺酸(Arg或R)；天冬醯胺(Asn或N)；天冬胺酸(Asp或D)；半胱胺酸(Cys或C)；麩醯胺酸(Gln或Q)；麩胺酸(Glu或E)；甘胺酸(Gly或G)；組胺酸(His或H)；異白胺酸(He或I)；白胺酸(Leu或L)；離胺酸(Lys或K)；甲硫胺酸(Met或M)；苯丙胺酸(Phe或F)；脯胺酸(Pro或P)；絲胺酸(Ser或S)；蘇胺酸(Thr或T)；色胺酸(Trp或W)；酪胺酸(Tyr或Y)；及纈胺酸(Val或V)，但經修飾、合成或稀有胺基酸可視需要使用。一般而言，胺基酸可分組為具有非極性側鏈之胺基酸(例如Ala、Cys、He、Leu、Met、Phe、Pro、Val)；具有帶負電側鏈之胺基酸(例

如 Asp、Glu)；具有帶正電側鏈之胺基酸(例如 Arg、His、Lys)；或具有不帶電極性側鏈之胺基酸(例如 Asn、Cys、Gln、Gly、His、Met、Phe、Ser、Thr、Trp 及 Tyr)。

胺基酸修飾包括例如缺失抗體構築體之胺基酸序列內的殘基及/或插入該等殘基中及/或取代該等殘基。進行缺失、插入及取代之任何組合以獲得最終構築體，其限制條件為該最終構築體具有所需特徵。胺基酸變化亦可改變抗體構築體之轉譯後過程，諸如改變糖基化位點之編號或位置。

舉例而言，1、2、3、4、5 或 6 個胺基酸可插入各 CDR 中或在各 CDR 中缺失(當然，取決於其長度)，而 1、2、3、4、5、6、7、8、9、10、11、12、13、14、15、16、17、18、19、20 或 25 個胺基酸可插入各 FR 中或在各 FR 中缺失。較佳地，胺基酸序列插入物包括長度為 1、2、3、4、5、6、7、8、9 或 10 個殘基至含有一百個或一百個以上殘基之多肽的胺基及/或羧基端融合物，以及具有單個或多個胺基酸殘基之內部序列插入物。本發明抗體構築體之插入變異體包括與針對酶之抗體構築體之 N 端或 C 端之融合物或與延長抗體構築體之血清半衰期的多肽的融合物。

取代突變誘發之最受關注位點包括重鏈及/或輕鏈之 CDR，尤其高變區，但亦涵蓋重鏈及/或輕鏈之 FR 改變。取代較佳為如本文所述之保守取代。較佳地，視 CDR 或 FR 之長度而定，可取代 CDR 中 1、2、3、4、5、6、7、8、9 或 10 個胺基酸，而可取代構架區(FR)中之 1、2、3、4、5、6、7、8、9、10、11、12、13、14、15、16、17、18、19、20 或 25 個胺基酸。舉例而言，若 CDR 序列涵蓋 6 個胺基酸，則可設想取代此等胺基酸中之一者、兩者或三者。類似地，若 CDR 序列涵蓋 15 個胺基酸，則可設想取代此等胺基酸中之一者、兩者、三者、四者、五者或六者。

鑑別抗體構築體中作為突變誘發之較佳位置的特定殘基或區域之適用方法稱為「丙胺酸掃描突變誘發」，其如Cunningham及Wells, *Science*, 244: 1081-1085 (1989)所述。在本文中，鑑別抗體構築體內之標靶殘基之殘基或基團(例如帶電殘基，諸如arg、asp、his、lys及glu)且經中性或帶負電胺基酸(最佳丙胺酸或聚丙胺酸)置換以影響胺基酸與抗原決定基之相互作用。

隨後，藉由在取代位點處或為取代位點引入其他變異體以改進彼等證明對取代具有功能敏感性之胺基酸部位。因此，在預先確定引入胺基酸序列變化之位點或區域時，突變本身之性質無需預先確定。舉例而言，為分析或最佳化既定位點之突變的效能，可在標靶密碼子或區域進行丙胺酸掃描或隨機突變誘發，且針對所要活性之最佳組合篩選所表現之抗體構築體變異體。在具有已知序列之DNA的預定位點中進行取代突變之技術為吾人所熟知，例如M13引子突變誘發及PCR突變誘發。使用抗原結合活性之分析(諸如CDH19結合)進行突變體之篩選。

一般而言，若取代重鏈及/或輕鏈之CDR中之一或多者或所有的胺基酸，則較佳隨後所得之「經取代之」序列與「原始」CDR序列至少60%、更佳65%、甚至更佳70%、尤其較佳75%、更尤其較佳80%一致。此意謂其取決於CDR之達到與「經取代之」序列一致之程度的長度。舉例而言，具有5個胺基酸之CDR與其經取代之序列較佳80%一致以有至少一個胺基酸經取代。因此，抗體構築體之CDR可與其經取代之序列具有不同程度之一致性，例如CDRL1可具有80%，而CDRL3可具有90%。

較佳取代(或置換)為保守取代。然而，可設想任何取代基(包括非保守取代或下表1中所列之「例示性取代」中之一或多者)，只要抗體構築體保留其經由第一結合結構域結合於標靶細胞抗原且經由第二

結合結構域結合於CD3 ϵ 之能力及/或其CDR與隨後經取代之序列具有一致性(與「原始」CDR序列至少60%、更佳65%、甚至更佳70%、尤其較佳75%、更尤其較佳80%一致)即可。

保守性取代以標題「較佳取代」展示於表1中。若此類取代引起生物活性變化，則可引入表A中稱為「例示性取代」或如下文提及胺基酸類別時之進一步描述的更實質變化且針對所要特徵篩選產物。

表A：胺基酸取代

原始	例示性取代	較佳取代
Ala (A)	val、leu、ile	val
Arg (R)	lys、gln、asn	lys
Asn (N)	gln、his、asp、lys、arg	gln
Asp (D)	glu、asn	glu
Cys (C)	ser、ala	ser
Gln (Q)	asn、glu	asn
Glu (E)	asp、gln	asp
Gly (G)	Ala	ala
His (H)	asn、gln、lys、arg	arg
Ile (I)	leu、val、met、ala、phe	leu
Leu (L)	norleucine、ile、val、met、ala	ile
Lys (K)	arg、gln、asn	arg
Met (M)	leu、phe、ile	leu
Phe (F)	leu、val、ile、ala、tyr	tyr
Pro (P)	Ala	ala
Ser (S)	Thr	thr
Thr (T)	Ser	ser
Trp (W)	tyr、phe	tyr
Tyr (Y)	trp、phe、thr、ser	phe
Val (V)	ile、leu、met、phe、ala	leu

本發明抗體構築體之生物特性的實質改變藉由選擇取代實現，該等取代在其對維持(a)取代區域中多肽主鏈之結構，例如片或螺旋構形，(b)標靶位點處分子之電荷或疏水性或(c)側鏈之體積的作用上顯著不同。可基於共同側鏈特性將天然存在之殘基分組：(1)疏水性：正白胺酸、met、ala、val、leu、ile；(2)中性親水性：cys、ser、thr；(3)酸性：asp、glu；(4)鹼性：asn、gin、his、lys、arg；(5)

影響鏈定向之殘基：gly、pro；及(6)芳族：trp、tyr、phe。

非保守性取代將需要將此等類別中之一者之成員換成另一類別。可取代(一般以絲胺酸)不參與維持抗體構築體之適當構形的任何半胱胺酸殘基以改良分子之氧化穩定性且防止異常交聯。反之，可向抗體添加半胱胺酸鍵以改良其穩定性(尤其在抗體為諸如Fv片段之抗體片段的情況下)。

對於胺基酸序列，藉由使用此項技術中已知之標準技術測定序列一致性及/或類似性，包括(但不限於)Smith及Waterman, 1981, *Adv. Appl. Math.* 2:482之局部序列一致性算法；Needleman及Wunsch, 1970, *J. Mol. Biol.* 48:443之序列一致性比對算法；Pearson及Lipman, 1988, *Proc. Nat. Acad. Sci. U.S.A.* 85:2444之類似性方法之檢索；此等算法之電腦化具體實例(Wisconsin Genetics軟體套件，Genetics Computer Group, 575 Science Drive, Madison, Wis.中之GAP、BESTFIT、FASTA及TFASTA)；Devereux等人, 1984, *Nucl. Acid Res.* 12:387-395所述之最佳擬合序列程式，較佳使用預設設定或藉由測試達成。較佳地，百分比一致性藉由FastDB基於以下參數計算：錯配罰分1；空隙罰分1；空隙尺寸罰分0.33；及接合罰分30，「Current Methods in Sequence Comparison and Analysis,」 *Macromolecule Sequencing and Synthesis, Selected Methods and Applications*, 第127-149頁 (1988), Alan R. Liss, Inc。

適用算法之一實例為PILEUP。PILEUP使用漸進成對比對由一組相關序列產生多個序列比對。其亦可繪製展示用於產生比對之叢集關係的樹。PILEUP使用Feng及Doolittle, 1987, *J. Mol. Evol.* 35:351-360之漸進比對方法之簡化方法；該方法類似於Higgins及Sharp, 1989, *CABIOS* 5:151-153所述。適用參數包括預設間隙權重3.00、預設空隙長度權重0.10及經加權末端空隙。

適用算法之另一實例為BLAST算法，描述於以下文獻中：Altschul等人，1990, *J. Mol. Biol.* 215:403-410；Altschul等人，1997, *Nucleic Acids Res.* 25:3389-3402；及Karin等人，1993, *Proc. Natl. Acad. Sci. U.S.A.* 90:5873-5787。尤其適用之BLAST程式為WU-BLAST-2程式，其獲自Altschul等人，1996, *Methods in Enzymology* 266:460-480。WU-BLAST-2使用數個檢索參數，其中之大多數設定成預設值。使用以下值設定可調節的參數：重疊間隔=1、重疊分數=0.125、詞臨限值(T)=II。HSP S及HSP S2參數為動態值且藉由本身程式視特定序列之組成及相關序列檢索之特定資料庫之組成而確立；然而可調節該等值以提高敏感性。

其他適用算法為Altschul等人，1993, *Nucl. Acids Res.* 25:3389-3402報導之空隙BLAST。空隙BLAST使用BLOSUM-62取代計分；臨限值T參數設定為9；兩點碰撞法(two-hit method)用於觸發無空隙延伸部分，電荷空隙長度k，代價為10+k；Xu設定為16，且Xg對於資料庫檢索階段設定為40，且對於算法之輸出階段設定為67。空隙比對藉由對應於約22比特之分值觸發。

一般而言，個別變異體CDR與本文所描繪之序列之間的胺基酸同源性、類似性或一致性為至少60%，且更通常具有至少65%或70%之較佳增加之同源性或一致性，更佳至少75%或80%，甚至更佳至少85%、90%、91%、92%、93%、94%、95%、96%、97%、98%、99%，且幾乎100%。以類似方式，相對於本文所鑑別之結合蛋白的核酸序列的「核酸序列一致性百分比(%)」定義為候選序列中與抗體構築體之編碼序列中之核苷酸殘基一致的核苷酸殘基之百分比。特定方法使用設定為預設參數之WU-BLAST-2的BLASTN模組，其中重疊間隔及重疊分數分別設定為1及0.125。

一般而言，編碼個別變異體CDR之核苷酸序列與本文所描繪之核

苷酸序列之間的核酸序列同源性、類似性或一致性為至少60%，且更通常具有至少65%、70%、75%、80%、81%、82%、83%、84%、85%、86%、87%、88%、89%、90%、91%、92%、93%、94%、95%、96%、97%、98%或99%的較佳增加之同源性或一致性，且幾乎100%。因此，「變異體CDR」為相對於本發明之親本CDR具有特定同源性、類似性或一致性的CDR，且具有包括(但不限於)親本CDR之特異性及/或活性的至少60%、65%、70%、75%、80%、81%、82%、83%、84%、85%、86%、87%、88%、89%、90%、91%、92%、93%、94%、95%、96%、97%、98%或99%的生物功能。

此外，可設想本發明之雙特異性抗體構築體展現治療功效或抗腫瘤活性。此可例如在以下晚期人類腫瘤異種移植模型之實例中所述的研究中評定：

在研究之第1天，將 5×10^6 個人類標靶細胞抗原陽性癌細胞株細胞皮下注射於雌性NOD/SCID小鼠之右背側中。當平均腫瘤體積達到約 100 mm^3 時，將活體外擴增之人類CD3陽性T細胞移植於小鼠中，其藉由將約 2×10^7 個細胞注射於動物之腹膜腔中達成。媒劑對照組1之小鼠不接受效應細胞且用作未移植對照來與媒劑對照組2（接受效應細胞）比較以監測單獨的T細胞對腫瘤生長之影響。抗體處理在平均腫瘤體積達到約 200 mm^3 時開始。處理開始之日各處理組之平均腫瘤尺寸不應在統計學上不同於任何其他組(變異數分析)。藉由靜脈內快速注射約15至20天用0.5毫克/公斤/天標靶細胞抗原/CD3雙特異性抗體構築體處理小鼠。在研究期間藉由測徑規量測腫瘤且藉由組間比較腫瘤體積(TV)評估進展。藉由以 $T/C\% = 100 \times (\text{分析組之中值TV})/(\text{對照組2之中值TV})$ 形式計算TV確定腫瘤生長抑制T/C[%]。

熟習此項技術者已知如何修改或調整此研究之特定參數，諸如所注射腫瘤細胞之數目、注射位點、所移植人類T細胞之數目、欲投

與之雙特異性抗體構築體之量及時刻表，而仍達成有意義且可複製之結果。較佳地，腫瘤生長抑制T/C[%]為 ≤ 70 或 ≤ 60 ，更佳 ≤ 50 或 ≤ 40 ，甚至更佳 ≤ 30 或 ≤ 20 且最佳 ≤ 10 或 ≤ 5 或甚至 ≤ 2.5 。

在一個實施例中，本發明之雙特異性抗體構築體在標準研究規模條件下(例如在標準兩步純化方法中)展現高單體產量。較佳地，本發明抗體構築體之單體產量 ≥ 0.25 mg/L上清液，更佳 ≥ 0.5 mg/L，甚至更佳 ≥ 1 mg/L，且最佳 ≥ 3 mg/L上清液。

同樣，可測定二聚抗體構築體同功異型物之產量及抗體構築體之單體百分比(亦即單體:(單體+二聚體))。單體及二聚抗體構築體之生產力及所計算之單體百分比可例如在來自滾瓶中之標準化研究規模製備之培養物上清液的SEC純化步驟中獲得。在一個實施例中，抗體構築體之單體百分比為 $\geq 80\%$ ，更佳 $\geq 85\%$ ，甚至更佳 $\geq 90\%$ ，且最佳 $\geq 95\%$ 。

在另一實施例中，與本發明抗體構築體之人類生殖系之一致性百分比為 $\geq 70\%$ 或 $\geq 75\%$ ，更佳 $\geq 80\%$ 或 $\geq 85\%$ ，甚至更佳 $\geq 90\%$ ，且最佳 $\geq 95\%$ 。認為與人類抗體生殖系基因產物之一致性為降低治療期間治療蛋白之引發患者中針對藥物之免疫反應之風險的重要特徵。Hwang & Foote (「Immunogenicity of engineered antibodies」; Methods 36 (2005) 3-10)展示減少藥物抗體構築體之非人類部分使治療期間患者中誘導抗藥物抗體之風險降低。藉由比較大量臨床上評估之抗體藥物及各別免疫原性資料，展示人類化抗體之V區使蛋白質之免疫原性(平均5.1%患者)低於帶有未改變之非人類V區之抗體(平均23.59%患者)的趨勢。因此，對於抗體構築體形式的基於V區之蛋白質療法，需要與人類序列具有較高一致性程度。出於確定生殖系一致性之此目的，可使用載體NTI軟體將VL之V區與人類生殖系V區及J區之胺基酸序列比對(<http://vbase.mrc-cpe.cam.ac.uk/>)，且胺基酸序列藉由將一致胺基酸

殘基除以VL之胺基酸殘基之總數計算(%)。其可用於VH區段(<http://vbase.mrc-cpe.cam.ac.uk/>)，除了可能由於VH CDR3之高多樣性及缺乏現有人類生殖系VH CDR3比對搭配物而不包括VH CDR3。可隨後使用重組技術提高與人類抗體生殖系基因之序列一致性。

在一個實施例中，抗體構築體具有較佳血漿穩定性(有血漿之情況下的EC50與無血漿之情況下的EC50之比率)，其為 ≤ 5 ，更佳 ≤ 4 ，甚至更佳 ≤ 3 ，且最佳 ≤ 2 。抗體構築體之血漿穩定性可藉由將構築體在37℃下在人類血漿中培育24小時，繼而在51鉻釋放細胞毒性分析中測定EC50來測試。細胞毒性分析中之效應細胞可為經刺激增濃之人類CD8陽性T細胞。標靶細胞可例如為經人類標靶細胞抗原轉染之CHO細胞。效應子與標靶細胞(E:T)比率可選擇為10:1。用於此目的之人類血漿庫獲自藉由塗佈EDTA之注射器收集的健康供體之血液。藉由離心移除細胞組分，收集上部血漿相且隨後彙集。作為對照，稀釋抗體構築體，隨後立即在RPMI-1640培養基中進行細胞毒性分析。血漿穩定性以EC50(血漿培育後)與EC50(對照)之比率的形式計算。

本發明抗體構築體之單體至二聚體之轉化率較佳為低的。轉化率可在不同條件下量測且藉由高效尺寸排阻層析分析。舉例而言，培育抗體構築體之單體同功異型物可在37℃下執行7天且在培育箱中達到例如100 µg/ml或250 µg/ml之濃度。在此等條件下，較佳地，本發明之抗體構築體展示 $\leq 5\%$ 之二聚體百分比，更佳 $\leq 4\%$ ，甚至更佳 $\leq 3\%$ ，甚至更佳 $\leq 2.5\%$ ，甚至更佳 $\leq 2\%$ ，甚至更佳 $\leq 1.5\%$ ，且最佳 $\leq 1\%$ 。

本發明之雙特異性抗體構築體亦較佳在多個凍/融循環後呈現極低二聚體轉化率。舉例而言，將抗體構築體單體例如在SEC操作緩衝液中調節至250 µg/ml之濃度且進行三個凍/融循環(在-80℃下冷凍30分鐘繼而在室溫下融化30分鐘)，繼而高效SEC以測定已轉化成二聚

抗體構築體之最初單體抗體構築體之百分比。舉例而言，在三個凍/融循環後，雙特異性抗體構築體之二聚體百分比比較佳為 $\leq 5\%$ ，更佳 $\leq 4\%$ ，甚至更佳 $\leq 3\%$ ，甚至更佳 $\leq 2.5\%$ ，甚至更佳 $\leq 2\%$ ，甚至更佳 $\leq 1.5\%$ ，且最佳 $\leq 1\%$ 。

本發明之雙特異性抗體構築體較佳展示有利熱穩定性，熔融溫度高於 60°C 。此參數可如下確定：溫度熔融曲線藉由差示掃描熱量測定(DSC)確定以測定抗體構築體之固有生物物理學蛋白質穩定性。此等實驗使用MicroCal LLC (Northampton, MA, U.S.A) VP-DSC器件執行。與僅含有調配緩衝液之樣品相比，自 20°C 至 90°C 記錄含有抗體構築體之樣品的能量吸收。將抗體構築體例如在SEC操作緩衝液中調節至 $250\text{ }\mu\text{g/ml}$ 之最終濃度。為記錄各別熔融曲線，逐步提高整個樣品溫度。在各溫度T下，記錄樣品及調配緩衝液參考物之能量吸收。相對於各別溫度繪製樣品減去參考物之能量吸收 C_p ($\text{kcal/mole/}^{\circ}\text{C}$)之差值的圖。熔融溫度定義為能量吸收之第一最大值之溫度。

在另一實施例中，本發明之抗體構築體在酸性pH值下穩定。在非生理pH值(諸如pH 5.5，例如操作陽離子交換層析所需之pH值)下，抗體構築體表現得愈具有耐受性，相對於所負載之蛋白質之總量自離子交換管柱溶離之抗體構築體之回收率愈高。pH 5.5下來自離子(例如陽離子)交換管柱之抗體構築體之回收率較佳為 $\geq 30\%$ ，更佳 $\geq 40\%$ ，更佳 $\geq 50\%$ ，甚至更佳 $\geq 60\%$ ，甚至更佳 $\geq 70\%$ ，甚至更佳 $\geq 80\%$ ，且最佳 $\geq 90\%$ 。

在一替代性實施例中，本發明提供一種編碼本發明之抗體構築體的聚核苷酸。

聚核苷酸為由13個或13個以上共價鍵結於鏈中之核苷酸單體構成的生物聚合物。DNA (諸如cDNA)及RNA (諸如mRNA)為具有不同生物功能之聚核苷酸的實例。核苷酸為充當核酸分子(如DNA或RNA)

之單體或次單位的有機分子。核酸分子或聚核苷酸可為雙股及單股、線性及環形的。其較佳包含於載體中，該載體較佳包含於宿主細胞中。該宿主細胞例如在用本發明之載體或聚核苷酸轉型或轉染後能夠表現抗體構築體。出於該目的，聚核苷酸或核酸分子與控制序列可操作地連接。

遺傳密碼為遺傳物質(核酸)內編碼之資訊轉譯成蛋白質所用之規則之組。活細胞中之生物學解碼藉由核糖體實現，核糖體使用tRNA分子運載胺基酸且同時讀取mRNA之三個核苷酸而以由mRNA規定之次序連接胺基酸。該密碼定義此等核苷酸三聯體(稱為密碼子)之序列如何規定在蛋白質合成期間隨後添加哪個胺基酸。核酸序列中三個核苷酸之密碼子規定單一胺基酸，但有一些例外情形。因為絕大部分基因用完全相同之密碼編碼，故此特定密碼通常稱為標準遺傳密碼。遺傳密碼決定既定編碼區之蛋白質序列，而其他基因組區可影響此等蛋白質產生之時間及位置。

此外，本發明提供一種載體，其包含本發明之聚核苷酸/核酸分子。

載體為用作將(外來)遺傳物質轉移至細胞中之運載工具的核酸分子。術語「載體」涵蓋(但不限於)質體、病毒、黏質體及人造染色體。。一般而言，工程改造載體包含複製起點、多選殖位點及可選標記物。載體本身通常為核苷酸序列，通常DNA序列，其包含插入序列(轉殖基因)及充當載體之「主鏈」的較大序列。現今載體可包涵除轉殖基因插入序列及主鏈以外之其他特徵：啟動子、遺傳標記物、抗生素抗性序列、報導基因、靶向序列、蛋白質純化標籤。稱為表現載體(表現構築體)之載體特異於在標靶細胞中表現轉殖基因，且通常具有控制序列。

術語「控制序列」係指在特定宿主生物體中表現可操作連接之

編碼序列所需之DNA序列。適用於原核生物之控制序列例如包括啟動子、視情況選用之操縱子序列及核糖體結合位點。已知真核細胞利用啟動子、聚腺苷酸化信號及增強子。

核酸在其置放至與另一核酸序列具有功能關係時「可操作地連接」。舉例而言，若前序列或分泌性前導序列之DNA表現為參與多肽分泌之前蛋白，則其與該多肽之DNA可操作地連接；若啟動子或增強子影響編碼序列之轉錄，則其與該序列可操作地連接；或若核糖體結合位點經定位以便有助於轉譯，則其與編碼序列可操作地連接。一般而言，「可操作地連接」意謂所連接之DNA序列相鄰且在分泌性前導序列之情況下，相鄰且在閱讀相中。然而，增強子不必為相鄰的。連接係藉由在適宜限制位點處連接來實現。若此類位點不存在，則根據慣例使用合成寡核苷酸接附子或連接子。

「轉染」為向標靶細胞中故意引入核酸分子或聚核苷酸(包括載體)的過程。該術語主要用於真核細胞中之非病毒方法。轉導通常用於描述病毒介導之核酸分子或聚核苷酸之轉移。動物細胞之轉染通常涉及在細胞膜中打開短暫的孔或「洞」，以使得可吸收物質。轉染可使用磷酸鈣、藉由電穿孔、藉由細胞擠壓或藉由混合陽離子脂質與產生脂質體(其與細胞膜融合且使其內部之負載沈積)之物質來執行。

術語「轉型」用於描述核酸分子或聚核苷酸(包括載體)向細菌以及非動物真核細胞(包括植物細胞)中之非病毒轉移。因此，轉型為細菌或非動物真核細胞透過細胞膜自其環境直接吸收且隨後併入外源遺傳物質(核酸分子)所造成之基因改變。轉型可由人工方式執行。為了使轉型發生，細胞或細菌必須處於感受態，其可隨時間限制而對環境條件(諸如饑餓及細胞密度)發生反應。

此外，本發明提供一種用聚核苷酸/核酸分子或用本發明之載體轉型或轉染之宿主細胞。

如本文所用，術語「宿主細胞」或「接受者細胞」意欲包括可作為或已成為載體、外源核酸分子及編碼本發明抗體構築體之聚核苷酸之接受者；及/或抗體構築體本身之接受者的任何個別細胞或細胞培養物。可藉助於轉型、轉染及其類似方法將各別物質引入細胞中。術語「宿主細胞」亦意欲包括單個細胞之後代或可能後代。因為隨後之續代中可能由於天然、偶然或故意突變或由於環境影響而發生特定修飾，故實際上此類後代可能不與親本細胞完全相同(形態或基因組或總DNA互補序列)，但仍包括在如本文所用之術語之範疇內。適合之宿主細胞包括原核或真核細胞，而且包括(但不限於)細菌、酵母細胞、真菌細胞、植物細胞及動物細胞，諸如昆蟲細胞及哺乳動物細胞，例如鼠類、大鼠、獼猴或人類。

本發明之抗體構築體可在細菌中產生。表現後，本發明之抗體構築體以可溶性溶離份自大腸桿菌細胞漿料分離且可經由例如親和層析及/或尺寸排阻純化。可類似於純化例如CHO細胞中表現之抗體之方法來進行最終純化。

除原核生物以外，真核微生物(諸如絲狀真菌或酵母)為本發明之抗體構築體的適合選殖或表現宿主。在低級真核宿主微生物中最常使用釀酒酵母(*Saccharomyces cerevisiae*)或普通麵包酵母(baker's yeast)。然而，多種其他屬、種及菌株通常可用且適用於本文，諸如粟酒裂殖酵母(*Schizosaccharomyces pombe*)；克魯維酵母宿主(*Kluyveromyces*)，諸如乳酸克魯維酵母(*K. lactis*)、脆壁克魯維酵母(*K. fragilis*)(ATCC 12424)、保加利亞克魯維酵母(*K. bulgaricus*)(ATCC 16045)、威克克魯維酵母(*K. wickerhamii*)(ATCC 24178)、克魯維雄酵母(*K. waltii*)(ATCC 56500)、果妮克魯維酵母(*K. drosophilarum*)(ATCC 36906)、耐熱克魯維酵母(*K. thermotolerans*)及馬克斯克魯維酵母(*K. marxianus*)；耶氏酵母屬(*yarrowia*)(EP 402 226)；甲醇酵母(*Pichia*

pastoris)(EP 183 070)；假絲酵母(*Candida*)；里氏木黴(*Trichoderma reesia*)(EP 244 234)；粗厚神經孢子菌(*Neurospora crassa*)；許旺酵母(*Schwanniomyces*)，諸如西方許旺酵母(*Schwanniomyces occidentalis*)；及絲狀真菌，諸如紅黴菌屬(*Neurospora*)、青黴菌屬(*Penicillium*)、彎頸黴屬(*Tolypocladium*)及麴菌屬(*Aspergillus*)宿主，諸如構巢麴黴(*A. nidulans*)及黑麴黴(*A. niger*)。

用於表現本發明之糖基化抗體構築體之適合宿主細胞來源於多細胞生物體。無脊椎動物細胞之實例包括植物及昆蟲細胞。已鑑別多種桿狀病毒株及變異體以及來自諸如草地黏蟲(*Spodoptera frugiperda*)(毛蟲)、埃及伊蚊(*Aedes aegypti*)(蚊子)、白紋伊蚊(*Aedes albopictus*)(蚊子)、黑腹果蠅(*Drosophila melanogaster*)(果蠅)及家蠶(*Bombyx mori*)之宿主的相應許可昆蟲宿主細胞。用於轉染之多種病毒株公開可得，例如苜蓿丫紋夜蛾(*Autographa californica*)NPV之L-1變異體及家蠶NPV之Bm-5病毒株，且根據本發明此類病毒可用作本文中之病毒，尤其用於轉染草地黏蟲細胞。

棉花、玉米、馬鈴薯、大豆、矮牽牛、番茄、芥菜及菸草之植物細胞培養物亦可用作宿主。適用於在植物細胞培養物中產生蛋白質之選殖及表現載體為熟習此項技術者已知。參見例如Hiatt等人，*Nature* (1989) 342: 76-78，Owen等人，(1992) *Bio/Technology* 10: 790-794，Artsaenko等人，(1995) *The Plant J* 8: 745-750，及Fecker等人，(1996) *Plant Mol Biol* 32: 979-986。

然而，脊椎動物細胞最受關注，且脊椎動物細胞於培養物(組織培養物)中之繁殖已成為一種常規程序。適用哺乳動物宿主細胞株之實例為由SV40轉型之猴腎臟CV1株(COS-7，ATCC CRL 1651)；人胚腎株(次選殖以用於在懸浮培養物中生長之293或293細胞，Graham等人，*J. Gen Virol.* 36 : 59 (1977))；幼倉鼠腎細胞(BHK，ATCC CCL

10)；中國倉鼠卵巢細胞/-DHFR (CHO，Urlaub等人，Proc. Natl. Acad. Sci. USA 77: 4216 (1980))；小鼠塞特利氏細胞(mouse sertoli cell，TM4，Mather, Biol. Reprod. 23: 243-251 (1980))；猴腎臟細胞(CVI ATCC CCL 70)；非洲綠猴腎細胞(VERO-76，ATCC CRL1587)；人類子宮頸癌細胞(HELA，ATCC CCL 2)；犬腎細胞(MDCK，ATCC CCL 34)；布法羅大鼠肝臟細胞(buffalo rat liver cell，BRL 3A，ATCC CRL 1442)；人類肺細胞(W138，ATCC CCL 75)；人類肝細胞(Hep G2，1413 8065)；小鼠乳房腫瘤(MMT 060562，ATCC CCL5 1)；TRI細胞(Mather等人，Annals N. Y Acad. Sci. (1982) 383: 44-68)；MRC 5細胞；FS4細胞；及人類肝癌株(Hep G2)。

本發明亦提供一種製備本發明抗體構築體之方法，該方法包含在使得本發明之抗體構築體表現之條件下培養本發明之宿主細胞，及回收自培養物產生之抗體構築體。

如本文所用，術語「培養」係指在適合條件下在培養基中活體外維持細胞、使其分化、生長、增殖及/或繁殖。術語「表現」包括參與制備本發明抗體構築體之任何步驟，包括(但不限於)轉錄、轉錄後修飾、轉譯、轉譯後修飾及分泌。

當使用重組技術時，抗體構築體可於細胞內、周質空間中產生或直接分泌於培養基中。若抗體構築體於細胞內產生，則作為第一步驟，例如藉由離心或超濾移除宿主細胞或已溶解片段之顆粒碎片。Carter等人，Bio/Technology 10: 163-167 (1992)描述分離分泌至大腸桿菌之周質空間的抗體的程序。簡言之，在乙酸鈉(pH 3.5)、EDTA及苯基甲基磺醯基氟(PMSF)存在下經約30分鐘融化細胞漿料。可藉由離心移除細胞碎片。在抗體分泌至培養基中之情形下，通常首先使用市售蛋白質濃縮過濾器(例如Amicon或Millipore Pellicon超濾單元)濃縮此類表現系統之上清液。在任何先前步驟中可包括諸如PMSF之蛋白

酶抑制劑以抑制蛋白水解，且可包括抗生素以防止外來污染物生長。

自宿主細胞製備之本發明之抗體構築體可使用例如羧磷灰石層析、凝膠電泳、透析及親和層析回收或純化。亦可視欲回收抗體而利用其他用於蛋白質純化之技術，諸如離子交換管柱分餾、乙醇沈澱、逆相HPLC、二氧化矽層析、肝素SEPHAROSE™層析、陰離子或陽離子交換樹脂(諸如聚天冬胺酸管柱)層析、層析聚焦、SDS-PAGE及硫酸銨沈澱。若本發明之抗體構築體包含CH3結構域，則Bakerbond ABX樹脂(J.T. Baker, Phillipsburg, NJ)適用於純化。

親和層析為較佳純化技術。儘管親和配體所連接之基質最常為瓊脂糖，但亦可利用其他基質。與用瓊脂糖可達成相比，機械穩定性基質(諸如可控孔度玻璃或聚(苯乙烯二乙烯基)苯)使流動速率較快且處理時間較短。

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在一替代性實施例中，本發明提供一種醫藥組合物，其包含本發明之抗體構築體或根據本發明方法製備之抗體構築體。

一個實施例係關於一種本發明抗體構築體或根據本發明方法製備之抗體構築體，其用於預防、治療或改善選自增生性疾病、腫瘤性疾病、病毒性疾病或免疫病症之疾病。

本文所述之調配物適用作治療、改善及/或預防有需要之患者之如本文所述之病理性醫學病狀的醫藥組合物。術語「治療」係指治療性處理與防護性或預防性措施。治療包括將調配物施用或投與來自患有疾病/病症、具有疾病/病症之症狀或易患疾病/病症之患者之身體、分離組織或細胞，以治癒、治療、減輕、降低、改變、補救、改善、

改良或影響疾病、疾病症狀或疾病之傾向。

如本文所用之術語「改善」係指藉由向有需要之個體投與本發明之抗體構築體達成的對患者之疾病病況的任何改良。此類改良亦可視為使患者疾病之進展減緩或停止。如本文所用之術語「預防」意謂藉由向有需要之個體投與本發明之抗體構築體避免患者發生或再發生罹患本文規定之疾病。

術語「疾病」係指受益於用本文所述之抗體構築體或醫藥組合物處理之任何病狀。其包括慢性及急性病症或疾病，包括使哺乳動物易患所述疾病之彼等病理病狀。

此外，本發明提供一種用於治療或改善增生性疾病、腫瘤性病、病毒性疾病或免疫病症之方法，其包含為有需要之個體投與本發明之抗體構築體或根據本發明方法製備之抗體構築體的步驟。

術語「有需要之個體」或「需要治療之個體」包括已患病症之個體以及預防病症之個體。有需要之個體或「患者」包括接受預防性或治療性處理之人類及其他哺乳動物個體。

本發明之抗體構築體通常經設計而尤其具有一定範圍之生物可用性及持久性以用於特定投藥途徑及方法、特定投藥劑量及頻率、特定疾病之特定治療。組合物之材料較佳以投藥位點可接受之濃度調配。

因此，調配物及組合物可根據本發明設計以用於藉由任何適合投藥路徑傳遞。在本發明之情形下，投藥途徑包括(但不限於)

- 局部途徑(諸如經上表皮、吸入、經鼻、經眼、經耳、經陰道、經黏膜)；
 - 腸內途徑(諸如經口、經胃腸、舌下、唇下、經頰、經直腸)；
- 及
- 非經腸途徑(諸如靜脈內、動脈內、骨內、肌肉內、腦內、腦

室內、硬膜外、鞘內、皮下、腹膜內、羊膜外、關節內、心內、皮內、病灶內、子宮內、膀胱內、玻璃體內、經皮、鼻內、經黏膜、滑膜內、邊緣內)。

本發明之醫藥組合物及抗體構築體尤其適用於非經腸投藥，例如皮下或靜脈內傳遞，例如藉由注射(諸如快速注射)，或藉由輸注(諸如連續輸注)。醫藥組合物可使用醫學器件投與。用於投與醫藥組合物之醫學器件之實例描述於美國專利第4,475,196號；第4,439,196號；第4,447,224號；第4,447,233號；第4,486,194號；第4,487,603號；第4,596,556號；第4,790,824號；第4,941,880號；第5,064,413號；第5,312,335號；第5,312,335號；第5,383,851號；及第5,399,163號中。

詳言之，本發明提供不間斷投與適合組合物。作為非限制性實例，不間斷或實質上不間斷，亦即連續投與，可藉由患者所穿戴之用於計量治療劑向患者身體中之流入的小泵系統實現。包含本發明抗體構築體之醫藥組合物可藉由使用該等泵系統投與。此類泵系統通常為此項技術中已知，且通常依賴於定期更換容納欲輸注治療劑之濾筒。在更換此類泵系統中之濾筒時，可繼而暫時中斷治療劑向患者身體之流動，否則該流動為不間斷的。在此情況下，在本發明之醫藥手段及方法之含義內，濾筒更換前之投藥階段及濾筒更換後之投藥階段仍認為一起構成此類治療劑之一次「不間斷投與」。

連續或不間斷投與本發明之抗體構築體可為靜脈內或皮下投與，其借助於包括用於驅使流體離開儲集器之流體驅動機構及用於致動驅動機構之致動機構的流體傳遞器件或小泵系統。用於皮下投與之泵系統可包括用於穿過患者皮膚且向患者身體傳遞適合組合物之針或導管。該等泵系統可直接獨立於靜脈、動脈或血管固定或連接於患者之皮膚，從而使得泵系統與患者之皮膚之間可直接接觸。泵系統可連

接於患者之皮膚24小時至數天。在小體積儲集器之情況下，泵系統可具有小尺寸。作為一非限制性實例，用於投與適合醫藥組合物之儲集器之體積可為0.1 ml至50 ml。

連續投藥亦可為借助於皮膚上穿戴之貼片經皮投與且以一定時間間隔更換。熟習此項技術者已知適用於此目的之用於藥物傳遞之貼片系統。值得注意地，經皮投藥尤其適於不間斷投藥，因為更換第一耗盡貼片可藉由例如在緊鄰第一耗盡貼片之皮膚之表面上放置新第二貼片且隨後立即移除第一耗盡貼片而同時有利地實現。不會發生流動中斷或電源電池故障之問題。

若醫藥組合物已凍乾，則經凍乾物質首先在適當液體中復原，隨後投與。經凍乾物質可在例如注射用抑菌水(BWFI)、生理食鹽水、磷酸鹽緩衝生理食鹽水(PBS)或蛋白質在凍乾之前所處之相同調配物中復原。

本發明之組合物可以適合劑量投與個體，該適合劑量可例如藉由劑量遞增研究藉由投與非黑猩猩靈長類動物(例如短尾猿)增加劑量之展現本文所述之種間交叉特異性之本發明抗體構築體來確定。如上所述，展現本文所述之種間交叉特異性之本發明抗體構築體可有利地以相同形式用於非黑猩猩靈長類動物之臨床前測試及人類之藥物。給藥方案將由主治醫師及臨床因素確定。如醫藥技術中所熟知，對於任一患者之劑量取決於諸多因素，包括患者體型、體表面積、年齡、欲投與之特定化合物、性別、投藥時間及途徑、一般健康狀況及同時投與之其他藥物。

術語「有效劑量(effective dose/effective dosage)」定義為足以達成或至少部分達成所要作用之量。術語「治療有效劑量」定義為足以治癒或至少部分遏止已患有疾病之患者之疾病及其併發症之量。有效用於此用途之量或劑量取決於欲治療之病狀(適應症)、傳遞之抗體構

築體、治療情形及目標、疾病之嚴重性、先前療法、患者之臨床病史及對治療劑之反應、投藥路徑、患者之體型(體重、身體表面或器官尺寸)及/或狀況(年齡及一般健康)及患者自身免疫系統之一般狀態。適當劑量可根據主治醫師之判斷調節以使得其可投與患者一次或經一系列投藥投與患者，且以獲得最佳治療作用。

典型劑量視上文所提及之因素而定可在約0.1 $\mu\text{g/kg}$ 至約30 mg/kg 或更大之範圍內。在特定實施例中，劑量可在1.0 $\mu\text{g/kg}$ 至約20 mg/kg 、視情況10 $\mu\text{g/kg}$ 至約10 mg/kg 或100 $\mu\text{g/kg}$ 至約5 mg/kg 範圍內。

治療性有效量之本發明抗體構築體較佳使疾病症狀之嚴重性降低，無疾病症狀期之頻率或持續時間提高或預防疾病病痛所致之損傷或失能。為治療表現標靶細胞抗原之腫瘤，治療有效量之本發明抗體構築體(例如抗標靶細胞抗原/抗CD3抗體構築體)較佳相對於未治療患者抑制細胞生長或腫瘤生長至少約20%、至少約40%、至少約50%、至少約60%、至少約70%、至少約80%或至少約90%。可在預測在人類腫瘤中之功效的動物模型中評估化合物抑制腫瘤生長的能力。

醫藥組合物可作為唯一治療劑投與或與其他療法(諸如視需要抗癌療法，例如其他蛋白質及非蛋白質藥物)組合投與。此等藥物可以適時定義之時間間隔及劑量與包含如本文所定義之本發明抗體構築體之組合物同時投與，或分別在投與該抗體構築體之前或之後投與。

如本文中所用之術語「有效且無毒劑量」係指本發明抗體構築體之可耐受劑量，其足夠高以引起病理性細胞消除、腫瘤去除、腫瘤縮小或疾病穩定而無或基本上無大的毒性作用。此類有效且無毒劑量可例如藉由此項技術中描述之劑量遞增研究確定且應低於誘導嚴重不良副事件(劑量限制性毒性，DLT)之劑量。

如本文中所用之術語「毒性」係指表現在不良事件或嚴重不良

事件中之藥物的毒性作用。此等副事件可指一般缺乏藥物耐受性及/或投藥之後缺乏局部耐受性。毒性亦可包括由藥物引起之致畸或致癌作用。

如本文中所用之術語「安全性」、「活體內安全性」或「耐受性」定義投與藥物而不會在投與後立即誘導嚴重不良事件(局部耐受性)及在藥物之較長期施用期間誘導嚴重不良事件。「安全性」、「活體內安全性」或「耐受性」可在治療及追蹤階段期間例如以規則時間間隔進行評估。量測包括臨床評估，例如器官表現，及實驗室異常之篩檢。臨床評估可進行且偏向根據NCI-CTC及/或MedDRA標準所記錄/編碼之正常研究結果。器官表現可包括諸如過敏/免疫學、血液/骨髓、心律不整、凝血及其類似者之標準，如闡述於例如不良事件之通用術語標準v3.0 (Common Terminology Criteria for adverse events v3.0; CTCAE)中。可測試之實驗室參數包括例如血液學、臨床化學、凝血概況及尿液分析及諸如血清、血漿、淋巴或脊髓液、液體及其類似物之其他體液的檢查。因此，安全性可例如藉由身體檢查、成像技術(亦即超音波、x射線、CT掃描、磁共振成像(MRI)、利用技術器件之其他措施(亦即心電圖)、生命徵象藉由量測實驗室參數及記錄不良事件來評定。舉例而言，在本發明之用途及方法中，非黑猩猩靈長類動物中之不良事件可藉由組織病理學及/或組織化學方法檢驗。

以上術語亦例如在1997年7月16日之Preclinical safety evaluation of biotechnology-derived pharmaceuticals S6; ICH Harmonised Tripartite Guideline; ICH Steering Committee meeting中提到。

最後，本發明提供一種套組，其包含本發明抗體構築體或根據本發明方法製備之抗體構築體、本發明之載體及/或本發明之宿主細胞。

在本發明之情形下，術語「套組」意謂一起包裝於盒子、容器

中或以其他方式包裝的兩種或兩種以上組分，其中之一對應於本發明之抗體構築體、醫藥組合物、載體或宿主細胞。因此，套組可描述為足以達成特定目標之產品及/或用具之組，其可作為單個單元出售。

套組可包含一或多個具有任何適當形狀、尺寸及材料(較佳防水，例如塑膠或玻璃)的容器(諸如小瓶、安瓿、容器、盒子、注射器、瓶子、袋)，其含有適用於投藥之劑量(參見上文)的本發明之抗體構築體或醫藥組合物。套組可另外含有使用說明(例如小冊或說明手冊形式)、投與本發明之抗體構築體的構件(諸如注射器、泵、輸注器或其類似物)、復原本發明之抗體構築體的構件及/或稀釋本發明之抗體構築體的構件。

本發明亦提供用於單次劑量投藥單位的套組。本發明之套組亦可含有包含經乾燥/凍乾之抗體構築體的第一容器及包含水性調配物之第二容器。在本發明之某些實施例中，提供含有單室及多室預填充注射器(例如液體注射器及冷凍乾燥物注射器)的套組。

【圖式簡單說明】

圖1：

相較於n端具有線性FcRnBP且c端具有環狀FcRnBP之BiTE抗體構築體，陽離子交換管柱純化/分離蛋白質之兩個位點上均具有環狀FcRnBP之BiTE抗體構築體(A圖)的溶離曲線。

圖2：

指定細胞株上CDH19/CD3雙特異性抗體之FACS分析：1)經人類CDH19穩定轉染之CHO細胞，2)人類CD3陽性人類T細胞株HBP-ALL，3)經獼猴CDH19穩定轉染之CHO細胞，4)獼猴T細胞株4119 LnPx，5)表現天然人類CDH19之人類黑色素瘤細胞株CHL-1，6)未轉染之CHO細胞。陰性對照[1)至6)]：無先前CDH19/CD3雙特異性抗體之偵測抗體。

圖3：

在48小時基於FACS之細胞毒性分析中量測的CDH19/CD3雙特異性抗體之細胞毒性活性。效應細胞：表現CD3之獼猴T細胞株4119LnPx。標靶細胞：經獼猴CDH19轉染之CHO細胞。效應子與標靶細胞(E:T)比率：10:1。該圖展示CDH19 2G6 302xI2C HALB、CDH19 2G6 302xI2C 156、CDH19 2G6 302xI2C LFcBY、CDH19 2G6 302xI2C LFcBY 156、CDH19 2G6 302xI2C D3 HALB及陰性對照之結果。

圖4：

新生兒Fc受體(FcRn)由人類肺微血管內皮細胞(HPMEC)表現。

藉由凝膠電泳分離HPMEC及Jurkat E6.1細胞之全細胞溶解物。抗FcRn西方墨點法在HPMEC溶解物(泳道1)中約40 kDa處展示條帶，在Jurkat E6.1溶解物(泳道2)中其不太明顯。作為對照，抗肌動蛋白西方墨點法在HPMEC與Jurkat E6.1全細胞溶解物(泳道1及2)中約42 kDa處均展示條帶，從而證實等量蛋白質產生墨點。

圖5：

活體外兩室系統之示意圖。

將人類肺微血管內皮細胞(HPMEC)塗佈於傳斯維爾插入膜(transwell insert membrane)上且生長直至匯合為止。實驗之前，藉由跨內皮電阻(TEER)量測確定內皮細胞單層之完整性。在t = 0小時時，在傳斯維爾插入件內之內皮細胞單層上提供分析物(BiTE抗體構築體或聚葡萄糖)。隨後兩室系統在37°C下培育4小時。將穿過內皮細胞單層進入下部腔室之分析物之量定量。實驗後，將內皮細胞單層染色且用顯微鏡檢驗其完整性。

圖6：

匯合之內皮細胞單層展現增加之跨內皮電阻(TEER)且提供針對

葡聚糖之有效障壁。

一式三份塗佈用單獨的分析培養基(空白)或HPMEC填充之傳斯維爾插入件(n=3)。**A.**細胞生長24-30小時後，空白及HPMEC單層之耐受性(平均值 $\pm$ SD)分別為 $199 \pm 2 \Omega$ 及 $249 \pm 5 \Omega$ ，得到 $16.67 \pm 2.08 \Omega \cdot \text{cm}^2$ 之HPMEC TEER值(平均值 $\pm$ SD)。**B.**細胞生長48小時後，向傳斯維爾插入件中提供FITC-聚葡萄糖40 (2 mg/ml，於含有597 μM HSA之分析培養基中)。在37°C下培育4小時後，穿過單獨之膜(空白)或HPMEC單層進入下部腔室的FITC-聚葡萄糖40之平均螢光強度(FI) $\pm$ SD分別為 4256 ± 361 及 93 ± 15 。**C.**實驗後，將HPMEC單層染色且用顯微鏡(10倍放大倍數)檢驗匯合程度(下部泳道)。使用不成對t-檢驗藉由GraphPad Prism 6軟體分析資料之統計顯著性(****： $P \leq 0.0001$)。

圖7：

半衰期延長之BiTE抗體構築體CDH19-LfcBY在生理HSA濃度下跨越HPMEC單層有效穿胞運輸。

對於各測試之條件，將HPMEC一式三份塗佈於傳斯維爾插入膜上(n=3)。細胞生長24-30小時後，HPMEC TEER值介於12與17 $\Omega \cdot \text{cm}^2$ 之間(資料未示)。細胞生長48小時後，於傳斯維爾插入件內之內皮細胞單層上提供100 μl 各別半衰期延長之BiTE抗體構築體(1 nM，於含有597 μM HSA之分析培養基中)，同時用HSA填充600 μl 分析培養基，但下部腔室中無BiTE抗體構築體。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。所回收BiTE抗體CDH19-156 (CDH19 2G6 302 x I2C-156-H6)、CDH19-HALB (CDH19 2G6 302 x I2C-HALB-DY-H6)及CDH19-LfcBY (CDH19 2G6 302 x I2C-LfcBY-H6)之平均濃度 $\pm$ SD分別為 $0.424 \pm 0.051 \text{ pM}$ 、 $0.248 \pm 0.026 \text{ pM}$ 及 $0.781 \pm 0.069 \text{ pM}$ 。實驗後，

將HPMEC單層染色且用顯微鏡(10倍放大倍數)檢驗匯合程度(資料未示)。藉由使用單因子ANOVA與圖基事後檢驗(Tukey post-test)之組合藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料之統計顯著性(**** : $P \leq 0.0001$; *** : $P \leq 0.001$; * : $P \leq 0.05$)。

圖8：

半衰期延長之BiTE抗體構築體CDH19-LfcBY在2%人類血清存在下跨越HPMEC單層有效穿胞運輸。

對於各測試之條件，將HPMEC一式三份塗佈於傳斯維爾插入膜上(n=3)。細胞生長24-30小時後，HPMEC TEER值介於19與31 $\Omega \cdot \text{cm}^2$ 之間(資料未示)。細胞生長48小時後，於傳斯維爾插入件內之內皮細胞單層上提供100 μl 各別半衰期延長之BiTE抗體構築體(1 nM，於含有2%彙集之人類血清之分析培養基中)，同時用2%彙集之人類血清填充600 μl 分析培養基，但下部腔室中無BiTE抗體構築體。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。所回收BiTE抗體CDH19-156 (CDH19 2G6 302 x I2C-156-H6)、CDH19-HALB (CDH19 2G6 302 x I2C-HALB-DY-H6)及CDH19-LfcBY (CDH19 2G6 302 x I2C-LfcBY-H6)之平均濃度 $\pm$ SD分別為0.849 $\pm$ 0.130 pM、0.658 $\pm$ 0.047 pM及1.751 $\pm$ 0.212 pM。實驗後，將HPMEC單層染色且用顯微鏡(10倍放大倍數)檢驗匯合程度(資料未示)。藉由使用單因子ANOVA與圖基事後檢驗之組合藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料之統計顯著性(*** : $P \leq 0.001$; ns : $P > 0.05$)。

圖9：

半衰期延長之BiTE抗體構築體CDH19-LfcBY在20%人類血清存在下跨越HPMEC單層有效穿胞運輸。

對於各測試之條件，將HPMEC一式三份塗佈於傳斯維爾插入膜

上($n=3$)。細胞生長24-30小時後，HPMEC TEER值介於19與31 $\Omega \cdot \text{cm}^2$ 之間(資料未示)。細胞生長48小時後，於傳斯維爾插入件內之內皮細胞單層上提供100 μl 各別半衰期延長之BiTE抗體構築體(1 nM，於含有20%彙集之人類血清之分析培養基中)，同時用20%彙集之人類血清填充600 μl 分析培養基，但下部腔室中無BiTE抗體構築體。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。所回收BiTE抗體CDH19-156 (CDH19 2G6 302 x I2C-156-H6)、CDH19-HALB (CDH19 2G6 302 x I2C-HALB-DY-H6)及CDH19-LfcBY (CDH19 2G6 302 x I2C-LfcBY-H6)之平均濃度 $\pm$ SD分別為 0.758 ± 0.027 pM、 0.761 ± 0.027 pM及 1.976 ± 0.355 pM。實驗後，將HPMEC單層染色且用顯微鏡(10倍放大倍數)檢驗匯合程度(資料未示)。藉由使用單因子ANOVA與圖基事後檢驗(Tukey post-test)之組合藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料之統計顯著性(***: $P \leq 0.001$; ns: $P > 0.05$)。

圖10：

BiTE抗體構築體之藥物動力學

在藥物動力學(PK)研究之情形下在食蟹獼猴中測試四個分子，其名為：1) 2G6-156；2) 2G6-LFcBy；3) 2G6-LFcBy-156；4) 2G6-D3HSA。該圖展示與實例5有關之結果。

圖11：

半衰期延長之BiTE-LfcBY之有效穿胞運輸與標靶無關

A)將HPMEC塗佈於傳斯維爾插入膜上。細胞生長24小時後，HPMEC TEER值介於13至23 $\Omega \cdot \text{cm}^2$ 之間。細胞生長48小時後，將100 μl 各別半衰期延長之BiTE抗體構築體(1 nM，於含有20%彙集之人類血清的分析培養基中)塗佈於傳斯維爾插入件內之內皮細胞單層上($n=4$ 至 $n=10$)。將具有20%彙集之人類血清且無BiTE抗體構築體之600

μ l分析培養基置於下部腔室中。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。將含有-LfcBY標籤之BiTE抗體構築體標準化為其各別BiTE-156對應物且條形圖呈現所回收BiTE-LfcBY抗體之倍數變化 $\pm$ SD。CD33-LfcBY之穿胞運輸比CD33-156有效 2.9 ± 0.7 倍。CHD19-LfcBY之穿胞運輸比CDH19-156有效 3.1 ± 0.4 倍。鈣黏素-LfcBY BiTE構築體之穿胞運輸比鈣黏素-156 BiTE有效 2.4 ± 0.5 倍。藉由不成對t-檢驗藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料之統計顯著性(****: $P \leq 0.0001$)。B)條形圖呈現標準化為BiTE-156對應物的BiTE-LfcBY在三個獨立標靶上穿胞運輸的平均值。BiTE-LfcBY構築體之穿胞運輸比BiTE-156構築體有效 2.8 ± 0.3 倍(***: $P \leq 0.001$)。

圖12：

不同的半衰期延長之BiTE-LfcBY置換物有效穿胞運輸

將HPMEC塗佈於傳斯維爾插入膜上。細胞生長24小時後，HPMEC TEER值介於13至23 $\Omega \cdot \text{cm}^2$ 之間。細胞生長48小時後，將100 μ l各別半衰期延長之BiTE抗體構築體(1 nM，於含有20%彙集之人類血清之分析培養基中)塗佈於傳斯維爾插入件內之內皮細胞單層上(n=4至n=10)。將600 μ l具有20%彙集之人類血清且無BiTE抗體構築體的分析培養基置放於下部腔室中。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。將含有-LfcBY置換之BiTE抗體構築體標準化其各別BiTE-156對應物且條形圖呈現所回收BiTE-LfcBY置換抗體之倍數變化 $\pm$ SD。相較於CH19-156，CH19-LH-FcB-CH之穿胞運輸有效 1.8 ± 0.4 倍，CH19-LH-FcB-LH 2.0 ± 0.1 倍，CH19-CH-FcB-LH 2.8 ± 0.4 倍，CH19-LY-FcB-LH 2.9 ± 0.6 倍，CH19-CH-FcB-LY 2.6 ± 0.4 倍，且CH19-LY-FcB-CH 3.1 ± 0.4 倍。使用ANOVA ONE-WAY及鄧奈特氏多重比較

檢驗(Dunnett's multiple comparisons test)藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料(****: $P \leq 0.0001$; ***: $P \leq 0.001$; **: $P \leq 0.01$)。

圖13：

不同的半衰期延長之BiTE-LfcBY置換物有效穿胞運輸

將HPMEC塗佈於傳斯維爾插入膜上。細胞生長24小時後，HPMEC TEER值介於13至23 $\Omega \cdot \text{cm}^2$ 之間。細胞生長48小時後，將100 μl 各別半衰期延長之BiTE抗體BiTE抗體構築體(1 nM，於含有20%彙集之人類血清之分析培養基中)塗佈於傳斯維爾插入件內之內皮細胞單層上(n=4至n=10)。將600 μl 具有20%彙集之人類血清且無BiTE抗體BiTE抗體構築體的分析培養基置放於下部腔室中。在37°C下培育4小時後，穿過內皮細胞單層之BiTE抗體BiTE抗體構築體之量藉由基於電化學發光(ECL)之配體結合分析定量。將含有-LfcBY置換之BiTE抗體構築體標準化其各別BiTE-156對應物且條形圖呈現所回收BiTE-LfcBY置換抗體之倍數變化 $\pm$ SD。相較於Cad-156，Cad-LH-FcB-CH之穿胞運輸有效 3.1 ± 0.4 倍，Cad-LH-FcB-LH 3.2 ± 1 倍，Cad-CH-FcB-LH 2.9 ± 0.4 倍，Cad-LY-FcB-LH 1.8 ± 0.1 倍，Cad-CH-FcB-LY 2.4 ± 0.2 倍，且Cad-LY-FcB-CH 2.4 ± 0.5 倍。使用ANOVA ONE-WAY及鄧奈特氏多重比較檢驗藉由Microsoft Excel 2010及GraphPad Prism 6軟體分析資料(****: $P \leq 0.0001$; *: $P \leq 0.05$)。

應瞭解，本發明不限於特定方法、方案或試劑，因此可變化。本文所提供之論述及實例僅出於描述特定實施例之目的呈現且並不欲限制本發明之範疇，本發明範疇僅由申請專利範圍限定。

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先於先前發明之此類揭示內容。以引用的方式併入之材料達到與本說明書矛盾或不一致之程度時，本說明書將替代任何此類材料。

【實施方式】

提供以下實例以說明本發明之特定實施例或特徵。此等實例不應理解為限制本發明之範疇。包括實例以用於說明，且本發明僅受申請專利範圍限制。

實例1：

1雙特異性單鏈抗體構築體之製備及純化

在滾瓶中執行CDH19BiTE抗體構築體之標準化研究規模製備。使所收集之培養物上清液在過濾後經受基於固定金屬親和層析(IMAC)捕捉及隨後尺寸排阻層析(SEC)的兩步BiTE抗體構築體純化。

1.1 BiTE抗體構築體之IMAC捕捉步驟

將由Unicorn®軟體控制之Äkta®Explorer系統(GE Healthcare)用於層析。使用負載有ZnCl₂之Fractogel EMDchelate® (Merck, Darmstadt)根據由製造商提供之方案執行固定金屬親和層析(IMAC)。用以4 ml/min之流速施加於管柱(10 ml填充體積)的緩衝液A (20 mM磷酸鈉緩衝液、0.1 M NaCl、10 mM咪唑，pH 7.2)及細胞培養物上清液(1000 ml)平衡管柱。用緩衝液A洗滌管柱以移除未結合之樣品。使用緩衝液B (20 mM磷酸鈉緩衝液、0.1 M NaCl、0.5 M咪唑，pH 7.2)之第二步梯度根據以下程序溶離結合之蛋白質：

步驟1：5個管柱體積之10%緩衝液B

步驟2：5個管柱體積之100%緩衝液B。

將步驟2之經溶離蛋白質溶離份彙集以使用具有聚醚砜PES膜且分子量截止為10 kDa之Vivaspin (Sartorius-Stedim, Göttingen-Germany)離心單元進一步純化且濃縮至3 ml最終體積。所有化學品均

磺丙基偶合於固體珠粒的BioPro SP管柱連接於Äkta Micro FPLC (GE Healthcare)器件。

為進行管柱平衡、樣品稀釋及洗滌，使用以氫氧化鈉調節至pH 5.5的由20 mM磷酸二氫鈉及30 mM氯化鈉組成之緩衝液。

為進行溶離，使用以氫氧化鈉調節至pH 5.5的由20 mM NaH_2PO_4 及1000 mM NaCl組成之緩衝液。

用稀釋緩衝液將50 μg BiTE抗體構築體單體稀釋至50 ml最終體積。

管柱平衡後，將40 ml經稀釋蛋白溶液施加於管柱，繼而使用管柱平衡緩衝液進行洗滌步驟。

藉由不斷增加之梯度執行溶離，其中溶離緩衝液為零至100%，總體積對應於200個管柱體積。整個操作在280 nm光學吸收下監測。

相較於BiTE蛋白質之兩側具有環狀FcRnBP之BiTE抗體構築體，n端具有線性FcRnBP且c端具有環狀FcRnBP之BiTE抗體構築體展示自陽離子交換管柱溶離。如圖1，此現象表明，BiTE抗體構築體之按比例擴大製備中純化性能及產物產量優良得多。

實例2：

雙特異性結合及種間交叉反應性：

為確認結合於人類及獼猴CDH19及人類及獼猴CD3，藉由流式細胞術使用指定細胞株測試雙特異性抗體。將經人類CDH19、獼猴CDH19轉染之CHO細胞、表現天然人類CDH19之人類黑色素瘤細胞株CHL-1、表現CD3之人類T細胞白血病細胞株HPB-ALL (DSMZ, Braunschweig, ACC483)及表現CD3之獼猴T細胞株4119LnPx (Knappe A等人, Blood, 2000, 95, 3256-3261)用作抗原陽性細胞株。此外，使用未轉染之CHO細胞作為陰性對照。

為進行流式細胞術，將各別細胞株之200,000個細胞與50 μl 濃度

為5 $\mu\text{g/ml}$ 之經純化雙特異性抗體一起在冰上培育30分鐘。用PBS/10% FCS洗滌細胞兩次且用鼠類抗His抗體(AbD Serotec；用50 μl PBS/10% FCS 1:1000稀釋)偵測構築體之結合。洗滌後，用結合於藻紅素之Fc γ 特異性抗體(Dianova)(用PBS/10% FCS 1:100稀釋)偵測結合之抗His抗體。藉由流式細胞術在FACSCanto II儀器上量測樣品且藉由FACSDiva軟體(均來自Becton Dickinson)分析。

將經人類CDH19、獼猴CDH19轉染之CHO細胞、表現人類CDH19之黑色素瘤細胞株CHL-1以及人類及獼猴T細胞用CDH19/CD3雙特異性抗體染色。此外，未轉染之CHO細胞未染色(參見圖2)。

實例3：

細胞毒性活性

標靶細胞標記

為於流式細胞術分析中分析細胞溶解，使用螢光膜染料DiOC₁₈ (DiO) (Molecular Probes, #V22886)標記作為標靶細胞之獼猴CDH19陽性CHO細胞且將其與效應細胞區分。簡言之，收集細胞，用PBS洗滌一次且於含有2% (v/v) FBS及膜染料DiO (5微升/ 10^6 個細胞)之PBS中調節至 10^6 個細胞/毫升。在37°C下培育3分鐘後，用完全RPMI培養基洗滌細胞兩次且將細胞數調節至 1.25×10^5 個細胞/毫升。使用0.5% (v/v)等張EosinG溶液(Roth, #45380)測定細胞活力。

基於流式細胞術之分析

此分析經設計以定量在CDH19雙特異性抗體之連續稀釋液存在下經獼猴CDH19轉染之CHO細胞的溶解。

混合等體積之經DiO標記之標靶細胞及效應細胞(亦即表現CD3之獼猴T細胞株4119LnPx)，得到10:1之E:T細胞比率。將160 μL 此懸浮液轉移至96孔盤之各孔。添加40 μL CDH19雙特異性抗體之連續稀釋液及雙特異性陰性對照(識別不相關標靶抗原之基於CD3之雙特異性

抗體)或作為另一陰性對照之RPMI完全培養基。雙特異性抗體介導之細胞毒性反應在7% CO₂含濕氣培育箱中進行48小時。隨後將細胞轉移至新96孔盤，且藉由添加最終濃度為1 μg/mL之碘化丙錠(PI)監測標靶細胞膜完整性之損失。PI為膜不可滲透性染料，其通常為活細胞所排斥，而死細胞將其吸收且變得可由螢光發射鑑別。

藉由流式細胞術在FACSCanto II儀器上量測樣品且藉由FACSDiva軟體(均來自Becton Dickinson)分析。

標靶細胞鑑別為DiO陽性細胞。將PI陰性標靶細胞分類為活標靶細胞。根據下式計算細胞毒性之百分比：

$$\text{細胞毒性 [\%]} = \frac{n_{\text{死標靶細胞}}}{n_{\text{標靶細胞}}} \times 100$$

n = 事件數。

使用GraphPad Prism 6軟體(Graph Pad Software, San Diego)，相對於相應雙特異性抗體濃度繪製細胞毒性百分比之圖。用四參數邏輯回歸模型分析劑量反應曲線以評估具有固定之希爾斜率(hill slope)之S型劑量反應曲線且計算EC₅₀值。

使用上述系統獲得之CDH19 2G6 302xI2C HALB、CDH19 2G6 302xI2C 156、CDH19 2G6 302xI2C LFcBY、CDH19 2G6 302xI2C LFcBY 156、CDH19 2G6 302xI2C D3 HALB及陰性對照的細胞毒性結果展示於圖3中。

實例4：

模擬半衰期延長之BiTE抗體穿過人類內皮細胞層之穿胞運輸的活體外兩腔室系統

內皮細胞之培養及收集

使用人類肺微血管內皮細胞(HPMEC) (PromoCell, #C-12281)作為內皮細胞模型。在37℃及5% CO₂下於Heraeus Cytoperm 2 (Thermo

Scientific)中在細胞培養燒瓶(Sarstedt, #831.810.302)中之補充有內皮細胞生長補充劑(ECGS, 1:100) (ScienCell, #1052)、5-7.5%彙集之人類血清(AMGEN, 內部批號: 140625DrM01)及5-10 mg/ml人類白蛋白(HSA) (Behring, #C66444411B)之MV2基礎培養基(PromoCell, #C-22221)(另外稱為生長培養基)中培養冷凍保存之第2代HPMEC ($> 5 \times 10^5$ 個細胞/小瓶)。用剝落套組(PromoCell, #C-41200)執行HPMEC之次培養, 該剝落套組由HEPES緩衝平衡鹽溶液(PromoCell, #C-40000)、胰蛋白酶-EDTA溶液(0.04%/0.03%) (PromoCell, #C-41000)及胰蛋白酶中和溶液(TNS) (PromoCell, #C-41100)組成。簡言之, 自HPMEC層抽吸培養基且用3 ml HEPES緩衝之平衡鹽溶液洗滌細胞。在室溫下添加3 ml用PBS 1:1稀釋之胰蛋白酶-EDTA溶液歷時1-3分鐘, 使得HPMEC自燒瓶底部剝落。藉由向細胞懸浮液添加3 ml TNS執行胰蛋白酶-EDTA溶液之不活化。將細胞於Heraeus Megafuge 40 (Thermo Scientific)中以300 g離心3分鐘, 且以約10,000個細胞/平方公分之細胞密度接種於細胞培養燒瓶 (Sarstedt, #831.810.302, #833.911.302)中。

藉由西方墨點法偵測HPMEC中之新生兒Fc受體(FcRn)

用EDTA (Biochrom, #L2113)剝落HPMEC (PromoCell, #C-12282, 批號: 1071302.1, P7)且用PBS (Biochrom, #L1820)洗滌。收集Jurkat細胞E6.1 (ECCC, #88042803)且用PBS洗滌。使 3×10^6 個細胞在冰上各溶解於100 μ l溶解緩衝液(20 mM Trizma鹼(Sigma Aldrich, #T1503) pH = 8、137 mM NaCl (Sigma-Aldrich, #S6546-1L)、10%甘油(Sigma-Aldrich, #G5516)、2 mM EDTA (Sigma-Aldrich, #03620)、1% Triton X100 (Sigma-Aldrich, #X100)、1 $\times$ 蛋白酶抑制劑混合物(Sigma-Aldrich, #13911-1BO)、100 mM NaF (Sigma-Aldrich, #919)、500 μ M Na_3VO_4 (Sigma-Aldrich, #S6508))中歷時15分鐘。藉由在4 $^{\circ}\text{C}$ 下在

13,200 g下離心15分鐘(Sigma Laborzentrifugen, #1K15)粒化全細胞溶解物之不可溶部分，且將上清液轉移於新鮮1.5 ml Eppendorf反應管中。用2 μ l NuPAGE LDS樣品緩衝液(life technologies,#NP0007)稀釋7.5 μ l溶解物且在70°C下變性10分鐘。將9.5 μ l溶解物及10 μ l預染色蛋白質標準物(life technologies, #LC5800)裝載於4-12% BisTris Gel (life technologies, #NP0336BOX)上，且於1× NuPAGE MES操作緩衝液(life technologies, #NP0002-02)中藉由施加200 V 35分鐘執行蛋白質分離。根據XCell II墨點模組說明(life technologies)將蛋白質轉移於硝化纖維膜(PALL BioTrace NT, #66485)上。在室溫下在攪拌下使用阻斷溶液(Thermo Scientific, #37542)阻斷膜1小時。在4°C下在攪拌下於抗FcRn抗體溶液(Novus Biologicals, #NBP1-89128，用阻斷緩衝液1:100稀釋，補充有0.05% Tween-20 (Sigma-Aldrich, #P1379))中培育膜隔夜。在室溫下用PBS-Tween (Biochrom, #L1820 以及 0.05% Tween-20 (Sigma-Aldrich, #P1379))洗滌膜3次歷時5分鐘。在室溫下在攪拌下於經HRP標記之二次抗體溶液(抗兔IgG HRP抗體(Thermo Scientific, #31460)，用PBS-Tween及3-5%奶(Fluka, #70166) 1:5000稀釋)中培育膜1小時。在室溫下用PBS-Tween洗滌膜2次歷時5分鐘且用PBS洗滌1次歷時5分鐘。根據製造商之說明於SuperSignalWest Pico 受質(Thermo Scientific, #1856135)中培育膜。使光敏感性膜(CL-XPosure™ Film, Thermo Scientific, #34088)暴露於膜且在顯影劑(VELPEX, EXTRA-X)中顯影。隨後，在4°C下於抗 β 肌動蛋白抗體(Thermo Scientific, #MA1-91399，用阻斷緩衝液1:1000稀釋，補充有0.05% Tween-20 (Sigma-Aldrich, #P1379))中培育膜隔夜。在室溫下用PBS-Tween洗滌膜3次歷時5分鐘。在室溫下在攪拌下於經HRP標記之二次抗小鼠IgG抗體(Jackson ImmunoResearch, #415-035-100，用PBS-Tween及3-5%奶1:5000稀釋)中培育膜1小時。如上文詳細描述使膜顯

影。

活體外兩室系統

塗佈HPMEC

在室溫下用含 $10 \mu\text{g}/\text{cm}^2$ 纖維結合蛋白(Sigma, #F2006)之PBS塗佈聚酯(PET)膜傳斯維爾透明插入件(Corning, #3470) 6小時，該等插入件之孔徑為 $0.4 \mu\text{m}$ 且有效生長表面積為 0.33 cm^2 。抽吸剩餘纖維結合蛋白溶液且用PBS洗滌插入件一次。將 $600 \mu\text{l}$ 生長培養基添加至24孔傳斯維爾系統(Corning, #3470)之外部腔室中，且在 37°C 下平衡培養盤30分鐘。如上所述使用剝落套組(PromoCell, #C-41200)收集HPMEC。將細胞以 $8 \times 10^4/\text{cm}^2$ 之密度塗佈於塗有纖維結合蛋白之經平衡傳斯維爾插入件上的 $200 \mu\text{l}$ 預升溫之生長培養基中。僅用生長培養基填充4個孔且用作空白值。24小時後，將 $100 \mu\text{l}$ 生長培養基添加至傳斯維爾系統之內部孔與外部腔室中。藉由跨內皮電阻(TEER)量測確定細胞層匯合。

內皮細胞單層之跨內皮電阻(TEER)量測

使用具有STX03可調節電極(Millipore, #MERSSTX03)之Millicell ERS-2系統(Millipore, #MERS00002)根據製造商之說明量測各內皮細胞單層之電阻。簡言之，藉由將STX04測試電極連接於輸入端口且接通電源來測試Millicell ERS-2之功能；MODE開關設定為Ohm，且必要時顯示器調節為 1000Ω ，且螺絲刀為「R Adj」螺絲。STX03可調節電極藉由將電極浸沒於80%乙醇中5分鐘滅菌。為進行電阻量測，將STX03電極經由輸入端口連接於ERS-2，MODE開關設定為Ohm且電源開關打開。將電極端部以90度角度浸沒於傳斯維爾插入件中；較短之端部在傳斯維爾插入件內，不接觸內皮細胞單層；較長之端部在傳斯維爾插入件外部，且恰好接觸外部孔(Corning, #3470)之底部。量測無細胞但含有相同培養基之空白傳斯維爾插入件以確定背景電阻。

在電阻量測前，使培養盤冷卻至室溫；在所有孔量測一次時，再次由起點開始量測且將值平均($(\Omega_{\text{量測}1} + \Omega_{\text{量測}2})/2 = \Omega_{\text{樣品}}$)。隨後藉由減去空白傳斯維爾插入件之平均電阻計算個別細胞單層之實際電阻(電阻 $\Omega = \Omega_{\text{樣品}} - \Omega_{\text{空白}}$)。為測定單位面積電阻(TEER)，考慮24孔傳斯維爾系統(Corning, #3470)之有效膜面積(0.33 cm^2)(TEER = 電阻 Ω *有效膜面積)。認為特徵為大於 $10 \text{ } \Omega \cdot \text{cm}^2$ 之 TEER 值的 HPMEC 細胞單層已匯合。

內皮細胞單層之 FITC-聚葡萄糖滲透性

細胞生長48小時後，將含有匯合HPMEC單層之傳斯維爾插入件轉移於24孔洗滌盤(FALCON, #353047)中，其中各孔預裝載有700 μl 經預升溫之MV基礎培養基(PromoCell, #C-22220)以洗滌傳斯維爾插入件之外部。將600 μl 分析培養基(MV2無酚紅培養基(PromoCell, #C-22226)、ECGS (1:100) (ScienCell, #1052)及597 μM HSA (Behring, #C66444411B))填充至阻斷液(在37°C下隔夜的700微升/孔起始阻斷(TBS)緩衝液(Thermo Scientific, #37542)於PBS/10% FBS中的1:1稀釋液)接納盤(具有超低連接表面之24孔培養盤(Corning, #3473))中。將含有匯合HPMEC單層之傳斯維爾插入件自洗滌盤轉移於經預升溫之接納盤中。同時，自內部孔移除生長培養基且用100 μl FITC-聚葡萄糖40 (2 mg/ml，於分析培養基中)(Sigma, #FD40)洗滌細胞單層一次。隨後，將100 μl FITC-聚葡萄糖40 (2 mg/ml，於分析培養基中)置放於HPMEC單層上，且在37°C及5% CO_2 下培育兩室分析物4小時。藉由在激發波長485 nm及發射波長535 nm下使用SPECTRAFluor Plus (序列號：94493；韌體：V 6.00 06_07_2003譜；XFLUOR4版本：V 4.40)量測定量自兩室系統之外部孔回收的FITC-聚葡萄糖40螢光。為進行兩室分析，將所有培養盤在加熱盤(minitube, #12055/0010)上在37°C下處理。

內皮細胞單層之染色

兩室分析後，用無FITC-聚葡萄糖40之分析培養基洗滌細胞單層一次。隨後，將100 μ l分析培養基置放於細胞單層上且添加100 μ l多聚甲醛(PFA) (4%，於PBS中)。將細胞單層在37°C下固定1小時或在室溫下隔夜，最終PFA濃度為2%。移除PFA溶液且在室溫下用100 μ l細胞染色溶液(結晶紫溶液(Sigma-Aldrich, #HT90132-1L)，用4% PFA之PBS溶液1:20稀釋)將細胞單層染色10分鐘。隨後，用200 μ l ddH₂O洗滌細胞單層兩次。使用具有10×物鏡之Nikon Eclipse E800顯微鏡拍攝HPMEC單層之圖片。

半衰期延長之BiTE抗體穿過內皮細胞單層之穿胞運輸

如上文對於FITC-聚葡萄糖40滲透性詳細描述用各種半衰期延長之BiTE抗體執行兩室分析。如所示，分析培養基由MV2無酚紅培養基(PromoCell, #C-22226)、ECGS (1:100) (ScienCell, #1052)及HSA (Behring, #C66444411B)或彙集之人類血清(在56°C下不活化30分鐘，AMGEN)組成。上述分析培養基中BiTE抗體之稀釋於蛋白質低結合管(Sarstedt, #72.706.600)中執行。將相同分析培養基用於BiTE稀釋(亦即於上部傳斯維爾插入件中)及兩室系統之下部腔室中。將培養盤在37°C下於加熱盤(minitube, #12055/0010)上處理。在45分鐘時間變化中分析不同的半衰期延長之BiTE抗體以使對於盤表面之時間依賴性非特異性黏著達最小。如下文詳細描述定量自兩室系統之較低孔回收的BiTE抗體。

半衰期延長之BiTE抗體之定量

使用基於電化學發光(ECL)之高敏感性配體結合分析進行來自穿胞運輸實驗之BiTE抗體的定量。

藉由於各別測試基質(分析培養基)中注射已知濃度之不同BiTE抗體，繼而10個稀釋步驟(1:2稀釋，得到總共11個校正樣品，其跨越

0.0048至5.0 ng/ml之濃度範圍)來製備建立標準參考曲線之校正樣品。將校正樣品之調配物與未知樣品之各別調配物匹配。對於各BiTE抗體構築體，將相同材料(構築體及批料)用於製備校正樣品與穿胞運輸分析。在定量前，將未知樣品之各別測試基質調節至等量HSA (597 μ M (Behring, #C66444411B))/Tween-80 (0.05% (J.T. Baker, #4117-04))或彙集之人類血清(20%在56°C下不活化30分鐘，AMGEN)。

在第一步驟中，將捕捉抗體3E5A5 (特異於BiTE抗體之抗CD3結合部分，AMGEN)固定於具有兩個電極之碳微量滴定盤(標準盤，MSD, #L15XA)上。為此目的，在 $5\pm 3^\circ\text{C}$ 下用25微升/孔的1 μ g/ml抗體溶液塗佈培養盤隔夜，隨後用150微升/孔的5% BSA溶液阻斷至少1小時。

如上所述製備樣品。將25 μ l各校正樣品或未知樣品添加至個別孔中且在 $25\pm 2^\circ\text{C}$ 下於震盪器上培育1小時。隨後用PBS-Tween (0.05% Tween-80)使用自動盤洗滌器洗滌培養盤3次，依序經由經生物素標記之抗Penta-His抗體(Qiagen, #34440; 1 μ g/ml, 25微升/孔，在 $25\pm 2^\circ\text{C}$ 下在震盪器上30分鐘)及抗生蛋白鏈菌素-SulfoTag (MSD, #R32AD-1; 1 μ g/ml, 25微升/孔，在 $25\pm 2^\circ\text{C}$ 下在震盪器上30分鐘)偵測結合於捕捉抗體之BiTE抗體構築體，其中在培育之間不進行洗滌。在第二培育後，用PBS-Tween (0.05% Tween-80)使用自動盤洗滌器洗滌培養盤3次。隨後，添加150微升/孔1 $\times$ MSD讀取緩衝液(MSD, #R92TC-1)且使用Sektor成像儀2400器件(MSD)量測培養盤。

相對於已知BiTE抗體構築體濃度繪製標準參考曲線校正樣品之ECL信號的圖，且藉由5-PL擬合法(權重1/y²; 軟體: SoftMaxPro GxP 5.4)擬合。未知樣品濃度由此回歸曲線反算。用所報導之各別方式重複三次分析所有未知樣品。由此等結果計算莫耳濃度。

兩室分析後，如上文詳細描述將內皮細胞單層染色且藉由光顯

微法檢驗其完整性。

如上所述執行CDH19-及CD33-BiTE抗體構築體之偵測。如下執行鈣黏素-BiTE之偵測。在第一步驟中，將BiTE標靶抗原(AMGEN)之重組可溶形式固定於具有兩個電極之碳微量滴定盤(標準盤，MSD，#L15XA)上。為此目的，在 $5\pm 3^{\circ}\text{C}$ 下用25微升/孔的 $1\text{ }\mu\text{g/ml}$ 抗體溶液塗佈培養盤隔夜，隨後用150微升/孔的5% BSA溶液阻斷至少1小時。

如上文所述製備樣品。將25 μl 各校正樣品或未知樣品添加至個別孔中且在 $25\pm 2^{\circ}\text{C}$ 下於震盪器上培育1小時。隨後用PBS-Tween (0.05% Tween-80)使用自動盤洗滌器洗滌培養盤3次。經由特異於BiTE抗體之抗CD3結合部分的與SulfoTag結合之抗體(3E5.E1-Rut, AMGEN)偵測結合於標靶抗原之BiTE抗體構築體。將抗體稀釋至 $1\text{ }\mu\text{g/mL}$ 之最終濃度。每孔添加25 μL 且在 $25\pm 2^{\circ}\text{C}$ 下於震盪器上培育30分鐘。

實例5

BiTE抗體構築體之藥物動力學

在藥物動力學(PK)研究之情形下在食蟹獼猴中測試四個分子，其名為：1) 2G6-156；2) 2G6-LFcBy；3) 2G6-LFcBy-156；4) 2G6-D3HSA。在此PK研究中，以單次靜脈內快速注射方式投與 $6\text{ }\mu\text{g/kg}$ 劑量。對於各上述化合物，使用具有2個動物之組。收集血液樣品且製備血清以測定兩個動物中各藥物之血清濃度。使用免疫分析量測血清藥物含量。使用血清濃度-時間資料測定PK參數。在以下時間點收集血液樣品：給藥前、給藥後0.05、0.25、0.5、1、4、8、24、48、72、168、240及336小時。使用標準非間隔分析(NCA)法確定PK參數。

對於所有測試藥物，可定量藥物投與後所有動物中絕大部分時間點之血清含量。PK曲線展示所有測試藥物均雙相指數遞減。使用

NCA方法，估計以下參數： AUC_{inf} (血清濃度-時間曲線下面積)、 V_{ss} (穩定狀態下之分布體積)、CL (全身性清除率)、MRT (平均滯留時間) 及終末 $t_{1/2}$ (自末期估計之半衰期)。各測試化合物之PK參數(n=2之平均值)如下概括：

對於化合物1、2、3及4， AUC_{inf} 分別為568 hr*ng/mL、366 hr*ng/mL、1796 hr*ng/mL及1383 hr*ng/mL。對於化合物1、2、3及4， V_{ss} 分別為446 mL/kg、594 mL/kg、193 mL/kg及80.7 mL/kg。對於化合物1、2、3及4，全身性清除率分別為11.3 mL/hr/kg、16.1 mL/hr/kg、4.3 mL/hr/kg及4.9 mL/hr/kg。化合物1、2、3及4之MRT值分別為42.3小時、39.8小時、48.7小時及18.1小時，且對於化合物1、2、3及4，終末半衰期分別為44.3小時、31.2小時、40.3小時及13.5小時。

化合物1、2及3各自之終末半衰期及MRT比化合物4高得多(>2倍)。化合物1、2及3代表BiTE抗體構築體型式較長半衰期型式。

結果參見圖10。

SEQ ID NO:	描述	序列
1.	線性FcRn結合肽	QRFVTGHFGGLXPANG
2.	線性FcRn結合肽Y	QRFVTGHFGGLYPANG
3.	線性FcRn結合肽H	QRFVTGHFGGLHPANG
4.	核心FcRn結合肽H	TGHFGGLHP
5.	環狀FcRn結合肽H	QRFCTGHFGGLHPCNG
6.	肽連接子	GGGS
7.	人類CD3 ε (1-27)	QDGNEEMGGITQTPYKVSISGTTVILT
8.	白鬚獾CD3 ε (1-27)	QDGNEEMGDDTTQNPKVSISGTTVTLT
9.	棉頂獾CD3 ε (1-27)	QDGNEEMGDDTTQNPKVSISGTTVTLT
10.	松鼠猴CD3 ε (1-27)	QDGNEEIGDTTQNPKVSISGTTVTLT
11.	CD3ε之N端	QDGNE
12.	F6A之CDR-L1	GSSTGAVTSGYYPN
13.	F6A之CDR-L2	GTKFLAP
14.	F6A之CDR-L3	ALWYSNRWV
15.	F6A之CDR-H1	IYAMN
16.	F6A之CDR-H2	RIRSKYNNYATYYADSVKS
17.	F6A之CDR-H3	HGNFGNSYVSFFAY
18.	F6A之VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNIAAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKSRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYVSFFAYWGQGTLLVT VSS
19.	F6A之VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGACGCTGGAGGGTCAATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATATCTACGCCATGAACCTGGGTCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTGCTCGCATAAAGAAATATAATAATTATGCAACAT ATTATGCCGATTCAAGTGAAGAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACTTGAAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGGAACCTCGGTAATAGCTACGTATCCCTTCTTCGCTTACTGGGGCCAAAGGACTCTGGT CACCGTCTCCTCA
20.	F6A之VL	QTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWVQQKPGQAPRGLIGTKFLAPGTPAR FSGSLGGKAALTLSGVQPEDEAEVYCALWYSNRWVFGGGTKLITVL
21.	F6A之VL	CAGACTGTGTGACTCAGGAACCTTCACTCACCGTATCACCTGGTGGACACAGTCACACTCA CTGTGGCTCCTCGACTGGGGCTGTACATCTGGCTACTACCCAAACTGGGTCCACAAAA



		ACCAGGTCAGGCACCCCGTGGTCTAATAGGTGGGACTAAGTTCTCGCCCCCGGTACTCCTGCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCTGGTG GAGGAACCAAACTGACTGTCCTA
22.	F6A- $\checkmark$ VH-VL	EVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKSRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGFNGNSYVSFFAYWGQGLVT VSSGGSGSGGGSGGGSQTVVTQEPSLTVSPGGTVLTGSSSTGAVTSGYYPNWVQQKPGQ APRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCALWYSNRWVFGGGTKL TVL
23.	F6A- $\checkmark$ VH-VL	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTTGGTGAGCCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACCTTCAATATCTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAATGGTTGCTCGCATAGAAAGTAAATATAATATATGCAACAT ATTATGCCGATTCAGTGAAAGCAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACCTTGAAAACCTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACGTATCCTTCCTTCGCTTACTGGGGCCAAGGGACTCTGGT CACCGTCTCCTCAGGTGGTGGTGTCTGGCGGCGGCTCCGGTGGTGGTGTCTCAG ACTGTTGTGACTCAGGAACCTTCACTCACCGTATCACCTGTGTGAACAGTCACTCACTT GTGGCTCTCGACTGGGGCTGTACATCTGGCTACTACCCAAACTGGGTCCAAACAAAAC CAGGTCAGGCACCCCGTGGTCTAATAGGTGGGACTAAGTTCTCGCCCCCGGTACTCCTGC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCCGGTGGA GGAACCAAACTGACTGTCCTA
24.	H2C- $\checkmark$ CDR-L1	GSSTGAVTSGYYPN
25.	H2C- $\checkmark$ CDR-L2	GTKFLAP
26.	H2C- $\checkmark$ CDR-L3	ALWYSNRWV
27.	H2C- $\checkmark$ CDR-H1	KYAMN
28.	H2C- $\checkmark$ CDR-H2	RIRSKYNNYATYYADSVKD
29.	H2C- $\checkmark$ CDR-H3	HGNFGNSYISYWAY
30.	H2C- $\checkmark$ VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGFNGNSYISYWAYWGQGLVT VSS
31.	H2C- $\checkmark$ VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTTGGTGAGCCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACCTTCAATAAGTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAATGGTTGCTCGCATAGAAAGTAAATATAATATATGCAACAT ATTATGCCGATTCAGTGAAAGACAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACCTTGAAAACCTGAGGACACTGCCGTGTAATACTGTGTGAGAC

		ATGGAACTTCGGTAATAGCTACATATCCTACTGGGCTTACTGGGGCCAAAGGACTCTGG TCACCGTCTCCTCA
32.	H2C $\dot{\sim}$ VL	QTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWWVQQKPGQAPRGLIGGTKFLAPGTPAR FSGSLGGKAAALTLGVPQPEDEAEYYCALWYSNRWVFGGGTKLTVL
33.	H2C $\dot{\sim}$ VL	CAGACTGTTGTGACTCAGGAACCTTCACCTCACCGTATCACCTGGTGGAACAGTCACACTCA CTTGTGGCTCCTCGACTGGGCTGTTACATCTGGCTACTACCCAACTGGGTCCACAAAA ACCAGGTCAGCACCCCGTGTCTAATAGGTGGGACTAAGTTCCTCGCCCCGGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAAATATTACTGTGCTCTATGTTACAGCAACCGCTGGGTGTTCCGGTG GAGGAACCAAACTGACTGTCCTA
34.	H2C $\dot{\sim}$ VH-VL	EVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWWVRQAPGKGLEWVARIRSKYNNYATY YADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNGFNSYISYWAYWGQGLVLT VSSGGGSGGGSGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWWVQQKPGQ APRGLIGGTKFLAPGTPARFSGSLGGKAAALTLGVPQPEDEAEYYCALWYSNRWVFGGGTKL TVL
35.	H2C $\dot{\sim}$ VH-VL	GAGGTGCAGCTGTGTCGAGTCTGGAGGAGGATTGGTGCAAGCCTGGAGGGTTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATAAGTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTGCTCGCATAAGAAGTAAATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAAGACAGGTTCAACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACCTGAAACTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACATATCTACTGGGCTTACTGGGGCCAAAGGACTCTGG TCACCGTCTCCTCAGTGTGGTGTCTGCGGGCGGGCTCCGGTGGTGGTGTCTCA GACTGTTGTGACTCAGGAACCTTCACCTACCGTATCACCTGGTGAACAGTCACTCACT TGTGGCTCCTCGACTGGGCTGTTACATCTGGCTACTACCCAACTGGGTCCAAACAAAAAC CAGGTCAGGCACCCCGTGGTCTAATAGGTGGGACTAAGTTCCTCGCCCCCGGTACTCCTGC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCTCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGTTACAGCAACCGCTGGGTGTTCCGGTGA GGAACCAAACTGACTGTCCTA
36.	H1E $\dot{\sim}$ CDR-L1	GSSTGAVTSGYYPN
37.	H1E $\dot{\sim}$ CDR-L2	GTKFLAP
38.	H1E $\dot{\sim}$ CDR-L3	ALWYSNRWV
39.	H1E $\dot{\sim}$ CDR-H1	SYAMN
40.	H1E $\dot{\sim}$ CDR-H2	RIRSKYNNYATYYADSVKG
41.	H1E $\dot{\sim}$ CDR-H3	HGNFGNSYLSFWAY
42.	H1E $\dot{\sim}$ VH	EVQLVESGGGLEQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKGLEWVARIRSKYNNYATY YADSVKGRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNGFNSYLSFWAYWGQGLVLT

[illegible]

51.	G4H $\checkmark$ CDR-H1	RYAMN	
52.	G4H $\checkmark$ CDR-H2	RIRSKYNNYATYYADSVKG	
53.	G4H $\checkmark$ CDR-H3	HGNFGNSYLSYFAY	
54.	G4H $\checkmark$ VH	EVQLVESGGGLVQPGSLKLSCAASGFTFNRYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKGRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYLSYFAYWGQGLVT VSS	
55.	G4H $\checkmark$ VH	GAGGTGCAGCTGTCGAGTCTGGAGGAGGATGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATCGCTACGCCATGAACCTGGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTTCGCATAGAGTAAGTAATAATAATATGCAACAT ATTATGCCGATTTCAGTGAAGGAGGTTCACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACCTTGAAACTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGGAACCTTCGGTAATAGCTACTTATCCTACTTCGCTTACTGGGGCAAGGGACTCTGCT CACCGTCTCCTCA	
56.	G4H $\checkmark$ VL	QTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWVQQKPGQAPRGLIGGTFKFLAPGTPAR FSGSLGGKAALTLGVQPEDEAEYYCALWYSNRWVFGGGTKLTVL	
57.	G4H $\checkmark$ VL	CAGACTGTTGTGACTCAGGAACTTCACTACCGTATCACTGTGGAACAGTCACACTCA CTTGTCCTCCTCGACTGGGCTGTTACATCTGGCTACTACCCAACCTGGGTCCAAACAAA ACCAGTCAAGCACCCCGTGTCTAATAGTGGGACTAAGTTCTCGCCCCGGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAATAATTACTGTCTCTATGTTACAGCAACCGCTGGGTGTTCTCGGTG GAGGAACCAAACTGACTGCTCA	
58.	G4H $\checkmark$ VH-VL	EVQLVESGGGLVQPGSLKLSCAASGFTFNRYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKGRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYLSYFAYWGQGLVT VSSGGSGGGSGGGGSGQTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWVQQKPGQ APRGLIGGTFKFLAPGTPARFSGSLGGKAALTLGVQPEDEAEYYCALWYSNRWVFGGGTKL TVL	
59.	G4H $\checkmark$ VH-VL	GAGGTGCAGCTGTCGAGTCTGGAGGAGGATGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATCGCTACGCCATGAACCTGGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTTCGCATAGAGTAAGTAATAATAATATGCAACAT ATTATGCCGATTTCAGTGAAGGAGGTTCACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACCTTGAAACTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGGAACCTTCGGTAATAGCTACTTATCCTACTTCGCTTACTGGGGCAAGGGACTCTGCT CACCGTCTCCTCAGGTGGTGTCTTGGCGCGCGGCTCCGGTGGTGGTGTCTCTCAG ACTGTTGTGACTCAGGAACCTTCACTACCGTATCACCTGTGTGGAACAGTCACACTCATT GTGGCTCCTCGACTGGGCTGTACATCTGGCTACTACCAAACTGGGTCCAAACAAAAC CAGGTCAGGCACCCCGTGGTCTAATAGTGGGACTAAGTTCTCGCCCCGGTACTCCTGTC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGCCA	

		GAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCCGGTGGA GGAACCAAACTGACTGTCCTA
60.	A2J $\dot{\bar{Z}}$ CDR-L1	RSSTGAVTSGYYPN
61.	A2J $\dot{\bar{Z}}$ CDR-L2	ATDMRPS
62.	A2J $\dot{\bar{Z}}$ CDR-L3	ALWYSNRWV
63.	A2J $\dot{\bar{Z}}$ CDR-H1	VYAMN
64.	A2J $\dot{\bar{Z}}$ CDR-H2	RIRSKYNNYATYYADSVKK
65.	A2J $\dot{\bar{Z}}$ CDR-H3	HGNFGNSYLSWWAY
66.	A2J $\dot{\bar{Z}}$ VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNVYAMNWWVRQAPGKGLEWVARIRSKYNNYATY YADSVKKRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYLSWWAYWGQGTILV TVSS
67.	A2J $\dot{\bar{Z}}$ VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATGTCTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGGTTTGAAATGGGTTGCTCGCATAAGAAAGTAAATATAAATATATGCAACAT ATTATGCCGATTTCAGTGAAAGAGAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACTTGAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACTTATCCTGTGGGCTTACTGGGCCAAGGGACTCTGGT CACCGTCTCCTCA
68.	A2J $\dot{\bar{Z}}$ VL	QTVVTQPSLTVSPGGTVTLTCRSSTGAVTSGYYPNWVQQKPGQAPRGLIGATDMRPSGTPAR FSGLLGGKAALTLGSGVQPEDEAEYYCALWYSNRWVFGGGTKLTVL
69.	A2J $\dot{\bar{Z}}$ VL	CAGACTGTTGTACTCAGGAACCTTCACCTACCGTATCACCTGGTGGAAACAGTCACACTCA CTTGTCGCTCCTCGACTGGGCTGTACATCTGGCTACTACCCAAACTGGGTCCAAACAAA ACCAGGTCAGGCACCCCGTGGTCTAATAGGTGCCACTGACATGAGGCCCTCTGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCCGGTG GAGGAACCAAACTGACTGCCTA
70.	A2J $\dot{\bar{Z}}$ VH-VL	EVQLVESGGGLVQPGGSLKLSCAASGFTFNVYAMNWWVRQAPGKGLEWVARIRSKYNNYATY YADSVKKRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYLSWWAYWGQGTILV TVSSGGGSGGGSGGGSQTIVTQPSLTVSPGGTVTLTCRSSITGAVTSGYYPNWVQQKPG QAPRGLIGATDMRPSGTPARFSGSLLGKKAALTLGSGVQPEDEAEYYCALWYSNRWVFGGGTK LTVL
71.	A2J $\dot{\bar{Z}}$ VH-VL	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATGTCTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGGTTTGAAATGGGTTGCTCGCATAAGAAAGTAAATATAAATATGCAACAT ATTATGCCGATTTCAGTGAAAGAGAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACTTGAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC

		ATGGAACTTCGGTAATAGCTACTTATCCTGGTGGGCTTACTGGGCCAAGGACTCTGGT CACCGTCTCCTCAGGTGGTGGTTCTGGCGGGCGGCTCCGGTGGTGGTCTCTCAG ACTGTTGTGACTCAGGAACCTTCACCTCACCGTATCACCTGGTGGAACAGTCACACTCACTT GTCGCTCCTCGACTGGGCTGTTACATCTGGCTACTACCCAACTGGGTCCAACAAAACC AGGTCAGGCACCCCGTGGTCTAATAGTGCCACTGACATGAGGCCCTCTGCTACTCCTGCC AGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCCTGGGTGTTCCGGTGA GGAACCAACTGACTGTCCCTA
72.	EIL ₂ CDR-L1	GSSTGAVTSGYYPN
73.	EIL ₂ CDR-L2	GTKFLAP
74.	EIL ₂ CDR-L3	ALWYSNRWV
75.	EIL ₂ CDR-H1	KYAMN
76.	EIL ₂ CDR-H2	RIRSKYNNYATYYADSVKS
77.	EIL ₂ CDR-H3	HGNFGNSYTSYYAY
78.	EIL ₂ VH	EVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKSRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYTSYYAYWGQGLVT VSS
79.	EIL ₂ VH	GAGTGCAGCTGGTCTGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTACCTTCAATAAGTACCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTGCTCGCATAGAAAGTAAATATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAATCGAGGTTCACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACTTGAAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACACATCCTACTACGCTTACTGGGCCAAGGACTCTGG TCACCGTCTCCTCA
80.	EIL ₂ VL	QTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWVQQKPGQAPRGLIGGTKFLAPGTPAR FSGSLLGKKAALTLSGVQPEDEAEYYCALWYSNRWVFGGTKLTVL
81.	EIL ₂ VL	CAGACTGTGTGACTCAGGAACCTTCACCTCACCGTATCACCTGGTGGAAACAGTCACACTCA CTTGTGGCTCCTCGACTGGGGCTGTACATCTGGTACTACCCAAACTGGTCCCAACAAA ACCAGGTACAGCACCCCGTGGTCTAATAGGTGGGACTAAGTTCTCGCCCCCGGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCCGCTGGGTGTTCCGGTG GAGGAACCAACTGACTGTCCCTA
82.	EIL ₂ VH-VL	EVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKSRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYTSYYAYWGQGLVT VSSGGGGGGGGGSGGGSQTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGYYPNWVQQKPGQ APRGLIGGTKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEYYCALWYSNRWVFGGTKL



83.	E1L $\rightarrow$ VH-VL	TVL GAGGTGCAGCTGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACCTTCAATAAGTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGATGGTGTCTCGCATAGAGTAAATATAATAATTATGCAACAT ATTATGCCGATTCAAGTAAATCGAGGTTACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACCTTGAACACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACACATCCTACTACGTTACTGGGGCCAAAGGACTCTGG TCACCGTCTCCTCAGTGGTGGTGTCTGGGGGGGGCTCCGGTGGTGGTGGTGTCTCA GACTGTGTGACTCAGGAACCTTCACTACCGTATACCTGGTGAACAGTCACTCACTCACT TGTGGCTCCTCGACTGGGCTGTACATCTGGCTACTACCCAAACTGGGTCCAAACAAAAC CAGGTACAGCACCCCGTGGTCTAATAGTGGGACTAAGTTCCTGCCCGGCTACTCCTGC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCTCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGTACAGCAACCGCTGGGTGTTCCGGTGA GGAACCAAACTGACTGTCTA
84.	E2M $\rightarrow$ CDR-L1	RSSTGAVTSGYYPN
85.	E2M $\rightarrow$ CDR-L2	ATDMRPS
86.	E2M $\rightarrow$ CDR-L3	ALWYSNRWV
87.	E2M $\rightarrow$ CDR-H1	GYAMN
88.	E2M $\rightarrow$ CDR-H2	RIRSKYNNYATYYADSVKE
89.	E2M $\rightarrow$ CDR-H3	HRNFGNSYLSWFAY
90.	E2M $\rightarrow$ VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNQYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKERFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHRNFGNSYLSWFAYWGQGLVT VSS
91.	E2M $\rightarrow$ VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACCTTCAATGGCTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGATGGTGTCTCGCATAGAGTAAATATAATAATTATGCAACAT ATTATGCCGATTCAAGTAAAGAGAGGTTCACTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACCTTGAACACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATAGGAACTTCGGTAATAGCTACTTATCCTGTGCTTACTGGGGCCAAAGGACTCTGTGT CACCGTCTCCTCA
92.	E2M $\rightarrow$ VL	QTVVTQEPSLTVSPGGTVTLTCSRSTGAVTSGYYPNWVQKPGQAPRGLIGATDMRPSGTPAR FSGSLLGKKAALTLGVQPEDEAEYYCALWYSNRWVFGGGLTLVL
93.	E2M $\rightarrow$ VL	CAGACTGTTGTGACTCAGGAACCTTCACTACCGTATCACCTGGTGGAAACAGTCACACTCA CTTGTCCGCTCCGACTGGGGCTGTACATCTGGCTACTACCCAAACTGGGTCCCAACAAA ACCAAGTCAAGCACCCCGTGGTCTAATAGTGCCACTGACATGAGGCCCTCTGTGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC

		CAGAGGATGAGGCAGAAATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCCGGTG GAGGAACCAAACTGACTGTCCTA
94.	E2M之VH-VL	EVQLVESGGGLVQPGGSLKLSCAASGFTFNGYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKRFITISRDSDSKNTAYLQMNNLKTEDTAVYYCVHRNFGNSYLSWFA YWGQGLVT VSSGGSGGGSGGGGSGTQVTVTQEPSLTVSPGGTVTLTCSRSTGAVTSGYYPNWVQQKPGQ APRGLIGATDMRPSGTPARFSGSLGGAALTLSGVQPEDEAEYYCALWYSNRWVFGGGTKL TVL
95.	E2M之VH-VL	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCAATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATGGCTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAATGGGTGCTCGCATAAGAAAGTAAATATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAGAGAGAGGTTCCACCATCTCCAGAGATGATTCAAAAACACATG CCTATCTACAAATGAACAACCTTGAAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATAGGAACTTCGGTAATAGCTACTTATCCTGGTTCGCTTACTGGGCCAAGGACTCTGGT CACCGTCTCCTCAGGTGGTGGTCTGGCGGGCGGCTCCGGTGGTGGTGTCTCAG ACTGTTGTGACTCAGGAACCTTCACTCACCGTATCACCTGGTGAACAGTCACACTCACTT GTCGCTCCTCGACTGGGGCTGTACATCTGGCTACTACCCAACTGGGTCCAACAAAAACC AGGTCAGGACCCCGTGGTCTAATAGTGCCACTGACATGAGGCCCTCTGTTACTCTGCTGCC AGATTCTCAGGCTCCCTGCTTGGAGGCAAGGCTGCCCTCACCTCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGTACAGCAACCGCTGGGTGTTCCGGTGGA GGAACCAAACTGACTGTCCTA
96.	F70之CDR-L1	GSSTGAVTSGYYPN
97.	F70之CDR-L2	GTKFLAP
98.	F70之CDR-L3	ALWYSNRWV
99.	F70之CDR-H1	VYAMN
100.	F70之CDR-H2	RIRSKYNNYATYYADSVKK
101.	F70之CDR-H3	HGNFGNSYISWYAY
102.	F70之VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNVYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKRFITISRDSDSKNTAYLQMNNLKTEDTAVYYCVHRNFGNSYISWFA YWGQGLV TVSS
103.	F70之VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCAATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATGTGTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAATGGGTGCTCGCATAAGAAAGTAAATATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAGAGAGGTTCCACCATCTCCAGAGATGATTCAAAAACACATG CCTATCTACAAATGAACAACCTTGAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGGAACTTCGGTAATAGCTACATATCCTGGTGGGCTTACTGGGGCCAAGGACTCTGG TCACCGTCTCCTCA



104.	F70 $\dot{\sim}$ VL	QTVVTQEPSLTVSPGGTIVLTGSGSTGAVTSGYYPNWVQQKPGQAPRGLIGGTKFLAPGTPAR FSGSLLGGKAALTLSGVQPEDEAEYYCALWYSNRWVFGGGTKLTVL
105.	F70 $\dot{\sim}$ VL	CAGACTGTTGTGACTCAGGAACCTTCACTCACCGTATCACCTGTGTGGAACAGTCACACTCA CTTGTGGCTCCTCGACTGGGCTGTTACATCTGGCTACTACCCAACTGGGTCCCAACAAAA ACAGGTCAGGCACCCCGTGGTCTAATAGTGGGACTAAGTTCCCTCGCCCCGGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCGCTGGGTGTTCCGGTG GAGGAACCAAACTGACTGTCCTA
106.	F70 $\dot{\sim}$ VH-VL	EVQLVESGGGLVQPGGSLKLSCAASGFTFNVYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKKRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFNSYISWWAYWGQGTLV TVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVLTGSGSTGAVTSGYYPNWVQQKPG QAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCALWYSNRWVFGGGTK LTVL
107.	F70 $\dot{\sim}$ VH-VL	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCGAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATGTGTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGTTTGGAATGGTTGCTCGCATAAGAAATAATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAAGAGGTTCAACCATCTCCAGAGATGATTCAAAAAACACTG CCTATCTACAAATGAACAACTTGAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACATATCTGTGGGCTTACTGGGCCAAGGACTCTGG TCACCGTCTCCTCAGGTGGTGGTCTGCGGGCGGCGCTCCGGTGGTGGTGTCTCA GACTGTTGTGACTCAGGAACCTTCACTCACCGTATCACCTGGTGGAACAGTCACACTCACT TGTGGCTCCTCGACTGGGGTGTACATCTGGCTACTACCCAACTGGGTCCCAACAAAAAC CAGGTCAGGCACCCCGTGGTCTAATAGTGGGACTAAGTTCTCGCCCCGGTACTCCTGC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGCTCTATGGTACAGCAACCCCTGGGTGTTCCGGTGGGA GGAACCAAACTGACTGTCCTA
108.	F12Q $\dot{\sim}$ CDR-L1	GSSTGAVTSGNYPN
109.	F12Q $\dot{\sim}$ CDR-L2	GTKFLAP
110.	F12Q $\dot{\sim}$ CDR-L3	VLWYSNRWV
111.	F12Q $\dot{\sim}$ CDR-H1	SYAMN
112.	F12Q $\dot{\sim}$ CDR-H2	RIRSKYNNYATYYADSVKG
113.	F12Q $\dot{\sim}$ CDR-H3	HGNFGNSYVSWWAY
114.	F12Q $\dot{\sim}$ VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNSYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKGRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFNSYVSWWAYWGQGTLV TVSS

115.	F12Q ^h -VH	GAGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATAGCTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGTTTGGAAATGGTTGCTCGCATAAGAAAGTAAATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAAGGCAGGTTACCATCTCCAGAGATGATTCAAAAACACATG CCTATCTACAAATGAACAACTTGAAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGGAACTTCGGTAATAGCTACGTTTCCTGGTGGGCTTACTGGGCCAAGGGACTCTGGT CACCGTCTCCTCA
116.	F12Q ^h -VL	QTVVTQEPSTVSPGGTVTLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPAR FSGLLGGKAAALTLGSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVL
117.	F12Q ^h -VL	CAGACTGTGTGACTCAGGAACCTTCACCTCACCGTATCACCTGGTGGACACAGTCACACTCA CTGTGGCTCCTCGACTGGGGCTGTACATCTGGCAACTACCCAAACTGGTCCCAACAAA ACCAGGTCAGGCACCCCGTGGTCTAATAGGTGGACTAAGTTCCTGCCCCCGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGC CAGAGGATGAGGCAGAAATATTACTGTGTCTATGGTACAGCAACCGCTGGGTGTTCCGGTG GAGGAACCAAACTGACTGCCTA
118.	F12Q ^h -VH-VL	EVQLVESGGGLVQPGSLKLSCAASGFTFNSYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKGRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNGFNSYVSWWAYWGQGTLV TVSSGGSGGGSGGGGSGTQVTVTQEPSTVSPGGTVTLTCGSSTGAVTSGNYPNWVQQKPG QAPRGLIGGTKFLAPGTPARFSGSLGKAAALTLGSGVQPEDEAEYYCVLWYSNRWVFGGGTK LTVL
119.	F12Q ^h -VH-VL	GAGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGCAGCCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATAGCTACGCCATGAACCTGGTCCGCCAGGCTC CAGGAAAGGTTTGGAAATGGTTGCTCGCATAAGAAAGTAAATAATAATTATGCAACAT ATTATGCCGATTTCAGTGAAAGGCAGGTTACCATCTCCAGAGATGATTCAAAAACACATG CCTATCTACAAATGAACAACTTGAAAACTGAGGACACTGCCGTGTACTACTGTGTGAGAC ATGGGAACTTCGGTAATAGCTACGTTTCCTGGTGGGCTTACTGGGCCAAGGGACTCTGGT CACCGTCTCCTCAGGTGGTGGTGTCTGCGCGGGCGGCTCCGGTGGTGGTGTCTCAG ACTGTTGTGACTCAGGAACCTTCACCTCACCGTATCACCTGGTGGACACAGTCACACTCACTI GTGGCTCCTCGACTGGGGCTGTTACATCTGGCAACTACCCAAACTGGGTCCCAACAAAAC CAGGTCAGGCACCCCGTGGTCTAATAGTGGGACTAAGTTCCTCGCCCCCGTACTCCTGC CAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCCCTCTCAGGGGTACAGCCA GAGGATGAGGCAGAAATATTACTGTGTCTATGGTACAGCAACCGCTGGGTGTTCCGGTGGA GGAACCAAACTGACTGCCTA
120.	I2C ^h -CDR-L1	GSSTGAVTSGNYPN
121.	I2C ^h -CDR-L2	GTKFLAP
122.	I2C ^h -CDR-L3	VLWYSNRWV



123.	I2C-CDR-H1	KYAMN	
124.	I2C-CDR-H2	RIRSKYNNYATYYADSVKD	
125.	I2C-CDR-H3	HGNFGNSYISYWAY	
126.	I2C-VH	EVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQGLTLVT VSS	
127.	I2C-VH	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGACGCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATAAGTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTGCTCGCATAAAGAAATAATAATAATATATGCAACAT ATTATGCCGATTCAGTGAAAGACAGGTTCAACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACCTTGAAAACCTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGAACTTCGGTAATAGCTACATATCCTACTGGGCTTACTGGGGCCAAAGGACTCTGG TCACCGTCTCCTCA	
128.	I2C-VL	QTVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPAR FSGSLLGKKAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVL	
129.	I2C-VL	CAGACTGTTGTGACTCAGGAACCTTCACTCACCGTATCACCTGGTGAACAGTCACACTCA CTTGTGGTCTCCTGACTGGGGCTGTACATCTGGCACTACCCAACTGGGTCCACAAAA ACCAAGTCAGCACCCCGTGGTCTAATAGTGGGACTAAGTTCTCGCCCCGGTACTCCT GCCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGTGCCCTCACCTCTCAGGGGTACAGC CAGAGGATGAGGCAGATAATTACTGTGTCTATGTACAGCAACCGCTGGGTGTTCTGGTG GAGGAACCAAACTGACTGCTCA	
130.	I2C-VH-VL	EVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNNYATY YADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQGLTLVT VSSGGGSGGGSGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGAVTSGNYPNWVQQKPGQ APRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKL TVL	
131.	I2C-VH-VL	GAGGTGCAGCTGGTCGAGTCTGGAGGAGGATTGGTGACGCTGGAGGGTCATTGAAACTC TCATGTGCAGCCTCTGGATTCACTTCAATAAGTACGCCATGAAGTGGTCCGCCAGGCTC CAGGAAAGGGTTTGGAAATGGGTGCTCGCATAAAGAAATAATAATAATATGCAACAT ATTATGCCGATTCAGTGAAAGACAGGTTCAACCATCTCCAGAGATGATTCAAAAACACTG CCTATCTACAAATGAACAACCTTGAAAACCTGAGGACACTGCCGTGTAATACTGTGTGAGAC ATGGGAACTTCGGTAATAGCTACATATCCTACTGGGCTTACTGGGGCCAAAGGACTCTGG TCACCGTCTCCTCAGGTGGTGGTGTCTGGCGGGGGGCTCCGGTGGTGGTGTCTCA GACTGTTGTGACTCAGGAACCTTCACTACCGTATCACTGTGTGAAACAGTCACACTCACT TGTGCTCCTCGACTGGGGCTGTACATCTGGCAACTACCCAAACTGGGTCCAAACAAAA CCAGGTCAGGCACCCCGTGGTCTAATAGGTGGGACTAAGTTCTCGCCCCCGGTACTCCTG CCAGATTCTCAGGCTCCCTGCTTGAGGCAAGGCTGCCCTCACCTCTCAGGGGTACAGCC	

132.	CDH19 14302 x I2C-LFcbY PCT/EP2014/051550之SEQ ID 1572	AGAGGATGAGGCAGAAATATTACTGTGTTCTATGGTACAGCAACCGCTGGGTGTTCCGGTGG AGGAACCAAACTGACTGCTCTA QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVVRQA PGKCLEWVAFIWDGSKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSSVELTQPPSVSVSPGQTASITCSG DRLGEKYSWYQRPQGSPLLVIYQDTKRPSGIPERFSGNSNGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGSSSQTAVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFVGGGTKLTVLGGGGSRQFCTGHFGGLHPCNGHHHHH QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVVRQA PGKCLEWVAFIWDGSKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSSVELTQPPSVSVSPGQTASITCSG DRLGEKYSWYQRPQGSPLLVIYQDTKRPSGIPERFSGNSNGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGSSSQTAVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFVGGGTKLTVLGGGG QRCTGHFGGLHPCNGGGGGSRDWDVDFVFGGGTPVGGHHHHH
133.	CDH19 14302 x I2C-LFcbY-156 PCT/EP2014/051550之SEQ ID 1573	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVVRQA PGKCLEWVAFIWDGSKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSSVELTQPPSVSVSPGQTASITCSG DRLGEKYSWYQRPQGSPLLVIYQDTKRPSGIPERFSGNSNGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGSSSQTAVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFVGGGTKLTVLGGGG QRCTGHFGGLHPCNGGGGGSRDWDVDFVFGGGTPVGGHHHHH
134.	CDH19 14302 CC x I2C-LFcbY PCT/EP2014/051550之SEQ ID 2219	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVVRQA PGKCLEWVAFIWDGSKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSSVELTQPPSVSVSPGQTASITCSGD RLGEKYSWYQRPQGSPLLVIYQDTKRPSGIPERFSGNSNGNTATLTISGTQAMDEADYYCQ AWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW RQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGSSSQTAVVTVQEPSLTVSPGGTV LTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ EDEAEYYCVLWYSNRWVFVGGGTKLTVLGGGG QRCTGHFGGLHPCNGHHHHH
135.	CDH19 14302 CC x I2C-LFcbY-156 PCT/EP2014/051550之SEQ ID 2220	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVVRQA PGKCLEWVAFIWDGSKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSSVELTQPPSVSVSPGQTASITCSGD RLGEKYSWYQRPQGSPLLVIYQDTKRPSGIPERFSGNSNGNTATLTISGTQAMDEADYYCQ AWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW RQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGSSSQTAVVTVQEPSLTVSPGGTV



		LTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQP EDEAEYYCVLWYYSNRWVFGGGTKLTVLGGGGS QRFTGHFGGLHPCNG GGGGS GGGG RDWDFDVFGGGTPVGGHHHHH
136.	CH19_2G6_302xI2C6	QVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYY ADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWGQGTITVT VSSGGGGGGGGSSYELTQPPSVSPGQTASITCSGDRLGEKYTSWYQRPQGSPLL VIYQDTRKPSGIPERFSGNSGNTATLTISGTQAMDEADYYCQAWESSTVFGGGTKLTVLSG GGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNN YATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAWYGQ GTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTGAVTSGNYPNWVQ QKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYCVLWYSNRWVFG GGTKLTVLHHHHH
137.	CH19_2G6_302xI2C6-156	QVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYY ADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWGQGTITVT VSSGGGGGGGGSSYELTQPPSVSPGQTASITCSGDRLGEKYTSWYQRPQGSPLL VIYQDTRKPSGIPERFSGNSGNTATLTISGTQAMDEADYYCQAWESSTVFGGGTKLTVLSG GGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNN YATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAWYGQ GTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTGAVTSGNYPNWVQ QKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYCVLWYSNRWVFG GGTKLTVLGGGGGGSRDWDFVFGGGTPVGGHHHHH
138.	CH19_2G6_302xI2C6-D3	QVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYY ADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWGQGTITVT VSSGGGGGGGGSSYELTQPPSVSPGQTASITCSGDRLGEKYTSWYQRPQGSPLL VIYQDTRKPSGIPERFSGNSGNTA'ILTISGTQAMDEADYYCQAWESSTVFGGGTKLTVLSG GGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNN YATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAWYGQ GTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTGAVTSGNYPNWVQ QKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYCVLWYSNRWVFG GGTKLTVLGGGGSEEPQNLKQNCLEFEQLGEYKFNALLVRYTKKVPQVSTPTLVEVSRNLG KVGSKCKKHPEAKRMPCAEDYLSVVLNQLCVLHEKTPVSDRVTKCCTESLVNRRPCFSALEV DETYVPKEFNAETFTFHADICTLSEKERQIKKQATALVELVKHKPKATKEQLKAVMDDFAFVE KCKKADDKETCFAEEGKKLVAAASQAALGLDYHHHHH
139.	CH19_2G6_302xI2C6-LH- FcB-CH	QRFVTHFGGLHPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGSSYELTQPPSVSPGQTASITCSG DRLGEKYTSWYQRPQGSPLLVIYQDTRKPSGIPERFSGNSGNTATLTISGTQAMDEADYYC



		QAWESSTVVFGGGTKLTVLSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSSQTAVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNGHHHHH
140.	CH19_2G6_302x12C6-LH- FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIYYYGMDVWGQGTITVTVSSGGGGGGGGGGSSYELTPPPSVSPGQTASITCSG DRLGEKYTSWYQRPQGQSPLLVIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSSQTAVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
141.	CH19_2G6_302x12C6-LY- FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIYYYGMDVWGQGTITVTVSSGGGGGGGGGGSSYELTPPPSVSPGQTASITCSG DRLGEKYTSWYQRPQGQSPLLVIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSSQTAVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
142.	CH19_2G6_302x12C6- HALBwD	QVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYY ADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIYYYGMDVWGQGTITVT VSSGGGGGGGGGGSSYELTPPPSVSPGQTASITCSGDRLGEKYTSWYQRPQGQSPLL VIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYCQAWESSTVVFGGGTKLTVLSG GGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLEWVARIRSKYNN YATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQ GTLTVTVSSGGGGGGGGGGGSSQTAVTQEPSTVSPGGTVTLTCGSSTGAVTSGNYPNWVQ QKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFG GGTKLTVLPGGDSDAHKSEVAHRFKDLGEENFKALVLIATAQYLQCPFFEDHVKLVNEVTE FAKTCVADESAENCDSLSHTLFGDKLCTVATLRETYGEMADCCAKQEPERNECFLOHKDDNP NLPRLVRPEVDVMCTAFHDNEETFLKKYLYEIAARRHPYFYAPELLFFAKRYKAAFTCECCQAAD KAACLPKLDELDEGKASSAKQRLKCAQLQKGERAFKAWAVARLSQRFPKAEFAEVSKLV TDLTKVHTECCCHDLECADRDLAKYICENQDSISSKLKECCEKPLLEKSHCIAEVENDEM PADLPSLAADFVESKDVCKNYAEAKDVFLGMFLYEARRRHPDYSVLLRLAKTYETILEKC



143.	CH19_2G6_302x12C6-CH-FcB-LH	CAAADPHECYAKVFDEFKPLVEEPQNLKQNCSELFQGEYKFNALLVRYTKKVPQVSTPTLVEVSRNLGKVGSKCKHPEAKRMPCAEADYLSVVLNQLCVLHEKTPVSDRVTKCCTESLVNRRPCFSALVEDETYVPKEFNAETFTFHADICTLSEKERQIKKQATALVELVKHKPKATKEQLKAVMDFAAFVEKCKADDKETCFABEGKKLVAAASQAALGLHHHHH
144.	CH19_2G6_302x12C6-CH-FcB-LY	QRFCTGHFGGLHPCNCGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWQGQTTVTVSSGGGGGGGGSSYELTPPPSVVSPGQTASITCSGDRLGEK YTSWYQQRPGQSPLLVIYQDTRKPSGIPERFSGSNSGNTATLTISGTQAMDEADYYCQAWESSTVVFVGGGGLVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGNSIISYWAWGQGTTLTVSSGGGGGGGGSSQTVVTQEPSTLTVSPGGTVTLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGLTVLGGGGSRFVTGHFGGLHPANGHHHHH
145.	CH19_2G6_302x12C6-CH-FcB-CH	QRFCTGHFGGLHPCNCGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWQGQTTVTVSSGGGGGGGGSSYELTPPPSVVSPGQTASITCSGDRLGEK YTSWYQQRPGQSPLLVIYQDTRKPSGIPERFSGSNSGNTATLTISGTQAMDEADYYCQAWESSTVVFVGGGGLVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGNSIISYWAWGQGTTLTVSSGGGGGGGGSSQTVVTQEPSTLTVSPGGTVTLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGLTVLGGGGSRFVTGHFGGLHPANGHHHHH
146.	CH19_2G6_302_VKGx12C6-LFcBY	QRFVTHFGGLYPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAFIWYDGSNKYYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAGIIGTIGYYGMDVWQGQTTVTVSSGGGGGGGGSSYELTPPPSVVSPGQTASITCSGDRLGEK YTSWYQQRPGQSPLLVIYQDTRKPSGIPERFSGSNSGNTATLTISGTQAMDEADYYCQAWESSTVVFVGGGGLVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVY

147.	CH19_0-E11xI2C6-LFcBY	CVRHGFNGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGLTKLTVLGGGSGQRFCCTGHFGGLHPCNHHHHHH
148.	CH19_5-G4xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSSGGYYWSWIRQ HPGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPPWGGQTLTVTVSSGGGGGGGGGGGSEIVLTQFPGTSLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP LTFGGGTLKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGLTKLTVLGGGSGQRFCCTGHFGGLHPCNHHHHHH
149.	CH19_8-H6xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPPWGGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP LTFGGGTLKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGLTKLTVLGGGSGQRFCCTGHFGGLHPCNHHHHHH
150.	CH19_2-C11xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPPWGGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP LTFGGGTLKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTG



		AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
151.	CH19_2-A10xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGGQTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNTYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGGSTVVTQEPSTLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
152.	CH19_1-D11xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGGQTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNTYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGGSTVVTQEPSTLTVSPGGTVTLTCGSSTGA AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
153.	CH19_9-F9xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPWGGQTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSPT FGGKTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNTYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGGSTVVTQEPSTLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
154.	CH19_1-H8xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGGQTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNTYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGGGGSTVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY

155.	CH19_1-B12xI2C6-LFcBY	YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFPGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYSYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNYG WFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSPT FGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY GWFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
156.	CH19_0-C4xI2C6-LFcBY	
157.	CH19_3-F2xI2C6-LFcBY	YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNYG WFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSPT FGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY GWFDPWGQGTLVTVSSGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGSGGGSGGGSQTVTQEPSTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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His His
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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

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

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
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Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
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Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
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Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
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Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
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Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
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Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
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Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
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Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
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Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
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Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
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Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
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Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
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Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp

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505

510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser

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His His His His His His

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354045

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys

505560

Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr

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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

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

100105110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr

115120125



Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
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Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
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Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser

340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
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Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
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Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
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Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
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Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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Gly His His His His His His
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 35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
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Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
 115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser



Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
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Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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Gly His His His His His His
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159.	CH19_0-G4xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP SFGQGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWYWGQGTTLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
160.	CH19_0-H5xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYCARVYSNYG WFDPWGQGTTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYDTSPL TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWYWGQGTTLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
161.	CH19_0-B8xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWYWGQGTTLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
162.	CH19_2-D9xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNF GNSYISYWAWYWGQGTTLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
163.	CH19_8-H7xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWVRQ

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Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr		
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser		
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Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr		
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Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr		
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Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr		
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly		
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Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser		
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Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser		
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Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu		
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Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe		
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Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
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Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

<210> 373
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<400> 373

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His
 530 535 540

His His His His
 545

<210> 374
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 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
 115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 375
<211> 549
<212> PRT
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<223> 合成多肽

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Thr Val
405 410 415

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

		HPGKGLEWIGYIFYSGRTYYNPSLKSRIISVDTSKNQFSLKLSSTAAADTA VYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYQYSSPL TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNF NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGQTVVTVQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGGLHPCNGHHHHH
164.	CH19_9-C2xI2C6-LFeBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRIISVDTSKNQFSLKLSSTAAADTA VYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYQYSSP LTFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGQTVVTVQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGGLHPCNGHHHHH
165.	CH19_3-D5xI2C6-LFeBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRIISVDTSKNQFSLKLSSTAAADTA VYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYQYSSP LTFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGQTVVTVQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGGLHPCNGHHHHH
166.	CH19_1-G11xI2C6-LFeBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ PPGKGLEWIGYIYYRGRYYNPSLKSRIISVDTSKNQFSLKLSSTAAADTA VYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYQYSSP LTFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGQTVVTVQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGGLHPCNGHHHHH
167.	CH19_1-H11xI2C6-LFeBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIYYRGRYYNPSLKSRIISVDTSKNQFSLKLSSTAAADTA VYCARVYSNY



420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly

260										265					270				
Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly				
		275					280					285							
Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys				
	290					295					300								
Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp				
305					310					315					320				
Val	Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala				
				325					330						335				
Asp	Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn				
			340					345						350					
Thr	Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val				
		355					360					365							
Tyr	Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr				
	370					375					380								
Trp	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly				
385					390					395					400				
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val				
				405					410					415					
Val	Thr	Gln	Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr				
			420					425					430						
Leu	Thr	Cys	Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro				
		435					440					445							
Asn	Trp	Val	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly				
	450					455					460								
Gly	Thr	Lys	Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser				
465					470					475					480				

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 377

<211> 571

<212> PRT

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<223> 合成多肽

<400> 377

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Asp
		100						105					110	
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Asn	Ser	Asn	Tyr	Gly	Trp
		115					120					125		Phe
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly
	130					135					140			Gly
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val
145					150					155				Leu
Thr	Gln	Phe	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala
				165					170					175
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala
			180					185					190	Trp
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly
		195					200					205		Ala
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly
	210					215					220			Ser
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp
225					230					235				Phe
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe
				245					250					255
Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu
			260					265					270	Val
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser
		275					280					285		Leu
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala
	290					295					300			Met

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
 530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
 545 550 555 560

Thr Pro Val Gly Gly His His His His His His
 565 570

<210> 378
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

		GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQQYGSSP TFGQGTRLRKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
168.	CH19_9-F3xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGKTYYNPSLKSRSVISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQQYGSSPI TFGQGTRLRKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
169.	CH19_2-G6xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSYYWSWIRPPG KGLEWIGYIYSGSTNYNPSLKSRSVTMSIDTSKNQFSLKLSVTAADTAVYCARDQRRIVAA GGYYGMDVWGQGTITVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQQKPGQAPRLIYGASTRATGIPARFSGSGGTDFLTISRLEPEDFAVYCCQ YGSSPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVR HGNFGNSYISYWAYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
170.	CH19_2-H7xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSNDYYWSWIRQ HPKGLEWIGYIYSGSTFYNPSLKSRAISVDTSKNQFSLKLSVTAADTAVYCARGVYRT GAFDIWGQGTMTVTVSSGGGGGGGGGGGGSDIQMTQSPSSLSASVGDRVTITCRASQSISSY LNWYQQKPGKAPKSLIYAASSLQSGVPSKFSGSGGTDFLTLISSLPEDIAITYCCQSYSTPQ AFGGGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNGHHHHH
171.	CH19_5-B3xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYFTFTYYGISWVRQA PGQGLEWMGWNPYGGETINYAQKLQGRVTMTTDTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLLTVSSGGGGGGGGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLSHN

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

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- <400> 380

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

	260		265		270
Gln	Leu	Val	Glu	Ser	Gly
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Gly	Gly	Gly	Leu	Val	Gln
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Pro	Gly	Gly	Ser	Leu	
	285				
Lys	Leu	Ser	Cys	Ala	Ala
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Ser	Gly	Phe	Thr	Phe	Asn
	295				300
Lys	Tyr	Ala	Met		
Asn	Trp	Val	Arg	Gln	Ala
	305				310
Pro	Gly	Lys	Gly	Leu	Glu
				315	
Trp	Val	Ala	Arg		
					320
Ile	Arg	Ser	Lys	Tyr	Asn
				325	
Asn	Asn	Tyr	Ala	Thr	Tyr
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Tyr	Tyr	Ala	Asp	Ser	Val
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Lys	Asp	Arg	Phe	Thr	Ile
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Ser	Arg	Asp	Asp	Ser	Lys
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Asn	Thr	Ala	Tyr		
				350	
Leu	Gln	Met	Asn	Asn	Leu
		355			
Lys	Thr	Glu	Asp	Thr	Ala
	360				
Val	Tyr	Tyr	Cys		
				365	
Val	Arg	His	Gly	Asn	Phe
	370				
Gly	Asn	Ser	Tyr	Ile	Ser
	375				380
Tyr	Trp	Ala	Tyr		
Trp	Gly	Gln	Gly	Thr	Leu
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Val	Thr	Val	Ser	Ser	Gly
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Gly	Gly	Gly	Gly	Gly	Ser
					400
Gly	Gly	Gly	Gly	Ser	Gln
				405	
Thr	Val	Val	Thr	Gln	
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Glu	Pro	Ser	Leu	Thr	Val
			420		
Ser	Pro	Gly	Gly	Thr	Val
		425			
Thr	Leu	Thr	Cys		
		430			
Gly	Ser	Ser	Thr	Gly	Ala
				435	
Val	Thr	Ser	Gly	Asn	Tyr
				440	
Pro	Asn	Trp	Val		
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Gln	Gln	Lys	Pro	Gly	Gln
				450	
Ala	Pro	Arg	Gly	Leu	Ile
				455	
Gly	Gly	Thr	Lys		
				460	
Phe	Leu	Ala	Pro	Gly	Thr
				465	
Pro	Ala	Arg	Phe	Ser	Gly
				470	
Ser	Gly	Ser	Leu	Leu	Gly
				475	
					480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

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172.	CH19_5-E10xI2C6-LFeBY	QRFTVGHFGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYSGATNYAQKLQGRVTMTTDTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQGTLLVTVSSGGGGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQLLSHN GYNYLDWYLQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVIYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGQTVVTPQPSLTVSPGGTIVLTLC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGLHPCNGHHHHH
173.	CH19_6-G10xI2C6-LFeBY	QRFTVGHFGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQGTLLVTVSSGGGGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQLLSHN GYNYLDWYLQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVIYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGQTVVTPQPSLTVSPGGTIVLTLC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGLHPCNGHHHHH
174.	CH19_4-H8xI2C6-LFeBY	QRFTVGHFGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQGTLLVTVSSGGGGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQLLSHV GYNYLDWYLQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVIYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGQTVVTPQPSLTVSPGGTIVLTLC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGLHPCNGHHHHH
175.	CH19_2-E4xI2C6-LFeBY	QRFTVGHFGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWINPYTGNRNYAQKQVDRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGS GGFDYWGGQGTLLVTVSSGGGGGGGGGGGSDIVMTQSPSLPVTLGQPASISCRSSQLLSH VGNYLDWYLQKPGQSPQLLIYLGSNRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVIYCM



Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
 355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
 370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
 405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
 420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
 435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
 450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
 465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
 485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
 500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
 515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
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Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
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Pro Val Gly Gly His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 385
- <211> 570
- <212> PRT
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- <223> 合成多肽
- <400> 385

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln

435

440

445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
 450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
 465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
 485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
 500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
 515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
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Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
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Pro Val Gly Gly His His His His His His
 565 570

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 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

		QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGGGQTVVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLLTVLGGGGSQRCTGHFGGLHPCNCGHHHHH
176.	CH19_6-B8xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKNTYAKLQDRVTMTDSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGQGTLLVTVSSGGGGGGGGGGGGGGGDMTQTPSLPVTGEPASISCRSSQSLLS VGYNLDWYLRQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGGGQTVVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLLTVLGGGGSQRCTGHFGGLHPCNCGHHHHH
177.	CH19_0-B4xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKNTYAKLQGRVTMTDSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGQGTLLVTVSSGGGGGGGGGGGGGGGDMTQTPSLPVTGEPASISCRSSQSLLS VGYNLDWYLRQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGGGQTVVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLLTVLGGGGSQRCTGHFGGLHPCNCGHHHHH
178.	CH19_9-F1xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKNTYAKVQDRVTMTDSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGQGTLLVTVSSGGGGGGGGGGGGGGGDMTQTPSLPVTGEPASISCRSSQSLLS VGYNLDWYLRQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTVSSGGGGGGGGGGGGGQTVVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLLTVLGGGGSQRCTGHFGGLHPCNCGHHHHH
179.	CH19_4-A7xI2C6-LFcBY	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKNTYAKLQGRVTMTDSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGQGTLLVTVSSGGGGGGGGGGGGGGGDMTQTPSLPVTGEPASISCRSSQSLLS VGYNLDWYLRQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ

260										265					270				
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys				
		275					280					285							
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn				
	290					295					300								
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile				
305					310					315					320				
Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	Lys				
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Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr	Leu				
			340					345					350						
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val				
		355					360					365							
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp				
	370					375					380								
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
385				390						395					400				
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu				
				405					410					415					
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly				
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Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln				
		435					440					445							
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe				
	450					455					460								
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly				
465					470					475					480				

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr



Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
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Pro Val Gly Gly His His His His His His
565 570

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
 530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
 245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
 260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
 275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
 290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
 305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
 325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
 340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
 355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
 370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

- <210> 390
- <211> 571
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445
 Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460
 Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480
 Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495
 Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510
 Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
 515 520 525
 Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
 530 535 540
 Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
 545 550 555 560
 Thr Pro Val Gly Gly His His His His His His
 565 570

<210> 391
 <211> 570
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 391

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

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

	260		265		270	
Leu Val	Glu Ser Gly Gly Gly	Leu Val	Gln Pro Gly Gly	Ser Leu Lys		
	275		280		285	
Leu Ser	Cys Ala Ala Ser	Gly Phe Thr Phe	Asn Lys Tyr	Ala Met Asn		
	290		295		300	
Trp Val	Arg Gln Ala Pro	Gly Lys Gly Leu	Glu Trp Val	Ala Arg Ile		
	305		310		315	
Arg Ser	Lys Tyr Asn Asn Tyr	Ala Thr Tyr Tyr	Ala Asp Ser	Val Lys		
		325		330		335
Asp Arg	Phe Thr Ile Ser Arg	Asp Asp Ser Lys	Asn Thr Ala	Tyr Leu		
		340		345		350
Gln Met	Asn Asn Leu Lys Thr	Glu Asp Thr Ala	Val Tyr Tyr	Cys Val		
		355		360		365
Arg His	Gly Asn Phe Gly	Asn Ser Tyr Ile	Ser Tyr Trp	Ala Tyr Trp		
		370		375		380
Gly Gln	Gly Thr Leu Val Thr	Val Ser Ser Gly	Gly Gly Gly	Ser Gly		
		385		390		400
Gly Gly	Gly Ser Gly Gly Gly	Gly Ser Gln Thr	Val Val Thr	Gln Glu		
		405		410		415
Pro Ser	Leu Thr Val Ser Pro	Gly Gly Thr Val	Thr Leu Thr	Cys Gly		
		420		425		430
Ser Ser	Thr Gly Ala Val Thr	Ser Gly Asn Tyr	Pro Asn Trp	Val Gln		
		435		440		445
Gln Lys	Pro Gly Gln Ala Pro	Arg Gly Leu Ile	Gly Gly Thr	Lys Phe		
		450		455		460
Leu Ala	Pro Gly Thr Pro Ala	Arg Phe Ser Gly	Ser Leu Leu	Gly Gly		
		465		470		475
						480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

<210> 392
<211> 571
<212> PRT
<213> 人工序列

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<400> 392

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Asp
		100						105					110	
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp
		115					120					125		Phe
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly
	130					135					140			Gly
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val
145					150					155				Leu
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala
				165					170					175
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala
			180					185					190	Trp
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly
		195					200					205		Ala
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly
	210					215					220			Ser
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp
225					230					235				Phe
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe
				245					250					255
Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu
			260					265					270	Val
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser
		275					280					285		Leu
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala
	290					295					300			Met

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 393
<211> 571
<212> PRT
<213> 人工序列

<220>
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<400> 393

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

[illegible]

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
 530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
 545 550 555 560

Thr Pro Val Gly Gly His His His His His
 565 570

<210> 394
<211> 571
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 394

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 395
- <211> 571
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 395

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 396
<211> 571
<212> PRT
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<220>
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<400> 396

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val



Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 397
<211> 570
<212> PRT
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<400> 397

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

85										90					95				
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp				
		100						105					110						
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe				
		115					120					125							
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly				
	130					135					140								
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu				
145					150					155					160				
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr				
				165					170					175					
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp				
			180					185					190						
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala				
		195					200					205							
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe				
225					230					235					240				
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Thr	Phe	Gly	Gln				
				245					250					255					
Gly	Thr	Arg	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	Gln				
			260					265					270						
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys				
		275					280					285							
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn				
		290				295					300								

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

<210> 398
<211> 571
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 398

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
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 35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
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Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr
 65 70 75 80

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
 85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
 100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
 115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
 130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
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Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
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Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
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- <210> 400
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- <400> 400

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln

192.	CH19_2G6_302_VKgXI2C 6-LFcBY-156	EA EY Y CV L W Y S N R W V F G G G T K L T V L G G G S Q R F C T G H F G G L H P C N G H H H H H H Q R F V T G H F G G L Y P A N G G G G S Q V Q L V E S G G V V Q P G G S L R L S C A A S G F T F S S Y G M H W V R Q A P G K G L E W V A F I W Y D G S N K Y Y A D S V K G R F T I S R D N S K N T L Y L Q M N S L R A E D T A V Y Y C A R R A G I I G T I G Y Y Y G M D V W G Q G T T V T V S S G G G S G G G G G S S Y E L T Q P P S V S V S P G Q T A S I T C S G D R L G E K Y T S W Y Q Q R P G Q S P L L V I Y Q D T K R P S G I P E R F S G S N S G N T A T L T I S G T A M D E A D Y Y C Q A W E S T V V F G G T K L T V L S G G G S E V Q L V E S G G L V Q P G G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F C T G H F G G L H P C N G G G G S G G S R D W D F D V F G G G T P V G G H H H H H
193.	CH19_0-E11xI2C6-LFcBY- 156	Q R F V T G H F G G L Y P A N G G G G S Q V Q L Q E S G P G L V K P S Q T L S L T C T V S G G S I S R G G Y Y W S W I R Q H P G K G L E W I G Y I F Y R G R T Y Y N P S L K S R V T I S V D T S K N Q F S L K L S S V T A A D T A V Y Y C A R V S N Y G W F D P W G Q G T L V T V S S G G G S G G G G G S E I V L T Q P G T L S L S P G E R A T L S C R A S Q S V S S S Y L A W Y Q Q K P G Q A P R L L I Y G A S S R A T G P D R F S G S G T D F T L T I S R L E P E D F A V Y Y C Q Q Y G S S P L T F G G G T K L E I K S G G G S E V Q L V E S G G L V Q P G G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F C T G H F G G L H P C N G G G G S G G S R D W D F D V F G G G T P V G G H H H H H
194.	CH19_5-G4xI2C6-LFcBY- 156	Q R F V T G H F G G L Y P A N G G G G S Q V Q L Q E S G P G L V K P S Q T L S L T C T V S G G S I S S G G Y Y W S W I R Q H P G K G L E W I G Y I F Y R G R T Y Y N P S L K S R V T I S V D T S K N Q F S L K L S S V T A A D T A V Y Y C A R V S N Y G W F D P W G Q G T L V T V S S G G G S G G G G G S E I V L T Q S P G T L S L S P G E R A T L S C R A S Q S V S S S Y L A W Y Q Q K P G Q A P R L L I Y G T S N R A T G P D R F S G S G T D F T L T I S R L E P E D F A V Y Y C Q Q Y G S S P L T F G G G T K L E I K S G G G S E V Q L V E S G G L V Q P G G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F C T G H F G G L H P C N G G G G S G G S R D W D F D V F G G G T P V G G H H H H H
195.	CH19_8-H6xI2C6-LFcBY- 156	Q R F V T G H F G G L Y P A N G G G G S Q V Q L Q E S G P G L V K P S Q T L S L T C T V S G G S I S S G G Y Y W S W I R Q H P G K G L E W I G Y I F Y S G R T Y Y N P S L K S R V T I S V D T S K N Q F S L K L S S V T A A D T A V Y Y C A R V S N Y G W F D P W G Q G T L V T V S S G G G S G G G G G S E I V L T Q S P G T L S L S P G E R A T L S C R A S Q S V S S S Y L A W Y Q Q K P G Q A P R L L I Y G A S S R A T G P D R F S G S G T D F T L T I S R L E P E D F A V Y Y C Q Q Y G S S P L T F G G G T K L E I K S G G G S E V Q L V E S G G L V Q P G G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G

435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
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Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260										265										270									
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu														
		275					280					285																	
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met														
	290					295					300																		
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg														
305					310					315					320														
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val														
				325					330					335															
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr														
			340					345					350																
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys														
		355					360					365																	
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr														
	370					375					380																		
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser														
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Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln														
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			420					425					430																
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val														
		435					440					445																	
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys														
	450					455					460																		
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly														
465					470					475					480														

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Ser Gly Ala Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser

	85						90						95					
Thr	Ser	Thr	Ala 100	Tyr	Met	Glu	Leu	Arg 105	Ser	Leu	Arg	Ser	Asp 110	Asp	Thr			
Ala	Val	Tyr 115	Tyr	Cys	Ala	Arg	Gly 120	Ser	Gly	Gly	Phe	Asp 125	Tyr	Trp	Gly			
Gln	Gly 130	Thr	Leu	Val	Thr	Val 135	Ser	Ser	Gly	Gly	Gly 140	Gly	Ser	Gly	Gly			
Gly 145	Gly	Ser	Gly	Gly	Gly 150	Gly	Ser	Asp	Ile	Val 155	Met	Thr	Gln	Thr	Pro 160			
Leu	Ser	Leu	Ser	Val 165	Thr	Pro	Gly	Glu	Pro 170	Ala	Ser	Ile	Ser	Cys 175	Arg			
Ser	Ser	Gln	Ser 180	Leu	Leu	His	Ser	Asn 185	Gly	Tyr	Asn	Tyr	Leu 190	Asp	Trp			
Tyr	Leu	Gln 195	Lys	Pro	Gly	Gln	Ser 200	Pro	Gln	Leu	Leu	Ile 205	Tyr	Leu	Gly			
Ser	Tyr 210	Arg	Ala	Ser	Gly	Val 215	Pro	Asp	Arg	Phe	Ser 220	Gly	Ser	Gly	Ser			
Gly 225	Thr	Asp	Phe	Thr	Leu 230	Lys	Ile	Ser	Arg	Val 235	Glu	Ala	Glu	Asp	Val 240			
Gly	Val	Tyr	Tyr	Cys 245	Met	Gln	Ala	Leu	Gln 250	Thr	Pro	Phe	Thr	Phe 255	Gly			
Pro	Gly	Thr	Lys 260	Val	Asp	Ile	Lys	Ser 265	Gly	Gly	Gly	Gly	Ser 270	Glu	Val			
Gln	Leu	Val 275	Glu	Ser	Gly	Gly	Gly 280	Leu	Val	Gln	Pro	Gly 285	Gly	Ser	Leu			
Lys	Leu 290	Ser	Cys	Ala	Ala	Ser 295	Gly	Phe	Thr	Phe	Asn 300	Lys	Tyr	Ala	Met			

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
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Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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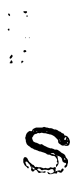
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

196.	CH19_2-C11xI2C6-LFeBY-156	NSYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGRSDWDFDVFGG GTPVGGHHHHH QRFTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSSGSSSGGYYSWIRQ HPGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAAATAVYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCYCQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGRSDWDFDVFGG GTPVGGHHHHH
197.	CH19_2-A10xI2C6-LFeBY-156	QRFTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSSGSSSGGYYSWIRQ HPGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAAATAVYCARDSSSR ALDYWGQGTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCYCQYDSSPR TFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGRSDWDFDVFGGG TPVGGHHHHH QRFTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSSGSSSGGYYSWIRQ HPGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAAATAVYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCYCQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGRSDWDFDVFGG GTPVGGHHHHH
198.	CH19_1-D11xI2C6-LFeBY-156	QRFTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSSGSSSGGYYSWIRQ HPGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAAATAVYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCYCQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGRSDWDFDVFGG GTPVGGHHHHH QRFTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSETLSLTCTVSSGSSSGGYYSWIRQH PGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAAATAVYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY
199.	CH19_9-F9xI2C6-LFeBY-156	



Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
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Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
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Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
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Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
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Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

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Gln	Leu	Val	Glu	Ser	Gly
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			Gly	Gly	Gly
			280	Leu	Val
				Gln	Pro
					285
				Gly	Gly
				Ser	Leu
Lys	Leu	Ser	Cys	Ala	Ala
	290				
				Ser	Gly
				295	Phe
					Thr
					Phe
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					300
				Lys	Tyr
					Ala
					Met
Asn	Trp	Val	Arg	Gln	Ala
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				Pro	Gly
					Lys
					Gly
					Leu
					315
					Glu
					Trp
					Val
					Ala
					Arg
					320
Ile	Arg	Ser	Lys	Tyr	Asn
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					Ala
					Thr
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					Tyr
					Ala
					Asp
					Ser
					335
					Val
Lys	Asp	Arg	Phe	Thr	Ile
					Ser
					Arg
					Asp
					345
					Asp
					Ser
					Lys
					Asn
					Thr
					350
					Ala
					Tyr
Leu	Gln	Met	Asn	Asn	Leu
					Lys
					Thr
					360
					Glu
					Asp
					Thr
					Ala
					Val
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					Tyr
					Tyr
					Cys
Val	Arg	His	Gly	Asn	Phe
					Gly
					375
					Asn
					Ser
					Tyr
					Ile
					Ser
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					Trp
					Ala
					Tyr
Trp	Gly	Gln	Gly	Thr	Leu
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					Val
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					Thr
					415
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Glu	Pro	Ser	Leu	Thr	Val
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					Pro
					Gly
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					Thr
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					Thr
					Leu
					430
					Thr
					Cys
Gly	Ser	Ser	Thr	Gly	Ala
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					Thr
					440
					Ser
					Gly
					Asn
					Tyr
					Pro
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					Asn
					Trp
					Val
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					450
					Ala
					Pro
					Arg
					Gly
					Leu
					Ile
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					Gly
					Gly
					Thr
					Lys
Phe	Leu	Ala	Pro	Gly	Thr
					470
					Pro
					Ala
					Arg
					Phe
					Ser
					475
					Gly
					Ser
					Leu
					Leu
					Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

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201.	CH19_1-B12xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKLEWIGYFYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGGTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYQYGSPT TFPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTIVTLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGGSRDWDVDFVFGG TPVGGHHHHHH
202.	CH19_0-C4xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKLEWIGYFYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGGTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYQYGSPT TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTIVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLGSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGGSRDWDVDFVFGG GTPVGGHHHHHH

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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

203.	CH19_3-F2xI2C6-LFeBY-156	QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLTCTISGSSGGYYWSWIRQH PGKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSVTAADTAVYYCARVNSNYG WFDPWGQGTLLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP FGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAWYWGQGTLLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSSTGA VTSNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDVDFVFGGG TPVGGHHHHHH
204.	CH19_3-B10xI2C6-LFeBY-156	QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLTCTVSGSSGGYYWSWIRQ HPKGGLDWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLTSSVTAAADTAVYYCARVNSNY GWFDPWGQGTLLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP LTFGGGKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAWYWGQGTLLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDVDFVFG GGTPVGGHHHHHH
205.	CH19_0-G4xI2C6-LFeBY-156	QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLTCTVSGSSGGYYWSWIRQ HPKGGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLTSSVTAAADTAVYYCARVNSNY GWFDPWGQGTLLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP SFGQGTVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAWYWGQGTLLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDVDFVFG GTPVGGHHHHHH
206.	CH19_0-H5xI2C6-LFeBY-156	QRVFTGHFGGLYPANGGGGSQVQLQESGPGLVRPSQTLTLTCTVSGSSGGYYWSWIRQH PGKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLTSSVTAAADTAVYYCARVNSNYG WFDPWGQGTLLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYDTSPL TFGGGKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAWYWGQGTLLVTVSSGGGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSSTG



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Gln	Leu	Val	Glu	Ser	Gly
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Gly	Gly	Gly	Leu	Val	Gln
	280				
Pro	Gly	Gly	Ser	Leu	
	285				
Lys	Leu	Ser	Cys	Ala	Ala
	290				
Ser	Gly	Phe	Thr	Phe	Asn
	295				
Lys	Tyr	Ala	Met		
	300				
Asn	Trp	Val	Arg	Gln	Ala
	305				
Pro	Gly	Lys	Gly	Leu	Glu
	310				
Trp	Val	Ala	Arg		
	315				
Ile	Arg	Ser	Lys	Tyr	Asn
	320				
Asn	Asn	Tyr	Ala	Thr	Tyr
	325				
Tyr	Tyr	Ala	Asp	Ser	Val
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Lys	Asp	Arg	Phe	Thr	Ile
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Ser	Arg	Asp	Asp	Ser	Lys
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Asn	Thr	Ala	Tyr		
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Leu	Gln	Met	Asn	Asn	Leu
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Lys	Thr	Glu	Asp	Thr	Ala
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Val	Tyr	Tyr	Cys		
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Val	Arg	His	Gly	Asn	Phe
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Gly	Asn	Ser	Tyr	Ile	Ser
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Tyr	Trp	Ala	Tyr		
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Trp	Gly	Gln	Gly	Thr	Leu
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Val	Thr	Val	Ser	Ser	Gly
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Gly	Gly	Gly	Gly	Gly	Gly
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Ser	Gly	Gly	Gly	Gly	Ser
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Gln	Thr	Val	Val	Thr	Gln
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Thr	Val	Val	Thr	Gln	
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Glu	Pro	Ser	Leu	Thr	Val
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Ser	Pro	Gly	Gly	Thr	Val
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Thr	Leu	Thr	Cys		
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Gly	Ser	Ser	Thr	Gly	Ala
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Val	Thr	Ser	Gly	Asn	Tyr
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Pro	Asn	Trp	Val		
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Gln	Gln	Lys	Pro	Gly	Gln
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Ala	Pro	Arg	Gly	Leu	Ile
	450				
Gly	Gly	Thr	Lys		
	455				
Phe	Leu	Ala	Pro	Gly	Thr
	460				
Pro	Ala	Arg	Phe	Ser	Gly
	465				
Ser	Gly	Ser	Leu	Leu	Gly
	470				
	475				
	480				

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser

					85					90					95
Thr	Ser	Thr	Ala	Tyr	Met	Glu	Leu	Arg	Ser	Leu	Arg	Ser	Asp	Asp	Thr
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Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly
		115					120					125			
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly
	130					135					140				
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro
145					150					155					160
Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg
				165					170					175	
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp
			180					185					190		
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly
		195					200					205			
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val
225					230					235					240
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly
				245					250					255	
Pro	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val
			260					265					270		
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu
		275					280					285			
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met
	290					295					300				

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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208.	CH19_2-D9xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGLVTVSSGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGSGGSRDWDDFDVFVG GGTPVGGHHHHHH
209.	CH19_8-H7xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSPL TFGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGTQVVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGSGGSRDWDDFDVFVG GTPVGGHHHHHH
210.	CH19_9-C2xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
260 265 270

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
275 280 285

Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
290 295 300

Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
340 345 350

Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
420 425 430

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

435

440

445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly

260

265

270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
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Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
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Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
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Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
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Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
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Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
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Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
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Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
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Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
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Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

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211.	CH19_3-D5xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRSVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGGLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYGGSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWQGGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
212.	CH19_1-G11xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ PPKGLEWIGYIFYRGRYYNPSLKSRSVTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGGLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYGGSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWQGGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
213.	CH19_1-H11xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRSVTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGGLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYGGSSP TFQGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF SYISYWAYWQGGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSTGA VTSNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
214.	CH19_9-F3xI2C6-LFcBY-	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ TPVGGHHHHH



Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
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Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
 115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
 145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
 165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly
530 535 540

Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly
545 550 555 560

Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 420
- <211> 574
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 420

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro

435 440 445
Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460
Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480
Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495
Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525
Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540
Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560
Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 421
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<220>
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<400> 421

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



Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly

260	265	270
Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly		
275	280	285
Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys		
290	295	300
Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp		
305	310	315
Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala		
325	330	335
Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn		
340	345	350
Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val		
355	360	365
Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr		
370	375	380
Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly		
385	390	395
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val		
405	410	415
Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr		
420	425	430
Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro		
435	440	445
Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly		
450	455	460
Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser		
465	470	475
		480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 422
<211> 574
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 422

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

156	HPKGLEWIGYIFYSGKTYYNPSLKSRSVISVDTSKNQFSLKSSVTAADTA VYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVY CQYQYGSPI TFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGL EWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGT VTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGKFLAPGTPARFSGSLLGKKAALTL SGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGGSRDWD FDFVFGGG TPVGGHHHHH
215.	CH19_2-G6xI2C6-LFcBY- 156 QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSETLSLTCTVSGGSISSYYWSWIRPPG KGLEWIGYIYYSGSTNYPNPSLKSRYVTMSIDTSKNQFSLKLISVTAADTA VYCARDQRRIVAA GGYYGMDVWGQGTTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQKPGQAPRLIYGASTRATGIPARFSGSGGTDFLTISRLEPEDFAVY CQY YGSSPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGT VTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGKFLAPGTPARFSGSLLGKKAALTL SGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGGSRDWD FDF VFGGTPVGGHHHHH
216.	CH19_2-H7xI2C6-LFcBY- 156 QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSNDYYWSWIRQ HPKGLEWIGYIYYSGSTFYNPSLKSRAISVDTSKNQFSLKLTSVTAADTA VY CARGVYRT GAFDIWGQGTMTVTVSSGGGGGGGGGGGSDIQMTQSPSSLASVGDRVTITCRASQSISSY LNWYQKPGKAPKSLIYAASSLQSGVPSKFSGSGGTDFLTITSSLOPEDIATY CQYQYSTPQ AFGGGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGT VTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGKFLAPGTPARFSGSLLGKKAALTL SGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGGSRDWD FDFVFGG GTPVGGHHHHH
217.	CH19_5-B3xI2C6-LFcBY- 156 QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYGGGETNYAQKLQGRVTMTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLVTVSSGGGGGGGGGGGSDIVMTQTPLSLVTPGEPASISCRSSQSLLSHN GYNLDWY LQKPGQSPQLLYLGSYRASVPDRFSGSGGTDFLTISRVEAEDVGY YCMQ ALQPTFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGT VTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGKFLAPGTPARFSGSLLGKKAALTL SGVQPEDE

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
 530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
 545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
 565 570

<210> 423
 <211> 571
 <212> PRT
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<220>
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<400> 423

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 424
 <211> 571
 <212> PRT
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<220>
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<400> 424

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
 195 200 205
 Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240
 Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255
 Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270
 Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285
 Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300
 Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320
 Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335
 Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350
 Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365
 Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 425
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<400> 425

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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 Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30
 Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45
 Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60
 Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125
 Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

218.	CH19_5-E10xI2C6-LFcBY-156	AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYSGATNYAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSHN GYNLDWYLOKPGQSPQLLIYLGSYRASVPDRFSGSGTDTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQTLVTVSSGGGGSGGSGSQTVVVTQEPSTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSHN GYNLDWYLOKPGQSPQLLIYLGSYRASVPDRFSGSGTDTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQTLVTVSSGGGGSGGSGSQTVVVTQEPSTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSHV GYNLDWYLOKPGQSPQLLIYLGSYRASVPDRFSGSGTDTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQTLVTVSSGGGGSGGSGSQTVVVTQEPSTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSH GYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGTDTLTKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR
219.	CH19_6-G10xI2C6-LFcBY-156	
220.	CH19_4-H8xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSHV GYNLDWYLOKPGQSPQLLIYLGSYRASVPDRFSGSGTDTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQTLVTVSSGGGGSGGSGSQTVVVTQEPSTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSH GYNLDWYLOKPGQSPQLLIYLGSYRASVPDRFSGSGTDTLTKISRVEAEDVGYYCM ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQTLVTVSSGGGGSGGSGSQTVVVTQEPSTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGSRDWDFD VFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSH GYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGTDTLTKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR
221.	CH19_2-E4xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGSDIVMTQTPLSLVTPEPASISCRSSQSLLSH GYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGTDTLTKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR



435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
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Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
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Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val



Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr

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Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp
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Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Asp	Ser	Ser	Ser	Ser	Arg	Ala	Leu
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Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
	130					135					140				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu
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Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr
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Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp
		180						185					190		
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala
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Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
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Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe
225					230					235					240
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Asp	Ser	Ser	Pro	Arg	Thr	Phe	Gly
				245					250					255	
Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val
			260					265					270		
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu
	275						280					285			
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met
	290					295					300				

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
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Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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222.	CH19_6-B8xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKNTYAKQLQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGOQTLVTVSSGGGGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLS VGYNLYDWYLQKPGQSPQLLIYLGNSRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGTLVTVSSGGGGGGGGGGGSDIVMTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWD DVFGGGTPVGGHHHHHH
223.	CH19_0-B4xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKNTYAKQLQGRVTMATDTSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGOQTLVTVSSGGGGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLS VGYNLYDWYLQKPGQSPQLLIYLGNSRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGTLVTVSSGGGGGGGGGGGSDIVMTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWD DVFGGGTPVGGHHHHHH
224.	CH19_9-F1xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGNRNYAQKVQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGOQTLVTVSSGGGGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLS VGYNLYDWYLQKPGQSPQLLIYLGNSRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGTLVTVSSGGGGGGGGGGGSDIVMTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWD DVFGGGTPVGGHHHHHH
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
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Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
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Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
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Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
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Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
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Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
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Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
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Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
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Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
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Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
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Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
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Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
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Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
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Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
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Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
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Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
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Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
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Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
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Pro Val Gly Gly His His His His His His
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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
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Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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<210> 431

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

	260		265		270
Leu Val	Glu Ser Gly Gly Gly	Leu Val Gln Pro Gly	Gly Ser Leu Lys		
	275	280	285		
Leu Ser Cys Ala Ala Ser	Gly Phe Thr Phe Asn Lys	Tyr Ala Met Asn			
	290	295	300		
Trp Val Arg Gln Ala Pro	Gly Lys Gly Leu Glu Trp Val Ala Arg	Ile			
	305	310	315		320
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser	Val Lys				
	325	330	335		
Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu					
	340	345	350		
Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val					
	355	360	365		
Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp					
	370	375	380		
Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly					
	385	390	395		400
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu					
	405	410	415		
Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly					
	420	425	430		
Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln					
	435	440	445		
Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe					
	450	455	460		
Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly					
	465	470	475		480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

85

90

95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
 245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
 260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
 275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
 290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

		GFDYWGGGTLTVSSGGGGGGGGSDIVMTQSPSLPVTGPGEASISCRSSQSLLSHV GYNYLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTTLTTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGGGGSRDWDWDFD VFGGGTPVGGHHHHH
226.	CH19_6-E12xI2C6-LFeBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGITWVRQA PGQGLEWMGWINPYTGNRNYAQKVFQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GGFDYWGGQGLTVTVSSGGGGGGGGGSDIVMTQSPLSLVTGPGEASISCRSSQSLLSHS VGNYLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLTKISRVEAEDVGYYCM QALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR RHGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGGGGSRDWDWDF DVFGGGTPVGGHHHHH
227.	CH19_6-C12xI2C6-LFeBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGISWVRQA PGQGLEWMGWINPYTGNRNYAQKVFQGRVTMTTDTSTNTAYMELSLRSDTAVYYCARGSG GFDYWGGGTLTVTVSSGGGGGGGGGSDIVMTQSPSLPVTGPGEASISCRSSQSLLSHV GYNYLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLTKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTTLTTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGGGGSRDWDWDFD VFGGGTPVGGHHHHH
228.	CH19_6-A7xI2C6-LFeBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVCKASGYSTSYGISWVRQA PGQGLEWMGWINPYTGNRNYAQKVFQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GGFDYWGGQGLTVTVSSGGGGGGGGGSDIVMTQSPLSLVTGPGEASISCRSSQSLLSHS VGNYLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLTKISRVEAEDVGYYCM QALQTPFTFGPGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR RHGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRCTGHFGGLHPCNCGGGGGGSRDWDWDF



Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
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Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
 545 550 555 560

Pro Val Gly Gly His His His His His His
 565 570

<210> 433
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln

435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45



Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

229.	CH19_6-G8xI2C6-LFcBY-156	DVFGGGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKQGRVTMTTDTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGSGGGSDIVMTQTPLSLVTPGQPASISCRSSQSLLSH VGYNLDWYLOKPGQSPQLLIYLSNRASGVDPFRFSGSGTDFTLKISRVEAEDVGYYCYM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNAITYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWD DFDVFGGGTPVGGHHHHH
230.	CH19_6-F9xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKQGRVTMTTDTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGGSDIVMTQTPLSLVTPGQPASISCRSSQSLLSH GYNLDWYLOKPGQSPQLLIYLSNRASGVDPFRFSGSGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNAITYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTVTLT GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWD DFDVFGGGTPVGGHHHHH
231.	CH19_0-C11xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVLVESGGGVVQPGRLSLRLSCAASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYYASSVKGRTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGLVTVSSGGGGSGGGGSDIQTQSPSSLSASVGDRVTITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGTDFTFITSSLQPEDIAITYC QQYDNLPTFGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNAITYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLVTVSSGGGGSGGGGSGTQVVTQEPSTLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWD DFDVFGGGTPVGGHHHHH
232.	CH19_8-F6xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGSQVLVESGGGVVQPGRLSLRLSCVASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYYASSVKGRTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGLVTVSSGGGGSGGGGSDIQTQSPSSLSASVGDRVTITC RASQSISSYLNWYQQKPGKAPKLLIYDASSLQSGVPSRFSGSGTFTLTITSSLQAEADVAVY CQQYYSTPLTFGGGKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPKGLEWVARIRSKYNNAITYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVY

	260		265		270
Gln	Leu	Val	Glu	Ser	Gly
	275				
			Gly	Gly	Leu
			280		
				Val	Gln
				Pro	Gly
					285
				Gly	Ser
				Leu	
Lys	Leu	Ser	Cys	Ala	Ala
	290				
				Ser	Gly
				295	
				Phe	Thr
				Phe	Asn
				300	
				Lys	Tyr
				Ala	Met
Asn	Trp	Val	Arg	Gln	Ala
305				310	
				Pro	Gly
				Lys	Gly
					315
				Leu	Glu
				Trp	Val
				Ala	Arg
				320	
Ile	Arg	Ser	Lys	Tyr	Asn
				325	
				Asn	Tyr
				Ala	Thr
				330	
				Tyr	Tyr
				Ala	Asp
				335	
				Ser	Val
Lys	Asp	Arg	Phe	Thr	Ile
				340	
				Ser	Arg
				Asp	Asp
				345	
				Ser	Lys
				Asn	Thr
				350	
				Ala	Tyr
Leu	Gln	Met	Asn	Asn	Leu
				Lys	Thr
				360	
				Glu	Asp
				Thr	Ala
					365
				Val	Tyr
				Tyr	Cys
Val	Arg	His	Gly	Asn	Phe
				Gly	Asn
				375	
				Ser	Tyr
				Ile	Ser
				380	
				Tyr	Trp
				Ala	Tyr
Trp	Gly	Gln	Gly	Thr	Leu
				390	
				Val	Thr
				Val	Ser
					395
				Ser	Gly
				Gly	Gly
				Gly	Gly
					400
Gly	Gly	Gly	Gly	Ser	Gly
				405	
				Gly	Gly
				Gly	Gly
				Ser	Gln
				410	
				Thr	Val
				Val	Thr
					415
Glu	Pro	Ser	Leu	Thr	Val
				420	
				Ser	Pro
				Gly	Gly
				425	
				Thr	Val
				Thr	Leu
					430
				Thr	Cys
Gly	Ser	Ser	Thr	Gly	Ala
				435	
				Val	Thr
				Ser	Gly
				440	
				Asn	Tyr
				Pro	Asn
				445	
				Trp	Val
Gln	Gln	Lys	Pro	Gly	Gln
				450	
				Ala	Pro
				Arg	Gly
				Leu	Ile
				460	
				Gly	Gly
				Thr	Lys
Phe	Leu	Ala	Pro	Gly	Thr
				470	
				Pro	Ala
				Arg	Phe
				Ser	Gly
				475	
				Ser	Leu
				Leu	Gly
					480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr



Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

<210> 438
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125



Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

<210> 439
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 440
- <211> 571
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- <223> 合成多肽
- <400> 440

233.	CH19_0-G9xI2C6-LFcBY-156	CVRHGNFNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRD WDFDVFGGGTPVGGHHHHH
234.	CH19_1-E11xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTFRNYAMHWVRQA PGKGLEWVAGISYSGTNKYASSVKGRFTISRDNKNTLYLQNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGGGGSDIQMTQSPSSLSASVGDRVTTIC QASQDISNLYNWYQQKPGKAPKLLIYDASNLETGVPSPRFGSGSGTEFTLTISSLQPEDIATYYC QQYDNLPLTFGGGTVKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRD WDFDVFGGGTPVGGHHHHH
235.	CH19_0-F5xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMQWVRQA PGKGLEWVAVIWSGSNKKYYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGTTVTVSSGGGGGGGGGGGSDIQMTQSPSSLSASVGDRVTTICRA SQGISNYLAWYQQKPGKVPKLLIYAASLQSGVPSRFGSGSGTDFTLTISSLQPEDVATYYCQ KYNAPLTFGGGTVKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWD DFDVFGGGTPVGGHHHHH
236.	CH19_1-E1xI2C6-LFcBY-156	QRFVTGHFGGLYPANGGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAVISYSGSNKKYYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY IFYRYGMDVWGQGTTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 441
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<400> 441

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

	260		265		270
Gln	Leu	Val	Glu	Ser	Gly
	275				Gly
					280
					Leu
					Val
					Gln
					Pro
					Gly
					285
					Gly
					Ser
					Leu
Lys	Leu	Ser	Cys	Ala	Ala
	290				Ser
					295
					Gly
					Phe
					Thr
					Phe
					Asn
					300
					Lys
					Tyr
					Ala
					Met
Asn	Trp	Val	Arg	Gln	Ala
	305				310
					Pro
					Gly
					Lys
					Gly
					Leu
					315
					Glu
					Trp
					Val
					Ala
					Arg
					320
Ile	Arg	Ser	Lys	Tyr	Asn
					325
					Asn
					Tyr
					Ala
					Thr
					330
					Tyr
					Tyr
					Ala
					Asp
					Ser
					335
					Val
Lys	Asp	Arg	Phe	Thr	Ile
					340
					Ser
					Arg
					Asp
					345
					Asp
					Ser
					Lys
					Asn
					Thr
					350
					Ala
					Tyr
Leu	Gln	Met	Asn	Asn	Leu
					355
					Lys
					Thr
					360
					Glu
					Asp
					Thr
					Ala
					Val
					365
					Tyr
					Tyr
					Cys
Val	Arg	His	Gly	Asn	Phe
					375
					Gly
					Asn
					Ser
					Tyr
					Ile
					Ser
					380
					Tyr
					Trp
					Ala
					Tyr
Trp	Gly	Gln	Gly	Thr	Leu
					390
					Val
					Thr
					Val
					Ser
					Ser
					395
					Gly
					Gly
					Gly
					Gly
					Ser
					400
Gly	Gly	Gly	Gly	Ser	Gly
					405
					Gly
					Gly
					Gly
					Ser
					410
					Gln
					Thr
					Val
					Val
					Thr
					415
					Gln
Glu	Pro	Ser	Leu	Thr	Val
					420
					Ser
					Pro
					Gly
					425
					Gly
					Thr
					Val
					Thr
					Leu
					430
					Thr
					Cys
Gly	Ser	Ser	Thr	Gly	Ala
					435
					Val
					Thr
					440
					Ser
					Gly
					Asn
					Tyr
					Pro
					445
					Asn
					Trp
					Val
Gln	Gln	Lys	Pro	Gly	Gln
					450
					Ala
					455
					Pro
					Arg
					Gly
					Leu
					Ile
					460
					Gly
					Gly
					Thr
					Lys
Phe	Leu	Ala	Pro	Gly	Thr
					470
					Pro
					Ala
					Arg
					Phe
					Ser
					475
					Gly
					Ser
					Leu
					Leu
					Gly
					480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

					85					90					95	
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	
			100					105					110			
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe	
		115					120					125				
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	
	130					135					140					
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu	
145					150					155					160	
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr	
				165					170					175		
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp	
			180					185					190			
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala	
		195					200					205				
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	
	210					215					220					
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe	
225					230					235					240	
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly	
				245					250					255		
Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	
			260					265					270			
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	
		275					280					285				
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	
	290					295					300					

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

		SVSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLA VYYCQQ YGTSPLTGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSIYWAWYWGQGLVTVSSGGGSGGGSGGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGGSRDWD VFGGGTPVGGHHHHH
237.	CH19_1-E6xI2C6-LFcBY- 156	QRFVTGHFGGLYPANGGGGSQVLVESGGGVVQGRSLRLSCAASGFTSSFGMHWVRQA PGKGLEWVAFIWYSGSNKYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYYYGMDVWGQGTITVTVSSGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQ QYSSPFTFGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSIYWAWYWGQGLVTVSSGGGSGGGGGGSGGTQVVTQEPSTVSPGGTVTLT CGSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGGSRDWD DVFGGGTPVGGHHHHH
238.	CH19_2G6_302_VKGxI2C 6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGSQVLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGSGGGGGGSSYELTQPPSVSPGQTASITCSG DRLGEKYTSWYQQKPGQAPRLLIYQDTKRPSGPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSIYWAWYWGQGLVTVTVSSGGGSGGGGGGSGGTQVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGHHHHH
239.	CH19_0-E11xI2C6-LH- FcB-CH	QRFVTGHFGGLHPANGGGGSQVLQESGPGLVKPSQTLTLCTVSGGSISRGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY GWFDPWQGTITVTVSSGGGSGGGGGGSEIVLTQPPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSIYWAWYWGQGLVTVTVSSGGGSGGGGGGSGGTQVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGHHHHH
240.	CH19_5-G4xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His
565 570

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn

435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln



Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser

		GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGTSNRAATGIPDRFSGSGGTDFTLTISRLEPEDFAVYVCQQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFG NSYISYWAYWQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
241.	CH19_8-H6xI2C6-LH-FeB- CH	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYPNPSLKSRTVISVDTSKNQFSLKLRSVTAADTAVYVCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYVCQQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFG NSYISYWAYWQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
242.	CH19_2-C11xI2C6-LH- FeB-CH	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYPNPSLKSRTVISVDTSKNQFSLKLRSVTAADTAVYVCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYVCQQYGGSSP LTFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFG NSYISYWAYWQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
243.	CH19_2-A10xI2C6-LH- FeB-CH	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYPNPSLKSRTVISVDTSKNQFSLKLRSVTAADTAVYVCARDSSSR ALDYWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYVCQQYDSSPR TFGGGTGLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFGN SYISYWAYWQGTLVTVSSGGGGGGGGGGGGGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAALTLGSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
244.	CH19_1-D11xI2C6-LH- FeB-CH	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIYRGRTYYPNPSLKSRTVISVDTSKNQFSLKLRSVTAADTAVYVCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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- <210> 450
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- <212> PRT
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

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245.	CH19_9-F9xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSGVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLLTVSSGGGGSGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYQCQYGSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGSGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
246.	CH19_1-H8xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSGVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYQCQYGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGSGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
247.	CH19_1-B12xI2C6-LH- FcB-CH	QRFVTGHFGGLHPANGGGGSGVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYQCQYGSSP TFPGGTKVEIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGSGGGGSGGSEIVLTQSPGTLSPGERATLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
248.	CH19_0-C4xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSGVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYQCQYGSSP

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

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Gly	Gly	Gly	Leu	Val	Gln
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Pro	Gly	Gly	Ser	Leu	
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Lys	Leu	Ser	Cys	Ala	Ala
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Ser	Gly	Phe	Thr	Phe	Asn
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Lys	Tyr	Ala	Met		
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Asn	Trp	Val	Arg	Gln	Ala
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Pro	Gly	Lys	Gly	Leu	Glu
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Trp	Val	Ala	Arg		
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Ile	Arg	Ser	Lys	Tyr	Asn
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Asn	Asn	Tyr	Ala	Thr	Tyr
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Tyr	Tyr	Ala	Asp	Ser	Val
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Lys	Asp	Arg	Phe	Thr	Ile
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Ser	Arg	Asp	Asp	Ser	Lys
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Asn	Thr	Ala	Tyr		
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Leu	Gln	Met	Asn	Asn	Leu
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Lys	Thr	Glu	Asp	Thr	Ala
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Val	Tyr	Tyr	Cys		
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Val	Arg	His	Gly	Asn	Phe
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Tyr	Trp	Ala	Tyr		
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Trp	Gly	Gln	Gly	Thr	Leu
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Val	Thr	Val	Ser	Ser	Gly
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Gln	Thr	Val	Val	Thr	Gln
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Leu	Thr	Cys			
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Val	Thr	Ser	Gly	Asn	Tyr
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Pro	Asn	Trp	Val		
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Gln	Gln	Lys	Pro	Gly	Gln
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Ala	Pro	Arg	Gly	Leu	Ile
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Gly	Gly	Thr	Lys		
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Phe	Leu	Ala	Pro	Gly	Thr
	455				
Pro	Ala	Arg	Phe	Ser	Gly
	460				
Ser	Gly	Ser	Leu	Leu	Gly
	465				
	470				
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	480				

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
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<210> 454
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Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

		TFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNHHHHH
249.	CH19_3-F2xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTISGSSGGYYWSWIRQH PGKGLEWIGYFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLTSTVAADTAVYYCARVNSNYG WFDPPWQGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTGA VTSNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNHHHHH
250.	CH19_3-B10xI2C6-LH- FcB-CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTISGSSGGYYWSWIRQ HPKGGLDWIGYFYRGRYYNPSLKSRTVISVDTSKNQFSLKLTSSVTAAADTAVYYCARVNSNY GWFDPPWQGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSP LTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNHHHHH
251.	CH19_0-G4xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTISGSSGGYYWSWIRQ HPKGGLEWIGYFYRGRYYNPSLKSRTVISVDTSKNQFSLKLTSSVTAAADTAVYYCARVYSNY GWFDPPWQGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSP SFGQGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNHHHHH
252.	CH19_0-H5xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTISGSSGGYYWSWIRQH PGKGLEWIGYFYRGRYYNPSLKSRTVISVDTSKNQFSLKLTSSVTAAADTAVYYCARVYSNYG WFDPPWQGQTLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYDTSPL TFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG



Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 455
- <211> 571
- <212> PRT
- <213> 人工序列
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- <223> 合成多肽
- <400> 455

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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 Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30
 Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45
 Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60
 Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80
 Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95
 Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110
 Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125
 Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140
 Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160
 Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175
 Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190
 Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205
 Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
 530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
 565 570

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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475
		480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

253.	CH19_0-B8x12C6-LH-FeB-CH	LEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVVYCVVRHGNFG NSYISYWAYWQGQTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHHH
254.	CH19_2-D9x12C6-LH-FeB-CH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWWSWIRQ HPKGLEWIGYIFYRGRITYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYVCQYGGSSP TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVVYCVVRHGNFG NSYISYWAYWQGQTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHHH
255.	CH19_8-H7x12C6-LH-FeB-CH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWWSWIRQ HPKGLEWIGYIFYRGRITYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVVYCARVYSNYG WFDPWGQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYVCQYGGSSPL TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVVYCVVRHGNFG NSYISYWAYWQGQTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHHH
256.	CH19_9-C2x12C6-LH-FeB-CH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWWSWIRQ HPKGLEWIGYIFYRGRITYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYVCQYGGSSP LTFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVVYCVVRHGNFG NSYISYWAYWQGQTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHHH

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

<210> 458
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<223> 合成多肽

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 459
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser₁₈₀ Leu Leu His Ser Val₁₈₅ Gly Tyr Asn Tyr Leu₁₉₀ Asp Trp

Tyr Leu Gln₁₉₅ Lys Pro Gly Gln Ser₂₀₀ Pro Gln Leu Leu Ile₂₀₅ Tyr Leu Gly

Ser Asn Arg Ala Ser Gly Val₂₁₅ Pro Asp Arg Phe Ser₂₂₀ Gly Ser Gly Ser

Gly Thr Asp Phe Thr Leu₂₃₀ Lys Ile Ser Arg Val₂₃₅ Glu Ala Glu Asp Val₂₄₀

Gly Val Tyr Tyr Cys₂₄₅ Met Gln Ala Leu Gln₂₅₀ Thr Pro Phe Thr Phe Gly₂₅₅

Pro Gly Thr Lys₂₆₀ Val Asp Ile Lys Ser₂₆₅ Gly Gly Gly Gly Ser₂₇₀ Glu Val

Gln Leu Val₂₇₅ Glu Ser Gly Gly Gly₂₈₀ Leu Val Gln Pro Gly₂₈₅ Gly Ser Leu

Lys Leu₂₉₀ Ser Cys Ala Ala Ser₂₉₅ Gly Phe Thr Phe Asn₃₀₀ Lys Tyr Ala Met

Asn Trp Val Arg Gln Ala₃₁₀ Pro Gly Lys Gly₃₁₅ Leu Glu Trp Val Ala Arg₃₂₀

Ile Arg Ser Lys Tyr₃₂₅ Asn Asn Tyr Ala Thr₃₃₀ Tyr Tyr Ala Asp Ser₃₃₅ Val

Lys Asp Arg Phe₃₄₀ Thr Ile Ser Arg Asp₃₄₅ Asp Ser Lys Asn Thr₃₅₀ Ala Tyr

Leu Gln Met₃₅₅ Asn Asn Leu Lys Thr₃₆₀ Glu Asp Thr Ala Val₃₆₅ Tyr Tyr Cys

Val Arg His Gly Asn Phe Gly₃₇₅ Asn Ser Tyr Ile Ser₃₈₀ Tyr Trp Ala Tyr

Trp₃₈₅ Gly Gln Gly Thr Leu₃₉₀ Val Thr Val Ser Ser₃₉₅ Gly Gly Gly Gly Ser₄₀₀

Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 460
- <211> 571
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- <223> 合成多肽
- <400> 460

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
 530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
 545 550 555 560

Thr Pro Val Gly Gly His His His His His His
 565 570

<210> 461
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly



Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
530 535 540

Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val
545 550 555 560

Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser



Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

<210> 464
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
 35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
 115 120 125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
 130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
 180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
 195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
 210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
 225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
 245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
 260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
 275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
 325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
 340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
 355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
 370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

- <210> 465
- <211> 573
- <212> PRT
- <213> 人工序列
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- <223> 合成多肽
- <400> 465

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261.	CH19_ 2-G6xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSNDYYWSWIRQ KGLEWIGYIYSGSTYNPSLKSRYVTMSIDTSKNQFSLKLSVTAAADTAVYYCARGVYRT GGYYGMDVWGQGTTVTVSSGGGSGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQQKPGQAPRLIYGASTRATGIPARFSGSGSGTDFTLTISRLEPEDFAVYYCQQ YGSSPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWYWGQGTLLTVSSGGGSGGGGGSGTQVVTQEPSTVSPGGTTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
262.	CH19_ 2-H7xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSNDYYWSWIRQ HPGKGLEWIGYIYSGSTYNPSLKSRYVTMSIDTSKNQFSLKLSVTAAADTAVYYCARGVYRT GAFDWGQGTMTVTVSSGGGSGGGGGSGDIQMTQSPSSLSASVGDRTVITCRASQSISSY LNWYQQKPGKAPKSLIYAASSLQSGVPSKFSGSGTDFTLTISLQPEADIAITYCCQSYSTPQ AFGGGTVKDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWYWGQGTLLTVSSGGGSGGGGGSGTQVVTQEPSTVSPGGTTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
263.	CH19_ 5-B3xI2C6-LH-FcB- CH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYGGETNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLLTVSSGGGSGGGGGSDIVMTQPLSLVTPGEPASISCRSSQSLLSHN GYNLDWYLOKPGQSPQLLIYLSYRASGVDPDRFSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWYWGQGTLLTVSSGGGSGGGGGSGTQVVTQEPSTVSPGGTTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNGHHHHH
264.	CH19_ 5-E10xI2C6-LH- FcB-CH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYSGATNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLLTVSSGGGSGGGGGSDIVMTQPLSLVTPGEPASISCRSSQSLLSHN GYNLDWYLOKPGQSPQLLIYLSYRASGVDPDRFSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWYWGQGTLLTVSSGGGSGGGGGSGTQVVTQEPSTVSPGGTTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220



Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn

435	440	445
Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly		
450	455	460
Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu		
465	470	475
		480
Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp		
	485	490
		495
Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe		
	500	505
		510
Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg		
	515	520
		525
Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly		
	530	535
		540
Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly		
545	550	555
		560
Gly Gly Thr Pro Val Gly Gly His His His His His His		
	565	570

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<220>
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		15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val		
	20	25
		30
Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe		
35	40	45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly



Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 467
- <211> 574
- <212> PRT
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

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<400> 468

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
 130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
 165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
 180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
 195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
 210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
 225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
 245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
 260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
 275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
 290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
 325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
 340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 469
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<400> 469

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 470
- <211> 571
- <212> PRT
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- <223> 合成多肽
- <400> 470

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 471
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<400> 471

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

	260		265		270
Gln	Leu	Val	Glu	Ser	Gly
	275				
Gly	Gly	Gly	Leu	Val	Gln
	280				
Pro	Gly	Gly	Ser	Leu	
	285				
Lys	Leu	Ser	Cys	Ala	Ala
	290				
Ser	Gly	Phe	Thr	Phe	Asn
	295				300
Lys	Tyr	Ala	Met		
Asn	Trp	Val	Arg	Gln	Ala
	305				310
Pro	Gly	Lys	Gly	Leu	Glu
				315	
Trp	Val	Ala	Arg		
					320
Ile	Arg	Ser	Lys	Tyr	Asn
				325	
Asn	Asn	Tyr	Ala	Thr	Tyr
				330	
Tyr	Tyr	Ala	Asp	Ser	Val
					335
Lys	Asp	Arg	Phe	Thr	Ile
			340		
Ser	Arg	Asp	Asp	Ser	Lys
			345		
Asn	Thr	Ala	Tyr		
					350
Leu	Gln	Met	Asn	Asn	Leu
		355			
Lys	Thr	Glu	Asp	Thr	Ala
					360
Val	Tyr	Tyr	Cys		
					365
Val	Arg	His	Gly	Asn	Phe
					370
Gly	Asn	Phe	Gly	Asn	Ser
			375		
Tyr	Ile	Ser	Tyr	Trp	Ala
					380
Trp	Gly	Gln	Gly	Thr	Leu
					385
Val	Thr	Val	Ser	Ser	Gly
				395	
Gly	Gly	Gly	Gly	Gly	Ser
					400
Gly	Gly	Gly	Gly	Ser	Gln
				405	
Thr	Val	Val	Thr	Gln	
					415
Glu	Pro	Ser	Leu	Thr	Val
			420		
Ser	Pro	Gly	Gly	Thr	Val
			425		
Thr	Leu	Thr	Cys		
					430
Gly	Ser	Ser	Thr	Gly	Ala
					435
Val	Thr	Ser	Gly	Asn	Tyr
					440
Pro	Asn	Trp	Val		
					445
Gln	Gln	Lys	Pro	Gly	Gln
					450
Ala	Pro	Arg	Gly	Leu	Ile
					455
Gly	Gly	Thr	Lys		
					460
Phe	Leu	Ala	Pro	Gly	Thr
					465
Pro	Ala	Arg	Phe	Ser	Gly
					470
Ser	Gly	Ser	Leu	Leu	Gly
					475
					480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 472
<211> 571
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<220>
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<400> 472

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

269.	CH19_0-B4xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGQGT LVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV VGYNLYLDWYLQKPGQSPQLLIYLSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGQTLVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
270.	CH19_9-F1xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGQGT LVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV VGYNLYLDWYLQKPGQSPQLLIYLSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGQTLVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
271.	CH19_4-A7xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGQGT LVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV GYNLYLDWYLQKPGQSPQLLIYLSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGQTLVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
272.	CH19_6-E12xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTSYGITWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVTMTDTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGQGT LVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV VGYNLYLDWYLQKPGQSPQLLIYLSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGQTLVTVSSGGGGSGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGHHHHH
273.	CH19_6-C12xI2C6-LH-	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA

				85					90					95			
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Arg	Ser	Val	Thr	Ala	Ala	Asp		
			100					105					110				
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe		
		115					120					125					
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly		
	130					135					140						
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu		
145					150					155					160		
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr		
				165					170					175			
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp		
			180					185					190				
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala		
		195					200					205					
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser		
	210					215					220						
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe		
225					230					235					240		
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly		
				245					250					255			
Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val		
			260					265					270				
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu		
		275					280					285					
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met		
	290					295					300						

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125



Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 475
- <211> 570
- <212> PRT
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- <400> 475

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 20 25 30
 Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45
 Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60
 Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125
 Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln

	FcB-CH	PGQLEWMGWINPYTGNRNYAQKFQGRVMTTDTSTNTAYMELSSLRSEDNAVYYCARGSGFDYWGGQTLVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLHSV GYNYLDWYLQKPGQSPQLLIYLGSRNASGVPDFRFGSGSGTDFTLKISRVEAEDVGYYCYCMQALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNGHHHHH
274.	CH19_6-A7xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTFYGGISWVRQA PGQLEWMGWINPYTGNRNYAQKVQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQTLVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLHSV GYNYLDWYLQKPGQSPQLLIYLGSRNASGVPDFRFGSGSGTDFTLKISRVEAEDVGYYCYCMQALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNGHHHHH
275.	CH19_6-G8xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTFYGGISWVRQA PGQLEWMGWINPYTGKTNYAQKVQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQTLVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLHSV GYNYLDWYLQKPGQSPQLLIYLGSRNASGVPDFRFGSGSGTDFTLKISRVEAEDVGYYCYCMQALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNGHHHHH
276.	CH19_6-F9xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTFYGGISWVRQA PGQLEWMGWINPYTGKTNYAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQTLVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLHSV GYNYLDWYLQKPGQSPQLLIYLGSRNASGVPDFRFGSGSGTDFTLKISRVEAEDVGYYCYCMQALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNSYISYWAYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNGHHHHH
277.	CH19_0-C11xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVLVESGGGVVQPRSLRSLSCAASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYYASSVKGRFTISRDNKNTLYLQNSLRAEDTAVYYCAREFY



435

440

445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Ser
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Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45



Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405410415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420425430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480



Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

				85					90					95			
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp		
			100					105					110				
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe		
		115					120					125					
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly		
	130					135					140						
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu		
145					150					155					160		
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr		
				165					170					175			
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp		
			180					185					190				
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala		
		195					200					205					
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser		
	210					215					220						
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe		
225					230					235					240		
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Thr	Phe	Gly	Pro		
				245					250					255			
Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	Gln		
			260					265					270				
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys		
		275					280					285					
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn		
	290					295					300						

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
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<210> 478
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

		DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGGGGGGGDIQMTQSPSSLSASVGDRVTTTC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPSRFSGSGGTDFTFTISSLQPEDIAITYYC QQYDNLPTFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGGQTVVTVQEPSLTVSPGGTVILT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFCCTGHFGGLHPCNGHHHHHHH
278.	CH19_8-F6xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVQLVESGGGVVQPRSLRLSCVASGFTFRNYAMHWVVRQA PGKGLEWVAVISYSGNNKYYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGGGGGGGDIQMTQSPSSLSASVGDRVTTTC RASQISSYLNWYQQKPGKAPKLLIYDASSLQSGVPSRFSGSGGTEFTLTISSLQAEDEVAVYY CQQYYSTPLTFGGGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGGQTVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFCCTGHFGGLHPCNGHHHHHHH
279.	CH19_0-G9xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVQLVESGGGVVQPRSLRLSCAASGFTFRNYAMHWVVRQA PGKGLEWVAGISYSGTNKYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGGGGGGGDIQMTQSPSSLSASVGDRVTTTC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPSRFSGSGGTEFTLTISSLQPEDIAITYYC QQYDNLPLTFGGGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGGQTVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFCCTGHFGGLHPCNGHHHHHHH
280.	CH19_1-E11xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVQLVESGGGVVQPRSLRLSCVASGFTFRNYAMHWVVRQA PGKGLEWVAVISYSGNNKYYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGNYWGQGTLVTVSSGGGGGGGGGGGGGGDIQMTQSPSSLSASVGDRVTTTC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPSRFSGSGGTDFTFTISSLQPEDIAITYYC QQYVNLPLTFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWW RQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGGGQTVVTVQEPSLTVSPGGTVT LTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQP EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFCCTGHFGGLHPCNGHHHHHHH
281.	CH19_0-F5xI2C6-LH-FcB-CH	QRFVTGHFGGLHPANGGGGGSQVQLVESGGGVVQPRSLRLSCAASGFTFSSYGMQWVVRQA PGKGLEWVAVIWYSGSNKYASSVKGRFTISRDN SKNTLYQLMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGTTVTVSSGGGGGGGGGGGGGGDIQMTQSPSSI SASVGDRVTTTCRA

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

- <210> 480
- <211> 571
- <212> PRT
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- <400> 480

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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 Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30
 Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45
 Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60
 Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125
 Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

[illegible]

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

		SQGISNYLAWYQQKPGKVPKLLIYAASLTQSGVPSRFSGSGGTDFTLTISLQPEDVATYYCQ KYNSAPLTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTVQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGLHPCNGHHHHH
282.	CH19_1-E1xI2C6-LH-FcB- CH	QRFTVTHFGGLHPANGGGGSQVQLVESGGGVVQPGRSRLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAVISYSGSNKYASSVKGRFTISRDNKNTLYLQMNLSRAEDTAVYYCARDGY IFYRYYGMDVWGQGTITVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLAVYYCQ YGTSPITFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV HGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTVQEPSLTVSPGGTVTLT GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGLHPCNGHHHHH
283.	CH19_1-E6xI2C6-LH-FcB- CH	QRFTVTHFGGLHPANGGGGSQVQLVESGGGVVQPGRSRLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYASSVKGRVTISRDNKNTLYLQMNLSRAEDTAVYYCARDGY PIFYYYGMDVWGQGTITVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFVYYCQ QYGSSPFTFGPGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTVQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGLHPCNGHHHHH
284.	CH19_2G6_302_VKGxI2C 6-LH-FcB-LH	QRFTVTHFGGLHPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKGRFTISRDNKNTLYLQMNLSRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGGGGSEIVLTQPPSVSVSPGQTASITCSG DRLGEKYSWYQQRPQSPLLVIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTVQEPSLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGLHPCNGHHHHH
285.	CH19_0-E11xI2C6-LH- FcB-LH	QRFTVTHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGISRGGYYWSWRQ HPKGLEWIGYFYRGRTYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGSEIVLTQFPGTLSLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFVYYCQQYGGSSP



Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
 355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
 370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
 405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
 420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
 435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
 450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
 465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
 485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
 500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
 515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
 530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
 545 550 555 560

Pro Val Gly Gly His His His His His His
 565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 485
- <211> 571
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 485

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

		LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTTLTLCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
286.	CH19_5-G4xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGTSNRAIGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTTLTLCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
287.	CH19_8-H6xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTTLTLCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
288.	CH19_2-C11xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGSGGSGTQVVTQEPSTLTVSPGGTTLTLCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
289.	CH19_2-A10xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGSTFYNPSLSRRTVISVDTSKNQFSLKLSVTAAADTAVYYCARDSSSR ALDYWGQGTLLTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYDSSPR TFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL

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Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu															
		275					280					285																		
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met															
	290					295					300																			
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg															
305					310					315					320															
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val															
				325					330					335																
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr															
			340					345					350																	
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys															
		355					360					365																		
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr															
	370					375					380																			
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser															
385					390					395					400															
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln															
				405					410					415																
Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys															
			420					425					430																	
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val															
			435				440					445																		
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys															
	450					455					460																			
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly															
465					470					475					480															

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr

				85						90					95
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp
			100					105					110		
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe
		115					120					125			
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
	130					135					140				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu
145					150					155					160
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr
				165					170					175	
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp
			180					185					190		
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala
		195					200					205			
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe
225					230					235				240	
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly
				245					250					255	
Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val
			260					265					270		
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu
		275					280					285			
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met
	290					295					300				

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 488
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Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 489
 <211> 570
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<400> 489

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

- <210> 490
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290.	CH19_1-D11xI2C6-LH- FeB-LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGSSSGGYYSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTILVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTILVTVSSGGGGGGGGGGGSSQT VVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
291.	CH19_9-F9xI2C6-LH-FeB- LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGSSSGGYYSWIRQH PGKLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTILVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSPT FGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTILVTVSSGGGGGGGGGGGSSQT VVTQEPSTLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
292.	CH19_1-H8xI2C6-LH-FeB- LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGSSSGGYYSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTILVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTILVTVSSGGGGGGGGGGGSSQT VVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGHHHHH
293.	CH19_1-B12xI2C6-LH- FeB-LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGSSSGGYYSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTILVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFPGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWV ARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
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Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly

260

265

270

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Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
 325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
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Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
 370 375 380

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 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
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Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
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Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
 450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
 465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
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Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr

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			100					105					110		
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Asp	Ile	Trp	Gly	Gln	Gly	Thr	Met	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
	130					135					140				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Gln	Met
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Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr
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Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Ser	Tyr	Leu	Asn	Trp	Tyr
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Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Lys	Phe	Ser	Gly	Ser	Gly	Ser	Gly
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Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Ile	Ala
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Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Gln	Ala	Phe	Gly	Gly
				245					250					255	
Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	Gln
			260					265					270		
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys
		275					280					285			
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn
	290					295					300				

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
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Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
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Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
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Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
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Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
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Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly Ser
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Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Gly Gly Glu Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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296.	CH19_3-B10xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGQVQLQESGGLVKPSQTLTLCTVSGGSSGGYYWSWIRQ HPKGGLDWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY GWFDPWGQGTTLTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLIYGASSRATGPDREFSGSGGTDFTLTISRLEPDAVYYCQYQYSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHHH
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Ser Gly Ala Thr Asn
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Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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- <210> 496
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- <212> PRT
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- <400> 496

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260										265					270				
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280						285						
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
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Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val				
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Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr				
			340					345					350						
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
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Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
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Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln				
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Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys				
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Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys				
	450					455					460								
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly				
465					470					475					480				

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser

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300.	CH19_2-D9xI2C6-LH-FcB-LH	
301.	CH19_8-H7xI2C6-LH-FcB-LH	





Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
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Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
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- <210> 500
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 35 40 45
 Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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 Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
 65 70 75 80
 Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95
 Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110
 Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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 Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140
 Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160
 Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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 Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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 Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205
 Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

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303.	CH19_3-D5xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGGQTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH
304.	CH19_1-G11xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSVSSGGYYWWSWIRQ PPGKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGGQTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH
305.	CH19_1-H11xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP TFGGGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFNG SYISYWAYWGGQTLVTVSSGGGSGGGGSGGTDFTLTISRLEPEDFAVYYCQYQYSSP GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH

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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480



Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Thr Pro Val Gly Gly His His His His His His
565 570

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35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

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

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
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Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

306.	CH19_9-F3xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGKTYNPSLKSRSISVDTSKNQFSLKLSVTAADTA VYVCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGGSP TFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFGN SYISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQQKPGQAPRLIGGTFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
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308.	CH19_2-H7xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSNDYYWSWIRQ HPKGLEWIGYIYSGSTFYNPSLKSRAISVDTSKNQFSLKLSVTAADTA VYVCARGVYRT GAFDIWGQGTMTVTVSSGGGGGGGGGGGGGDIQMTQSPSSLSASVGDRTITCRASQSISSY LNWYQQKPGKAPKSLIYAASLQSGVPSKFSGSGGTDFLTISLLQPEDIAITYCCQSYSTPQ AFGGGTVKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVRHGNFG NSYISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGTFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
309.	CH19_5-B3xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYGGETNYAQKLQGRVTMTTDTSTAYMELRSLRSDDTAVYVCARGSG GFDYWQGQTLVTVSSGGGGGGGGGGGGGDIVMTQPLSLVTPGEPASISCRSSQSLHSN GYNLDWYLLQKPGSPQLLIYLGYSRASGVPRFSGSGGTDFTLKISRVEADVGVYYCMQ ALQTPFTFGPTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYVCVR HGNFGNSYISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTC GSSTGAVTSGNYPNWVQQKPGQAPRLIGGTFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
310.	CH19_5-E10xI2C6-LH-	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA



Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
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Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly Gly Gly
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

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

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Gln Leu Val	Glu Ser Gly Gly Gly	Leu Val Gln Pro	Gly Gly Ser Leu		
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Lys Leu Ser	Cys Ala Ala Ser Gly Phe Thr Phe	Asn Lys Tyr Ala Met			
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Asn Trp Val	Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg				
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Ile Arg Ser Lys	Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val				
	325		330		335
Lys Asp Arg	Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr				
	340		345		350
Leu Gln Met	Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys				
	355		360		365
Val Arg His	Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr				
	370		375		380
Trp Gly Gln Gly Thr	Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser				
385		390	395		400
Gly Gly Gly Gly	Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln				
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Glu Pro Ser	Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys				
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Gly Ser Ser	Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val				
	435		440		445
Gln Gln Lys	Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys				
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Phe Leu Ala	Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly				
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
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Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

	85		90		95
Lys Asn Thr	Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr				
	100		105		110
Ala Val Tyr	Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr				
	115		120		125
Asp Tyr Ser	Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr				
	130		135		140
Val Ser Ser	Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly				
	145		150		155
Gly Ser Asp	Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser				
	165		170		175
Val Gly Asp	Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser				
	180		185		190
Asn Tyr Leu	Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu				
	195		200		205
Leu Ile Tyr	Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe				
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Ser Gly Ser	Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu				
	225		230		235
Gln Pro Glu	Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu				
	245		250		255
Pro Thr Phe	Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly				
	260		265		270
Gly Ser Glu	Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro				
	275		280		285
Gly Gly Ser	Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn				
	290		295		300

Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
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Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
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Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
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Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
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Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
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	FcB-LH	PGQLEWMGWNPYSGATNYAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQSLLHSN GYNLDWYLYQKPGQSPQLLYLGSYRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAWYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
311.	CH19_6-G10xI2C6-LH- FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQSLLHSN GYNLDWYLYQKPGQSPQLLYLGSYRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAWYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
312.	CH19_4-H8xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGGGGGSDIVMTQPLSLSVTPGEPASISCRSSQSLLHSV GYNLDWYLYQKPGQSPQLLYLGSYRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAWYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
313.	CH19_2-E4xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQLEWMGWNPYTGNRNYAQKVDQDRVTMTTDTSTNTAYMELSSLRSDDTAVYYCARGS GGFDYWGGQTLVTVSSGGGGGGGGSDIVMTQSPSLPVLGQPASISCRSSQSLLHS VGYNLDWYLYQKPGQSPQLLYLGSNRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYCM QALQTPFTFGPGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCYV RHGNFGNSYISYWAWYWGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
314.	CH19_6-B8xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNYAQKLQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGS

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
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Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
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Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
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Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
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Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
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Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
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Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
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Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
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Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
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Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
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Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
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Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
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Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
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Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
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Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
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Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
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Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
 115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
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Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
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Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
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Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
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Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
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Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
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Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
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Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
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Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
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Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
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Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
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Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
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Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
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Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
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Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
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Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
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Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
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Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
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Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
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Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
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Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
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Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
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Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
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Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
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Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
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Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
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Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
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Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
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Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
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Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
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Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
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Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn

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Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu		
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Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser		
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Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg		
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Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly		
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Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn		
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe		
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Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
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Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
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Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
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Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
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Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
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Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
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318.	CH19_6-E12xI2C6-LH-FcB-LH	QRFTVGHFGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGITWVRQA PGQLEWMGWINPYTGKTNYAQKLQGRVTMTDSTSTAYMELRSLRSDDTAVYYCARGS GGFDYWGGQTLVTVSSGGGGGGGGGGSDIVMTQSPLSLPVTGPASISCRSSQSLLS



260										265					270				
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly				
		275					280					285							
Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr				
	290					295					300								
Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val				
305					310					315					320				
Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp				
				325					330						335				
Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr				
			340					345						350					
Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr				
		355					360					365							
Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp				
	370					375					380								
Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly				
385					390					395					400				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val				
			405						410						415				
Thr	Gln	Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu				
			420					425						430					
Thr	Cys	Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn				
		435					440					445							
Trp	Val	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly				
	450					455					460								
Thr	Lys	Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu				
465					470					475					480				

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly Gly
530 535 540

Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly
545 550 555 560

Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

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- <211> 574
- <212> PRT
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- <223> 合成多肽

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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

859095

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115120125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130135140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145150155160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165170175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180185190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195200205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210215220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225230235240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245250255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260265270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275280285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290295300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His
565 570

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20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
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Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

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

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
 65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
 115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
 130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
 165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
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- <210> 515
- <211> 546
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319.	CH19_6-C12xI2C6-LH- FcB-LH	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWINPYTGNRNYAQKFQGRVTMTTDTSTNTAYMELSSRSEDNAVYYCARGSG GFDYWGGQGTLLVTSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLSHV GYNYLDWYLOKPGQSPQLLIYLGSNRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYM ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLVTSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
320.	CH19_6-A7xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYSTSYGISWVRQA PGQGLEWMGWINPYTGNRNYAQKVQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGS GGFDYWGGQGTLLVTSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLSHS VGYNYLDWYLOKPGQSPQLLIYLGSNRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYM QALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
321.	CH19_6-G8xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQGLEWMGWINPYTGKTNYAQKVQGRVTMTTDTSTSTAYMELNLRSDDTAVYYCARGS GGFDYWGGQGTLLVTSSGGGGGGGGGGGSDIVMTQTPLSLVTGPASICRSSQSLLSHS VGYNYLDWYLOKPGQSPQLLIYLGSNRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTSSGGGGGGGGGGGSGTQVVTQEPSLTVSPGGTIVLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
322.	CH19_6-F9xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQGLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQGTLLVTSSGGGGGGGGGGGSDIVMTQTPLSLVTGPASICRSSQSLLSHV GYNYLDWYLOKPGQSPQLLIYLGSNRASGVDPDRFSGSGSGTDFTLKISRVEAEDVGYYCYM

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450

455

460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540

His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

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

290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val 435 440 445		
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys 450 455 460		
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly 465 470 475 480		
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala 485 490 495		
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly 500 505 510		

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly

130				135				140							
Gly 145	Ser	Gly	Gly	Gly	Gly 150	Ser	Gly	Gly	Gly	Gly 155	Ser	Glu	Ile	Val	Leu 160
Thr	Gln	Ser	Pro	Gly 165	Thr	Leu	Ser	Leu	Ser 170	Pro	Gly	Glu	Arg	Ala 175	Thr
Leu	Ser	Cys	Arg 180	Ala	Ser	Gln	Ser	Val 185	Ser	Ser	Ser	Tyr	Leu 190	Ala	Trp
Tyr	Gln	Gln 195	Lys	Pro	Gly	Gln	Ala 200	Pro	Arg	Leu	Leu	Ile 205	Tyr	Gly	Ala
Ser	Ser 210	Arg	Ala	Thr	Gly	Ile 215	Pro	Asp	Arg	Phe	Ser 220	Gly	Ser	Gly	Ser
Gly 225	Thr	Asp	Phe	Thr	Leu 230	Thr	Ile	Ser	Arg	Leu 235	Glu	Pro	Glu	Asp	Phe 240
Ala	Val	Tyr	Tyr	Cys 245	Gln	Gln	Tyr	Gly	Ser 250	Ser	Pro	Leu	Thr	Phe 255	Gly
Gly	Gly	Thr	Lys 260	Leu	Glu	Ile	Lys	Ser 265	Gly	Gly	Gly	Gly	Ser 270	Glu	Val
Gln	Leu	Val 275	Glu	Ser	Gly	Gly	Gly 280	Leu	Val	Gln	Pro	Gly 285	Gly	Ser	Leu
Lys	Leu 290	Ser	Cys	Ala	Ala	Ser 295	Gly	Phe	Thr	Phe	Asn 300	Lys	Tyr	Ala	Met
Asn 305	Trp	Val	Arg	Gln	Ala 310	Pro	Gly	Lys	Gly	Leu 315	Glu	Trp	Val	Ala	Arg 320
Ile	Arg	Ser	Lys	Tyr 325	Asn	Asn	Tyr	Ala	Thr 330	Tyr	Tyr	Ala	Asp	Ser 335	Val
Lys	Asp	Arg	Phe 340	Thr	Ile	Ser	Arg	Asp 345	Asp	Ser	Lys	Asn	Thr 350	Ala	Tyr



Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
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Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

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323.	CH19_0-C11xI2C6-LH- FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNSKNTLYQLNSLRAEDTAVYCAREFYY DSTGYDYSTPGDYWGQGTLLTVSSGGGGGGGGGGGSDIOMTQSPSSLSASVGDRVTTTC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGSDTFTFTISSLPEDIAYYC QQYDNLPTFGGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCYV RHGNFGNSYISYWYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
324.	CH19_8-F6xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCVASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNSKNTLYQLNSLRAEDTAVYCAREFYY DSTGYDYSTPGDYWGQGTLLTVSSGGGGGGGGGGGSDIOMTQSPSSLSASVGDRVTTTC RASQSISSYLNWYQQKPGKAPKLLIYDASSLQSGVPSRFSGSGGTEFTLTISSLQAEDEVAVYY CQQYYSTPLTFGGGTVKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
325.	CH19_0-G9xI2C6-LH-FcB- LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAISYSGTNKYASSVKGRFTISRDNSKNTLYQLNSLRAEDTAVYCAREFYY DSTGYDYSTPGDYWGQGTLLTVSSGGGGGGGGGGGSDIOMTQSPSSLSASVGDRVTTTC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTEFTLTISSLQPEDIATYYC QQYDNLPLTFGGGTVKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWYWGQGTLLTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
326.	CH19_1-E11xI2C6-LH- FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCVASGFTFRNYAMHWVRQA PGKLEWVAISYSGNNKYASSVKGRFTISRDNSKNTLYQLNSLRAEDTAVYCAREFYY DSTGYDYSTPGNYWGQGTLLTVSSGGGGGGGGGGGSDIOMTQSPSSLSASVGDRVTTTC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGSDTFTFTISSLPEDIAYYC QQYVNLPLTFGGGTVKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWV



Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

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His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
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Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His

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His His
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Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
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Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
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Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
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Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp

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Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu		
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Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly		
	420	425 430
Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln		
	435	440 445
Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe		
	450	455 460
Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly		
	465	470 475 480
Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu		
	485	490 495
Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly		
	500	505 510
Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr		
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Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His		
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His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
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Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser

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327.	CH19_0-F5xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTSSYGMQWVRQA PGKLEWVAIWYSGSNKYASSVKGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGTITVTVSSGGGGGGGGGGGGDIQMTQSPSSLSASVGDRVITTCRA SQGISNYLAWYQQKPKVKPLLIIYAATLQSGVPSRFSGSGGTDFTLTISLQPEDVATYYCQ KYNAPLTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQTVVTOEPSLTVSPGGTIVLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH
328.	CH19_1-E1xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTSSYGMHWVRQA PGKLEWVAVISYSGSNKYASSVKGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCARDGY IFYRYGMDVWGQGTITVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQQKPGQAPRLIIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLA YYCQ YGTSPITFGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQTVVTOEPSLTVSPGGTIVLT GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH
329.	CH19_1-E6xI2C6-LH-FcB-LH	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTSSFGMHWVRQA PGKLEWVAFTWYSGSNKYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGTITVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSYLAWYQQKPGQAPRLIIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQ QYGSSPFTFGPTRLKIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQTVVTOEPSLTVSPGGTIVLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHHH
330.	CH19_2G6_302_VKGxI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKLEWVAFTWYDGSNKYYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGGGGGSEIVLTQPPSVSVSPGQTASITCSG DRLGEKYTSWYQQRPGQSPLLVIYQDTKRPSGPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY

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Gly Gly Thr Lys 260	Val Glu Ile Lys 265	Ser Gly Gly Gly Gly Ser Glu Val 270
Gln Leu Val 275	Glu Ser Gly Gly Gly 280	Leu Val Gln Pro Gly Gly Ser Leu 285
Lys Leu Ser Cys Ala Ala 290	Ser Gly Phe Thr Phe 295	Asn Lys Tyr Ala Met 300
Asn Trp Val Arg Gln Ala Pro Gly Lys 305	Gly Leu Glu Trp Val Ala Arg 310 315 320	
Ile Arg Ser Lys 325	Tyr Asn Asn Tyr Ala Thr 330	Tyr Tyr Ala Asp Ser Val 335
Lys Asp Arg Phe Thr Ile Ser Arg 340	Asp Asp Ser Lys Asn Thr Ala Tyr 345 350	
Leu Gln Met Asn Asn Leu Lys 355	Thr Glu Asp Thr Ala Val Tyr Tyr Cys 360 365	
Val Arg His Gly Asn Phe Gly 370	Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 375 380	
Trp Gly Gln Gly Thr Leu Val Thr Val Ser 385	Ser Gly Gly Gly Gly Ser 390 395 400	
Gly Gly Gly Gly Ser Gly Gly Gly Gly 405	Ser Gln Thr Val Val Thr Gln 410 415	
Glu Pro Ser Leu Thr Val Ser Pro Gly 420	Gly Thr Val Thr Leu Thr Cys 425 430	

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro

50	55	60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr		
65	70	75
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr		
	85	90
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp		
	100	105
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe		
	115	120
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly		
	130	135
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
	145	150
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
	165	170
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
	180	185
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
	195	200
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
	210	215
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
	225	230
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro		
	245	250
Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln		
	260	265
		270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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<210> 525
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240
 Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
 245 250 255
 Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
 260 265 270
 Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
 275 280 285
 Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
 290 295 300
 Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
 305 310 315 320
 Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
 325 330 335
 Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
 340 345 350
 Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
 355 360 365
 Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
 370 375 380
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

- <210> 526
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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331.	CH19_0-E11xI2C6-LY- FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYCARVYSNY GWFDPWQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEYY CYVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
332.	CH19_5-G4xI2C6-LY-FcB- LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYCARVYSNY GWFDPWQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGTSNRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEYY CYVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
333.	CH19_8-H6xI2C6-LY-FcB- LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYINPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYCARVYSNY GWFDPWQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEYY CYVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGHHHHH
334.	CH19_2-C11xI2C6-LY- FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYINPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYCARVYSNY GWFDPWQGTTLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTG



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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450

455

460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540

His His
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 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

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

290	295	300
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile 305 310 315 320		
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys 325 330 335		
Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu 340 345 350		
Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val 355 360 365		
Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp 370 375 380		
Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly 385 390 395 400		
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu 405 410 415		
Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly 420 425 430		
Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln 435 440 445		
Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe 450 455 460		
Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly 465 470 475 480		
Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu 485 490 495		
Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly 500 505 510		

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

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20 25 30

Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly

130	135	140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
145	150	155
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
	165	170
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
	180	185
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
	195	200
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
	210	215
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
225	230	235
Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly		
	245	250
Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
	260	265
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
	275	280
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
	290	295
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
	325	330
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
	340	345
		350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

		AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSQRFVTHFGGLHPANGHHHHH
335.	CH19_2-A10xI2C6-LY- FcB-LH	QRFVTHFGGLYPANGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLSRVTSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY ALDYWGQGTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYDSSPR TFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGSGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSQRFVTHFGGLHPANGHHHHH
336.	CH19_1-D11xI2C6-LY- FcB-LH	QRFVTHFGGLYPANGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLSRVTSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGSGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSQRFVTHFGGLHPANGHHHHH
337.	CH19_9-F9xI2C6-LY-FcB- LH	QRFVTHFGGLYPANGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRYYNPSLSRVTSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPT FGGKTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGSGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSQRFVTHFGGLHPANGHHHHH
338.	CH19_1-H8xI2C6-LY-FcB- LH	QRFVTHFGGLYPANGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLSRVTSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGSGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGSGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
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His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

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

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His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
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Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
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His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser

339.	CH19_1-B12xI2C6-LY-FeB-LH	YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRITYNPSLKSRTISVDTSKNQFSLKLSVT AADTAVYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP TFPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
340.	CH19_0-C4xI2C6-LY-FeB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRITYNPSLKSRTISVDTSKNQFSLKLSVT AADTAVYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
341.	CH19_3-F2xI2C6-LY-FeB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTISGSISSGGYYWSWIRQH PGKLEWIGYIYRGRITYNPSLKSRTISVDTSKNQFSLKLSVT AADTAVYCARVNSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
342.	CH19_3-B10xI2C6-LY-FeB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ HPKGGLDWIGYIFRGRITYNPSLKSRTISVDTSKNQFSLKLSVT AADTAVYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYCCQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVTVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH



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Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly 245 250 255		
Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu 275 280 285		
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met 290 295 300		
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
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Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro

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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr				
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Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr				
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp				
	100	105		110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe				
	115	120		125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly				
	130	135	140	
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu				
145		150	155	160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr				
	165		170	175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp				
	180	185		190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala				
	195	200	205	
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser				
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Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe				
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Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly				
	245		250	255
Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val				
	260	265		270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
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His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 536
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 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

- <210> 537
- <211> 551
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 537

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

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344.	CH19_0-H5xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVRPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYDTSPL TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGGQTVVTVQPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
345.	CH19_0-B8xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGGQTVVTVQPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
346.	CH19_2-D9xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGLVTVSSGGGGGGGGGGGGQTVVTVQPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
347.	CH19_8-H7xI2C6-LY-FcB-	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWVRQ

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu

450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

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

290		295		300
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile				
305		310		315
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys				
	325		330	335
Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu				
	340		345	350
Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val				
	355		360	365
Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp				
	370		375	380
Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly				
385		390		395
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu				
	405		410	415
Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly				
	420		425	430
Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln				
	435		440	445
Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe				
	450		455	460
Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly				
465		470		475
Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu				
	485		490	495
Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly				
	500		505	510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly

130	135	140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro 145 150 155 160		
Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg 165 170 175		
Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp 180 185 190		
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly 195 200 205		
Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser 210 215 220		
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val 225 230 235 240		
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly 245 250 255		
Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu 275 280 285		
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met 290 295 300		
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

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348.	CH19_9-C2xI2C6-LY-FeB-LH	QRFVTGHFGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRIISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAWYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLVSPGGTTLTLCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTFKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGLHPANGHHHHH
349.	CH19_3-D5xI2C6-LY-FeB-LH	QRFVTGHFGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRIISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAWYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLVSPGGTTLTLCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTFKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGLHPANGHHHHH
350.	CH19_1-G11xI2C6-LY-FeB-LH	QRFVTGHFGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ PPGKGLEWIGYIYRGRYYNPSLKSRIISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAWYWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLVSPGGTTLTLCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTFKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGLHPANGHHHHH
351.	CH19_1-H11xI2C6-LY-FeB-LH	QRFVTGHFGLYPANGGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWWSWIRQ HPGKGLEWIGYIYRGRYYNPSLKSRIISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

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

530 535 540

His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45
Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80
Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95
Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395 400
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
	405	410 415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
	420	425 430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
	435	440 445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
	450	455 460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475 480
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala		
	485	490 495
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly		
	500	505 510
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val		
	515	520 525
Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His		
530	535	540

His His
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35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser

		GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYCCQYGGSSP TFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIKSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
352.	CH19_9-F3xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGKTYNPSLKSRSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYCCQYGGSSPI TFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIKSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAWGQGTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
353.	CH19_2-G6xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSISSYYWSWIRQPPG KGLEWIGYIYSGSTYNPSLKSRTMSIDTSKNQFSLKLSVTAADTAVYYCARDQRRIVAA GGYYGMDVWGQGTIVTVSSGGGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQ SVSSYLAWYQKPGQAPRLIYGASTRATGIPARFSGSGSGTDFTLTISRLEPEDFAVYYCQ YGSPPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSIYAWAWGQGTIVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
354.	CH19_2-H7xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSISSNDYYWSWIRQ HPKGLEWIGYIYSGSTFYNPSLKSRAISVDTSKNQFSLKLSVTAADTAVYYCARGVYRT GAFDIWGQGTMTVTVSSGGGGGGGGGGGGSDIQMTQSPSSLSASVGDRTITCRASQSISSY LNWYQKPGKAPKSLIYAASSLQSGVPSKFSGSGSGTDFTLTISLQPEDIAIYCCQSYSTPQ AFGGGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGK LEWVARIKSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSIYAWAWGQGTIVTVSSGGGGGGGGGGGGSGTQVVTQEPSTVSPGGTIVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
355.	CH19_5-B3xI2C6-LY-FcB-LH	QRFVTGHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYGGGETNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLVTVSSGGGGGGGGGGGGSDIVMTQTPLSL SVTPGEPASICRSSQSLLSHN

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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly 245 250 255		
Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu 275 280 285		
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met 290 295 300		
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
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His His
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35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln

50	55	60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn		
65	70	75 80
Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser		
	85	90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr		
	100	105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly		
	115	120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly		
	130	135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro		
	145	150 155 160
Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg		
	165	170 175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp		
	180	185 190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly		
	195	200 205
Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser		
	210	215 220
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
	225	230 235 240
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
	245	250 255
Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
	260	265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110



Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
 20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
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His His
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358.	CH19_4-H8x12C6-LY-FcB- LH	QRFTVTHFGGLYPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKTNIAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGQGTLLTVSSGGGGGGGGGGGSDIVMTQPLSLVTPGEPASISCRSSQSLLSHV G'YNYLDWYLQKPGQSPQLLIYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQPTFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNNWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV HGNFGNSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVTPQPSLTVSPGGTIVLTTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
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Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
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Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
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Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80



Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
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Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met



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Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly

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Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
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Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
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Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
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Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110
 Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
 115 120 125
 Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 130 135 140
 Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 145 150 155 160
 Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 165 170 175
 Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
 180 185 190
 Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
 195 200 205
 Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
 210 215 220
 Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
 225 230 235 240
 Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
 245 250 255
 Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
 260 265 270
 Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
 275 280 285
 Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
 290 295 300
 Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
 305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
340 345 350

Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
420 425 430

Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

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

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His His His His His His
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202530

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
354045

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
505560

Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr
65707580

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
859095

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115120125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130135140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145150155160



Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile

370	375	380
Ser 385 Tyr Trp Ala Tyr Trp 390 Gly Gln Gly Thr Leu 395 Val Thr Val Ser Ser 400		
Gly Gly Gly Gly Ser 405 Gly Gly Gly Gly Ser 410 Gly Gly Gly Gly Ser 415 Gln		
Thr Val Val Thr 420 Gln Glu Pro Ser Leu 425 Thr Val Ser Pro Gly 430 Gly Thr		
Val Thr Leu 435 Thr Cys Gly Ser Ser 440 Thr Gly Ala Val Thr 445 Ser Gly Asn		
Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu 450 455 460		
Ile 465 Gly Gly Thr Lys Phe 470 Leu Ala Pro Gly Thr 475 Pro Ala Arg Phe Ser 480		
Gly Ser Leu Leu 485 Gly Gly Lys Ala Ala Leu 490 Thr Leu Ser Gly Val 495 Gln		
Pro Glu Asp Glu 500 Ala Glu Tyr Tyr Cys 505 Val Leu Trp Tyr Ser 510 Asn Arg		
Trp Val Phe 515 Gly Gly Gly Thr Lys 520 Leu Thr Val Leu Gly 525 Gly Gly Gly Gly		
Ser Gln Arg Phe Val Thr Gly 535 His Phe Gly Gly Leu 540 His Pro Ala Asn		
Gly 545 His His His His 550 His		

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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

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



210	215	220
Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu		
225	230	235 240
Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu		
	245	250 255
Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly		
	260	265 270
Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln		
	275	280 285
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe		
	290	295 300
Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu		
	305	310 315 320
Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr		
	325	330 335
Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser		
	340	345 350
Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr		
	355	360 365
Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile		
	370	375 380
Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser		
	385	390 395 400
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln		
	405	410 415
Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr		
	420	425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys

Gly 65	Leu	Glu	Trp	Val	Ala 70	Val	Ile	Ser	Tyr	Ser 75	Gly	Asn	Asn	Lys	Tyr 80
Tyr	Ala	Ser	Ser	Val 85	Lys	Gly	Arg	Phe	Thr 90	Ile	Ser	Arg	Asp	Asn 95	Ser
Lys	Asn	Thr	Leu 100	Phe	Leu	Gln	Leu	Asn 105	Ser	Leu	Arg	Ala	Glu	Asp	Thr
Ala	Val	Tyr 115	Tyr	Cys	Ala	Arg	Glu 120	Phe	Tyr	Tyr	Asp	Ser 125	Thr	Gly	Tyr
Asp	Tyr 130	Ser	Thr	Pro	Gly	Asn 135	Tyr	Trp	Gly	Gln	Gly 140	Thr	Leu	Val	Thr
Val 145	Ser	Ser	Gly	Gly	Gly 150	Gly	Ser	Gly	Gly	Gly 155	Gly	Ser	Gly	Gly	Gly 160
Gly	Ser	Asp	Ile	Gln 165	Met	Thr	Gln	Ser	Pro 170	Ser	Ser	Leu	Ser	Ala 175	Ser
Val	Gly	Asp	Arg 180	Val	Thr	Ile	Thr	Cys 185	Gln	Ala	Ser	Gln	Asp 190	Ile	Ser
Asn	Tyr	Leu 195	Asn	Trp	Tyr	Gln	Gln 200	Lys	Pro	Gly	Lys	Ala 205	Pro	Lys	Leu
Leu	Ile 210	Tyr	Asp	Ala	Ser	Asn 215	Leu	Glu	Thr	Gly	Val 220	Pro	Ser	Arg	Phe
Ser 225	Gly	Ser	Gly	Ser	Gly 230	Thr	Asp	Phe	Thr	Phe 235	Thr	Ile	Ser	Ser	Leu 240
Gln	Pro	Glu	Asp	Ile 245	Ala	Thr	Tyr	Tyr	Cys 250	Gln	Gln	Tyr	Val	Asn 255	Leu
Pro	Leu	Thr	Phe 260	Gly	Gly	Gly	Thr	Lys 265	Leu	Glu	Ile	Lys	Ser 270	Gly	Gly

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
 500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
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Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
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Gly His His His His His His
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His
530 535 540

His His His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
 115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
 145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
 165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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369.	CH19_0-C11xI2C6-LY-FcB-LH	
370.	CH19_8-F6xI2C6-LY-FcB-LH	
371.	CH19_0-G9xI2C6-LY-FcB-LH	

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly

450		455		460
Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser				
465		470		475
				480
Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu				
		485		490
				495
Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val				
		500		505
				510
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln				
		515		520
				525
Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His				
		530		535
				540
His His His His His				
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly				
1		5		10
				15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val				
		20		25
				30
Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe				
		35		40
				45
Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys				
		50		55
				60
Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr				
65		70		75
				80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

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

290	295	300
Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp		
305	310	315 320
Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala		
	325	330 335
Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn		
	340	345 350
Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val		
	355	360 365
Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr		
	370	375 380
Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly		
	385	390 395 400
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val		
	405	410 415
Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr		
	420	425 430
Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro		
	435	440 445
Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly		
	450	455 460
Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser		
	465	470 475 480
Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu		
	485	490 495
Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val		
	500	505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His
530 535 540

His His His His His
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<210> 561
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly

130		135		140
Gly 145	Ser	Gly	Gly	Gly 150
	Ser	Gly	Gly	Gly 155
	Ser	Glu	Ile	Val 160
Thr	Gln	Phe	Pro	Gly 165
		Thr	Leu	Ser 170
				Pro 175
Leu	Ser	Cys	Arg	Ala 180
				Ser 185
				Ser 190
Tyr	Gln	Gln	Lys	Pro 195
				Gly 200
				Ala 205
Ser	Ser	Arg	Ala	Thr 210
				Gly 215
				Ile 220
Gly	Thr	Asp	Phe	Thr 225
				Leu 230
				Thr 235
Ala	Val	Tyr	Tyr	Cys 245
				Gln 250
				Gln 255
Gly	Gly	Thr	Lys	Leu 260
				Glu 265
				Ile 270
Gln	Leu	Val	Glu	Ser 275
				Gly 280
				Gly 285
Lys	Leu	Ser	Cys	Ala 290
				Ala 295
				Ser 300
Asn	Trp	Val	Arg	Gln 305
				Ala 310
				Pro 315
Ile	Arg	Ser	Lys	Tyr 325
				Asn 330
				Asn 335
Lys	Asp	Arg	Phe	Thr 340
				Ile 345
				Ser 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

		TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTHFGGLHPANGHHHHH
372.	CH19_1-E11xI2C6-LY- FeB-LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCVASGFTFRNYAMHWVRQA PGKGLEWVAVISYGSNKKYYASSVKGRFTISRDNKNTLFLQNLRAEDTAVYYCAREFY DSTGYDYSTPGNYWGQGLTVTVSSGGGGSGGGSDIQMTQSPSSLSASVGDRVITIC QASQDISNLYNWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGSDTFTTISLQPEDIATYYC QQYVNLPLTFGGGTKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWV RQAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGLTVTVSSGGGGSGGGSGGGSQT VVTQEPSLTVSPGGTVT LTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTHFGGLHPANGHHHHH
373.	CH19_0-F5xI2C6-LY-FeB- LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFSSYGMQWVRQA PGKGLEWVAVIWYSGSNKKYYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGLTVTVSSGGGGSGGGSDIQMTQSPSSLSASVGDRVITICRA SQGISNYLAWYQQKPGKVPKLLIYAASTLQSVPSRFSGSGTDFTLTISLQPEDVATYYCQ KYNAPLTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLTVTVSSGGGGSGGGSGGGSQT VVTQEPSLTVSPGGTVT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTHFGGLHPANGHHHHH
374.	CH19_1-E1xI2C6-LY-FeB- LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAVISYGSNKKYYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY IFRYRYGMDVWGQGLTVTVSSGGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGSDTFTLTISRLEPEDLAVYYCQ YGTSPPLTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGSGGGSGGGSQT VVTQEPSLTVSPGGTVTLC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTHFGGLHPANGHHHHH
375.	CH19_1-E6xI2C6-LY-FeB- LH	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFSSFGMHVVRQA PGKGLEWVAFIWYSGSNKKYYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGLTVTVSSGGGGSGGGSGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGSDTFTLTISRLEPEDFVAVYYCQ QYGSSPFTFGPGRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLTVTVSSGGGGSGGGSGGGSQT VVTQEPSLTVSPGGTVT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTHFGGLHPANGHHHHH



Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

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- <211> 546
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- <223> 合成多肽

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His

530

535

540

His His
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser

376.	CH19_2G6_302_VKGxI2C 6-LH-FcB-CH-156	EA EYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLHPANGHHHHH QRFTVTHFGGLHPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAFIWDGSKNYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWVGQGTITVTVSSGGGGGGGGGGSSYELTQPPSVSVSPGQTASITCSG DRLGEKYTSWYQQRPGQSPLLVIYQDTKRPSGPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYVCVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLHPCNCGGGGGSGGSRD WDFDVFGGGTPVGGHHHHH
377.	CH19_0-E11xI2C6-LH- FcB-CH-156	QRFTVTHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISRGGYYWSWIRQ HPKGLEWIGYIFYRGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVNSNY GWFDPPWQGTITVTVSSGGGGGGGGGGGGSEIVLTQFPGTLSLSPGERATLSCRASQSVSSS YLA WYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTITVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLHPCNCGGGGGSGGSRDWDFDVFVG GTPVGGHHHHH
378.	CH19_5-G4xI2C6-LH-FcB- CH-156	QRFTVTHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPPWQGTITVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSLSPGERATLSCRASQSVSSS YLA WYQQKPGQAPRLIYGTSNRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTITVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLHPCNCGGGGGSGGSRDWDFDVFVG GTPVGGHHHHH
379.	CH19_8-H6xI2C6-LH-FcB- CH-156	QRFTVTHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPPWQGTITVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSLSPGERATLSCRASQSVSSS YLA WYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSP LTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG

210	215	220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe 225 230 235 240		
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly 245 250 255		
Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu 275 280 285		
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met 290 295 300		
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
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His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro

50		55		60
Gly 65	Lys	Gly	Leu	Glu
		Trp 70	Ile	Gly
			Tyr	Ile
			Phe 75	Tyr
			Arg	Gly
			Arg	Thr 80
Tyr	Tyr	Asn	Pro	Ser
		85	Leu	Lys
			Ser	Arg
			Val 90	Thr
			Ile	Ser
			Val	Asp
				Thr 95
Ser	Lys	Asn	Gln	Phe
		100	Ser	Leu
			Lys	Leu
			105	Ser
			Ser	Val
			Thr	Ala
				110
Thr	Ala	Val	Tyr	Tyr
		115	Cys	Ala
			Arg	Val
			120	Tyr
			Ser	Asn
				125
			Tyr	Gly
			Trp	Phe
Asp	Pro	Trp	Gly	Gln
		130	Gly	Thr
			135	Leu
			Val	Thr
			Val	Ser
				140
			Ser	Ser
			Gly	Gly
			Gly	Gly
Gly 145	Ser	Gly	Gly	Gly
		150	Ser	Gly
			Gly	Gly
			155	Ser
			Glu	Ile
			Val	Leu
				160
Thr	Gln	Ser	Pro	Gly
		165	Thr	Leu
			Ser	Leu
			170	Ser
			Pro	Gly
			Glu	Arg
				175
			Ala	Thr
Leu	Ser	Cys	Arg	Ala
		180	Ser	Gln
			Ser	Val
			185	Ser
			Ser	Ser
			Ser	Tyr
				190
			Leu	Ala
			Trp	
Tyr	Gln	Gln	Lys	Pro
		195	Gly	Gln
			Ala	Pro
			200	Arg
			Leu	Leu
				205
			Ile	Tyr
			Gly	Ala
Ser	Ser	Arg	Ala	Thr
		210	Gly	Ile
			215	Pro
			Asp	Arg
			Phe	Ser
			220	Gly
			Ser	Gly
			Ser	Gly
				225
Gly	Thr	Asp	Phe	Thr
		230	Leu	Thr
			Ile	Ser
			Arg	Leu
			235	Glu
			Pro	Glu
			Asp	Phe
				240
Ala	Val	Tyr	Tyr	Cys
		245	Gln	Gln
			Tyr	Gly
			250	Ser
			Ser	Pro
			Thr	Phe
				255
			Gly	Gly
Gly	Thr	Lys	Val	Glu
		260	Ile	Lys
			Ser	Gly
			265	Gly
			Gly	Gly
			Gly	Ser
				270
			Glu	Val
			Gln	

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
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Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His His
530 535 540

His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 569
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
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His
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380.	CH19_2-C11xI2C6-LH- FeB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRTISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSP LTFGGGTLKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFGG GTPVGGHHHHHH
381.	CH19_2-A10xI2C6-LH- FeB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGTFYNPPLRSRVTISVDTSKNQFSLKLSVTAAADTAVYYCARDSSSR ALDYGWQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYDSSPR TFGQGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFGG TPVGGHHHHHH
382.	CH19_1-D11xI2C6-LH- FeB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYYPNPSLKSRTISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSP LTFGGGTLKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFGG GTPVGGHHHHHH
383.	CH19_9-F9xI2C6-LH-FeB- CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRTYYPNPSLKSRTISVDTSKNQFSLKLSVTAAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY

Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
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Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
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Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
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Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
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Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
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Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
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Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe

450

455

460

Leu
465

Ala

Pro

Gly

Thr

Pro
470

Ala

Arg

Phe

Ser

Gly
475

Ser

Leu

Leu

Gly

Gly
480

Lys

Ala

Ala

Leu

Thr
485

Leu

Ser

Gly

Val

Gln
490

Pro

Glu

Asp

Glu

Ala
495

Glu

Tyr

Tyr

Cys

Val
500

Leu

Trp

Tyr

Ser

Asn
505

Arg

Trp

Val

Phe

Gly
510

Gly

Gly

Thr

Lys

Leu
515

Thr

Val

Leu

Gly

Gly
520

Gly

Gly

Ser

Gln

Arg
525

Phe

Val

Thr

Gly
530

His

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Gly

Leu

Tyr
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Asn

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Phe

Cys

Thr
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Gly

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Leu

His

Pro

Cys

Asn
15

Gly

Gly

Gly

Gly

Gly
20

Ser

Gln

Val

Gln
25

Leu

Gln

Glu

Ser

Gly

Pro
30

Gly

Leu

Val

Lys

Pro
35

Ser

Gln

Thr

Leu

Ser
40

Leu

Thr

Cys

Thr
45

Ile

Ser

Gly

Gly

Ser

Ile
50

Ser

Ser

Gly

Gly

Tyr
55

Tyr

Trp

Ser

Trp

Ile
60

Arg

Gln

His

Pro

Gly
65

Lys

Gly

Leu

Glu

Trp
70

Ile

Gly

Tyr

Ile
75

Phe

Tyr

Ser

Gly

Arg

Thr
80



Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

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

290						295						300					
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile		
305					310					315					320		
Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	Lys		
				325					330					335			
Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr	Leu		
			340					345					350				
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val		
		355					360					365					
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp		
	370					375					380						
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly		
385					390					395					400		
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu		
				405					410					415			
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly		
			420					425					430				
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln		
		435					440					445					
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe		
	450					455					460						
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly		
465					470					475				480			
Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	Glu	Asp	Glu	Ala	Glu		
				485					490					495			
Tyr	Tyr	Cys	Val	Leu	Trp	Tyr	Ser	Asn	Arg	Trp	Val	Phe	Gly	Gly	Gly		
			500					505					510				

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515 520 525

Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His His
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His
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly

130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 573
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

		LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQQYGSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAWYWGQGTLLTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTGA VTSIGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFGG TPVGGHHHHHH
384.	CH19_1-H8xI2C6-LH-FcB- CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQQYGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNF GNSYISYWAWYWGQGTLLTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFG GGTPVGGHHHHHH
385.	CH19_1-B12xI2C6-LH- FcB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQQYGSSP TFPGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAWYWGQGTLLTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTGA VTSIGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFGG TPVGGHHHHHH
386.	CH19_0-C4xI2C6-LH-FcB- CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYCARVYSNY GWFDPWGQGTLLTVSSGGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQQYGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAWYWGQGTLLTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCCTGHFGGLHPCNCGGGGGSGGSRDWDVDFVFG GTPVGGHHHHHH



Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His His
530 535 540

His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
 245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
 260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
 275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
 290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
 305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His His

530

535

540

His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405410415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420425430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515520525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530535540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser

387.	CH19_3-F2xI2C6-LH-FeB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSLTCTISGSSGGYYWSWIRQH PGKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTA VYCARVNSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNFGN SYISYWAWYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRLIGGTGKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDFFDVFGGG TPVGGHHHHHH
388.	CH19_3-B10xI2C6-LH-FeB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGSSGGYYWSWIRQ HPKGLDWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTA VYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQYGSSTP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNF GNSYISYWAWYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRLIGGTGKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDFFDVFG GGTPVGGHHHHHH
389.	CH19_0-G4xI2C6-LH-FeB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGSSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTA VYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASTRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQYGSSTP SFGQGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNFG NSYISYWAWYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGTGKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWDFFDVFG GTPVGGHHHHHH
390.	CH19_0-H5xI2C6-LH-FeB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSLTCTVSGSSGGYYWSWIRQH PGKGLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTA VYCARVNSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYQCQYDTSPL TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYCVRHGNFG NSYISYWAWYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTCGSSTG



210	215	220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe 225 230 235 240		
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly 245 250 255		
Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu 275 280 285		
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met 290 295 300		
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg 305 310 315 320		
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val 325 330 335		
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr 340 345 350		
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

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<400> 578

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro

50	55	60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr		
65	70	75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr		
	85	90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp		
	100	105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe		
	115	120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly		
	130	135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
145	150	155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
	165	170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
	180	185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
	195	200 205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
	210	215 220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
225	230	235 240
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly		
	245	250 255
Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
	260	265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 579
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<223> 合成多肽

<400> 579

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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<210> 580
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<400> 580

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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- <210> 581
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

391.	CH19_0-B8xI2C6-LH-FcB-CH-156	AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNCGGGGGSRDWDVDFVFGG GTPVGGHHHHH QRFTVGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGGTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVTVSSGGGGGGGGGGGQTVVTVQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNCGGGGGSRDWDVDFVFGG GTPVGGHHHHH
392.	CH19_2-D9xI2C6-LH-FcB-CH-156	QRFTVGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGGTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKG GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVTVSSGGGGGGGGGGGQTVVTVQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNCGGGGGSRDWDVDFVFG GGTPVGGHHHHH
393.	CH19_8-H7xI2C6-LH-FcB-CH-156	QRFTVGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIYFYSGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGGTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSPL TFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVTVSSGGGGGGGGGGGQTVVTVQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNCGGGGGSRDWDVDFVFGG GTPVGGHHHHH
394.	CH19_9-C2xI2C6-LH-FcB-CH-156	QRFTVGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYFYSGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGGTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe

450

455

460

Leu
465

Ala

Pro

Gly

Thr

Pro
470

Ala

Arg

Phe

Ser

Gly
475

Ser

Leu

Leu

Gly

Gly
480

Lys

Ala

Ala

Leu

Thr
485

Leu

Ser

Gly

Val

Gln
490

Pro

Glu

Asp

Glu

Ala
495

Glu

Tyr

Tyr

Cys

Val
500

Leu

Trp

Tyr

Ser

Asn
505

Arg

Trp

Val

Phe

Gly
510

Gly

Gly

Thr

Lys

Leu

Thr

Val

Leu

Gly

Gly
520

Gly

Gly

Ser

Gln

Arg
525

Phe

Val

Thr

Gly

His
530

Phe

Gly

Gly

Leu

Tyr
535

Pro

Ala

Asn

Gly

His
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His

His

His

His

His

His
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Gln
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Cys

Thr
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His

Phe

Gly

Gly
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Leu

His

Pro

Cys

Asn
15

Gly

Gly

Gly

Gly

Gly
20

Ser

Gln

Val

Gln
25

Leu

Gln

Glu

Ser

Gly

Pro
30

Gly

Leu

Val

Lys

Pro

Ser

Gln

Thr

Leu

Ser
40

Leu

Thr

Cys

Thr
45

Val

Ser

Gly

Gly

Ser

Ile
50

Ser

Ser

Gly

Gly

Tyr
55

Tyr

Trp

Ser

Trp

Ile
60

Arg

Gln

His

Pro

Gly
65

Lys

Gly

Leu

Glu

Trp
70

Ile

Gly

Tyr

Ile

Phe
75

Tyr

Ser

Gly

Lys

Thr
80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

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

290		295		300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg				
305		310		315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val				
	325		330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr				
	340		345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys				
	355		360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr				
	370		375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser				
385		390		395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln				
	405		410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys				
	420		425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val				
	435		440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys				
	450		455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly				
465		470		475
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala				
	485		490	495
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly				
	500		505	510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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<210> 583

<211> 551

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 583

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val

130	135	140
Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly		
145	150	155 160
Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro		
	165	170 175
Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser		
	180	185 190
Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu		
	195	200 205
Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe		
	210	215 220
Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu		
	225	230 235 240
Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser		
	245	250 255
Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly		
	260	265 270
Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln		
	275	280 285
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe		
	290	295 300
Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu		
	305	310 315 320
Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr		
	325	330 335
Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser		
	340	345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

<210> 584
<211> 545
<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 584

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
 65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
 115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
 145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
 165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
 180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

		LTFGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
395.	CH19_3-D5xI2C6-LH-FcB- CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRYTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
396.	CH19_1-G11xI2C6-LH- FcB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ PPGKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG GGTPVGGHHHHH
397.	CH19_1-H11xI2C6-LH- FcB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIYRGRYYNPSLKSRYTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGSGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP TFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF SYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGSRDWDVDFVFG TPVGGHHHHH
398.	CH19_9-F3xI2C6-LH-FcB-	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ



Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His His
530 535 540

His
545

- <210> 585
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 585

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 586
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<400> 586

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His

530

535

540

His His
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<210> 587
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370

375

380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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<210> 588
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<400> 588

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser

	CH-156	HPKGGLEWIGYIFYSGKTYNPSLKS RV SISVDTSKNQFSLKLS SVTAADTA VYVCARVYSNY GWFDPWGQGT LVTVSSGGGGGGGGGGSEIVLTQSPGTL SLSPGERATL SCRASQSVSSS YLA WYQQKPGQAPRL LIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYVCQQYGSPI TFGQGT RLKSGGGSEVQLVESGGGLVQPGSLKLSCAA SGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAYWGQGT LVTVSSGGGGGGGGGGGSGT VVTQEPSLTVSPGGTVTLTCGSSSTA VTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTL SGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGSGSRDWD FDFVFGG TPVGGHHHHH
399.	CH19_2-G6xI2C6-LH-FeB- CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTL SLTCTVSGGSISSY YWSWIRQPPG KGLEWIGYIYSGSTNYNPSLKS RVVTMSIDTSKNQFSLKLSVTAADTA VYVCARDQRRIVAA GGYYYGMDVWGQGT TVTVSSGGGGGGGGGGGSEIVLTQSPGTL SLSPGERATL SCRASQ SVSSSYLA WYQQKPGQAPRL LIYGASTRATGPARFSGSGGTDFTLTISRLEPEDFAVYVCQQ YGSSPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAA SGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVR HGNFGNSYISYWAYWGQGT LVTVSSGGGGGGGGGGGSGT VVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTL SGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGSGSRDWD FDF VFGGTPVGGHHHHH
400.	CH19_2-H7xI2C6-LH-FeB- CH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTL SLTCTVSGGSISSNDY YWSWIRQ HPKGGLEWIGYIYSGSTFYNPSLKS RGAISVDTSKNQFSLKLSVTAADTA VYVCARGVYRT GAFDIWGQGT MVTVSSGGGGGGGGGGGSDIQMTQSPSSLSASV GDRVITITCRASQSISSY LNWYQQKPGKAPKSLIYAASLQSGVPSKFSGSGGTDFTLTISSLQPEDIA TYVCQSYSTPQ AFGGGTVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAA SGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGT LVTVSSGGGGGGGGGGGSGT VVTQEPSLTVSPGGTVTLTCGSSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTL SGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFC TGHFGGLHPCNCGGGGGSGSRDWD FDFVFGG GTPVGGHHHHH
401.	CH19_5-B3xI2C6-LH-FeB- CH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKV SCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYGGETNYAQKLQGRVTMTTDTSTAYMELRSLRSDDTAVYVCARGSG GFDYWGQGT LVTVSSGGGGGGGGGGGSDIVMTQTPLSL SVTPGEPASISCRSSQLLSHN GYNLDWY LQKPGQSPQLLIYLSYRASGVDRFSGSGGTDFTLKISRVEAEDVGY YCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAA SGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVR HGNFGNSYISYWAYWGQGT LVTVSSGGGGGGGGGGGSGT VVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLLGGKAALTL SGVQPEDE

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Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
225	230	235 240
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
	245	250 255
Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
	260	265 270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
	275	280 285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
	290	295 300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
	305	310 315 320
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
	325	330 335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
	340	345 350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
	355	360 365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
	370	375 380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
	385	390 395 400
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
	405	410 415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
	420	425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln

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Gly Leu Glu Trp Met 65	Gly Trp Ile Asn Pro 70	Tyr Thr Gly Asn Arg Asn 75 80
Tyr Ala Gln Lys 85	Val Gln Asp Arg Val 90	Thr Met Thr Thr Asp Thr Ser 95
Thr Asn Thr 100	Ala Tyr Met Glu Leu Ser 105	Ser Leu Arg Ser Asp Asp Thr 110
Ala Val Tyr 115	Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe 120	Asp Tyr Trp Gly 125
Gln Gly Thr Leu Val Thr 130	Val Ser Ser Gly Gly 135	Gly Gly Ser Gly Gly 140
Gly Gly Ser Gly Gly 145	Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro 150 155 160	
Leu Ser Leu Pro 165	Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg 170 175	
Ser Ser Gln Ser 180	Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp 185 190	
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly 195 200 205		
Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser 210 215 220		
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val 225 230 235 240		
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly 245 250 255		
Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val 260 265 270		

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

- <210> 590
- <211> 546
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- <223> 合成多肽
- <400> 590

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110



Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
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His His
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<210> 591
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
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Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
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Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
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Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
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Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
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Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
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Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
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His His
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402.	CH19_5-E10xI2C6-LH-FcB-CH-156		VFGGTPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWNPYSGATNAAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLTVTVSSGGGSGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLHSN GYNLDWYLLQKPGQSPQLLIYLGSYRASGVPPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLTVTVSSGGGSGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWD
403.	CH19_6-G10xI2C6-LH-FcB-CH-156		VFGGTPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWNPYTGKTNAAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLTVTVSSGGGSGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLHSN GYNLDWYLLQKPGQSPQLLIYLGSYRASGVPPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLTVTVSSGGGSGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWD
404.	CH19_4-H8xI2C6-LH-FcB-CH-156		VFGGTPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWNPYTGKTNAAQKLQGRVMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLTVTVSSGGGSGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLHSV GYNLDWYLLQKPGQSPQLLIYLGSYRASGVPPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLTVTVSSGGGSGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFCTGHFGGLHPCNCGGGGGSGGSRDWD
405.	CH19_2-E4xI2C6-LH-FcB-CH-156		VFGGTPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGGLEWMGWNPYTGNRNAAQKVQDRVMTTDTSTNTAYMELSSLRSDDTAVYYCARGS GGFDYWGGQTLTVTVSSGGGSGGGGGSDIVMTQSPLSLPVTLGQPASISCRSSQSLLHS VGYNLDWYLLQKPGQSPQLLIYLGSNRASGVPPDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR

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 Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
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 Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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 Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
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 Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
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 Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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 Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
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 Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
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 Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160
 Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
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 Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
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 Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
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 Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
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 Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
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Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450 455 460
 Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480
 Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495
 Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
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 Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
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 Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
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 Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
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 Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
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Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
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Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

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

290					295					300					
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg
305					310					315					320
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val
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Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr
			340					345					350		
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
		355					360					365			
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr
	370					375					380				
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser
385					390					395					400
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln
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Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys
			420					425					430		
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val
		435					440					445			
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys
		450				455					460				
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly
465					470					475					480
Gly	Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	Glu	Asp	Glu	Ala
				485					490					495	
Glu	Tyr	Tyr	Cys	Val	Leu	Trp	Tyr	Ser	Asn	Arg	Trp	Val	Phe	Gly	Gly
			500					505					510		



Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly

130										135										140									
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro														
145					150					155					160														
Leu	Ser	Leu	Ser	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg														
				165					170					175															
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp														
			180					185					190																
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly														
		195					200					205																	
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser														
		210				215					220																		
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val														
225					230					235					240														
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly														
				245					250					255															
Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val														
			260					265					270																
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu														
		275					280					285																	
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met														
		290				295					300																		
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg														
305					310					315					320														
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val														
				325					330					335															
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr														
			340					345					350																

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

406.	CH19_6-B8xI2C6-LH-FcB-CH-156	QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGLTVTVSSGGGGGGGGSGGGSQTVVTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGSGSRDWD DVFGGGTPVGGHHHHH
407.	CH19_0-B4xI2C6-LH-FcB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKNTYAAQKLQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARG GGFDYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQTPLSLPTPGEPAISICRSSQSLHS VGYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQTPLSLPTPGEPAISICRSSQSLHS CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGSGSRDWD DVFGGGTPVGGHHHHH
408.	CH19_9-F1xI2C6-LH-FcB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGNRNYAAQKVQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARG GGFDYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLHS VGYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQTPLSLPTPGEPAISICRSSQSLHS CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGSGSRDWD DVFGGGTPVGGHHHHH
409.	CH19_4-A7xI2C6-LH-FcB-CH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKNTYAAQKLQGRVMTTDTSTNTAYMELRSLRSDDTAVYYCARG GGFDYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLHS VGYNLDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGOQGLTVTVSSGGGGGGGGGGSDIVMTQTPLSLPTPGEPAISICRSSQSLHS CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGSGSRDWD DVFGGGTPVGGHHHHH

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30



Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His
530 535 540

His His
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His

530

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His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr

370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
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Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
	420	425 430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
	435	440 445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
	450	455 460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475 480
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala		
	485	490 495
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly		
	500	505 510
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val		
	515	520 525
Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His His His		
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His His
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

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

		GFDYWGGTTLVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHSV GYNULDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGSDTFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLVTVSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWD VFGGGTPVGGHHHHH
410.	CH19_6-E12xI2C6-LH- FcB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGITWVRQA PGQGLEWMGWINPYTGNRNYYAQKVGQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS VGYNULDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGSDTFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVR QAPKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQTLVTVSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWD VFGGGTPVGGHHHHH
411.	CH19_6-C12xI2C6-LH- FcB-CH-156	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWINPYTGNRNYYAQKVGQGRVTMTTDTSTNTAYMELSLRSEDATVYYCARGSG GFDYWGGTTLVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHSV GYNULDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGSDTFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLVTVSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWD VFGGGTPVGGHHHHH
412.	CH19_6-A7xI2C6-LH-FcB- CH-156	QRFVTGHFGGLHPANGGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYSTSYGISWVRQA PGQGLEWMGWINPYTGNRNYYAQKVGQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS VGYNULDWYLOKPGQSPQLLIYLGSNRASGVDRFSGSGGSDTFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWWVR QAPKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQTLVTVSSGGGGGGGGGGGSDIVMTQSPLSLPTPGEPAISICRSSQSLLHS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLGSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFCTGHFGGLHPCNCGGGGGGGSRDWD VFGGGTPVGGHHHHH

210	215	220
Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu 225 230 235 240		
Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu 245 250 255		
Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly 260 265 270		
Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro 275 280 285		
Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn 290 295 300		
Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu 305 310 315 320		
Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr 325 330 335		
Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys 340 345 350		
Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala 355 360 365		
Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser 370 375 380		
Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly 385 390 395 400		
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr 405 410 415		
Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val 420 425 430		

Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
530 535 540

His His His His His His
545 550

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<400> 600

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys

50

55

60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

<210> 601

<211> 551

<212> PRT

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<220>

<223> 合成多肽

<400> 601

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

<210> 602
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<400> 602

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
 35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
 115 120 125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
 130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

- <210> 603
- <211> 548
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 603

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

413.	CH19_6-G8xI2C6-LH-FcB-CH-156	DVFGGTPVGGHHHHH QRFVTGHFGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAQKLVQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGSGGGGGSDIVMTQTPLSL SVTPGQPASISCRSSQSLLSH VGYNLDWYLQKPGQSPQLLYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGTLVTVSSGGSGGGGGSGGQTVVTQEPSTVSPGGTVTLT CGSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGLHPCNGGGGGGGSGRSDWDF DVFGGTPVGGHHHHH
414.	CH19_6-F9xI2C6-LH-FcB-CH-156	QRFVTGHFGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAQKLVQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGSGGGGGSDIVMTQTPLSL SVTPGQPASISCRSSQSLLSH GYNLDWYLQKPGQSPQLLYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWQGTLVTVSSGGSGGGGGSGGQTVVTQEPSTVSPGGTVTLT GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPED AEAECVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGLHPCNGGGGGGGSGRSDWDF VFGGTPVGGHHHHH
415.	CH19_0-C11xI2C6-LH-FcB-CH-156	QRFVTGHFGLHPANGGGGSQVLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRVTITC QASQDISNLYLNWYQKPGKAPKLLIYDASNLETGVPSRFSGSGGTDFTTISLQPEDIAITYC QAYDNLPTFGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGTLVTVSSGGSGGGGGSGGQTVVTQEPSTVSPGGTVTLT CGSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPED EAECYCVLWYSNRWVFGGGTKLTVLGGGSGRFRCTGHFGLHPCNGGGGGGGSGRSDWDF DVFGGTPVGGHHHHH
416.	CH19_8-F6xI2C6-LH-FcB-CH-156	QRFVTGHFGLHPANGGGGSQVLVESGGGVVQGRSLRLSCV ASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRVTITC RASQISSYLNWYQKPGKAPKLLIYDASSLQSGVPSRFSGSGGTEFTLTISLQAEADVAVY CQQYYSTPLTFGGGKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVY

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly

450		455		460
Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu				
465		470	475	480
Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp				
	485		490	495
Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe				
	500		505	510
Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg				
	515		520	525
Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His His				
	530		535	540
His His His His				
545				
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<400> 604				
Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly				
1	5		10	15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val				
	20		25	30
Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe				
	35		40	45
Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys				
	50		55	60
Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Ser Asn Lys Tyr				
65	70		75	80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

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

290	295	300
Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp		
305	310	315 320
Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala		
	325	330 335
Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn		
	340	345 350
Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val		
	355	360 365
Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr		
	370	375 380
Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly		
	385	390 395 400
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val		
	405	410 415
Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr		
	420	425 430
Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro		
	435	440 445
Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly		
	450	455 460
Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser		
	465	470 475 480
Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu		
	485	490 495
Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val		
	500	505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 605
<211> 549
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<220>
<223> 合成多肽

<400> 605

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser

130135140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145150155160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165170175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180185190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195200205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210215220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225230235240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245250255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260265270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275280285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290295300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305310315320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325330335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340345350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 606

<211> 574

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 606

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30
Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45
Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60
Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80
Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95
Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125
Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140
Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160
Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175
Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190



Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 607
- <211> 574
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 607

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

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<400> 608

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

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

500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 609
<211> 16
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 609

Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly
1 5 10 15

<210> 610
<211> 105
<212> PRT
<213> 智人

<400> 610

Gln Asp Gly Asn Glu Glu Met Gly Gly Ile Thr Gln Thr Pro Tyr Lys
1 5 10 15

Val Ser Ile Ser Gly Thr Thr Val Ile Leu Thr Cys Pro Gln Tyr Pro
20 25 30

Gly Ser Glu Ile Leu Trp Gln His Asn Asp Lys Asn Ile Gly Gly Asp
35 40 45

Glu Asp Asp Lys Asn Ile Gly Ser Asp Glu Asp His Leu Ser Leu Lys
50 55 60

Glu Phe Ser Glu Leu Glu Gln Ser Gly Tyr Tyr Val Cys Tyr Pro Arg
65 70 75 80

Gly Ser Lys Pro Glu Asp Ala Asn Phe Tyr Leu Tyr Leu Arg Ala Arg
85 90 95

Val Cys Glu Asn Cys Met Glu Met Asp
100 105

<210> 611

<211> 772

<212> PRT

<213> 智人

<400> 611

Met Asn Cys Tyr Leu Leu Leu Arg Phe Met Leu Gly Ile Pro Leu Leu
1 5 10 15

Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys Val Lys
20 25 30

Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp Val Trp Asn
35 40 45

Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser His His Ile Gly
50 55 60

Gln Leu Arg Ser Asp Leu Asp Asn Gly Asn Asn Ser Phe Gln Tyr Lys
65 70 75 80

Leu Leu Gly Ala Gly Ala Gly Ser Thr Phe Ile Ile Asp Glu Arg Thr
85 90 95

Gly Asp Ile Tyr Ala Ile Gln Lys Leu Asp Arg Glu Glu Arg Ser Leu
100 105 110

Tyr Ile Leu Arg Ala Gln Val Ile Asp Ile Ala Thr Gly Arg Ala Val
115 120 125

Glu Pro Glu Ser Glu Phe Val Ile Lys Val Ser Asp Ile Asn Asp Asn
130 135 140

Glu Pro Lys Phe Leu Asp Glu Pro Tyr Glu Ala Ile Val Pro Glu Met
145 150 155 160

Ser Pro Glu Gly Thr Leu Val Ile Gln Val Thr Ala Ser Asp Ala Asp
165 170 175

Asp Pro Ser Ser Gly Asn Asn Ala Arg Leu Leu Tyr Ser Leu Leu Gln
180 185 190

Gly Gln Pro Tyr Phe Ser Val Glu Pro Thr Thr Gly Val Ile Arg Ile
195 200 205

Ser Ser Lys Met Asp Arg Glu Leu Gln Asp Glu Tyr Trp Val Ile Ile
210 215 220

Gln Ala Lys Asp Met Ile Gly Gln Pro Gly Ala Leu Ser Gly Thr Thr
225 230 235 240

Ser Val Leu Ile Lys Leu Ser Asp Val Asn Asp Asn Lys Pro Ile Phe
245 250 255

Lys Glu Ser Leu Tyr Arg Leu Thr Val Ser Glu Ser Ala Pro Thr Gly
260 265 270

Thr Ser Ile Gly Thr Ile Met Ala Tyr Asp Asn Asp Ile Gly Glu Asn
275 280 285

Ala Glu Met Asp Tyr Ser Ile Glu Glu Asp Asp Ser Gln Thr Phe Asp
290 295 300

Ile Ile Thr Asn His Glu Thr Gln Glu Gly Ile Val Ile Leu Lys Lys
305 310 315 320

Lys Val Asp Phe Glu His Gln Asn His Tyr Gly Ile Arg Ala Lys Val
325 330 335

Lys Asn His His Val Pro Glu Gln Leu Met Lys Tyr His Thr Glu Ala
340 345 350

Ser Thr Thr Phe Ile Lys Ile Gln Val Glu Asp Val Asp Glu Pro Pro
355 360 365

Leu Phe Leu Leu Pro Tyr Tyr Val Phe Glu Val Phe Glu Glu Thr Pro
 370 375 380

Gln Gly Ser Phe Val Gly Val Val Ser Ala Thr Asp Pro Asp Asn Arg
 385 390 395 400

Lys Ser Pro Ile Arg Tyr Ser Ile Thr Arg Ser Lys Val Phe Asn Ile
 405 410 415

Asn Asp Asn Gly Thr Ile Thr Thr Ser Asn Ser Leu Asp Arg Glu Ile
 420 425 430

Ser Ala Trp Tyr Asn Leu Ser Ile Thr Ala Thr Glu Lys Tyr Asn Ile
 435 440 445

Glu Gln Ile Ser Ser Ile Pro Leu Tyr Val Gln Val Leu Asn Ile Asn
 450 455 460

Asp His Ala Pro Glu Phe Ser Gln Tyr Tyr Glu Thr Tyr Val Cys Glu
 465 470 475 480

Asn Ala Gly Ser Gly Gln Val Ile Gln Thr Ile Ser Ala Val Asp Arg
 485 490 495

Asp Glu Ser Ile Glu Glu His His Phe Tyr Phe Asn Leu Ser Val Glu
 500 505 510

Asp Thr Asn Asn Ser Ser Phe Thr Ile Ile Asp Asn Gln Asp Asn Thr
 515 520 525

Ala Val Ile Leu Thr Asn Arg Thr Gly Phe Asn Leu Gln Glu Glu Pro
 530 535 540

Val Phe Tyr Ile Ser Ile Leu Ile Ala Asp Asn Gly Ile Pro Ser Leu
 545 550 555 560

Thr Ser Thr Asn Thr Leu Thr Ile His Val Cys Asp Cys Gly Asp Ser
 565 570 575

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

		SVSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLA VYYCQQ YGTSPLTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGLSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLVTSSGGGSGGGSGGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGLHPNCNGGGGGSGGSRDWDFF VFGGTPVGGHHHHH
421.	CH19_1-E6xI2C6-LH-FcB- CH-156	QRFVTGHFGLHPANGGGGSQQLVESGGGVVQGRSLRLSCAASGFTSSFGMHWVRQA PGKLEWVAFIWYSGSNKYASSVKGRVTISRDNSKNTLYQMNSLRAEDTAVYYCARDGY PIFYYYGMDVWGQGTITVTVSSGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQ QYSSPFTFGPTRLEIKSGGGSEVQLVESGGGLVQPGLSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLVTSSGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLT CGSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGLHPNCNGGGGGSGGSRDWDFF DVFGGTPVGGHHHHH
422.	CH19_2G6_302_VKGxI2C 6-LH-FcB-LH-156	QRFVTGHFGLHPANGGGGSQQLVESGGGVVQPGSLRLSCAASGFTSSYGMHWVRQA PGKLEWVAFIWYDGSNKYYADSVKGRFTISRDNKNTLYQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGSGGGGGGSSYELTQPPSVSPGQTASITCSG DRLGEKYTSWYQQRPQSPLLVIYQDTKRPSGPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLLVTVSSGGGSGGGGGGSGTQVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGLHPANGGGGGSGGSRD WDFDVFGGGTPVGGHHHHH
423.	CH19_0-E11xI2C6-LH- FcB-LH-156	QRFVTGHFGLHPANGGGGSQQLQESGPGLVKPSQTLSTCTVSGGSISRGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTA VYYCARVNSNY GWFDPWQGTLLVTVSSGGGSGGGGGGSEIVLTQPPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSPP LTFGGGKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLVTVSSGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGLHPANGGGGGSGGSRDWDFFVFGG GTPVGGHHHHH

580	585	590
Phe Lys Thr Glu Val Ile Ile Ala Ile Leu Ile Cys Ile Met Ile Ile		
595	600	605
Phe Gly Phe Ile Phe Leu Thr Leu Gly Leu Lys Gln Arg Arg Lys Gln		
610	615	620
Ile Leu Phe Pro Glu Lys Ser Glu Asp Phe Arg Glu Asn Ile Phe Gln		
625	630	635
Tyr Asp Asp Glu Gly Gly Gly Glu Glu Asp Thr Glu Ala Phe Asp Ile		
	645	650
Ala Glu Leu Arg Ser Ser Thr Ile Met Arg Glu Arg Lys Thr Arg Lys		
	660	665
Thr Thr Ser Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val		
	675	680
Gly Pro Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu		
	690	700
Glu Ala Asn Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr		
705	710	715
Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser Leu		
	725	730
Glu Ser Ala Val Ser Asp Gln Asp Glu Ser Tyr Asp Tyr Leu Asn Glu		
	740	745
Leu Gly Pro Arg Phe Lys Arg Leu Ala Cys Met Phe Gly Ser Ala Val		
	755	760
Gln Ser Asn Asn		
770		

<210> 612
 <211> 772
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<400> 612

Met Asn Cys Tyr Leu Leu Leu Pro Phe Met Leu Gly Ile Pro Leu Leu
 1 5 10 15

Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys Val Gln
 20 25 30

Gln Pro Val Gly Ser His Leu Arg Val Lys Arg Gly Trp Val Trp Asn
 35 40 45

Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser His His Val Gly
 50 55 60

Arg Leu Arg Ser Asp Leu Asp Asn Gly Asn Asn Ser Phe Gln Tyr Lys
 65 70 75 80

Leu Leu Gly Ala Gly Ala Gly Ser Thr Phe Ile Ile Asp Glu Arg Thr
 85 90 95

Gly Asp Ile Tyr Ala Ile Glu Lys Leu Asp Arg Glu Glu Arg Ser Leu
 100 105 110

Tyr Ile Leu Arg Ala Gln Val Ile Asp Ile Thr Thr Gly Arg Ala Val
 115 120 125

Glu Pro Glu Ser Glu Phe Val Ile Lys Val Ser Asp Ile Asn Asp Asn
 130 135 140

Glu Pro Lys Phe Leu Asp Glu Pro Tyr Glu Ala Ile Val Pro Glu Met
 145 150 155 160

Ser Pro Glu Gly Thr Leu Val Ile Gln Val Thr Ala Ser Asp Ala Asp
 165 170 175

Asp Pro Ser Ser Gly Asn Asn Ala Arg Leu Leu Tyr Ser Leu Leu Gln
 180 185 190

Gly Gln Pro Tyr Phe Ser Val Glu Pro Thr Thr Gly Val Ile Arg Ile
 195 200 205

Ser Ser Lys Met Asp Arg Glu Leu Gln Asp Glu Tyr Trp Val Ile Ile
210 215 220

Gln Ala Lys Asp Met Ile Gly Gln Pro Gly Ala Leu Ser Gly Thr Thr
225 230 235 240

Ser Val Leu Ile Lys Leu Ser Asp Val Asn Asp Asn Lys Pro Ile Phe
245 250 255

Lys Glu Ser Leu Tyr Arg Leu Thr Val Ser Glu Ser Ala Pro Thr Gly
260 265 270

Thr Ser Ile Gly Thr Ile Met Ala Tyr Asp Asn Asp Ile Gly Glu Asn
275 280 285

Ala Glu Met Asp Tyr Ser Ile Glu Glu Asp Asp Ser Gln Thr Phe Asp
290 295 300

Ile Ile Thr Asn His Glu Thr Gln Glu Gly Ile Val Ile Leu Lys Lys
305 310 315 320

Lys Val Asn Phe Glu His Gln Asn His Tyr Gly Ile Arg Ala Lys Val
325 330 335

Lys Asn His His Val Asp Glu Gln Leu Met Lys Tyr His Thr Glu Ala
340 345 350

Ser Thr Thr Phe Ile Lys Ile Gln Val Glu Asp Val Asp Glu Pro Pro
355 360 365

Leu Phe Leu Leu Pro Tyr Tyr Ile Phe Glu Ile Phe Glu Glu Thr Pro
370 375 380

Gln Gly Ser Phe Val Gly Val Val Ser Ala Thr Asp Pro Asp Asn Arg
385 390 395 400

Lys Ser Pro Ile Arg Tyr Ser Ile Thr Arg Ser Lys Val Phe Asn Ile
405 410 415

Asp Asp Asn Gly Thr Ile Thr Thr Thr Asn Ser Leu Asp Arg Glu Ile
420 425 430

Ser Ala Trp Tyr Asn Leu Ser Ile Thr Ala Thr Glu Lys Tyr Asn Ile
435 440 445

Glu Gln Ile Ser Ser Ile Pro Val Tyr Val Gln Val Leu Asn Ile Asn
450 455 460

Asp His Ala Pro Glu Phe Ser Gln Tyr Tyr Glu Ser Tyr Val Cys Glu
465 470 475 480

Asn Ala Gly Ser Gly Gln Val Ile Gln Thr Ile Ser Ala Val Asp Arg
485 490 495

Asp Glu Ser Ile Glu Glu His His Phe Tyr Phe Asn Leu Ser Val Glu
500 505 510

Asp Thr Asn Ser Ser Ser Phe Thr Ile Ile Asp Asn Gln Asp Asn Thr
515 520 525

Ala Val Ile Leu Thr Asn Arg Thr Gly Phe Asn Leu Gln Glu Glu Pro
530 535 540

Ile Phe Tyr Ile Ser Ile Leu Ile Ala Asp Asn Gly Ile Pro Ser Leu
545 550 555 560

Thr Ser Thr Asn Thr Leu Thr Ile His Val Cys Asp Cys Asp Asp Ser
565 570 575

Gly Ser Thr Gln Thr Cys Gln Tyr Gln Glu Leu Met Leu Ser Met Gly
580 585 590

Phe Lys Thr Glu Val Ile Ile Ala Ile Leu Ile Cys Ile Met Val Ile
595 600 605

Phe Gly Phe Ile Phe Leu Thr Leu Gly Leu Lys Gln Arg Arg Lys Gln
610 615 620

Ile Leu Phe Pro Glu Lys Ser Glu Asp Phe Arg Glu Asn Ile Phe Arg
625 630 635 640

Tyr Asp Asp Glu Gly Gly Gly Glu Glu Asp Thr Glu Ala Phe Asp Val
645 650 655

Ala Ala Leu Arg Ser Ser Thr Ile Met Arg Glu Arg Lys Thr Arg Lys
 660 665 670

Thr Thr Ser Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val
 675 680 685

Gly Pro Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu
 690 695 700

Glu Ala Asp Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr
 705 710 715 720

Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser Leu
 725 730 735

Glu Ser Ala Val Ser Asp Gln Asp Glu Ser Tyr Asp Tyr Leu Asn Glu
 740 745 750

Leu Gly Pro Arg Phe Lys Arg Leu Ala Cys Met Phe Gly Ser Ala Val
 755 760 765

Gln Ser Asn Asn
 770

<210> 613
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<220>
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<400> 613

Asn Tyr Gly Met Asn
 1 5

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<400> 614

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 615

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Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
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Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
1 5 10 15

Ala

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Trp Ala Ser Thr Arg Glu Ser
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<400> 618

Gln Gln Ser Ala His Phe Pro Ile Thr
 1 5

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<400> 619

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
 50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser

115120

<210> 620<211> 113<212> PRT<213> 人工<220><223> 人工<400> 620

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly15105

Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser202530

Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln354045

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile505560

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr65707580

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln859095

Ser Ala His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile100105110

Lys

<210> 621<211> 250<212> PRT<213> 人工<220><223> 人工<400> 621

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110
Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125
Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
130 135 140
Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
145 150 155 160
Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
180 185 190
Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
195 200 205
Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
210 215 220



Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
225 230 235 240

Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
245 250

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<220>
<223> 人工

<400> 622

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
130 135 140

424.	CH19_5-G4xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGTSNRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGG GTPVGGHHHHH
425.	CH19_8-H6xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGG GTPVGGHHHHH
426.	CH19_2-C11xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSLKSRTISVDTSKNQFSLKSSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGG GTPVGGHHHHH
427.	CH19_2-A10xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYSGSTFYNPSLSRVTISVDTSKNQFSLKSSVTAADTAVYYCARDSSSR ALDYWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYDSSPR TFGGGTGLEKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGGQTVVTVQEPSTVSPGGTVTLTCGSSTGA



Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala
245 250 255

His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser
260 265 270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
275 280 285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
290 295 300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340 345 350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405 410 415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420 425 430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435 440 445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450 455 460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515 520 525

Gly Gly Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro
530 535 540

Cys Asn Gly His His His His His His
545 550

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<400> 623

Asn Tyr Gly Met Asn
1 5

<210> 624

<211> 17

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 624

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 625

<211> 13

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 625

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
1 5 10

<210> 626

<211> 17

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 626

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
1 5 10 15

Ala

<210> 627
<211> 7
<212> PRT
<213> 人工

<220>
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<400> 627

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 628
<211> 9
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 628

Gln Gln Ser Ala His Phe Pro Ile Thr
1 5

<210> 629
<211> 122
<212> PRT
<213> 人工

<220>
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<400> 629

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 630

<211> 113

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 630

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

Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser
20 25 30

Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95

Ser Ala His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 631
<211> 250
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 631

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
130 135 140

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
145 150 155 160

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ser
180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
210 215 220

Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
225 230 235 240

Phe Gly Cys Gly Thr Arg Leu Glu Ile Lys
245 250

<210> 632

<211> 553

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 632

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

Cys Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr
65 70 75 80

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser

5

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340 345 350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405 410 415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420 425 430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435 440 445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450 455 460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515 520 525

Gly Gly Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro
530 535 540

Cys Asn Gly His His His His His His
545 550

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Asn Tyr Gly Met Asn
1 5

<210> 634
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<400> 634

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 635
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<400> 635

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
1 5 10

428.	CH19_1-D11xI2C6-LH-FcB-LH-156	VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGGGGGSGSRDWDVDFVFGGG TPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSST LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGGGGGSGSRDWDVDFVFGG GTPVGGHHHHH
429.	CH19_9-F9xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSETLSLTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFRGRTYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSST FGGKTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGGGGGSGSRDWDVDFVFGGG TPVGGHHHHH
430.	CH19_1-H8xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFRGRTYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSST LTFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGGGGGSGSRDWDVDFVFG GGTPVGGHHHHH
431.	CH19_1-B12xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSST

<210> 636
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<220>
<223> 人工

<400> 636

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
1 5 10 15

Ala

<210> 637
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<212> PRT
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<220>
<223> 人工

<400> 637

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 638
<211> 9
<212> PRT
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<220>
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<400> 638

Gln Gln Ser Ala His Phe Pro Ile Thr
1 5

<210> 639
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<212> PRT
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<400> 639

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 640
<211> 113
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 640

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

Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser
20 25 30

Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95

Ser Ala His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 641
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<213> 人工

<220>
<223> 人工

<400> 641

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp

100	105	110
Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly		
115	120	125
Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser		
130	135	140
Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys		
145	150	155
Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu		
165	170	175
Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser		
180	185	190
Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser		
195	200	205
Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu		
210	215	220
Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr		
225	230	235
Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys		
245	250	

<210> 642
 <211> 553
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 642

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
 50 55 60

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

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
 115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
 130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
 145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
 165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
 180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
 210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
 225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala

245250255

His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser
260265270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
275280285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
290295300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305310315320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325330335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340345350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355360365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370375380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385390395400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405410415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420425430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435440445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450455460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
 465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
 485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
 500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
 515 520 525

Gly Gly Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro
 530 535 540

Ala Asn Gly His His His His His His
 545 550

<210> 643
 <211> 5
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 643

Asn Tyr Gly Met Asn
 1 5

<210> 644
 <211> 17
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 644

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
 1 5 10 15

Gly

<210> 645
 <211> 13
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 645

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
 1 5 10

<210> 646
 <211> 17
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 646

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
 1 5 10 15

Ala

<210> 647
 <211> 7
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 647

Trp Ala Ser Thr Arg Glu Ser
 1 5

<210> 648
 <211> 9
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 648

Gln Gln Ser Ala His Phe Pro Ile Thr
 1 5

<210> 649

<211> 122

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 649

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
 50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 650

<211> 113

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 650

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly
1 5 10 15
Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser
20 25 30
Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45
Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80
Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95
Ser Ala His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 651
<211> 250
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 651

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

		TFPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGGG TPVGGHHHHHH
432.	CH19_0-C4xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRYYNPSTLSRVTSISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGERATLSCRASQSVSSS YLAAYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSSTG AVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGGG GTPVGGHHHHHH
433.	CH19_3-F2xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGQVQLQESGPGLVKPSQTLSTCTISGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRYYNPSTLSRVTSISVDTSKNQFSLKLSSTAAADTAVYYCARVNSNYG WFDPWQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGERATLSCRASQSVSSSY LAAYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFGGG TPVGGHHHHHH
434.	CH19_3-B10xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLDWIGYIFYRGRYYNPSTLSRVTSISVDTSKNQFSLKLSSTAAADTAVYYCARVNSNY GWFDPWQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGERATLSCRASQSVSSS YLAAYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGSGTQVVTQEPSTLTVSPGGTVTLTCGSSST GAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGGLHPANGGGGGGGSRDWDVDFVFG GGTPVGGHHHHHH
435.	CH19_0-G4xI2C6-LH-FcB-	QRFVTGHFGGLHPANGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ



Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
 50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
 130 135 140

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
 145 150 155 160

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
 165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
 180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
 210 215 220

Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
 225 230 235 240

Phe Gly Cys Gly Thr Arg Leu Glu Ile Lys
 245 250

<210> 652

<211> 553
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 652

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

Cys Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr
65 70 75 80

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
 210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
 225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala
 245 250 255

His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile Lys Ser
 260 265 270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
 275 280 285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
 290 295 300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
 305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
 325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
 340 345 350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
 355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
 370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
 385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly

405410415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420425430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435440445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450455460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465470475480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485490495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500505510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515520525

Gly Gly Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro
530535540

Ala Asn Gly His His His His His His
545550

<210> 653
<211> 5
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 653

Asn Tyr Gly Met Asn
15

<210> 654
<211> 17

<212> PRT
<213> 人工

<220>
<223> 人工

<400> 654

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 655
<211> 13
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 655

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
1 5 10

<210> 656
<211> 17
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 656

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
1 5 10 15

Ala

<210> 657
<211> 7
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 657

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 658

<211> 9

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 658

Gln Gln Ser Ala His Phe Pro Ile Thr
1 5

<210> 659

<211> 122

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 659

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 660

<211> 113

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 660

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

Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser
20 25 30

Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95

Ser Ala His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 661

<211> 250

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 661

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
130 135 140

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
145 150 155 160

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
210 215 220

Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
225 230 235 240

Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
245 250

<210> 662

<211> 578

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 662

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala
245 250 255

His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser
260 265 270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
275 280 285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
290 295 300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340 345 350

	LH-156	HPKGLEWIGYIYRGRTYYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASTRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP SFGGQTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTIVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQFVTGHFGGLHPANGGGGGGGGSRDWDDEDVFGG GTPVGGHHHHH
436.	CH19_0-H5xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRTYYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWQGGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYDTSPL TFGGGQTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTIVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQFVTGHFGGLHPANGGGGGGGGSRDWDDEDVFGG GTPVGGHHHHH
437.	CH19_0-B8xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP TFGGGQTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTIVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRQFVTGHFGGLHPANGGGGGGGGSRDWDDEDVFGG GTPVGGHHHHH
438.	CH19_2-D9xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYYNPSLKSRVTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP LTFGGGQTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTIVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405 410 415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420 425 430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435 440 445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450 455 460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515 520 525

Gly Gly Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro
530 535 540

Cys Asn Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp
545 550 555 560

Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His

565

570

575

His His

<210> 663
<211> 5
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 663

Asn Tyr Gly Met Asn
1 5

<210> 664
<211> 17
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 664

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 665
<211> 13
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 665

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
1 5 10

<210> 666
<211> 17

<212> PRT
<213> 人工

<220>
<223> 人工

<400> 666

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
1 5 10 15

Ala

<210> 667
<211> 7
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 667

Trp Ala Ser Thr Arg Glu Ser
1 5

<210> 668
<211> 9
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 668

Gln Gln Ser Ala His Phe Pro Ile Thr
1 5

<210> 669
<211> 122
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 669

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu



1	5	10	15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr	20	25	30
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met	35	40	45
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe	50	55	60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr	65	70	75
Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys	85	90	95
Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp	100	105	110
Gly Gln Gly Thr Ser Val Thr Val Ser Ser	115	120	
<210> 670			
<211> 113			
<212> PRT			
<213> 人工			
<220>			
<223> 人工			
<400> 670			
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly	1	5	10
Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser	20	25	30
Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln	35	40	45
Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile	50	55	60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95

Ser Ala His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 671

<211> 250

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 671

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
130 135 140

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
145 150 155 160

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
210 215 220

Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
225 230 235 240

Phe Gly Cys Gly Thr Arg Leu Glu Ile Lys
245 250

<210> 672

<211> 578

<212> PRT

<213> 人工

<220>

<223> 人工

<400> 672

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

Cys Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr
65 70 75 80

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala
245 250 255

His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile Lys Ser
260 265 270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
275 280 285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
290 295 300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340 345 350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405 410 415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420 425 430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435 440 445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450 455 460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515 520 525

Gly Gly Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro
530 535 540

Cys Asn Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp
545 550 555 560

Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His
565 570 575

His His

<210> 673
<211> 5
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 673

Asn Tyr Gly Met Asn
1 5

<210> 674
<211> 17
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 674

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln

1 5 10 15

Gly

<210> 675
 <211> 13
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 675

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
 1 5 10

<210> 676
 <211> 17
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 676

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
 1 5 10 15

Ala

<210> 677
 <211> 7
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 677

Trp Ala Ser Thr Arg Glu Ser
 1 5

<210> 678
 <211> 9

439.	CH19_8-H7xI2C6-LH-FcB-LH-156	YCVLWYSNRWVFGGKTLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFG GGTPVGGHHHHH QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQGSSPL TFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF NSYISYWAYWGQGTLVTVSSGGGGGGGGGSGGTIVTQEPSTVSPGGTTLTTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEY CVLWYSNRWVFGGKTLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFG GTPVGGHHHHH
440.	CH19_9-C2xI2C6-LH-FcB-LH-156	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQGSSP LTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGSGGTIVTQEPSTVSPGGTTLTTCGSSST GAVTSGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEY YCVLWYSNRWVFGGKTLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFG GGTPVGGHHHHH
441.	CH19_3-D5xI2C6-LH-FcB-LH-156	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQGSSP LTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGSGGTIVTQEPSTVSPGGTTLTTCGSSST GAVTSGNYPNWVQQKPGQAPRLIGGKFLAPGTPARFSGSLGGAALTLSGVQPEDEAEY YCVLWYSNRWVFGGKTLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFG GGTPVGGHHHHH
442.	CH19_1-G11xI2C6-LH-FcB-LH-156	QRFTGHFGGLHPANGGGGSQVQLQESGPGLVKPSETLSLTCTVSGGSVSSGGYYWSWVRQ PPGKLEWIGYIYYRGRTYYPNPSLKSRTISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQGSSP LTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQAPGK



<212> PRT
<213> 人工

<220>
<223> 人工

<400> 678

Gln Gln Ser Ala His Phe Pro Ile Thr
1 5

<210> 679
<211> 122
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 679

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 680



<211> 113
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 680

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

Glu Arg Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser
20 25 30

Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
85 90 95

Ser Ala His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile
100 105 110

Lys

<210> 681
<211> 250
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 681

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
130 135 140

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
145 150 155 160

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
210 215 220

Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala His Phe Pro Ile Thr
225 230 235 240

Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
245 250

<210> 682
<211> 578
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 682

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Asp Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly
130 135 140

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile
145 150 155 160

Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg
165 170 175

Thr Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr
180 185 190

Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
195 200 205

Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp
210 215 220

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp
225 230 235 240

Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln Ser Ala
245 250 255

His Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser
260 265 270

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu
275 280 285

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
290 295 300

Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
305 310 315 320

Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
325 330 335

Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
340 345 350

Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
355 360 365

Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser
370 375 380

Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
385 390 395 400

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
405 410 415

Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly
420 425 430

Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser
435 440 445

Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg
450 455 460

Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
465 470 475 480

Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
485 490 495

Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
500 505 510

Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
515 520 525

Gly Gly Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro
530 535 540

Ala Asn Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp
545 550 555 560

Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His
565 570 575

His His

<210> 683
<211> 5

<212> PRT
<213> 人工

<220>
<223> 人工

<400> 683

Asn Tyr Gly Met Asn
1 5

<210> 684
<211> 17
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 684

Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe Gln
1 5 10 15

Gly

<210> 685
<211> 13
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 685

Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr
1 5 10

<210> 686
<211> 17
<212> PRT
<213> 人工

<220>
<223> 人工

<400> 686

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu

1 5 10 15

Ala

<210> 687
 <211> 7
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 687

Trp Ala Ser Thr Arg Glu Ser
 1 5

<210> 688
 <211> 9
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 688

Gln Gln Ser Ala His Phe Pro Ile Thr
 1 5

<210> 689
 <211> 122
 <212> PRT
 <213> 人工

<220>
 <223> 人工

<400> 689

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser
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Ser Thr Asn Lys Asn Ser Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45

Pro Pro Lys Leu Leu Leu Ser Trp Ala Ser Thr Arg Glu Ser Gly Ile
50 55 60

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80

Ile Asp Ser Pro Gln Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln
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Ser Ala His Phe Pro Ile Thr Phe Gly Cys Gly Thr Arg Leu Glu Ile
 100 105 110

Lys

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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
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Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln Cys Leu Glu Trp Met
 35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Lys Phe
 50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
 65 70 75 80

Met Glu Ile Arg Asn Leu Gly Gly Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Trp Ser Trp Ser Asp Gly Tyr Tyr Val Tyr Phe Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
 115 120 125

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser
 130 135 140

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443.	CH19_1-H11xI2C6-LH- FcB-LH-156	QRFVTGHFGGLHPANGGGGGGQVQLQESGGLVKPSQTLSTCTVSSGSSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGGLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSP TFGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFNG SYISYWAYWQGGLTVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEYCY VLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGSRDWDVDFVFGGG TPVGGHHHHH
444.	CH19_9-F3xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGGQVQLQESGGLVKPSQTLSTCTVSSGSSGGYYWSWIRQ HPKGLEWIGYIFYSGKTYNPSLKSRSISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGGLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSPI TFGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFNG SYISYWAYWQGGLTVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTCGSSTGA VTSNGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEYCY VLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGSRDWDVDFVFGGG TPVGGHHHHH
445.	CH19_2-G6xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGGQVQLQESGGLVKPSETLSLTCTVSSGSSYYWSWIRQPPG KGLEWIGYIYSGSTNYPNPSLKSRTMSIDTSKNQFSLKLSVTAADTAVYYCARDQRRIVAA GGYYYGMDVWQGGLTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQKPGQAPRLIYGASTRATGIPARFSGSGGTDFLTISRLEPEDFAVYYCQY YSSPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWQGGLTVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGSRDWDVDF VFGGTPVGGHHHHH
446.	CH19_2-H7xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGGGQVQLQESGGLVKPSQTLSTCTVSSGSSNDYYWSWIRQ HPKGLEWIGYIYSGSTFYNPSLKSRAISVDTSKNQFSLKLSVTAADTAVYYCARGVYRT

Pro Asp Ser Leu Thr Val Ser Leu Gly Glu Arg Thr Thr Ile Asn Cys
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Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Thr Asn Lys Asn Ser Leu
165 170 175

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Leu Ser
180 185 190

Trp Ala Ser Thr Arg Glu Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
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Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Ser Pro Gln Pro Glu
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Glu Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Gln
50 55 60

Cys Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr

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				85					90					95	
Thr	Ser	Thr	Ala	Tyr	Met	Glu	Ile	Arg	Asn	Leu	Gly	Gly	Asp	Asp	Thr
			100					105					110		
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Trp	Ser	Trp	Ser	Asp	Gly	Tyr	Tyr	Val
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Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Ser	Val	Thr	Val	Ser	Ser	Gly
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Val	Met	Thr	Gln	Ser	Pro	Asp	Ser	Leu	Thr	Val	Ser	Leu	Gly	Glu	Arg
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Thr	Thr	Ile	Asn	Cys	Lys	Ser	Ser	Gln	Ser	Val	Leu	Asp	Ser	Ser	Thr
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Asn	Lys	Asn	Ser	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Pro	Pro
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Lys	Leu	Leu	Leu	Ser	Trp	Ala	Ser	Thr	Arg	Glu	Ser	Gly	Ile	Pro	Asp
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Ser	Pro	Gln	Pro	Glu	Asp	Ser	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Ala
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His	Phe	Pro	Ile	Thr	Phe	Gly	Cys	Gly	Thr	Arg	Leu	Glu	Ile	Lys	Ser
			260					265					270		
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Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
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Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys
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Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala
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Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp
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Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu
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Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg
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Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly
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Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser
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Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly
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Gly Gly Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro
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Ala Asn Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp
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Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His
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His His

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447.	CH19_5-B3xI2C6-LH-FcB- LH-156	QRFTVGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYGGETNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGGTILVTVSSGGGGGGGGGGGGDIVMTQTPLSLVTGEPASISCRSSQSLLSHN GYNLDWYLLQKPGQSPQLLIYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTILVTVSSGGGGGGGGGGGGQTVVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGGGSRDWDWDFD VFGGGTPVGGHHHHH
448.	CH19_5-E10xI2C6-LH- FcB-LH-156	QRFTVGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYSGATNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGGTILVTVSSGGGGGGGGGGGGDIVMTQTPLSLVTGEPASISCRSSQSLLSHN GYNLDWYLLQKPGQSPQLLIYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTILVTVSSGGGGGGGGGGGGQTVVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGGGSRDWDWDFD VFGGGTPVGGHHHHH
449.	CH19_6-G10xI2C6-LH- FcB-LH-156	QRFTVGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGGTILVTVSSGGGGGGGGGGGGDIVMTQTPLSLVTGEPASISCRSSQSLLSHN GYNLDWYLLQKPGQSPQLLIYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTILVTVSSGGGGGGGGGGGGQTVVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGGGSRDWDWDFD VFGGGTPVGGHHHHH

450.	CH19_4-H8xI2C6-LH-FcB-LH-156	VFGGGTPVGGHHHHH QRFVTGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYGISWVRQA PGQLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHSV GYNLDWYLVQKPGQSPQLLIYLGSRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAWYWGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
451.	CH19_2-E4xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQLEWMGWINPYTGNRNYAQKVQDRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGS GGFDYWGGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS VGYNYLDWYLVQKPGQSPQLLIYLGSRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAWYWGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
452.	CH19_6-B8xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTYGISWVRQA PGQLEWMGWINPYTGKTNYAQKLQDRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGS GGFDYWGGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS VGYNYLDWYLVQKPGQSPQLLIYLGSRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAWYWGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
453.	CH19_0-B4xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQLEWMGWINPYTGKTNYAQKLQGRVTMATDTSTSTAYMELSLRSDDTAVYYCARGS GGFDYWGGQTLVTVSSGGGGSGGGSDIVMTQPLSLPVTLPGEPAISCRSSQSLLHS VGYNYLDWYLVQKPGQSPQLLIYLGSRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV



		GYNYLDWYLOKPGQSPQLLIYLGSNRASGVPDFRSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGGSGGTFTLKISRVEAEDVGVYYCMQ GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
458.	CH19_6-A7xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYSTSYGISWVRQA PGQLEWMGWINPYTGKNTYAKVQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH VGNYLDWYLOKPGQSPQLLIYLGSNRASGVPDFRSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
459.	CH19_6-G8xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKNTYAKVQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH VGNYLDWYLOKPGQSPQLLIYLGSNRASGVPDFRSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
460.	CH19_6-F9xI2C6-LH-FcB-LH-156	QRFVTGHFGGLHPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKNTYAKVQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GGFDYWGGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH VGNYLDWYLOKPGQSPQLLIYLGSNRASGVPDFRSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGGSGGSDIVMTQSPLSLPTPGEPAISCRSSQSLLSH CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH

461.	CH19_0-C11xI2C6-LH-FcB-LH-156	QRFVTGHFGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRTITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTDFTFITSSLPEDIAIYYC QQYDNLPLTFGGGTTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQTLVTVSSGGSGGGGGSGGSGTQVTVTQEPSTVSPGGTIVLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGLHPANGGGGGSGGSRDWD DFVFGGTPVGGHHHHH
462.	CH19_8-F6xI2C6-LH-FcB-LH-156	QRFVTGHFGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCV ASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRTITC RASQISSYLNWYQQKPGKAPKLLIYDASSLQSGVPSRFSGSGGTFTLTISLQAEDVAVYY CQQYYSTPLTFGGGTVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQTLVTVSSGGSGGGGGSGGSGTQVTVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGLHPANGGGGGSGGSRD WDFDVFGGTPVGGHHHHH
463.	CH19_0-G9xI2C6-LH-FcB-LH-156	QRFVTGHFGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKGLEWVAGISYSGTNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRTITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTFTLTISLQPEDIAIYYC QQYDNLPLTFGGGTVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQTLVTVSSGGSGGGGGSGGSGTQVTVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRFVTGHFGLHPANGGGGGSGGSRD WDFDVFGGTPVGGHHHHH
464.	CH19_1-E11xI2C6-LH-FcB-LH-156	QRFVTGHFGLHPANGGGGSQVQLVESGGGVVQGRSLRLSCV ASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQTLVTVSSGGSGGGGGSDIQMTQSPSSLSASVGDRTITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTDFTFITSSLPEDIAIYYC QQYVNLPLTFGGGTTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW RQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQTLVTVSSGGSGGGGGSGGSGTQVTVTQEPSTVSPGGTIV



		LTCGSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAALTLSGVQP EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGSRQRFVTGHFGGLHPANGGGGGSGGSRDW DFDVFGGGTPVGGHHHHH
465.	CH19_0-F5xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTSSYGMQWVRQA PGKGLEWVAIWYSGSNKYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYYYGMDVWGQGTITVTVSSGGGGGGGGSDIQMTQSPSSLSASVGDRVTITCRA SQGISNYLAWYQQKPGKVPKLLIYAASLQSGVPSRFSGSGGTDFTLTISLQPEDVATYYCQ KYNsAPLTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSRQRFVTGHFGGLHPANGGGGGSGGSRDWDF DVFGGGTPVGGHHHHH
466.	CH19_1-E1xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAISYSGSNKYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGYP IFYRYYGMDVWGQGTITVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQQKPGAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLA VYYCQ YGTSP LTFGGGKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSRQRFVTGHFGGLHPANGGGGGSGGSRDWDFD VFGGGTPVGGHHHHH
467.	CH19_1-E6xI2C6-LH-FcB- LH-156	QRFVTGHFGGLHPANGGGGSQVQLVESGGGVVQPGRSLRLSCAASGFTSSFGMHWVRQA PGKGLEWVAIWYSGSNKYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYYYGMDVWGQGTITVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSYLAWYQQKPGAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQ QYGSPPFTFGPGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTITVTVSSGGGGGGGGGGGSGTQVVTQEPSTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSRQRFVTGHFGGLHPANGGGGGSGGSRDWDF DVFGGGTPVGGHHHHH
468.	CH19_2G6_302_VKGxI2C 6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKGLEWVAIWYDGSNKYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWGQGTITVTVSSGGGGGGGGGGSSYELTPPPSVSPGQTASITCSG DRLGEKYTSWYQQRPQSPLLVIYQDTKRPSGPERFSGSNSGNTATLTISGTQAMDEADYYC

		QAWESSTVVFGGGTKLTVLSGGGSEVQLVESGGGLVQPGGSLKLSCAAASGFTFNKYAMNW VRQAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGQTVVTVQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGSGGSRD WDFDVFGGGTPVGGHHHHH
469.	CH19_0-E11xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISRGGYYWSWIRQ HPGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVNSNY GWFDPWQGQTLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFGG GTPVGGHHHHH
470.	CH19_5-G4xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYRGRITYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGQTLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGTSNRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFGG GTPVGGHHHHH
471.	CH19_8-H6xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ HPGKGLEWIGYIFYSGRTYNNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWQGQTLTVTVSSGGGGGGGGGSGGSEIVLTQSPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGQTVVTVQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGSGGSRDWDVDFVFGG GTPVGGHHHHH
472.	CH19_2-C11xI2C6-LY-	QRFVTGHFGGLYPANGGGGGSQVQLQESGPGLVKPSQTLSTLTCTVSGGSISSGGYYWSWIRQ



	FcB-LH-156	HPKGGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGGSRDWDVDFVFGG GTPVGGHHHHH
473.	CH19_2-A10xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGQVQLQESGPGLVKPSQTLTCTVSGGSISSGGYYWSWIRQ HPKGGLEWIGYIYSGSTFYNPSLRSRVTISVDTSKNQFSLKLSVTAADTAVYYCARDSSSR ALDYWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYDSSPR TFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGGSRDWDVDFVFGG TPVGGHHHHH
474.	CH19_1-D11xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGQVQLQESGPGLVKPSQTLTCTVSGGSISSGGYYWSWIRQ HPKGGLEWIGYIYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTGLEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGGSRDWDVDFVFGG GTPVGGHHHHH
475.	CH19_9-F9xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGQVQLQESGPGLVKPSETLSLTCTVSGGSISSGGYYWSWIRQH PGKGGLEWIGYIFYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGGSSPT FGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGQTVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC

		VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDDFDVFVGG TPVGGHHHHH
476.	CH19_1-H8xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGTTLTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAWWQGQTLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDDFDVFVGG GGTPVGGHHHHH
477.	CH19_1-B12xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGTTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFPGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAWWQGQTLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEY VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDDFDVFVGG TPVGGHHHHH
478.	CH19_0-C4xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWQGTTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAWWQGQTLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRLIGTKFLAPGTPARFSGSLGKAAALTLSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWDDFDVFVGG GTPVGGHHHHH
479.	CH19_3-F2xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTLCTISGGSISSGGYYWSWIRQH PGKLEWIGYIFYSRGRTYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNYG WFDPWQGTTLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGGSSPT FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL



		EWV ARSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGGQTVVTOEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGSRDWD FDFVFGG TPVGGHHHHHH
480.	CH19_3-B10xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGGLDWIGYFYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVT AADTAVYYCARVNSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYGS LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGSQTVVTOEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGSRDWD FDFVFG GGTPVGGHHHHHH
481.	CH19_0-G4xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVT AADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASTRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYGS SFGQGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGSQTVVTOEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGSRDWD FDFVFG GTPVGGHHHHHH
482.	CH19_0-H5xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVRPSTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVT AADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYDTSPL TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGGSQTVVTOEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLHPANGGGGGGGSRDWD FDFVFG GTPVGGHHHHHH
483.	CH19_0-B8xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVT AADTAVYYCARVYSNY

		GWFDPWGQGTTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGGSSP TFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKG LEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGSRDWDWDFDVFGG GTPVGGHHHHH
484.	CH19_2-D9xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGGQVQLQESGPGLVKPSQTLTSLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRYTISVDTSKNQFSLKSSVTAADTAVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGGSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGK GLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNF GNSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGSRDWDWDFDVFGG GGTPVGGHHHHH
485.	CH19_8-H7xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGGQVQLQESGPGLVKPSQTLTSLTCTVSGGSISSGGYYWSWVRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRYTISVDTSKNQFSLKSSVTAADTAVYCARVYSNYG WFDPWGQGTTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGGSSPL TFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKG LEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGSRDWDWDFDVFGG GTPVGGHHHHH
486.	CH19_9-C2xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGGQVQLQESGPGLVKPSQTLTSLTCTVSGGSISSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYPNPSLKSRYTISVDTSKNQFSLKSSVTAADTAVYCARVYSNY GWFDPWGQGTTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGGSSP LTFGGGTVKVEIKSGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGK GLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNF GNSYISYWAYWGQGTTLVTVSSGGGGGGGGGGGQTVVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGGGSRDWDWDFDVFGG GGTPVGGHHHHH



487.	CH19_3-D5xI2C6-LY-FcB-LH-156	GGTPVGGHHHHH QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSSGGYYWSWIRQ HPKGLEWIGYIFYSGRTYYNPSLKSRSVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQKPGQAPRLIGGTKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGSRDWDVDFVFG GGTPVGGHHHHH
488.	CH19_1-G11xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSSGGYYWSWIRQ PPKGLEWIGYIYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSST GAVTSGNYPNWVQKPGQAPRLIGGTKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGSRDWDVDFVFG GGTPVGGHHHHH
489.	CH19_1-H11xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSSGGYYWSWIRQ HPKGLEWIGYIYRGRYYNPSLKSRTVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSP TFGGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSNGNYPNWVQKPGQAPRLIGGTKFLAPGTPARFSGSLGGAALTLGVPQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGSRDWDVDFVFGG TPVGGHHHHH
490.	CH19_9-F3xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLQESGPGLVKPSQTLTCTVSGGSSGGYYWSWIRQ HPKGLEWIGYIFYSGKTYNPSLKSRSVISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSPI TFGGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN

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		GYNLDWYLYQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLVTSSGGGGSGGGGSGGSGTQVVTQEPSTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
495.	CH19_6-G10xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKLQGRVTMTDSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTSSGGGGSGGGGSDIVMTQPLSLSVTPGEPASISCRSSQSLHNS GYNLDWYLYQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLVTSSGGGGSGGGGSGGSGTQVVTQEPSTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
496.	CH19_4-H8xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKLQGRVTMTDSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQTLVTSSGGGGSGGGGSDIVMTQPLSLSVTPGEPASISCRSSQSLHNS GYNLDWYLYQKPGQSPQLLIYLGSYRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGQTLVTSSGGGGSGGGGSGGSGTQVVTQEPSTVSPGGTIVTLTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
497.	CH19_2-E4xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWNPYTGNNRYAQKVQDRVTMTDSTNTAYMELSLRSDDTAVYYCARGS GGFDYWGGQTLVTSSGGGGSGGGGSDIVMTQPLSLPVTLQPASISCRSSQSLHS VGYNLDWYLYQKPGQSPQLLIYLGSNRASGVPDFRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQTLVTSSGGGGSGGGGSGGSGTQVVTQEPSTVSPGGTIVTLT CGSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD DVFGGGTPVGGHHHHH

498.	CH19_6-B8xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAOKLQGRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV VGNYLDWYLYQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWD DFVFGGTPVGGHHHHH
499.	CH19_0-B4xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAOKLQGRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV VGNYLDWYLYQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWD DFVFGGTPVGGHHHHH
500.	CH19_9-F1xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAOKLQGRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV VGNYLDWYLYQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGKFLAPGTPARFSGSLGGAALTLGSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSRQRFVTGHFGGLHPANGGGGGGGSRDWD DFVFGGTPVGGHHHHH
501.	CH19_4-A7xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVCKASGYTFTYYGISWVRQA PGQLEWMGWINPYTGKTNYAOKLQGRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGSGGFDYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV VGNYLDWYLYQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTDFTLKISRVEAEDVGYYCYCM QALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWNVR APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV HGNFGNSYISYWAYWGGQGLTVTVSSGGGGGGGGSDIVMTQPLSLPVTGPGEASISCRSSQSLLSHV



		GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGSGGSRDWD VFGGGTPVGGHHHHH
502.	CH19_6-E12xI2C6-LY- FeB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGITWVRQA PGQGLEWMGWNPYTGNRNYAQKVQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS VGYNLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGSGGSRDWD DVFGGGTPVGGHHHHH
503.	CH19_6-C12xI2C6-LY- FeB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWNPYTGNRNYAQKFQGRVTMTTDTSTNTAYMELSLRSED TAVYYCARGSGGFDYWGGQTLVTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS VGYNLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGSGGSRDWD VFGGGTPVGGHHHHH
504.	CH19_6-A7xI2C6-LY-FeB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWNPYTGNRNYAQKVQGRVTMTTDTSTSTAYMELSLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS VGYNLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLLTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS CGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGSGGSRDWD DVFGGGTPVGGHHHHH
505.	CH19_6-G8xI2C6-LY-FeB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKVQGRVTMTTDTSTSTAYMELNLRSDDTAVYYCARGSG GGFDYWGGQTLVTVSSGGGGSGGSDIVMTQSPLSLVPVTPGEPASISCRSSQSLLS VGYNLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGGTDFTLKISRVEAEDVGVYYCM

		QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGGLTVTVSSGGGGGGGGSGGSGQTAVTQEPSTVSPGGTIVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGGGGGSGGSRDWD DFVFGGTPVGGHHHHH
506.	CH19_6-F9xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWNPYTGKTNYAQLQGRVTMTDTSTSTAYMELSLRSDDTAVYYCARGSG GFDYWQGGLTVTVSSGGGGGGGGGGSDIVMTQPLSLVTPGPASISCRSSQSLLSHV GYNLDWYLGKPGQSPQLLIYLGSRASVDPDRFSGSGGTDFTLKISRVEAEDVGYVYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGSGQTAVTQEPSTVSPGGTIVTLT GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGGGGGSGGSRDWD DFVFGGTPVGGHHHHH
507.	CH19_0-C11xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYLQNLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGLTVTVSSGGGGGGGGGGSDIQMTQSPSSLSASVGDRTITC QASQDISNLYNWYQKPGKAPKLLIYDASNLETGVPFRFSGSGGTDFTTISSLPEDIAYYC QYDNLPTFGQGRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGSGQTAVTQEPSTVSPGGTIVTLT CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGGGGGSGGSRDWD DFVFGGTPVGGHHHHH
508.	CH19_8-F6xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCV ASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYLQNLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGLTVTVSSGGGGGGGGGGSDIQMTQSPSSLSASVGDRTITC RASQSISSYLNWYQKPGKAPKLLIYDASSLQSVPSRFSGSGGTFTLTSSLQAEDVAVYY CQYYSTPLTFGGGTVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGSGQTAVTQEPSTVSPGGTIV TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGGLHPANGGGGGSGGSRD WDFDVFGGGTPVGGHHHHH
509.	CH19_0-G9xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQGRSLRLSCAASGFTFRNYAMHWVRQA



	LH-156	PGKGLEWVAGISYSGTNKYYASSVKGRFTISRDN SKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGSGGGGGGSDIQMTQSPSSLSASVGDRTVITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVP SRFSGSGTEFTLTSSLQPEDIAYYC QQYDNLPLTFGGGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGLHPANGGGGGSGGSRD WDFVFGGGTPVGGHHHHH
510.	CH19_1-E11xI2C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGRSRLRLSCVASGFTFRNYAMHWVRQA PGKGLEWVAVISYSGNNKYYASSVKGRFTISRDN SKNTLFLQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGNYWGQGTLVTVSSGGGGSGGGGGGSDIQMTQSPSSLSASVGDRTVITC QASQDISNYLNWYQQKPGKAPKLLIYDASNLETGVP SRFSGSGTDFTFITSSLQPEDIAYYC QQYVNLPLTFGGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW RQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGTLVTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVT LTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQ EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGLHPANGGGGGSGGSRDW DFDVFGGGTPVGGHHHHH
511.	CH19_0-F5xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGRSRLRLSCAASGFTFSSYGMQWVRQA PGKGLEWVAIVYSGSNKYYASSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWGQGTTVTVSSGGGGSGGGGGGSDIQMTQSPSSLSASVGDRTVITCRA SQGISNYLAWYQQKPGKVPKLLIYAASLQSGVPSRFSGSGGTDFTLTSSLQPEDVATYYCQ KYN SAPLTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFTVGHFGLHPANGGGGGSGGSRDWDF DVFGGGTPVGGHHHHH
512.	CH19_1-E1xI2C6-LY-FcB- LH-156	QRFVTGHFGGLYPANGGGGSQVQLVESGGGVVQPGRSRLRLSCAASGFTFSSYGMHWVRQA PGKGLEWVAVISYSGSNKYYASSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCARDGY IFYRYGMDVWGQGTTVTVSSGGGGSGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDLA VYYCQ YGTSP LTFGGGKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLVTVSSGGGGSGGGGGGSGTQVVTQEPSTVSPGGTVITC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDE

		AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD VFGGGTPVGGHHHHH
513.	CH19_1-E6xI2C6-LY-FcB-LH-156	QRFVTGHFGGLYPANGGGGSQVLVESGGGVVQPGRSLRLSCAASGFTFSFGMHWVRQA PGKGLEWVAFIWYSGSNKYAYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYYYGMDVWGQGTIVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRAS QSVSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQ QYSSPFTFGPGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNLLKTEDTAVYYCV RHGNGNSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLT CGSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGGGGGSGGSRDWD DVFGGGTPVGGHHHHH
514.	CH19_2G6_302_VKGxI2C6-CH-FcB-LH	QRFCTGHFGGLHPCNCGGGGSQVLVESGGGVVQPGGSLRLSCAASGFTFSYGMHWVRQA PGKGLEWVAFIWYDGSNKYYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIYYGMDVWGQGTIVTVSSGGGGGGGGGGSSYELTQPPSVSPGQTASITCSG DRLGEKYSWYQQRPQQSPLLIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTCLTVLGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNLLKTEDTAVYY CVRHGNFNSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
515.	CH19_0-E11xI2C6-CH-FcB-LH	QRFCTGHFGGLHPCNCGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISRGYYWWSWRQ HPGKGLEWIGYIFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY GWFDPWQGGLTVTVSSGGGGGGGGGGSEIVLTQFPGTLSPGERATLSCRASQSVSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGS LTFGGGTCLLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNLLKTEDTAVYYCVRHGNF NSYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
516.	CH19_5-G4xI2C6-CH-FcB-LH	QRFCTGHFGGLHPCNCGGGGSQVLQESGPGLVKPSQTLSTCTVSGGSISRGYYWWSWRQ PGKGLEWIGYIFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVNSNY WFDPWQGGLTVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSY LAWYQQKPGQAPRLLIYGTNRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGS TFGGGTCLLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNLLKTEDTAVYYCVRHGNF SYISYWAYWQGGLTVTVSSGGGGGGGGGGSGGTIVVTQEPSTVSPGGTVTLTCGSSTGA

		VTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSQRFVTGHFGLHPANGHHHHH
517.	CH19_8-H6xI2C6-CH-FcB-LH	QRFC'TGHFGLHPCNCGGGGQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSPL TFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSQRFVTGHFGLHPANGHHHHH
518.	CH19_2-C11xI2C6-CH-FcB-LH	QRFC'TGHFGLHPCNCGGGGQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSPL TFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSQRFVTGHFGLHPANGHHHHH
519.	CH19_2-A10xI2C6-CH-FcB-LH	QRFC'TGHFGLHPCNCGGGGQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYSGTFYNPSLSRVTISVDTSKNQFSLKLSVTAADTAVYYCARDSSSRA LDYWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSYL AWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYDSSPRT FGQGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGLF WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSQRFVTGHFGLHPANGHHHHH
520.	CH19_1-D11xI2C6-CH-FcB-LH	QRFC'TGHFGLHPCNCGGGGQVQLQESGPGLVKPSQTLTLCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSPL TFGGGTKLEIKSGGGGSEVQLVESGGGLVQPGGSLKSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLTTCGSSTGA VTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYC

521.	CH19_9-F9xI2C6-CH-FeB-LH	VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH QRCTGHFGGLHPCNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTA VYVCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYVCQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYVCVRHGNFGN SYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
522.	CH19_1-H8xI2C6-CH-FeB-LH	QRCTGHFGGLHPCNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTA VYVCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYVCQYGSSTP TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYVCVRHGNFGN NSYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
523.	CH19_1-B12xI2C6-CH-FeB-LH	QRCTGHFGGLHPCNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTA VYVCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYVCQYGSSTP FGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYVCVRHGNFGNS YISYWAYWQGQTLTVTVSSGGGGGGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTGAV TSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH
524.	CH19_0-C4xI2C6-CH-FeB-LH	QRCTGHFGGLHPCNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYFYRGRTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTA VYVCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYVCQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTA VYVCVRHGNFGN SYISYWAYWQGQTLTVTVSSGGGGGGGGGSGGTQVTVTQEPSTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHH



525.	CH19_3-F2xI2C6-CH-FcB-LH	QRFC ^T GHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQ ^T LSLCTCTISGSSGGYYWSWIRQH PGKLEWIGYIFYSGR ^T YYNPSLKS ^R VTISV ^D TSKNQFSLK ^L TSV ^T AAD ^T AVYYCARVNSNYG WFD ^P WGQ ^T LVT ^V SSGGGGGGGGSEIVLTQSPG ^T LSLSPGERATLS ^C RASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD ^R FGSGSGTD ^F TLTISRLEPEDFAVYYCQYQSSPT FGGG ^T KVEIKSGGGSEVQLVESGGGLVQP ^G SLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARISKYNNYATYYADSVKDRFTISR ^D DSKNTAYLQMN ^N LKTEDTAVYYCVRHGNFGN SYISYWAYWGQ ^T LVT ^V SSGGGGGGGGGGSTVVTQEP ^S LTVSPGGT ^V TLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIG ^T GKFLAPGTPARFSGSL ^L GKAAAL ^T LSGVQPEDEAEYYC VLWYSNRWVFGGGT ^K LTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
526.	CH19_3-B10xI2C6-CH-FcB-LH	QRFC ^T GHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQ ^T LSLCTCTISGSSGGYYWSWIRQH PGKGLDWIGYIFYRGR ^T YYNPSLKS ^R VTISV ^D TSKNQFSLK ^L SSV ^T AAD ^T AVYYCARVNSNYG WFD ^P WGQ ^T LVT ^V SSGGGGGGGGGGSEIVLTQSPG ^T LSLSPGERATLS ^C RASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD ^R FGSGSGTD ^F TLTISRLEPEDFAVYYCQYQSSPL TFGGG ^T KVEIKSGGGSEVQLVESGGGLVQP ^G SLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARISKYNNYATYYADSVKDRFTISR ^D DSKNTAYLQMN ^N LKTEDTAVYYCVRHGNFG NSYISYWAYWGQ ^T LVT ^V SSGGGGGGGGGGSTVVTQEP ^S LTVSPGGT ^V TLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIG ^T GKFLAPGTPARFSGSL ^L GKAAAL ^T LSGVQPEDEAEYY CVLWYSNRWVFGGGT ^K LTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
527.	CH19_0-G4xI2C6-CH-FcB-LH	QRFC ^T GHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQ ^T LSLCTCTISGSSGGYYWSWIRQH PGKLEWIGYIYYRGR ^T YYNPSLKS ^R VTISV ^D TSKNQFSLK ^L SSV ^T AAD ^T AVYYCARVNSNYG WFD ^P WGQ ^T LVT ^V SSGGGGGGGGGGSEIVLTQSPG ^T LSLSPGERATLS ^C RASQSVSSSY LAWYQKPGQAPRLLIYGASTRATGPD ^R FGSGSGTD ^F TLTISRLEPEDFAVYYCQYQSSPS FGG ^T KVEIKSGGGSEVQLVESGGGLVQP ^G SLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARISKYNNYATYYADSVKDRFTISR ^D DSKNTAYLQMN ^N LKTEDTAVYYCVRHGNFGN SYISYWAYWGQ ^T LVT ^V SSGGGGGGGGGGSTVVTQEP ^S LTVSPGGT ^V TLTCGSSTGA VTSGNYPNWVQKPGQAPRGLIG ^T GKFLAPGTPARFSGSL ^L GKAAAL ^T LSGVQPEDEAEYYC VLWYSNRWVFGGGT ^K LTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
528.	CH19_0-H5xI2C6-CH-FcB-LH	QRFC ^T GHFGGLHPCNCGGGGSQVQLQESGPGLVRPSQ ^T LSLCTCTISGSSGGYYWSWIRQH PGKLEWIGYIYYRGR ^T YYNPSLKS ^R VTISV ^D TSKNQFSLK ^L SSV ^T AAD ^T AVYYCARVNSNYG WFD ^P WGQ ^T LVT ^V SSGGGGGGGGGGSEIVLTQSPG ^T LSLSPGERATLS ^C RASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD ^R FGSGSGTD ^F TLTISRLEPEDFAVYYCQYQSDTSPL TFGGG ^T KVEIKSGGGSEVQLVESGGGLVQP ^G SLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARISKYNNYATYYADSVKDRFTISR ^D DSKNTAYLQMN ^N LKTEDTAVYYCVRHGNFG NSYISYWAYWGQ ^T LVT ^V SSGGGGGGGGGGSTVVTQEP ^S LTVSPGGT ^V TLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIG ^T GKFLAPGTPARFSGSL ^L GKAAAL ^T LSGVQPEDEAEYY CVLWYSNRWVFGGGT ^K LTVLGGGGSQRFVTGHFGGLHPANGHHHHHH
529.	CH19_0-B8xI2C6-CH-FcB-LH	QRFC ^T GHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQ ^T LSLCTCTISGSSGGYYWSWIRQH

	LH	PGKLEWIGYIYRGRTYYNPSLKSRTISVDTSKNQFSLKSSVT AADTAVYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGSSTP FGGGTKVEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGQT VVTQEPSTVSPGGT VTLTCSSTGA VTSNGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
530.	CH19_2-D9xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGSSSGGYYSWIRQH PGKLEWIGYIYRGRTYYNPSLKSRTISVDTSKNQFSLKSSVT AADTAVYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGSSTP TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQT VVTQEPSTVSPGGT VTLTCSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
531.	CH19_8-H7xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGSSSGGYYSWVVRQ HPGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKSSVT AADTAVYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGSSTP TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQT VVTQEPSTVSPGGT VTLTCSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
532.	CH19_9-C2xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGSSSGGYYSWIRQH PGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKSSVT AADTAVYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYCCQYGSSTP TFGGGTKEIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYCVRHGNFG NSYISYWAYWGQGTLVTVSSGGGGGGGGGGGQT VVTQEPSTVSPGGT VTLTCSSTG AVTSGNYPNWVQQKPGQAPRLIGGTKFLAPGTPARFSGSLGGKAAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLHPANGHHHHH
533.	CH19_3-D5xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGSSSGGYYSWIRQH PGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKSSVT AADTAVYCARVYSNYG



		WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSPL TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVTVSSGGGGGGGGGGGSGTQTVVTQEPSTLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLGSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHHH
534.	CH19_1-G11xI2C6-CH- FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTCTVSGGSVSSGGYYVWSWIRQ PPKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNY GWFDPWGQGTLLTVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSS YLAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP LTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVTVSSGGGGGGGGGGGSGTQTVVTQEPSTLTVSPGGTVTLTCGSST GAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLGSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHHH
535.	CH19_1-H11xI2C6-CH- FcB-LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTCTVSGGSISSGGYYVWSWIRQH PGKGLEWIGYIYRGRYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLLTVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP FGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKGLE WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGTLLTVTVSSGGGGGGGGGGGSGTQTVVTQEPSTLTVSPGGTVTLTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLGSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHHH
536.	CH19_9-F3xI2C6-CH-FcB- LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTCTVSGGSISSGGYYVWSWIRQH PGKGLEWIGYIFYSGKTYYNPSLKSRTISVDTSKNQFSLKLSVTAADTAVYYCARVYSNYG WFDPWGQGTLLTVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFTLTISRLEPEDFAVYYCQQYGSSTP FGQGTREIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKGLE WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGTLLTVTVSSGGGGGGGGGGGSGTQTVVTQEPSTLTVSPGGTVTLTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLLGGKAALTLGSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLHPANGHHHHHH
537.	CH19_2-G6xI2C6-CH-FcB- LH	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTCTVSGGSISSYYVWSWIRQPPG KGLEWIGYIYSGSTNYNPSLKSRTISIDTSKNQFSLKLSVTAADTAVYYCARDQRRIVAA GGYYYGMDVWGQGTITVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQ

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		ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNTAYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGSGGSGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGLTVLGGGGSGRQFVTGHFGLHPANGHHHHH
542.	CH19_4-H8xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWINPYTGKTNYAQKLQGRVTMTTDTSTAYMELRSLRSDDTAVYYCARGSG GFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQPLSLVTPGEPASISCRSSQSLLSHV GYNLDWYLYQKPGQSPQLLYLGSYRASGVPDFRSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNTAYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGLTVLGGGGSGRQFVTGHFGLHPANGHHHHH
543.	CH19_2-E4xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQAP GGGLEWMGWINPYTGNRNYAQKVQDRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGSG GFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQSPSLPVTLGQPAISICRSSQSLLSHV GYNLDWYLYQKPGQSPQLLYLGSNRASGVPDFRSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APKGLEWVARIRSKYNNTAYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGLTVLGGGGSGRQFVTGHFGLHPANGHHHHH
544.	CH19_6-B8xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWINPYTGKTNYAQKLQDRVTMTTDTSTNTAYMELRSLRSDDTAVYYCARGS GGFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQPLSLPVTGEPASICRSSQSLLSHS VGYNLDWYLYQKPGQSPQLLYLGSNRASGVPDFRSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPKGLEWVARIRSKYNNTAYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGGSGTQVVTQEPSTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGKKAALTLSGVQPED EAYYCVLWYSNRWVFGGGLTVLGGGGSGRQFVTGHFGLHPANGHHHHH
545.	CH19_0-B4xI2C6-CH-FcB-LH	QRCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGGLEWMGWINPYTGKTNYAQKLQGRVTMATDTSTSTAYMELRSLRSDDTAVYYCARGS GGFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQSPSLPVTGEPASICRSSQSLLSHS VGYNLDWYLYQKPGQSPQLLYLGSNRASGVPDFRSGSGGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR



550.	CH19_6-A7xI2C6-CH-FcB-LH	HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFTVGHFGGLHPANGHHHHHH QRFTGHFGGLHPCNCGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTTYYGISWVRQA GQGLEWMGWNPYTGKTNYAQKVQGRVTMTDTSTSTAYMELRNLRSDDTA VYYCARGSG GFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQPLSLSVTPGQPASISCRSSQSLLHSV GYNLYDWYLQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFTVGHFGGLHPANGHHHHHH QRFTGHFGGLHPCNCGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKVQGRVTMTDTSTSTAYMELRNLRSDDTA VYYCARGSG GFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQPLSLSVTPGQPASISCRSSQSLLHS VGYNYLDWYLQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLSGVQPEDE EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFTVGHFGGLHPANGHHHHHH QRFTGHFGGLHPCNCGGGGSQVLVQSGAEVKKPGASVKVSCKASGYFTTYYGISWVRQA PGQGLEWMGWNPYTGKTNYAQKLQGRVTMTDTSTSTAYMELRNLRSDDTA VYYCARGSG GFDYWGGQGLTVTVSSGGGGGGGGGGSDIVMTQPLSLSVTPGQPASISCRSSQSLLHSV GYNLYDWYLQKPGQSPQLLIYLGSNRASGVPDRFSGSGGTDFTLKISRVEAEDVGYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVRQ APGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLTC GSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFTVGHFGGLHPANGHHHHHH QRFTGHFGGLHPCNCGGGGSQVLVESGGGVVQPGRSLRLSCAASGFTFRNYAMHWWVRQA PGKGLEWVARISYSGNNKYAYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGLTVTVSSGGGGGGGGGGSDIOMTQSPSSLSASVGDRVTTC QASQDISNLYNWYQKPGKAPKLLIYDASNLETGVPSPRFSGSGTDFTFITSSLOPEDIATYC QQYDNLPTFGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWWVR QAPGKGLEWVARIRSKYNNYATYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGLTVTVSSGGGGGGGGGGSGTQVVTQEPSLTVSPGGTVTLT
551.	CH19_6-G8xI2C6-CH-FcB-LH	
552.	CH19_6-F9xI2C6-CH-FcB-LH	
553.	CH19_0-C11xI2C6-CH-FcB-LH	



558.	CH19_1-E1xI2C6-CH-FcB-LH	EA EY Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F V T G H F G G L H P A N G H H H H H H Q R F C T G H F G G L H P C N G G G S Q V Q L V E S G G V V Q P G R S L R L S C A A S G F T F S S Y G M H W V R Q A P G K G L E W V A V I S Y S G S N K Y Y A S S V K G R F T I S R D N S K N T L Y L Q M N S L R A E D T A V Y Y C A R D G Y P I F Y R Y Y G M D V W G Q G T T V T V S S G G G S G G G G G S E I V L T Q S P G T L S L S P G E R A T L S C R A S Q S V S S Y L A W Y Q Q K P G Q A P R L L Y G A S S R A T G P D R F S G S G S G T D F T L T I S R L E P E D L A V Y Y C Q Q Y G T S P L T F G G T K L E I K S G G G S E V Q L V E S G G L V Q P G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F V T G H F G G L H P A N G H H H H H H
559.	CH19_1-E6xI2C6-CH-FcB-LH	Q R F C T G H F G G L H P C N G G G S Q V Q L V E S G G V V Q P G R S L R L S C A A S G F T F S S F G M H W V R Q A P G K G L E W V A F I W Y S G S N K Y Y A S S V K G R V T I S R D N S K N T L Y L Q M N S L R A E D T A V Y Y C A R D G Y P I F Y Y Y G M D V W G Q G T T V T V S S G G G S G G G G G S E I V L T Q S P G T L S L S P G E R A T L S C R A S Q S V S S Y L A W Y Q Q K P G Q A P R L L Y G A S S R A T G P D R F S G S G S G T D F T L T I S R L E P E D A V Y Y C Q Q Y G S S P T F G P G T R L E I K S G G G S E V Q L V E S G G L V Q P G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F V T G H F G G L H P A N G H H H H H H
560.	CH19_2G6_302_VK GxI2C6-CH-FcB-LY	Q R F C T G H F G G L H P C N G G G S Q V Q L V E S G G V V Q P G S L R L S C A A S G F T F S S Y G M H W V R Q A P G K G L E W V A F I W Y D G S N K Y Y A D S V K G R F T I S R D N S K N T L Y L Q M N S L R A E D T A V Y Y C A R R A G I I G T I G Y Y G M D V W G Q G T T V T V S S G G G S G G G G G S S Y E L T Q P P S V S V S P G Q T A S I T C S G D R L G E K Y T S W Y Q Q R P G Q S P L L V I Y Q D T K R P S G I P E R F S G S N S G N T A T L T I S G T Q A M D E A D Y Y C Q A W E S T V V F G G G T K L T V L S G G G S E V Q L V E S G G L V Q P G G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F V T G H F G G L Y P A N G H H H H H H
561.	CH19_0-E11xI2C6-CH-FcB-LY	Q R F C T G H F G G L H P C N G G G S Q V Q L Q E S G P L V K P S Q T L S L T C T V S G G S I S R G Y Y W S W I R Q H P K G L E W I G Y I F Y R G R T Y Y N P S L K S R V T I S V D T S K N Q F S L K L S S V T A A D T A V Y Y C A R V N S N Y G W F D P W Q G T L V T V S S G G G S G G G G G S E I V L T Q P P G T L S L S P G E R A T L S C R A S Q S V S S S Y L A W Y Q Q K P G Q A P R L L Y G A S S R A T G P D R F S G S G S G T D F T L T I S R L E P E D A V Y Y C Q Q Y G S S P L T F G G G T K L E I K S G G G S E V Q L V E S G G L V Q P G S L K L S C A A S G F T F N K Y A M N W V R Q A P G K G L E W V A R I R S K Y N N Y A T Y Y A D S V K D R F T I S R D D S K N T A Y L Q M N N L K T E D T A V Y Y C V R H G N F G N S Y I S Y W A Y W G Q G T L V T V S S G G G S G G G G S Q T V V T Q E P S L T V S P G G T V T L T C G S S T G A V T S G N Y P N W V Q Q K P G Q A P R G L I G G T K F L A P G T P A R F S G S L L G G K A A L T L S G V Q P E D E A E Y Y C V L W Y S N R W V F G G G T K L T V L G G G S Q R F V T G H F G G L Y P A N G H H H H H H

562.	CH19_5-G4xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVTAADTA VYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGTSNRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSPL TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTIVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLYPANGHHHHH
563.	CH19_8-H6xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVTAADTA VYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSPL TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTIVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLYPANGHHHHH
564.	CH19_2-C11xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIFYRGRTYNPSLKSRTVISVDTSKNQFSLKLSVTAADTA VYYCARVYSNYG WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYQYSSPL TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTIVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLYPANGHHHHH
565.	CH19_2-A10xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYSGTFTYNPSLRSRTVISVDTSKNQFSLKLSVTAADTA VYYCARDSSSRA LDYWGGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLSPGERATLSRASQSVSSSYL AWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQYDSSPRT FGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWRVQAPGKGL WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGTLVTVSSGGGGGGGGGGGSGTQVTVTQEPSTVSPGGTIVTLTCGSSTGAV TSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGGSQRFTGHFGGLYPANGHHHHH
566.	CH19_1-D11xI2C6-CH-	QRCTGHFGGLHPCNCGGGGSQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH



	FcB-LY	PGKLEWIGYIYRGRYYNP SLKSRVTISVDT SKNQFSLKLSSTAA DTAVYYCARVYSNYG WFD PWGQGT LVTVSSGGGGGGGGGSEIVLTQSPGTLSLSPGERATLS CRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD RFSGSGTDFTLTISRLEPDAVYYCQYQYSSPL TFGGGT KLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARRSKYN NYATYYADSVKDRFTISRDDSKNTAYLQMN NLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGT LVTVSSGGGGGGGGGSGSQTVVTQEP SLTVSPGGTVTLTCGSSTGA VTS GNYPNWVQKPGQAPRGLIGG TKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
567.	CH19_9-F9xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNP SLKSRVTISVDT SKNQFSLKLSSTAA DTAVYYCARVYSNYG WFD PWGQGT LVTVSSGGGGGGGGGSEIVLTQSPGTLSLSPGERATLS CRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD RFSGSGTDFTLTISRLEPDAVYYCQYQYSSPT FGGGT KVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL EWVARRSKYN NYATYYADSVKDRFTISRDDSKNTAYLQMN NLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGT LVTVSSGGGGGGGGGSGSQTVVTQEP SLTVSPGGTVTLTCGSSTGA VTS GNYPNWVQKPGQAPRGLIGG TKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
568.	CH19_1-H8xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNP SLKSRVTISVDT SKNQFSLKLSSTAA DTAVYYCARVYSNYG WFD PWGQGT LVTVSSGGGGGGGGGSEIVLTQSPGTLSLSPGERATLS CRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD RFSGSGTDFTLTISRLEPDAVYYCQYQYSSPL TFGGGT KVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL LEWVARRSKYN NYATYYADSVKDRFTISRDDSKNTAYLQMN NLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGT LVTVSSGGGGGGGGGSGSQTVVTQEP SLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQKPGQAPRGLIGG TKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
569.	CH19_1-B12xI2C6-CH- FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNP SLKSRVTISVDT SKNQFSLKLSSTAA DTAVYYCARVYSNYG WFD PWGQGT LVTVSSGGGGGGGGGSEIVLTQSPGTLSLSPGERATLS CRASQSVSSSY LAWYQKPGQAPRLLIYGASSRATGPD RFSGSGTDFTLTISRLEPDAVYYCQYQYSSPT FGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGL WVARRSKYN NYATYYADSVKDRFTISRDDSKNTAYLQMN NLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGT LVTVSSGGGGGGGGGSGSQTVVTQEP SLTVSPGGTVTLTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGG TKFLAPGTPARFSGSLLGKKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
570.	CH19_0-C4xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKLEWIGYIYRGRYYNP SLKSRVTISVDT SKNQFSLKLSSTAA DTAVYYCARVYSNYG

		WFDPWGQGTLVTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTVSPGGTIVLTTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
571.	CH19_3-F2xI2C6-CH-FeB- LY	QRFGTHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTSLCTISGSSGGYYWSWIRQH PGKLEWIGYIFYSGRTYYNPSLKSRTISVDTSKNQFSLKLTSTVAADTAVYYCARVNSNYG WFDPWGQGTLLTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTVSPGGTIVLTTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
572.	CH19_3-B10xI2C6-CH- FeB-LY	QRFGTHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTSLCTVSGSSGGYYWSWIRQH PGKGLDWIGYIFYRGRITYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTAVYYCARVNSNYG WFDPWGQGTLLTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTVSPGGTIVLTTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
573.	CH19_0-G4xI2C6-CH-FeB- LY	QRFGTHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTSLCTVSGSSGGYYWSWIRQH PGKLEWIGYIFYRGRITYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTAVYYCARVNSNYG WFDPWGQGTLLTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLIYGASTRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAAAGFTFNKYAMNWVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSTVSPGGTIVLTTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGKAALTLSGVQPEDEAEYYC VLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
574.	CH19_0-H5xI2C6-CH-FeB- LY	QRFGTHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLTSLCTVSGSSGGYYWSWIRQH PGKLEWIGYIFYRGRITYNPSLKSRTISVDTSKNQFSLKLTSSVTAADTAVYYCARVNSNYG WFDPWGQGTLLTVSSGGGGGGGGGGSEIVLTQSPGTLTSLSPGERATLSCRASQSVSSSY



		LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYDTSPL TFGGGTKEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
575.	CH19_0-B8xI2C6-CH-FcB- LY	QRFGTGHFGGLHPCNNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIYRGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPPWGQGLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKGL EWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGN SYISYWAYWGQGLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTGA VTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY VLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
576.	CH19_2-D9xI2C6-CH-FcB- LY	QRFGTGHFGGLHPCNNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIYRGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPPWGQGLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
577.	CH19_8-H7xI2C6-CH-FcB- LY	QRFGTGHFGGLHPCNNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWVRQ HPGKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPPWGQGLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP TFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGLVTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
578.	CH19_9-C2xI2C6-CH-FcB- LY	QRFGTGHFGGLHPCNNGGGGQVQLQESGPGLVKPSQTLSTCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIFYSGRTYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPPWGQGLVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP

		TFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHHH
579.	CH19_3-D5xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIFYSGRTYYNPSLKSRSVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPWGQGTLLTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP TFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKG LEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFG NSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTG AVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYY CVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHHH
580.	CH19_1-G11xI2C6-CH- FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQ PPGKGLEWIGYIYRGRYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNY GWFDPWGQGTLLTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSS YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP LTFGGGKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGK GLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNF GNSYISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSST GAVTSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEY YCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHHH
581.	CH19_1-H11xI2C6-CH- FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIYRGRYYNPSLKSRTVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPWGQGTLLTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGQGRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLE WVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWGQGTLLTVSSGGGGGGGGGGGQTVVVTQEPSLTVSPGGTVTLTCGSSTGAV TSGNYPNWVQQKPGQAPRGLIGGTFKFLAPGTPARFSGSLGKKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHHH
582.	CH19_9-F3xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGPGLVKPSQTLSTLCTVSGGSISSGGYYWSWIRQH PGKGLEWIGYIFYSGKTYNPSLKSRSVISVDTSKNQFSLKLSSTAAADTAVYYCARVYSNYG WFDPWGQGTLLTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQSVSSSY LAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQQYGSSTP FGQGRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLE



		WV ARSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTTLTTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLYPANGHHHHH
583.	CH19_2-G6xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGGLVKPSETLSLCTVSGGSISSYYWSWIRQPPG KGLEWIGYIYSGSTNYPNPSLKSRYTMSIDTSKNQFSLKLISVTAADTAVYYCARDQRRIVAA GGYYGMDVWQGQTTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQKPGQAPRLLIYGASTRATGTPARFSGSGGTDFTLTISRLEPEDFAVYYCQQ YGSPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSIISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTTLTTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLYPANGHHHHH
584.	CH19_2-H7xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLQESGGLVKPSQTLSTCTVSGGSISSNDYYWSWIRQH PGKLEWIGYIYSGSTFYNPSLKSRAISVDTSKNQFSLKLTSVTAADTAVYYCARGVYRTG AFDIWQGQTMVTVSSGGGGGGGGGGGSDIQMTQSPSSLASVGDRVTITCRASQSISSYL NWYQKPGKAPKSLIYAASSLQSGVPSKFSGSGGTDFTLTISLQPEDATYYCQQSYSTPQAF GGGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQAPGKGLE WV ARSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVRHGNFGNS YISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTTLTTCGSSTGAV TSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDEAEYYCV LWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLYPANGHHHHH
585.	CH19_5-B3xI2C6-CH-FcB- LY	QRCTGHFGGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYGGETNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWQGQTLVTVSSGGGGGGGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLSHN GYNLDWYLYQKPGQSPQLLYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSIISYWAYWQGQTLVTVSSGGGGGGGGGGGSGTQVVTQEPSTLTVSPGGTTLTTC GSSTGAVTSGNYPNWVQKPGQAPRGLIGGTFKFLAPGTPARFSGSLLGGKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRFVTGHFGGLYPANGHHHHH
586.	CH19_5-E10xI2C6-CH- FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVSCKASGYTFTYYGISWVRQA PGQLEWMGWINPYSGATNYAQKLQGRVTMTTDTSTSTAYMELRSLRSDDTAVYYCARGSG GFDYWQGQTLVTVSSGGGGGGGGGGGSDIVMTQTPLSLSVTPGEPASISCRSSQSLLSHN GYNLDWYLYQKPGQSPQLLYLGSYRASGVDPDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR

		CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFVTGHFGGLYPANGHHHHH
591.	CH19_0-B4xI2C6-CH-FcB- LY	QRFCCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQGLEWMGWNPYTGTNTYAKLQGRVTMTDTSTAYMELSLRSDDTAVYYCARGS GGFDYWGGGTLTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHS VGYNYLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGGTLTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFVTGHFGGLYPANGHHHHH
592.	CH19_9-F1xI2C6-CH-FcB- LY	QRFCCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQGLEWMGWNPYTGTNRNYAQKVDQRTMTDTSTNTAYMELSLRSDDTAVYYCARGS GGFDYWGGGTLTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHS VGYNYLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGGTLTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFVTGHFGGLYPANGHHHHH
593.	CH19_4-A7xI2C6-CH-FcB- LY	QRFCCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTTYGISWVRQA PGQGLEWMGWNPYTGTNTYAKLQGRVTMTDTSTAYMELSLRSDDTAVYYCARGSG GFDYWGGGTLTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHSV GYNYLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGGGTLTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGSGQRFVTGHFGGLYPANGHHHHH
594.	CH19_6-E12xI2C6-CH- FcB-LY	QRFCCTGHFGGLHPCNCGGGGSGVQLVQSGAEVKKPGASVKVSCKASGYTFTSYGITWVRQA PGQGLEWMGWNPYTGTNRNYAQKVGGRVTMTDTSTAYMELSLRSDDTAVYYCARGS GGFDYWGGGTLTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPAISCRSSQSLHS VGYNYLDWYLQKPGQSPQLLIYLGSNRASGVDRFSGSGSGTDFTLKISRVEAEDVGVYYCM QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGGGTLTVSSGGGGGGGGGSGTQVVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKKAALTLSGVQPED

595.	CH19_6-C12xI2C6-CH-FeB-LY	EAYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH QRCTGHFGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGISWVRQAP GQGLEWMGWNPYTGNRNYAQKQGRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGSG GFDYWGGTLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GYNLDWYLQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLGSGVQPEDE EAYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
596.	CH19_6-A7xI2C6-CH-FeB-LY	QRCTGHFGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGISWVRQAP GQGLEWMGWNPYTGNRNYAQKQGRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGSG GFDYWGGTLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GYNLDWYLQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLGSGVQPEDE EAYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
597.	CH19_6-G8xI2C6-CH-FeB-LY	QRCTGHFGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGISWVRQAP PGQGLEWMGWNPYTGKNTYAKVQGRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGSG GGFDYWGGTLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV VGYNYLDWYLQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTFTLKISRVEAEDVGVYYCMQ QALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ QAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR RHGNFGNSYISYWAYWGQGTLLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV CGSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLGSGVQPEDE EAYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH
598.	CH19_6-F9xI2C6-CH-FeB-LY	QRCTGHFGLHPCNCGGGGQVQLVQSGAEVKKPGASVKVCKASGYTFTSYGISWVRQAP PGQGLEWMGWNPYTGKNTYAKVQGRVTMTTDTSTNTAYMELSLRSDDTAVYYCARGSG GFDYWGGTLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GYNLDWYLQKPGQSPQLLIYLGSRASGVDPDRFSGSGGTFTLKISRVEAEDVGVYYCMQ ALQTPFTFGPGTKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWGQGTLLTVTVSSGGGGGGGGSDIVMTQSPLSLPTPGEPASISCRSSQSLLSHV GSSTGAVTSGNYPNWVQKPGQAPRGLIGTKFLAPGTPARFSGSLGKGKAAALTLGSGVQPEDE EAYYCVLWYSNRWVFGGGTKLTVLGGGSGRQFVTGHFGGLYPANGHHHHH



599.	CH19_0-C11xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVESGGGVVQPRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGSDIOMTQSPSSLASVGDRVTITC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTDFTTISSLQPEDIATYYC QQYDNLPTFGGQTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGSGGTQVTVTQEPSTVSPGGTTLT CGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
600.	CH19_8-F6xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVESGGGVVQPRSLRLSCV ASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGSDIOMTQSPSSLASVGDRVTITC RASQISSYLNWYQQKPGKAPKLLIYDASSLQSGVPSRFSGSGGTFTLTISSLQAEDEVAVYY CQQYSTPLTFGGGTVKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGSGGTQVTVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
601.	CH19_0-G9xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVESGGGVVQPRSLRLSCAASGFTFRNYAMHWVRQA PGKLEWVAGISYSGTNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGDYWGQGTLVTVSSGGGGGGGGSDIOMTQSPSSLASVGDRVTITC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTFTLTISSLQPEDIATYYC QQYDNLPLTFGGGTVKVDIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGSGGTQVTVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
602.	CH19_1-E11xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVESGGGVVQPRSLRLSCV ASGFTFRNYAMHWVRQA PGKLEWVAVISYSGNNKYASSVKGRFTISRDNKNTLYQLNSLRAEDTAVYYCAREFY DSTGYDYSTPGNYWGQGTLVTVSSGGGGGGGGSDIOMTQSPSSLASVGDRVTITC QASQDISNYLWYQQKPGKAPKLLIYDASNLETGVPFRFSGSGGTDFTTISSLQPEDIATYYC QQYVNLPLTFGGGTVKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYC VRHGNFGNSYISYWAYWGQGTLVTVSSGGGGGGGGSGGTQVTVTQEPSTVSPGGTVT LTCGSSTGAVTSGNYPNWVQQKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLSGVQ EDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
603.	CH19_0-F5xI2C6-CH-FcB-LY	QRCTGHFGGLHPCNCGGGGQVQLVESGGGVVQPRSLRLSCAASGFTSSYGMQWVRQA

	LY	PGKLEWVAVIWYSGSNKYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGY PIFYRYGMDVWVGQGTTVTVSSGGGGGGGGSDIQMTQSPSSLASVGDRTVITICRA SQGISNYLAWYQQKPGKVPKLLIYAASLTQSGVPSRFSGSGTDFTLTISLQPEDVATYYCQ KYNSAPLTFGGGTKVEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVR QAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCV RHGNFGNSYISYWAYWQGTLTVTVSSGGGGGGGGGGGQTVVTQEPSTVSPGGTVTLT CGSSTGAVTSGNYPNWVQOKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPED EAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
604.	CH19_1-E1xI2C6-CH-FeB- LY	QRFCTGHFGGLHPCNCGGGGQVQLVESGGGVVQGRSLRLSCAASGFTFSSYGMHWVRQA PGKLEWVAVISYSGSNKYASSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCARDGYP IFYRYGMDVWVGQGTTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDLAVYYCQ YGTSPFTFGGTKLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWQGTLTVTVSSGGGGGGGGGGGQTVVTQEPSTVSPGGTVTLT GSSTGAVTSGNYPNWVQOKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
605.	CH19_1-E6xI2C6-CH-FeB- LY	QRFCTGHFGGLHPCNCGGGGQVQLVESGGGVVQGRSLRLSCAASGFTFSSYGMHWVRQAP GKLEWVAFIWYSGSNKYASSVKGRVTISRDNKNTLYLQMNSLRAEDTAVYYCARDGYPI FYRYGMDVWVGQGTTVTVSSGGGGGGGGGGGSEIVLTQSPGTLSPGERATLSCRASQ SVSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFVYYCQ YGSSPFTFGGTRLEIKSGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNWVRQ APGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYYCVR HGNFGNSYISYWAYWQGTLTVTVSSGGGGGGGGGGGQTVVTQEPSTVSPGGTVTLT GSSTGAVTSGNYPNWVQOKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQPEDE AEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFVTGHFGGLYPANGHHHHH
606.	CH19_2G6_302xI2C6-LH- FeB-CH-156	QRFVTGHFGGLHPANGGGGQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQA PGKLEWVAFIWYDGSNKYYADSVKDRFTISRDNKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWVGQGTTVTVSSGGGGGGGGGGGSSYELTQPPSVVSPGQTASITCSG DRLGEKYTSWYQQRPQSPLLVIYQDTRKPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAYWQGTLTVTVSSGGGGGGGGGGGQTVVTQEPSTVSPGGTV TLTCGSSTGAVTSGNYPNWVQOKPGQAPRGLIGTKFLAPGTPARFSGSLGGAALTLGVPQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGSQRFCTGHFGGLHPCNCGGGGSGSRD WDFDVFGGGTPVGHHHHH
607.	CH19_2G6_302xI2C6-LH-	QRFVTGHFGGLHPANGGGGQVQLVESGGGVVQPGGSLRLSCAASGFTFSSYGMHWVRQA



	FcB-LH-156	PGKLEWVAFTWYDGSNKYYADSVKDRFTISRDNSKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWVGQGTTVTVSSGGGGGGGGSSYELTPQPSVSVSPGQTASITCSG DRLGEKYTSWYQQRPGQSPLLVIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAWYGQGTLVTVSSGGGGGGGGSSYELTPQPSVSVSPGQTASITCSG TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKGKAAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRQRFVTGHFGGLHPANGGGGGGGGSRD WDFDVFGGGTPVGGHHHHH
608.	CH19_2G6_302x12C6-LY- FcB-LH-156	QRFVTGHFGGLYPANGGGGQQQLVESGGGVVQPGGSLRLSCAASGFTSSYGMHWVRQA PGKLEWVAFTWYDGSNKYYADSVKDRFTISRDNSKNTLYLQMNSLRAEDTAVYYCARRAG IIGTIGYYGMDVWVGQGTTVTVSSGGGGGGGGSSYELTPQPSVSVSPGQTASITCSG DRLGEKYTSWYQQRPGQSPLLVIYQDTKRPSGIPERFSGNSGNTATLTISGTQAMDEADYYC QAWESSTVVFGGGTKLTVLSGGGGSEVQLVESGGGLVQPGGSLKLSCAASGFTFNKYAMNW VRQAPGKGLEWVARIRSKYNNYATYYADSVKDRFTISRDDSKNTAYLQMNNLKTEDTAVYY CVRHGNFGNSYISYWAWYGQGTLVTVSSGGGGGGGGSSYELTPQPSVSVSPGQTASITCSG TLTCGSSTGAVTSGNYPNWVQKPGQAPRGLIGGTKFLAPGTPARFSGSLGKGKAAALTLSGVQ PEDEAEYYCVLWYSNRWVFGGGTKLTVLGGGGGSRQRFVTGHFGGLHPANGGGGGGGGSRD WDFDVFGGGTPVGGHHHHH
609.	白蛋白結合肽	RDWDFDVFGGGTPVGG
610.	人類CD3ε細胞外結構域	QDGENEEMGGITQTPYKVSISGTTVILTCPQYPGSEILWQHNDKNIGGDEDDKNIGSDEDHLSLK EISELEQSGYYVCYPRGSKPEDANFYLRLARVCENCMEMD
611.	人類鈣黏素19	MNCYLLRLFRMLGIPLLWPCLGATENSQTKKVKQPVRSHLRVKRGVWVNQFFVPEEMNTTSH HIGQLRSDLDNGNNSFYKLLGAGAGSTFIDERTGDIYAIQKLDREERSLYILRAQVIDIATGR AVEPESEFVIKVSNDINDNEPKFLDEPYEAVPEMSPEGLVIQVITASDADDPSSGNNARLLYSLL QQQPYFSVEPTTGVIRISSKMDRELQDEYWVIIQAKDMIGQPGALSGTTSVLKLSDVNDNKPFI KESLYRLTVSESAPTGTSGTIMAYDNDIGENAEMDYSIEEDDSQTFDIITNHETQEGVILKKKV DFEHQNHYGIRAKVKNHHVPEOLMKYHTEASTTFIKIQVEDVDEPPLFLPYVYVFEVFEETPQ GSFVGVVSAITDPDNRKSPIRYSITRSKVFNNNDNGTITTSNSLDREISAWYNLSITATEKYNIEQI SSPLVYVQVLNINDHAPEFSQYYETVVCENAGSGVVIQVITASVDRDESIEEHHFYFNLSVEDTNN SSFTIHDNQDNTAVILTNRTGFNLQEEPVFYISILIADNGPSLTSTNTLTIHVCDGDSGSTQTCQ YQELVLSMGFKTEVIAILICIMIIFGFIFLTLGLKQRRKQILFPEKSEDFRENIFQYDDEGGGEED TEAFDIAELRSSTMREKTRKTTSAEIRSLYRQSLQVGPDSAFRKFLEKLEEANTDPCAPPFD SLQTYAFEGTGLAGSLSSLESAVSDQDESVDYLNELGPRFKRLACMFGSAVQSN
612.	獼猴鈣黏素-19 食蟹獼猴	MNCYLLLPFMLGIPLLWPCLGATENSQTKKVVQPVGSHLRVKRGVWVNQFFVPEEMNTTSH HVGRLRSDLDNGNNSFYKLLGAGAGSTFIDERTGDIYAEKLDREERSLYILRAQVIDITGR AVEPESEFVIKVSNDINDNEPKFLDEPYEAVPEMSPEGLVIQVITASDADDPSSGNNARLLYSLL

		QQQPYFSVEPTTGVIRISSKMDRELQDEYWVIIQAKDMIGQPGALSGTTSVLKLSDVNDNKPIF KESLYRLTVSESAPTGTSGITIMAYDNDIGENAEMDY SIEEDDSQTFDIITNHETQEGIVILKKKV NFEHQNHYGIRAKVKNHHVDEQLMKYHTEASTTFIKIQVEDVDEPPLFLLPYYIFEFEETPQGS FVGVSATDPDNRKSPIRYSITRSKVFNDNDNGTITTTNSLDREISAWYNLSITATEKYNIEQISSI PVYVQVLNINDHAPEFSQYYESYVCENAGSGQVIQTISAVDRDESIEHHFYFNLSVEDTNSSS FTIIDNQDNTAVILTNRTGFNLQEEPIFYISILIADNGPSLTSTNTLTHVCDCCDDSGSTQCQYQ ELMLSMGFKTEVILAILICIMVIFGFIFLTLGLKQRRKQILFPEKSEDFRENIFRYDDDEGGGEEDTE AFDVAAALRSSSTMREKTRKTTSAEIRSLYRQSLQVGPDSAIKFKFILEKLEEADTDPCAPPFDS LQTYAFEGTGSAGSLSSLESAVSDQDESVDYLNELGPRFKRLACMFGSAVQSN
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SEQ ID NO	名稱	形式	序列
613.	CD33_E11xI2C6-LFcBY	VH CDR1	NYGMN
614.	CD33_E11xI2C6-LFcBY	VH CDR2	WINTYTGEPTYADKFQG
615.	CD33_E11xI2C6-LFcBY	VH CDR3	WSWSDBGYVYFDY
616.	CD33_E11xI2C6-LFcBY	VL CDR1	KSSQSVLDSSTKNKNSLA
617.	CD33_E11xI2C6-LFcBY	VL CDR2	WASTRES
618.	CD33_E11xI2C6-LFcBY	VL CDR3	QQSAHFPIT
619.	CD33_E11xI2C6-LFcBY	VH	QVQLVQSGAEVKKPGESVKVCKASGYTFTNYGMNWKQAPQGQLEWMGWINTYTGEPT YADKFQGRVTMTTDTSTSTAYMEIRNLGGDDTA VYYCARWSWSDGYVYFDYWGGQTSV TVSS
620.	CD33_E11xI2C6-LFcBY	VL	DIVMTQSPDSLTVSLGERTTINCKSSQSVLDSSTKNKNSLA WYQQKPGQPPKLLLSWASTRESGI PDRFSGSGSGTDFTLTIDSPQPEDSATYCCQQSAHPITFGQTRLEIK
621.	CD33_E11xI2C6-LFcBY	scFv	QVQLVQSGAEVKKPGESVKVCKASGYTFTNYGMNWKQAPQGQLEWMGWINTYTGEPT YADKFQGRVTMTTDTSTSTAYMEIRNLGGDDTA VYYCARWSWSDGYVYFDYWGGQTSV TVSSGGGGSGGGGGGSDIVMTQSPDSLTVSLGERTTINCKSSQSVLDSSTKNKNSLA WYQ QKPGQPPKLLLSWASTRESGIPDRFSGSGSGTDFTLTIDSPQPEDSATYCCQQSAHPITFGQGT RLEIK



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629.	CD33_E11_CCxI2C6-LFcBY	VH	QVLVQSGAEVKKPGESVKVSCKASGYTFTNYGMNWVKQAPGQCLEWMGWINTYTGEPT YADKFQGRVTMTTDTSTSTAYMEIRNLGGDDTAVYYCARWSWSDGYVYFDYWGGTSTV TVSS
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<220>
<223> 合成多肽

<400> 12

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 13
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 13

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 14
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 14

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 15
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<220>
<223> 合成多肽

<400> 15

Ile Tyr Ala Met Asn
1 5

<210> 16
<211> 19
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 16

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Ser

<210> 17
<211> 14
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<213> 人工序列

<220>
<223> 合成多肽

<400> 17

His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe Ala Tyr
1 5 10

<210> 18
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 18

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Tyr
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 19

<211> 375

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 19

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
 1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
 20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
 35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Thr Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Ala Gly Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala

260

265

270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
 275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
 290 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
 305 310 315 320

Cys Thr Ala Cys Gly Thr Ala Thr Cys Cys Thr Thr Cys Thr Thr Cys
 325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
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Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
 355 360 365

Cys Thr Cys Cys Thr Cys Ala
 370 375

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 <211> 109
 <212> PRT
 <213> 人工序列

<220>
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<400> 20

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 1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
 20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
 35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
 50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
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<210> 21
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 21

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
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Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
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<210> 22
<211> 249

<212> PRT
<213> 人工序列

<220>
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<400> 22

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 23
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 23

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Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Thr Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Ala Gly Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Gly Thr Ala Thr Cys Cys Thr Thr Cys Thr Thr Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 24
<211> 14
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<220>
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<400> 24

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 25
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 25

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 26
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 26

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 27
<211> 5
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 27

Lys Tyr Ala Met Asn
1 5

<210> 28
<211> 19
<212> PRT
<213> 人工序列



<220>
<223> 合成多肽

<400> 28

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Asp

<210> 29
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 29

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
1 5 10

<210> 30
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 30

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr



S

S

S

S

S

S

S

S

S

S

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Thr Ala Thr Cys Cys Thr Ala Cys Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly



S

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<223> 合成多肽

<400> 33

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Cys Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

- <210> 34
- <211> 249
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 34

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 35
<211> 747
<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 35

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 20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
 35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
 50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
 65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Ala Gly Thr Ala Cys
 85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
 100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
 115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
 130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
 145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
 165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
 180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Thr Ala Thr Cys Cys Thr Ala Cys Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
 420 425 430
 Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
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 450 455 460
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 465 470 475 480
 Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
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 610 615 620
 Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
 625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

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675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
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725 730 735

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740 745

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<400> 36

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 37
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 37

Gly Thr Lys Phe Leu Ala Pro

1 5

<210> 38
<211> 9
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<400> 38

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 39
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<400> 39

Ser Tyr Ala Met Asn
1 5

<210> 40
<211> 19
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<400> 40

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Gly

<210> 41
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<223> 合成多肽

<400> 41

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp Ala Tyr
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<210> 42

<211> 125

<212> PRT

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<223> 合成多肽

<400> 42

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

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 43

<211> 374

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 43

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
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Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Ala Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Thr Cys Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Gly Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Cys Thr Ala Thr Cys Cys Thr Thr Cys Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys
370

<210> 44
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 44

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 45
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 45

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 46
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 46

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Glu Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 47
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 47

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Ala Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr

50		55		60
Gly Thr Gly Cys Ala	Gly Cys Cys Thr Cys	Thr Gly Gly Ala Thr Thr		
65	70	75	80	
Cys Ala Cys Cys Thr	Thr Cys Ala Ala Thr	Thr Cys Gly Thr Ala Cys		
	85	90	95	
Gly Cys Cys Ala Thr	Gly Ala Ala Cys Thr	Gly Gly Gly Thr Cys Cys		
	100	105	110	
Gly Cys Cys Ala Gly	Gly Cys Thr Cys Cys Ala	Gly Gly Ala Ala Ala		
	115	120	125	
Gly Gly Gly Thr Thr Thr	Gly Gly Ala Ala Thr	Gly Gly Gly Thr Thr		
	130	135	140	
Gly Cys Thr Cys Gly Cys	Ala Thr Ala Ala Gly	Ala Ala Gly Thr Ala		
	145	150	155	160
Ala Ala Thr Ala Thr	Ala Ala Thr Ala Ala	Thr Thr Ala Thr Gly Cys		
	165	170	175	
Ala Ala Cys Ala Thr	Ala Thr Thr Ala Thr	Gly Cys Cys Gly Ala Thr		
	180	185	190	
Thr Cys Ala Gly Thr	Gly Ala Ala Ala Gly	Gly Gly Ala Gly Gly Thr		
	195	200	205	
Thr Cys Ala Cys Cys	Ala Thr Cys Thr Cys	Cys Ala Gly Ala Gly Ala		
	210	215	220	
Thr Gly Ala Thr Thr	Cys Ala Ala Ala Ala	Ala Ala Cys Ala Cys Thr		
	225	230	235	240
Gly Cys Cys Thr Ala	Thr Cys Thr Ala Cys	Ala Ala Ala Thr Gly Ala		
	245	250	255	
Ala Cys Ala Ala Cys	Thr Thr Gly Ala Ala	Ala Ala Cys Thr Gly Ala		
	260	265	270	

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Cys Thr Ala Thr Cys Cys Thr Thr Cys Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 48
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 48

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 49
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 49

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 50
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 50

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 51
<211> 5
<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 51

Arg Tyr Ala Met Asn
1 5

<210> 52

<211> 19

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 52

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Gly

<210> 53

<211> 14

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 53

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe Ala Tyr
1 5 10

<210> 54

<211> 125

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 54

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Arg Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 55
<211> 375
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 55

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Cys Gly Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Gly Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Ala Cys Thr Thr Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Ala Gly Gly Thr Gly Cys Ala Gly
370 375 1 5

Cys Thr Gly Gly Thr Cys Gly Ala Gly Thr Cys Thr Gly Gly Ala Gly
10 15 20 25

Gly Ala Gly Gly Ala Thr Thr Gly Gly Thr Gly Cys Ala Gly Cys Cys
30 35 40

Thr Gly Gly Ala Gly Gly Gly Thr Cys Ala Thr Thr Gly Ala Ala Ala
45 50 55

Cys Thr Cys Thr Cys Ala Thr Gly Thr Gly Cys Ala Gly Cys Cys Thr
60 65 70

Cys Thr Gly Gly Ala Thr Thr Cys Ala Cys Cys Thr Thr Cys Ala Ala
75 80 85

Thr Cys Gly Cys Thr Ala Cys Gly Cys Cys Ala Thr Gly Ala Ala Cys
90 95 100 105

Thr Gly Gly Gly Thr Cys Cys Gly Cys Cys Ala Gly Gly Cys Thr Cys
110 115 120

Cys Ala Gly Gly Ala Ala Ala Gly Gly Gly Thr Thr Thr Gly Gly Ala

125					130					135					
Ala	Thr	Gly	Gly	Gly	Thr	Thr	Gly	Cys	Thr	Cys	Gly	Cys	Ala	Thr	Ala
		140					145					150			
Ala	Gly	Ala	Ala	Gly	Thr	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Ala	Thr	Ala
	155					160					165				
Ala	Thr	Thr	Ala	Thr	Gly	Cys	Ala	Ala	Cys	Ala	Thr	Ala	Thr	Thr	Ala
	170					175					180				185
Thr	Gly	Cys	Cys	Gly	Ala	Thr	Thr	Cys	Ala	Gly	Thr	Gly	Ala	Ala	Ala
				190					195					200	
Gly	Gly	Gly	Ala	Gly	Gly	Thr	Thr	Cys	Ala	Cys	Cys	Ala	Thr	Cys	Thr
			205						210					215	
Cys	Cys	Ala	Gly	Ala	Gly	Ala	Thr	Gly	Ala	Thr	Thr	Cys	Ala	Ala	Ala
		220					225					230			
Ala	Ala	Ala	Cys	Ala	Cys	Thr	Gly	Cys	Cys	Thr	Ala	Thr	Cys	Thr	Ala
	235					240					245				
Cys	Ala	Ala	Ala	Thr	Gly	Ala	Ala	Cys	Ala	Ala	Cys	Thr	Thr	Gly	Ala
	250					255					260				265
Ala	Ala	Ala	Cys	Thr	Gly	Ala	Gly	Gly	Ala	Cys	Ala	Cys	Thr	Gly	Cys
			270						275					280	
Cys	Gly	Thr	Gly	Thr	Ala	Cys	Thr	Ala	Cys	Thr	Gly	Thr	Gly	Thr	Gly
			285					290					295		
Ala	Gly	Ala	Cys	Ala	Thr	Gly	Gly	Gly	Ala	Ala	Cys	Thr	Thr	Cys	Gly
		300					305					310			
Gly	Thr	Ala	Ala	Thr	Ala	Gly	Cys	Thr	Ala	Cys	Thr	Thr	Ala	Thr	Cys
	315					320					325				
Cys	Thr	Ala	Cys	Thr	Thr	Cys	Gly	Cys	Thr	Thr	Ala	Cys	Thr	Gly	Gly
	330					335					340				345

Gly Gly Cys Cys Ala Ala Gly Gly Gly Ala Cys Thr Cys Thr Gly Gly
350 355 360

Thr Cys Ala Cys Cys Gly Thr Cys Thr Cys Cys Thr Cys Ala
365 370 375

<210> 56
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 56

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 57
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 57

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
 1 5 10 15
 Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
 20 25 30
 Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
 35 40 45
 Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
 50 55 60
 Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
 65 70 75 80
 Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
 85 90 95
 Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
 100 105 110
 Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly
 115 120 125
 Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
 130 135 140
 Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
 145 150 155 160
 Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Gly Gly
 165 170 175
 Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
 180 185 190
 Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
 195 200 205
 Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
 210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 58
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 58

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Arg Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 59
<211> 747
<212> PRT
<213> 人工序列

<220>

<223> 合成多肽

<400> 59

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Cys Gly Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Gly Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Ala Cys Thr Thr Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly

645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 60
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 60

Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 61
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 61

Ala Thr Asp Met Arg Pro Ser
1 5



<210> 62
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 62

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 63
<211> 5
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 63

Val Tyr Ala Met Asn
1 5

<210> 64
<211> 19
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 64

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Lys

<210> 65
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 65

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp Ala Tyr
1 5 10

<210> 66
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 66

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 67
<211> 375
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 67

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Thr Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Ala Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala

210

215

220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Cys Ala Cys Thr

225230235240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala

245250255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala

260265270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys

275280285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly

290295300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly

305310315320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Gly Gly Thr Gly Gly

325330335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly

340345350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr

355360365

Cys Thr Cys Cys Thr Cys Ala

370375

<210> 68

<211> 109

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 68

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

151015



Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Ala Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 69
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 69

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Cys Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Cys Cys Ala Cys Thr Gly
145 150 155 160

Ala Cys Ala Thr Gly Ala Gly Gly Cys Cys Cys Thr Cys Thr Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 70
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 70

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Ala
180 185 190

Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 71
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 71

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60



Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Thr Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Ala Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Gly Gly Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Cys Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Cys Cys
565 570 575

Ala Cys Thr Gly Ala Cys Ala Thr Gly Ala Gly Gly Cys Cys Cys Thr
580 585 590

Cys Thr Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys

725730735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala

740745

<210> 72
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 72

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn

1510

<210> 73
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 73

Gly Thr Lys Phe Leu Ala Pro

15

<210> 74
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 74

Ala Leu Trp Tyr Ser Asn Arg Trp Val

15

<210> 75
<211> 5
<212> PRT
<213> 人工序列

<220>



<223> 合成多肽

<400> 75

Lys Tyr Ala Met Asn
1 5

<210> 76

<211> 19

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 76

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Ser

<210> 77

<211> 14

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 77

His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr Ala Tyr
1 5 10

<210> 78

<211> 125

<212> PRT

<213> 人工序列

<220>

<223> 合成多肽

<400> 78

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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

	20		25		30
Ala Met	Asn Trp Val Arg Gln	Ala Pro Gly Lys Gly	Leu Glu Trp Val		
	35	40	45		
Ala Arg Ile Arg Ser Lys Tyr	Asn Asn Tyr Ala Thr	Tyr Tyr Ala Asp			
	50	55	60		
Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr					
	65	70	75		80
Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr					
	85	90			95
Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr					
	100	105		110	
Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser					
	115	120		125	

<210> 79
 <211> 375
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 79

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly					
1	5	10	15		
Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr					
	20	25	30		
Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly					
	35	40	45		
Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr					
	50	55	60		
Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr					
65	70	75	80		

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Ala Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Thr Cys Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly

290

295

300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Cys Ala Thr Cys Cys Thr Ala Cys Thr Ala Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala
370 375

<210> 80
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 80

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 81
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 81

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Cys Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 82
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 82

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 83
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 83

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Ala Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Thr Cys Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Cys Ala Thr Cys Cys Thr Ala Cys Thr Ala Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

- <210> 84
- <211> 14
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 84

Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 85
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 85

Ala Thr Asp Met Arg Pro Ser
1 5

<210> 86
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 86

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 87
<211> 5
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 87

Gly Tyr Ala Met Asn
1 5

<210> 88
<211> 19
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 88

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Glu

<210> 89
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 89

His Arg Asn Phe Gly Asn Ser Tyr Leu Ser Trp Phe Ala Tyr
1 5 10

<210> 90
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 90

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Gly Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Glu Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Arg Asn Phe Gly Asn Ser Tyr Leu Ser Trp Phe

100

105

110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 91
 <211> 375
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 91

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
 1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
 20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
 35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
 50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
 65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Gly Cys Thr Ala Cys
 85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
 100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
 115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
 130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
 145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Ala
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Gly Gly Thr Thr Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala

370

375

<210> 92
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 92

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Ala Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 93
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 93

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Cys Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Cys Cys Ala Cys Thr Gly
145 150 155 160

Ala Cys Ala Thr Gly Ala Gly Gly Cys Cys Cys Thr Cys Thr Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 94
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 94

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Gly Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Glu Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Arg Asn Phe Gly Asn Ser Tyr Leu Ser Trp Phe
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Ala
180 185 190

Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 95
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 95

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly

1	5	10	15
Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr	20	25	30
Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly	35	40	45
Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr	50	55	60
Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr	65	70	75
Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Gly Cys Thr Ala Cys	85	90	95
Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys	100	105	110
Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala	115	120	125
Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr	130	135	140
Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala	145	150	155
Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys	165	170	175
Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr	180	185	190
Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Gly Ala Gly Gly Thr	195	200	205
Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala	210	215	220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Ala
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Thr Thr Ala Thr Cys Cys Thr Gly Gly Thr Thr Cys
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Cys Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Cys Cys
565 570 575

Ala Cys Thr Gly Ala Cys Ala Thr Gly Ala Gly Gly Cys Cys Cys Thr
580 585 590

Cys Thr Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 96
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 96

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
1 5 10

<210> 97
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 97

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 98
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 98

Ala Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 99
<211> 5
<212> PRT
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<220>
<223> 合成多肽

<400> 99

Val Tyr Ala Met Asn
1 5

<210> 100
<211> 19
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 100

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Lys

<210> 101
<211> 14
<212> PRT
<213> 人工序列

<220>
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<400> 101

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp Ala Tyr
1 5 10

<210> 102
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 102

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr
20 25 30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60
Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80
Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp
100 105 110
Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 103
<211> 375
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 103

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Thr Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Ala Gly Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Thr Ala Thr Cys Cys Thr Gly Gly Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala
370 375

<210> 104
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 104

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 105
<211> 327
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 105

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
85 90 95

Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly
115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Cys Gly Gly
165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 106
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 106

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
195 200 205

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

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 107
<211> 747
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 107

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Gly Thr Gly Thr Ala Cys

85								90					95				
Gly	Cys	Cys	Ala	Thr	Gly	Ala	Ala	Cys	Thr	Gly	Gly	Gly	Thr	Cys	Cys		
			100						105								110
Gly	Cys	Cys	Ala	Gly	Gly	Cys	Thr	Cys	Cys	Ala	Gly	Gly	Ala	Ala	Ala		
			115						120								125
Gly	Gly	Gly	Thr	Thr	Thr	Gly	Gly	Ala	Ala	Thr	Gly	Gly	Gly	Thr	Thr		
			130						135								140
Gly	Cys	Thr	Cys	Gly	Cys	Ala	Thr	Ala	Ala	Gly	Ala	Ala	Gly	Thr	Ala		
			145						150								155
			160														
Ala	Ala	Thr	Ala	Thr	Ala	Ala	Thr	Ala	Ala	Thr	Thr	Ala	Thr	Gly	Cys		
			165						170								175
Ala	Ala	Cys	Ala	Thr	Ala	Thr	Thr	Ala	Thr	Gly	Cys	Cys	Gly	Ala	Thr		
			180						185								190
Thr	Cys	Ala	Gly	Thr	Gly	Ala	Ala	Ala	Ala	Gly	Ala	Gly	Gly	Thr			
			195						200								205
Thr	Cys	Ala	Cys	Cys	Ala	Thr	Cys	Thr	Cys	Cys	Ala	Gly	Ala	Gly	Ala		
			210						215								220
Thr	Gly	Ala	Thr	Thr	Cys	Ala	Ala	Ala	Ala	Ala	Ala	Cys	Ala	Cys	Thr		
			225						230								235
Gly	Cys	Cys	Thr	Ala	Thr	Cys	Thr	Ala	Cys	Ala	Ala	Ala	Thr	Gly	Ala		
			245						250								255
Ala	Cys	Ala	Ala	Cys	Thr	Thr	Gly	Ala	Ala	Ala	Ala	Cys	Thr	Gly	Ala		
			260						265								270
Gly	Gly	Ala	Cys	Ala	Cys	Thr	Gly	Cys	Cys	Gly	Thr	Gly	Thr	Ala	Cys		
			275						280								285
Thr	Ala	Cys	Thr	Gly	Thr	Gly	Thr	Gly	Ala	Gly	Ala	Cys	Ala	Thr	Gly		
			290						295								300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Thr Ala Thr Cys Cys Thr Gly Gly Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr
370 375 380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Thr Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Cys Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 108
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 108

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
1 5 10

<210> 109
<211> 7
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 109

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 110
<211> 9
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 110

Val Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 111
<211> 5
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 111

Ser Tyr Ala Met Asn

1 5

<210> 112
<211> 19
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 112

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Gly

<210> 113
<211> 14
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 113

His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp Ala Tyr
1 5 10

<210> 114
<211> 125
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 114

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 115
<211> 375
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 115

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Gly Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Gly Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Gly Thr Thr Thr Cys Cys Thr Gly Gly Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
340 345 350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala
370 375

<210> 116
<211> 109
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 116

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
20 25 30

Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 117
 <211> 327
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 117

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
 1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
 20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala
 35 40 45

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
 50 55 60

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
 65 70 75 80

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
 85 90 95

Ala Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
 100 105 110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys Cys Ala Gly Gly
 115 120 125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
 130 135 140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
 145 150 155 160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Gly Gly
 165 170 175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180 185 190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195 200 205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210 215 220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225 230 235 240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Thr
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

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<220>
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<400> 118

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

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



Gly Gly Gly Thr Lys Leu Thr Val Leu
245

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<220>
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<400> 119

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Gly Cys Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys

165170175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr

180185190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Gly Cys Ala Gly Gly Thr

195200205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala

210215220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr

225230235240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala

245250255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala

260265270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys

275280285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly

290295300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly

305310315320

Cys Thr Ala Cys Gly Thr Thr Thr Cys Cys Thr Gly Gly Thr Gly Gly

325330335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly

340345350

Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr

355360365

Cys Thr Cys Cys Thr Cys Ala Gly Gly Thr Gly Gly Thr Gly Gly Thr

370375380

Gly Gly Thr Thr Cys Thr Gly Gly Cys Gly Gly Cys Gly Gly Cys Gly
385 390 395 400

Gly Cys Thr Cys Cys Gly Gly Thr Gly Gly Thr Gly Gly Thr Gly Gly
405 410 415

Thr Thr Cys Thr Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly
420 425 430

Ala Cys Thr Cys Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys
435 440 445

Thr Cys Ala Cys Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly
450 455 460

Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Ala Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Thr Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
705 710 715 720

Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

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<400> 120

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
1 5 10

<210> 121
<211> 7
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<400> 121

Gly Thr Lys Phe Leu Ala Pro
1 5

<210> 122
<211> 9
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<213> 人工序列

<220>
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<400> 122

Val Leu Trp Tyr Ser Asn Arg Trp Val
1 5

<210> 123
<211> 5
<212> PRT
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<400> 123

Lys Tyr Ala Met Asn
1 5

<210> 124
<211> 19
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<400> 124

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser
1 5 10 15

Val Lys Asp

<210> 125
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<400> 125

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 1 5 10

<210> 126
 <211> 125
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<400> 126

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

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120 125

<210> 127
<211> 375
<212> PRT
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<220>
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<400> 127

Gly Ala Gly Gly Thr Gly Cys Ala Gly Cys Thr Gly Gly Thr Cys Gly
1 5 10 15

Ala Gly Thr Cys Thr Gly Gly Ala Gly Gly Ala Gly Gly Ala Thr Thr
20 25 30

Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Ala Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala
245 250 255

Ala Cys Ala Ala Cys Thr Thr Gly Ala Ala Ala Ala Cys Thr Gly Ala
260 265 270

Gly Gly Ala Cys Ala Cys Thr Gly Cys Cys Gly Thr Gly Thr Ala Cys
275 280 285

Thr Ala Cys Thr Gly Thr Gly Thr Gly Ala Gly Ala Cys Ala Thr Gly
290 295 300

Gly Gly Ala Ala Cys Thr Thr Cys Gly Gly Thr Ala Ala Thr Ala Gly
305 310 315 320

Cys Thr Ala Cys Ala Thr Ala Thr Cys Cys Thr Ala Cys Thr Gly Gly
325 330 335

Gly Cys Thr Thr Ala Cys Thr Gly Gly Gly Gly Cys Cys Ala Ala Gly
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Gly Gly Ala Cys Thr Cys Thr Gly Gly Thr Cys Ala Cys Cys Gly Thr
355 360 365

Cys Thr Cys Cys Thr Cys Ala
370 375

<210> 128
<211> 109

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<400> 128

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1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly
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Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

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<400> 129

Cys Ala Gly Ala Cys Thr Gly Thr Thr Gly Thr Gly Ala Cys Thr Cys
1 5 10 15

Ala Gly Gly Ala Ala Cys Cys Thr Thr Cys Ala Cys Thr Cys Ala Cys
20 25 30

Cys Gly Thr Ala Thr Cys Ala Cys Cys Thr Gly Gly Thr Gly Gly Ala

354045

Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys Ala Cys Thr Thr
505560

Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala Cys Thr Gly Gly
65707580

Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys Thr Gly Gly Cys
859095

Ala Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys Thr Gly Gly Gly
100105110

Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Cys Cys Ala Gly Gly
115120125

Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly Thr Gly Gly Thr
130135140

Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly Ala Cys Thr Ala
145150155160

Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys Cys Gly Gly
165170175

Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly Ala Thr Thr Cys
180185190

Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly Cys Thr Thr Gly
195200205

Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly Cys Cys Cys Thr
210215220

Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly Gly Gly Thr Ala
225230235240

Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245250255



Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Thr
260 265 270

Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly Cys Ala Ala Cys
275 280 285

Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys Gly Gly Thr Gly
290 295 300

Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys Thr Gly Ala Cys
305 310 315 320

Thr Gly Thr Cys Cys Thr Ala
325

<210> 130
<211> 249
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 130

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp



Gly Gly Thr Gly Cys Ala Gly Cys Cys Thr Gly Gly Ala Gly Gly Gly
35 40 45

Thr Cys Ala Thr Thr Gly Ala Ala Ala Cys Thr Cys Thr Cys Ala Thr
50 55 60

Gly Thr Gly Cys Ala Gly Cys Cys Thr Cys Thr Gly Gly Ala Thr Thr
65 70 75 80

Cys Ala Cys Cys Thr Thr Cys Ala Ala Thr Ala Ala Gly Thr Ala Cys
85 90 95

Gly Cys Cys Ala Thr Gly Ala Ala Cys Thr Gly Gly Gly Thr Cys Cys
100 105 110

Gly Cys Cys Ala Gly Gly Cys Thr Cys Cys Ala Gly Gly Ala Ala Ala
115 120 125

Gly Gly Gly Thr Thr Thr Gly Gly Ala Ala Thr Gly Gly Gly Thr Thr
130 135 140

Gly Cys Thr Cys Gly Cys Ala Thr Ala Ala Gly Ala Ala Gly Thr Ala
145 150 155 160

Ala Ala Thr Ala Thr Ala Ala Thr Ala Ala Thr Thr Ala Thr Gly Cys
165 170 175

Ala Ala Cys Ala Thr Ala Thr Thr Ala Thr Gly Cys Cys Gly Ala Thr
180 185 190

Thr Cys Ala Gly Thr Gly Ala Ala Ala Gly Ala Cys Ala Gly Gly Thr
195 200 205

Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Ala Gly Ala Gly Ala
210 215 220

Thr Gly Ala Thr Thr Cys Ala Ala Ala Ala Ala Ala Cys Ala Cys Thr
225 230 235 240

Gly Cys Cys Thr Ala Thr Cys Thr Ala Cys Ala Ala Ala Thr Gly Ala

245										250					255				
Ala	Cys	Ala	Ala	Cys	Thr	Thr	Gly	Ala	Ala	Ala	Ala	Cys	Thr	Gly	Ala				
			260					265						270					
Gly	Gly	Ala	Cys	Ala	Cys	Thr	Gly	Cys	Cys	Gly	Thr	Gly	Thr	Ala	Cys				
		275					280					285							
Thr	Ala	Cys	Thr	Gly	Thr	Gly	Thr	Gly	Ala	Gly	Ala	Cys	Ala	Thr	Gly				
	290					295					300								
Gly	Gly	Ala	Ala	Cys	Thr	Thr	Cys	Gly	Gly	Thr	Ala	Ala	Thr	Ala	Gly				
305					310					315					320				
Cys	Thr	Ala	Cys	Ala	Thr	Ala	Thr	Cys	Cys	Thr	Ala	Cys	Thr	Gly	Gly				
				325					330					335					
Gly	Cys	Thr	Thr	Ala	Cys	Thr	Gly	Gly	Gly	Gly	Cys	Cys	Ala	Ala	Gly				
			340					345					350						
Gly	Gly	Ala	Cys	Thr	Cys	Thr	Gly	Gly	Thr	Cys	Ala	Cys	Cys	Gly	Thr				
		355					360					365							
Cys	Thr	Cys	Cys	Thr	Cys	Ala	Gly	Gly	Thr	Gly	Gly	Thr	Gly	Gly	Thr				
	370					375					380								
Gly	Gly	Thr	Thr	Cys	Thr	Gly	Gly	Cys	Gly	Gly	Cys	Gly	Gly	Cys	Gly				
385					390					395					400				
Gly	Cys	Thr	Cys	Cys	Gly	Gly	Thr	Gly	Gly	Thr	Gly	Gly	Thr	Gly	Gly				
				405					410					415					
Thr	Thr	Cys	Thr	Cys	Ala	Gly	Ala	Cys	Thr	Gly	Thr	Thr	Gly	Thr	Gly				
			420					425					430						
Ala	Cys	Thr	Cys	Ala	Gly	Gly	Ala	Ala	Cys	Cys	Thr	Thr	Cys	Ala	Cys				
		435					440					445							
Thr	Cys	Ala	Cys	Cys	Gly	Thr	Ala	Thr	Cys	Ala	Cys	Cys	Thr	Gly	Gly				
	450					455					460								



Thr Gly Gly Ala Ala Cys Ala Gly Thr Cys Ala Cys Ala Cys Thr Cys
465 470 475 480

Ala Cys Thr Thr Gly Thr Gly Gly Cys Thr Cys Cys Thr Cys Gly Ala
485 490 495

Cys Thr Gly Gly Gly Gly Cys Thr Gly Thr Thr Ala Cys Ala Thr Cys
500 505 510

Thr Gly Gly Cys Ala Ala Cys Thr Ala Cys Cys Cys Ala Ala Ala Cys
515 520 525

Thr Gly Gly Gly Thr Cys Cys Ala Ala Cys Ala Ala Ala Ala Ala Cys
530 535 540

Cys Ala Gly Gly Thr Cys Ala Gly Gly Cys Ala Cys Cys Cys Cys Gly
545 550 555 560

Thr Gly Gly Thr Cys Thr Ala Ala Thr Ala Gly Gly Thr Gly Gly Gly
565 570 575

Ala Cys Thr Ala Ala Gly Thr Thr Cys Cys Thr Cys Gly Cys Cys Cys
580 585 590

Cys Cys Gly Gly Thr Ala Cys Thr Cys Cys Thr Gly Cys Cys Ala Gly
595 600 605

Ala Thr Thr Cys Thr Cys Ala Gly Gly Cys Thr Cys Cys Cys Thr Gly
610 615 620

Cys Thr Thr Gly Gly Ala Gly Gly Cys Ala Ala Gly Gly Cys Thr Gly
625 630 635 640

Cys Cys Cys Thr Cys Ala Cys Cys Cys Thr Cys Thr Cys Ala Gly Gly
645 650 655

Gly Gly Thr Ala Cys Ala Gly Cys Cys Ala Gly Ala Gly Gly Ala Thr
660 665 670

Gly Ala Gly Gly Cys Ala Gly Ala Ala Thr Ala Thr Thr Ala Cys Thr
675 680 685

Gly Thr Gly Thr Thr Cys Thr Ala Thr Gly Gly Thr Ala Cys Ala Gly
690 695 700

Cys Ala Ala Cys Cys Gly Cys Thr Gly Gly Gly Thr Gly Thr Thr Cys
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Gly Gly Thr Gly Gly Ala Gly Gly Ala Ala Cys Cys Ala Ala Ala Cys
725 730 735

Thr Gly Ala Cys Thr Gly Thr Cys Cys Thr Ala
740 745

<210> 132
<211> 549
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 132

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530 535 540

His His His His His
545

<210> 133
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 <212> PRT
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<220>
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<400> 133

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
 65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
 115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
 130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
 165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 134
<211> 549
<212> PRT
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<220>
<223> 合成多肽

<400> 134

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Cys Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro

435440445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450455460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465470475480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485490495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500505510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515520525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530535540

His His His His His
545

<210> 135
<211> 574
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<213> 人工序列

<220>
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<400> 135

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
202530

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
354045

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
505560



Cys Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Cys Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly

275

280

285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 136
<211> 507
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<213> 人工序列

<220>
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<400> 136

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly Tyr Tyr Tyr Gly Met

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly
355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro
385 390 395 400

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser
405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln
420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu
435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys
450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr
465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr
485 490 495

Lys Leu Thr Val Leu His His His His His His
500 505

<210> 137
<211> 532
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 137

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly Tyr Tyr Tyr Gly Met
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Tyr Glu Leu
130 135 140

Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln Thr Ala Ser Ile
145 150 155 160

Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr Thr Ser Trp Tyr Gln
165 170 175

Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile Tyr Gln Asp Thr Lys
180 185 190

Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn
195 200 205

Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met Asp Glu Ala Asp
210 215 220

Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val Val Phe Gly Gly Gly
225 230 235 240

Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly Ser Glu Val Gln Leu
245 250 255

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
260 265 270

Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp
275 280 285

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg
290 295 300

Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
305 310 315 320

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly
355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro
385 390 395 400

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser
405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln
420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu
435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys
450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr
465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr
485 490 495

Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp
500 505 510

Trp Asp Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His
515 520 525

His His His His
530

<210> 138
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<400> 138

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60



Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly Tyr Tyr Tyr Gly Met
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Tyr Glu Leu
130 135 140

Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln Thr Ala Ser Ile
145 150 155 160

Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr Thr Ser Trp Tyr Gln
165 170 175

Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile Tyr Gln Asp Thr Lys
180 185 190

Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn
195 200 205

Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met Asp Glu Ala Asp
210 215 220

Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val Val Phe Gly Gly Gly
225 230 235 240

Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly Ser Glu Val Gln Leu
245 250 255

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
260 265 270

Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp
275 280 285

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg
290 295 300

Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
305 310 315 320

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly
355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro
385 390 395 400

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser
405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln
420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu
435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys
450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr
465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr
485 490 495

Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Glu Glu Pro Gln Asn Leu
500 505 510

Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe
515 520 525

Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser
530 535 540

Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser
545 550 555 560

Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp
565 570 575

Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr
580 585 590

Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn
595 600 605

Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro
610 615 620

Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr
625 630 635 640

Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu
645 650 655

Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val
660 665 670

Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp
675 680 685

Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser
690 695 700

Gln Ala Ala Leu Gly Leu Asp Tyr His His His His His His
705 710 715

<210> 139

<211> 549
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 139

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val

	405		410		415
Val Thr Gln	Glu Pro Ser Leu Thr	Val Ser Pro Gly Gly	Thr Val Thr		
	420	425	430		
Leu Thr Cys	Gly Ser Ser Thr	Gly Ala Val Thr Ser	Gly Asn Tyr Pro		
	435	440	445		
Asn Trp Val	Gln Gln Lys Pro	Gly Gln Ala Pro Arg	Gly Leu Ile Gly		
	450	455	460		
Gly Thr Lys Phe	Leu Ala Pro Gly Thr Pro	Ala Arg Phe Ser Gly	Ser		
	470	475	480		
Leu Leu Gly Gly	Lys Ala Ala Leu Thr	Leu Ser Gly Val Gln	Pro Glu		
	485	490	495		
Asp Glu Ala	Glu Tyr Tyr Cys Val	Leu Trp Tyr Ser Asn	Arg Trp Val		
	500	505	510		
Phe Gly Gly Gly	Thr Lys Leu Thr	Val Leu Gly Gly Gly	Gly Gly Ser Gln		
	515	520	525		
Arg Phe Cys Thr	Gly His Phe Gly Gly Leu His	Pro Cys Asn Gly His			
	530	535	540		
His His His His His					
545					
<210>	140				
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<212>	PRT				
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<223>	合成多肽				
<400>	140				
Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly					
1 5 10 15					
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val					
20 25 30					

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val

245										250					255				
Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Ser	Gly	Gly	Gly	Gly				
			260					265					270						
Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly				
		275					280					285							
Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys				
	290					295					300								
Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp				
305					310					315					320				
Val	Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala				
				325					330					335					
Asp	Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn				
			340					345					350						
Thr	Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val				
		355					360					365							
Tyr	Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr				
	370					375					380								
Trp	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly				
385					390					395					400				
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val				
			405					410						415					
Val	Thr	Gln	Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr				
			420					425					430						
Leu	Thr	Cys	Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro				
		435					440					445							
Asn	Trp	Val	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly				
	450					455					460								

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 141
<211> 549
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 141

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 142
<211> 1098
<212> PRT
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<220>
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<400> 142

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly Tyr Tyr Tyr Gly Met
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Tyr Glu Leu
130 135 140

Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln Thr Ala Ser Ile
145 150 155 160

Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr Thr Ser Trp Tyr Gln
165 170 175

Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile Tyr Gln Asp Thr Lys
180 185 190

Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn
195 200 205

Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met Asp Glu Ala Asp
210 215 220

Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val Val Phe Gly Gly Gly
225 230 235 240

Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly Ser Glu Val Gln Leu
245 250 255

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu
260 265 270

Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp
275 280 285

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg
290 295 300

Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp
305 310 315 320

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln
325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg
340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly
355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro
385 390 395 400

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser
405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln
420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu
435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys
450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr
465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr
485 490 495

Lys Leu Thr Val Leu Pro Gly Gly Asp Gly Ser Asp Ala His Lys Ser
500 505 510

Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala
515 520 525

Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu
530 535 540

Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys
545 550 555 560

Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu
565 570 575

Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly
580 585 590

Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys
595 600 605

Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg
610 615 620

Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr
625 630 635 640

Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe
645 650 655

Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe
660 665 670

Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys
675 680 685

Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg
690 695 700

Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala
705 710 715 720

Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala
725 730 735

Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys
740 745 750

Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala
755 760 765

Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu
770 775 780

Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val
785 790 795 800

Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe

				805					810					815	
Val	Glu	Ser	Lys	Asp	Val	Cys	Lys	Asn	Tyr	Ala	Glu	Ala	Lys	Asp	Val
			820					825					830		
Phe	Leu	Gly	Met	Phe	Leu	Tyr	Glu	Tyr	Ala	Arg	Arg	His	Pro	Asp	Tyr
		835					840					845			
Ser	Val	Val	Leu	Leu	Leu	Arg	Leu	Ala	Lys	Thr	Tyr	Glu	Thr	Thr	Leu
	850					855					860				
Glu	Lys	Cys	Cys	Ala	Ala	Ala	Asp	Pro	His	Glu	Cys	Tyr	Ala	Lys	Val
865					870					875					880
Phe	Asp	Glu	Phe	Lys	Pro	Leu	Val	Glu	Glu	Pro	Gln	Asn	Leu	Ile	Lys
				885					890					895	
Gln	Asn	Cys	Glu	Leu	Phe	Glu	Gln	Leu	Gly	Glu	Tyr	Lys	Phe	Gln	Asn
			900					905					910		
Ala	Leu	Leu	Val	Arg	Tyr	Thr	Lys	Lys	Val	Pro	Gln	Val	Ser	Thr	Pro
		915					920					925			
Thr	Leu	Val	Glu	Val	Ser	Arg	Asn	Leu	Gly	Lys	Val	Gly	Ser	Lys	Cys
	930					935					940				
Cys	Lys	His	Pro	Glu	Ala	Lys	Arg	Met	Pro	Cys	Ala	Glu	Asp	Tyr	Leu
945					950					955					960
Ser	Val	Val	Leu	Asn	Gln	Leu	Cys	Val	Leu	His	Glu	Lys	Thr	Pro	Val
				965					970					975	
Ser	Asp	Arg	Val	Thr	Lys	Cys	Cys	Thr	Glu	Ser	Leu	Val	Asn	Arg	Arg
			980					985					990		
Pro	Cys	Phe	Ser	Ala	Leu	Glu	Val	Asp	Glu	Thr	Tyr	Val	Pro	Lys	Glu
		995					1000					1005			
Phe	Asn	Ala	Glu	Thr	Phe	Thr	Phe	His	Ala	Asp	Ile	Cys	Thr	Leu	
	1010					1015					1020				

Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu
1025 1030 1035

Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala
1040 1045 1050

Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala
1055 1060 1065

Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
1070 1075 1080

Ala Ala Ser Gln Ala Ala Leu Gly Leu His His His His His His
1085 1090 1095

<210> 143
<211> 549
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<220>
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<400> 143

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr

100	105	110
Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly		
115	120	125
Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val		
130	135	140
Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly		
145	150	155
Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly		
165	170	175
Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr		
180	185	190
Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile		
195	200	205
Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly		
210	215	220
Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala		
225	230	235
Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val		
245	250	255
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly		
260	265	270
Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly		
275	280	285
Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys		
290	295	300
Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp		
305	310	315
		320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 144
<211> 549
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 144

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly His
530 535 540

His His His His His
545

- <210> 145
- <211> 549
- <212> PRT
- <213> 人工序列
- <220>
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- <400> 145

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530 535 540

His His His His His
545

<210> 146
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<400> 146

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

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

	500		505		510	
Phe	Gly	Gly	Gly	Thr	Lys	Leu
	515			Thr	Val	Leu
				520	Gly	Gly
					525	Gly
						Ser
						Gln
Arg	Phe	Cys	Thr	Gly	His	Phe
530						535
						Gly
						Gly
						Leu
						His
						Pro
						540
						Cys
						Asn
						Gly
						His
His	His	His	His	His	Gln	Arg
545					1	
						Phe
						Val
						5
						Thr
						Gly
						His
						Phe
						Gly
						Gly
						Leu
						10
Tyr	Pro	Ala	Asn	Gly	Gly	Gly
			15			
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						Gly
						20
						Ser
						Gln
						Val
						Gln
						25
						Leu
						Val
						Glu
Ser	Gly	Gly	Gly	Val	Val	Gln
	30					
						Gln
						Pro
						35
						Gly
						Gly
						Ser
						Leu
						Arg
						40
						Leu
						Ser
						Cys
Ala	Ala	Ser	Gly	Phe	Thr	Phe
45						50
						Ser
						Ser
						Tyr
						Gly
						Met
						55
						His
						Trp
						Val
						Arg
Gln	Ala	Pro	Gly	Lys	Gly	Leu
60						65
						Glu
						Trp
						Val
						70
						Ala
						Phe
						Ile
						Trp
						Tyr
						Asp
						75
Gly	Ser	Asn	Lys	Tyr	Tyr	Ala
						80
						Asp
						Ser
						85
						Val
						Lys
						Gly
						Arg
						Phe
						90
						Thr
						Ile
Ser	Arg	Asp	Asn	Ser	Lys	Asn
						95
						Thr
						Leu
						100
						Tyr
						Leu
						Gln
						Met
						105
						Asn
						Ser
						Leu
Arg	Ala	Glu	Asp	Thr	Ala	Val
						110
						Tyr
						115
						Tyr
						Cys
						Ala
						Arg
						120
						Arg
						Ala
						Gly
						Ile
Ile	Gly	Thr	Ile	Gly	Tyr	Tyr
125						130
						Tyr
						Gly
						Met
						Asp
						Val
						135
						Trp
						Gly
						Gln
						Gly
Thr	Thr	Val	Thr	Val	Ser	Ser
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						Gly
						Gly
						Gly
						Gly
						150
						Ser
						Gly
						Gly
						Gly
						155
Ser	Gly	Gly	Gly	Gly	Ser	Ser
						160
						Tyr
						Glu
						Leu
						165
						Thr
						Gln
						Pro
						Pro
						Ser
						Val
						170

Ser Val Ser Pro Gly Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg
175 180 185

Leu Gly Glu Lys Tyr Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser
190 195 200

Pro Leu Leu Val Ile Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro
205 210 215

Glu Arg Phe Ser Gly Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile
220 225 230 235

Ser Gly Thr Gln Ala Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp
240 245 250

Glu Ser Ser Thr Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
255 260 265

Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly
270 275 280

Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly
285 290 295

Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly
300 305 310 315

Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr
320 325 330

Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg
335 340 345

Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr
350 355 360

Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn
365 370 375

Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
380 385 390 395

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
400 405 410

Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro
415 420 425

Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr
430 435 440

Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro
445 450 455

Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala
460 465 470 475

Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser
480 485 490

Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr
495 500 505

Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
510 515 520

Gly Gly Gly Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His
525 530 535

Pro Cys Asn Gly His His His His His His
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<210> 147
<211> 546
<212> PRT
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<400> 147

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460



Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 148
<211> 546
<212> PRT
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<223> 合成多肽

<400> 148

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515

520

525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 149
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 149

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140



Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

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

355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405410415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420425430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515520525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530535540

His His
545

- <210> 150
- <211> 546
- <212> PRT
- <213> 人工序列



<220>

<223> 合成多肽

<400> 150

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala



Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 151
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 151

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

35	40	45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro		
50	55	60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr		
65	70	75
Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr		
85	90	95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp		
100	105	110
Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu		
115	120	125
Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly		
130	135	140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
145	150	155
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
165	170	175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
180	185	190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
195	200	205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
225	230	235
Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly		
245	250	255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 152
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 152

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 153
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<212> PRT
<213> 人工序列

<220>
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<400> 153

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

- <210> 154
- <211> 546
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 154

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435		440		445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys				
450		455		460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly				
465		470		475
				480
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala				
		485		490
				495
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly				
		500		505
				510
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys				
		515		520
				525
Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His				
		530		535
				540
His His				
545				

<210> 155
 <211> 545
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 155

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys

275	280	285
Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn 290 295 300		
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile 305 310 315 320		
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys 325 330 335		
Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu 340 345 350		
Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val 355 360 365		
Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp 370 375 380		
Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly 385 390 395 400		
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu 405 410 415		
Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly 420 425 430		
Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln 435 440 445		
Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe 450 455 460		
Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly 465 470 475 480		
Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu 485 490 495		

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

<210> 156
<211> 545
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 156

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe

115	120	125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly		
130	135	140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
145	150	155
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
165	170	175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
180	185	190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
195	200	205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
225	230	235
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly		
245	250	255
Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln		
260	265	270
Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys		
275	280	285
Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn		
290	295	300
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile		
305	310	315
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys		
325	330	335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

<210> 157
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<400> 157

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

- <210> 158
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 158

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30
 Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45
 Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60
 Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125
 Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
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<210> 159
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr

515

520

525

Gly

His

Phe

Gly

Gly

Leu

His

Pro

Cys

Asn

Gly

His

His

His

His

His

530

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His

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Gln

Arg

Phe

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Thr

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Phe

Gly

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Pro

Ala

Asn

Gly

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5

10

15

Gly

Gly

Gly

Gly

Ser

Gln

Val

Gln

Leu

Gln

Glu

Ser

Gly

Pro

Gly

Leu

20

25

30

Val

Arg

Pro

Ser

Gln

Thr

Leu

Ser

Leu

Thr

Cys

Thr

Val

Ser

Gly

Gly

35

40

45

Ser

Ile

Ser

Ser

Gly

Gly

Tyr

Tyr

Trp

Ser

Trp

Ile

Arg

Gln

His

Pro

50

55

60

Gly

Lys

Gly

Leu

Glu

Trp

Ile

Gly

Tyr

Ile

Tyr

Tyr

Arg

Gly

Arg

Thr

65

70

75

80

Tyr

Tyr

Asn

Pro

Ser

Leu

Lys

Ser

Arg

Val

Thr

Ile

Ser

Val

Asp

Thr

85

90

95

Ser

Lys

Asn

Gln

Phe

Ser

Leu

Lys

Leu

Ser

Ser

Val

Thr

Ala

Ala

Asp

100

105

110

Thr

Ala

Val

Tyr

Tyr

Cys

Ala

Arg

Val

Tyr

Ser

Asn

Tyr

Gly

Trp

Phe

115

120

125

Asp

Pro

Trp

Gly

Gln

Gly

Thr

Leu

Val

Thr

Val

Ser

Ser

Gly

Gly

Gly

130

135

140



Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

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

355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 161
- <211> 545
- <212> PRT
- <213> 人工序列



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<223> 合成多肽

<400> 161

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala

205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

- <210> 162
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 162

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 163
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95



Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540



His His
545

<210> 164
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
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- <210> 165
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- <223> 合成多肽
- <400> 165

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 166
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 166

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu

275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala		
485	490	495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 167
<211> 545
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 167

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe

115	120	125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly		
130	135	140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu		
145	150	155
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr		
165	170	175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp		
180	185	190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala		
195	200	205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe		
225	230	235
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln		
245	250	255
Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln		
260	265	270
Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys		
275	280	285
Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn		
290	295	300
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile		
305	310	315
Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys		
325	330	335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

<210> 168
 <211> 546
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 168

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240
 Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
 245 250 255
 Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270
 Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285
 Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300
 Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320
 Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335
 Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350
 Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365
 Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 169
<211> 551
<212> PRT
<213> 人工序列

<220>
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<400> 169

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15



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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
545 550

<210> 170
<211> 545
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 170

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr

515	520	525
Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His		
530	535	540
His		
545		
<210> 171		
<211> 546		
<212> PRT		
<213> 人工序列		
<220>		
<223> 合成多肽		
<400> 171		
Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly		
1	5	10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val		
	20	25 30
Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr		
	35	40 45
Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln		
	50	55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Gly Gly Glu Thr Asn		
65	70	75 80
Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser		
	85	90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr		
	100	105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly		
	115	120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly		
	130	135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

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

355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 172
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 172

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly

195	200	205
Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
225	230	235
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
245	250	255
Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 173
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 173

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
505560

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65707580

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
859095

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115120125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130135140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145150155160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165170175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180185190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195200205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225230235240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245250255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 174
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 174

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 175
<211> 546
<212> PRT
<213> 人工序列

<220>
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<400> 175

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
 165 170 175
 Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190
 Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205
 Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240
 Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255
 Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270
 Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285
 Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300
 Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320
 Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335
 Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350
 Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365
 Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 176
- <211> 546
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 176

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435

440

445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 177
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 177

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu

275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala		
485	490	495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 178
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 178

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly

115	120	125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly		
130	135	140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro		
145	150	155
Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg		
165	170	175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp		
180	185	190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly		
195	200	205
Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
225	230	235
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
245	250	255
Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 179
 <211> 546
 <212> PRT
 <213> 人工序列

<220>
 <223> 合成多肽

<400> 179

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 180
<211> 546
<212> PRT
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<220>
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<400> 180

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 181
<211> 546
<212> PRT
<213> 人工序列

<220>
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<400> 181

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515520525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530535540

His His
545

<210> 182
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
202530

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
354045

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
505560

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65707580

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
859095

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115120125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130135140



Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

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

355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 183
<211> 546
<212> PRT
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<220>

<223> 合成多肽

<400> 183

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly

195	200	205
Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
225	230	235
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
245	250	255
Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 184
<211> 546
<212> PRT
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<220>
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<400> 184

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
505560

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65707580

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
859095

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115120125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130135140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145150155160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165170175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180185190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195200205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225230235240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245250255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 185
- <211> 550
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 185

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
260 265 270

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
275 280 285

Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
290 295 300

Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
340 345 350

Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
420 425 430

Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
530 535 540

His His His His His His
545 550

<210> 186
<211> 551
<212> PRT
<213> 人工序列

<220>
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<400> 186

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
 180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
 195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
 210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
 225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
 245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
 260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
 275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
 325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
 340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
 355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
 370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
545 550

- <210> 187
- <211> 551
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 187

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn

435

440445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450455460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465470475480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485490495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500505510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515520525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530535540

Gly His His His His His His
545550

<210> 188
<211> 551
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<400> 188

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
202530

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
354045

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
505560



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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln

275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495



Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
545 550

<210> 189

<211> 548

<212> PRT

<213> 人工序列

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<223> 合成多肽

<400> 189

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr

115					120					125						
Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	
130					135					140						
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	
145					150					155					160	
Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	
165					170					175						
Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly	Ile	Ser	Asn	Tyr	Leu	
180					185					190						
Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Val	Pro	Lys	Leu	Leu	Ile	Tyr	
195					200					205						
Ala	Ala	Ser	Thr	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser	
210					215					220						
Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	
225					230					235					240	
Asp	Val	Ala	Thr	Tyr	Tyr	Cys	Gln	Lys	Tyr	Asn	Ser	Ala	Pro	Leu	Thr	
245					250					255						
Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	
260					265					270						
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	
275					280					285						
Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	
290					295					300						
Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
305					310					315					320	
Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	
325					330					335						

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His
530 535 540

His His His His
545

<210> 190
<211> 549
<212> PRT
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<220>
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<400> 190

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530 535 540

His His His His His
545

- <210> 191
- <211> 549
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 191

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530 535 540

His His His His His
545

<210> 192
<211> 574
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<213> 人工序列

<220>
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<400> 192

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300



Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln

525

- 294 -

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

● Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

● Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 194
- <211> 571
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 194

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

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

165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 195
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<220>
<223> 合成多肽

<400> 195

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 196
- <211> 571
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 196

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480



Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 197
<211> 571
<212> PRT
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<220>
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<400> 197

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515

520

525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly

530535540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly

545550555560

Thr Pro Val Gly Gly His His His His His His

565570

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<400> 198

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly

151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro

505560

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

65707580

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

859095

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

100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe

115120125



Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 199
<211> 570
<212> PRT
<213> 人工序列

<220>
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<400> 199

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

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

165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245250255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260265270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275280285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290295300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305310315320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325330335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340345350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355360365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370375380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

- <210> 200
- <211> 571
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽

<400> 200

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 201
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<400> 201

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

<210> 202
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<400> 202

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr

515

520

525

Gly

His

Phe

Gly

Gly

Leu

His

Pro

Cys

Asn

Gly

Gly

Gly

Gly

Gly

Ser

530

535

540

Gly

Gly

Gly

Ser

Arg

Asp

Trp

Asp

Phe

Asp

Val

Phe

Gly

Gly

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Thr

545

550

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560

Pro

Val

Gly

Gly

His

His

His

His

His

His

565

570

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203

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人工序列

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<223>

合成多肽

<400>

203

Gln

Arg

Phe

Val

Thr

Gly

His

Phe

Gly

Gly

Leu

Tyr

Pro

Ala

Asn

Gly

1

5

10

15

Gly

Gly

Gly

Gly

Ser

Gln

Val

Gln

Leu

Gln

Glu

Ser

Gly

Pro

Gly

Leu

20

25

30

Val

Lys

Pro

Ser

Gln

Thr

Leu

Ser

Leu

Thr

Cys

Thr

Ile

Ser

Gly

Gly

35

40

45

Ser

Ile

Ser

Ser

Gly

Gly

Tyr

Tyr

Trp

Ser

Trp

Ile

Arg

Gln

His

Pro

50

55

60

Gly

Lys

Gly

Leu

Glu

Trp

Ile

Gly

Tyr

Ile

Phe

Tyr

Ser

Gly

Arg

Thr

65

70

75

80

Tyr

Tyr

Asn

Pro

Ser

Leu

Lys

Ser

Arg

Val

Thr

Ile

Ser

Val

Asp

Thr

85

90

95

Ser

Lys

Asn

Gln

Phe

Ser

Leu

Lys

Leu

Thr

Ser

Val

Thr

Ala

Ala

Asp

100

105

110

Thr

Ala

Val

Tyr

Tyr

Cys

Ala

Arg

Val

Asn

Ser

Asn

Tyr

Gly

Trp

Phe

115

120

125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

340										345					350				
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val				
		355					360					365							
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp				
	370					375					380								
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
385					390					395					400				
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu				
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Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly				
			420					425					430						
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln				
		435					440					445							
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe				
	450					455					460								
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly				
465					470					475					480				
Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	Glu	Asp	Glu	Ala	Glu				
			485						490					495					
Tyr	Tyr	Cys	Val	Leu	Trp	Tyr	Ser	Asn	Arg	Trp	Val	Phe	Gly	Gly	Gly				
			500					505					510						
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gly	Gly	Gly	Ser	Gln	Arg	Phe	Cys	Thr				
		515					520					525							
Gly	His	Phe	Gly	Gly	Leu	His	Pro	Cys	Asn	Gly	Gly	Gly	Gly	Gly	Ser				
	530					535					540								
Gly	Gly	Gly	Ser	Arg	Asp	Trp	Asp	Phe	Asp	Val	Phe	Gly	Gly	Gly	Thr				
545					550					555					560				

Pro Val Gly Gly His His His His His His
565 570

<210> 204
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<400> 204

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

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

165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245250255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 205
- <211> 570
- <212> PRT
- <213> 人工序列
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- <223> 合成多肽

<400> 205

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
565 570

<210> 206
<211> 571
<212> PRT
<213> 人工序列

<220>
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 207
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr

515

520

525

Gly

His

Phe

Gly

Gly

Leu

His

Pro

Cys

Asn

Gly

Gly

Gly

Gly

Gly

Ser

530

535

540

Gly

Gly

Gly

Ser

Arg

Asp

Trp

Asp

Phe

Asp

Val

Phe

Gly

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人工序列

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Gln

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Tyr

Pro

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Asn

Gly

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5

10

15

Gly

Gly

Gly

Gly

Ser

Gln

Val

Gln

Leu

Gln

Glu

Ser

Gly

Pro

Gly

Leu

20

25

30

Val

Lys

Pro

Ser

Gln

Thr

Leu

Ser

Leu

Thr

Cys

Thr

Val

Ser

Gly

Gly

35

40

45

Ser

Ile

Ser

Ser

Gly

Gly

Tyr

Tyr

Trp

Ser

Trp

Ile

Arg

Gln

His

Pro

50

55

60

Gly

Lys

Gly

Leu

Glu

Trp

Ile

Gly

Tyr

Ile

Tyr

Tyr

Arg

Gly

Arg

Thr

65

70

75

80

Tyr

Tyr

Asn

Pro

Ser

Leu

Lys

Ser

Arg

Val

Thr

Ile

Ser

Val

Asp

Thr

85

90

95

Ser

Lys

Asn

Gln

Phe

Ser

Leu

Lys

Leu

Ser

Ser

Val

Thr

Ala

Ala

Asp

100

105

110

Thr

Ala

Val

Tyr

Tyr

Cys

Ala

Arg

Val

Tyr

Ser

Asn

Tyr

Gly

Trp

Phe

115

120

125



Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys 355 360 365		
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr 370 375 380		
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser 385 390 395 400		
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln 405 410 415		
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys 420 425 430		
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val 435 440 445		
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys 450 455 460		
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly 465 470 475 480		
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala 485 490 495		
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly 500 505 510		
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys 515 520 525		
Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly 530 535 540		
Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly 545 550 555 560		

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 209
- <211> 571
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 209

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

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

165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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<400> 210

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20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 211
- <211> 571
- <212> PRT
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- <220>
- <223> 合成多肽

<400> 211

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
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Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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20 25 30

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515

520

525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
530 535 540

Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
545 550 555 560

Pro Val Gly Gly His His His His His His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

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

	165		170		175
Leu Ser Cys Arg	Ala Ser Gln Ser Val Ser Ser Ser Tyr	Leu Ala Trp			
	180		185		190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala					
	195		200		205
Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser					
	210		215		220
Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe					
	225		230		235
Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly					
		245		250	255
Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val					
		260		265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu					
		275		280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met					
		290		295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg					
		305		310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val					
		325		330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr					
		340		345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys					
		355		360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr					
		370		375	380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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<400> 215

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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20 25 30

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35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
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Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

<210> 216
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35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly Ser
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Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr
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Pro Val Gly Gly His His His His His His
565 570

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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

525

- 364 -

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr



Thr Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

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

165170175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180185190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195200205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225230235240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245250255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 222
<211> 571
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 222

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300



Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515

520

525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly

530535540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly

545550555560

Thr Pro Val Gly Gly His His His His His His

565570

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<223> 合成多肽

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly

151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

202530

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln

505560

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn

65707580

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser

859095

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr

100105110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly

115120125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340										345					350				
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
	370					375					380								
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
385					390					395					400				
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln				
				405					410						415				
Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys				
			420					425					430						
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val				
		435					440					445							
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys				
		450				455					460								
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly				
465					470					475					480				
Gly	Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	Glu	Asp	Glu	Ala				
				485					490					495					
Glu	Tyr	Tyr	Cys	Val	Leu	Trp	Tyr	Ser	Asn	Arg	Trp	Val	Phe	Gly	Gly				
			500					505					510						
Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Gly	Gly	Gly	Ser	Gln	Arg	Phe	Cys				
		515					520					525							
Thr	Gly	His	Phe	Gly	Gly	Leu	His	Pro	Cys	Asn	Gly	Gly	Gly	Gly	Gly				
	530					535					540								
Ser	Gly	Gly	Gly	Ser	Arg	Asp	Trp	Asp	Phe	Asp	Val	Phe	Gly	Gly	Gly				
545					550					555					560				

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 224
<211> 571
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 224

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

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



Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 225
- <211> 571
- <212> PRT
- <213> 人工序列
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- <223> 合成多肽

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205



Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 226
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<212> PRT
<213> 人工序列

<220>
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<400> 226

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45
 Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60
 Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
 65 70 75 80
 Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95
 Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110
 Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125
 Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140
 Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160
 Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175
 Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190
 Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205
 Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240
 Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 227
- <211> 571
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 227

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 228
<211> 571
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 228

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 - 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

Thr Pro Val Gly Gly His His His His His His
565 570

<210> 229
<211> 571
<212> PRT
<213> 人工序列

<220>
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<400> 229

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

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

165170175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180185190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195200205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225230235240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245250255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 230
- <211> 571
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽

<400> 230

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30
Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45
Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80
Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160
Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly Gly Gly
530 535 540

Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly
545 550 555 560

Thr Pro Val Gly Gly His His His His His His
565 570

- <210> 231
- <211> 575
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 231

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
260 265 270

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
275 280 285

Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
290 295 300

Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
340 345 350

Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
420 425 430

Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
530 535 540

Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val
545 550 555 560

Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

- <210> 232
- <211> 576
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 232

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly

515

520

525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

<210> 233

<211> 576

<212> PRT

<213> 人工序列

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<223> 合成多肽

<400> 233

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125



Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser

340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560



Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

<210> 234
<211> 576
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 234

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser

165										170										175									
Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Gln	Ala	Ser	Gln	Asp	Ile	Ser														
			180					185					190																
Asn	Tyr	Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu														
		195					200					205																	
Leu	Ile	Tyr	Asp	Ala	Ser	Asn	Leu	Glu	Thr	Gly	Val	Pro	Ser	Arg	Phe														
	210					215					220																		
Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser	Ser	Leu														
225					230					235					240														
Gln	Pro	Glu	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Tyr	Val	Asn	Leu														
				245					250					255															
Pro	Leu	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly														
			260					265					270																
Gly	Gly	Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln														
		275					280					285																	
Pro	Gly	Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe														
	290					295					300																		
Asn	Lys	Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu														
305					310					315					320														
Glu	Trp	Val	Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr														
				325					330					335															
Tyr	Ala	Asp	Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser														
			340					345					350																
Lys	Asn	Thr	Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr														
		355					360					365																	
Ala	Val	Tyr	Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile														
	370					375					380																		

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp
545 550 555 560

Val Phe Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570 575

- <210> 235
- <211> 573
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽

<400> 235

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly Gly
530 535 540

Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe Gly
545 550 555 560

Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 236
<211> 574
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 236

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30



Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480



Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
530 535 540

Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545 550 555 560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565 570

<210> 237
<211> 574
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 237

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln

515520525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly Gly
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Gly Gly Gly Ser Gly Gly Gly Ser Arg Asp Trp Asp Phe Asp Val Phe
545550555560

Gly Gly Gly Thr Pro Val Gly Gly His His His His His His
565570

<210> 238
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<220>
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<400> 238

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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202530

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
354045

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
505560

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65707580

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
859095

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115120125



Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn

340345350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355360365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370375380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385390395400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405410415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420425430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435440445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450455460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465470475480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485490495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500505510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
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Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530535540

His His His His His
545



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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

	180		185		190
Tyr	Gln	Gln	Lys	Pro	Gly
	195				Gln
				Ala	Pro
				200	Arg
					Leu
					Leu
					Ile
					205
					Tyr
					Gly
					Ala
Ser	Ser	Arg	Ala	Thr	Gly
	210				Ile
					215
					Pro
					Asp
					Arg
					Phe
					Ser
					220
					Gly
					Ser
					Gly
					Ser
Gly	Thr	Asp	Phe	Thr	Leu
225					230
					Thr
					Ile
					Ser
					Arg
					Leu
					235
					Glu
					Pro
					Glu
					Asp
					240
					Phe
Ala	Val	Tyr	Tyr	Cys	Gln
				245	Gln
					Tyr
					Gly
					Ser
					250
					Ser
					Pro
					Leu
					Thr
					Phe
					255
					Gly
Gly	Gly	Thr	Lys	Leu	Glu
			260		Ile
					Lys
					Ser
					265
					Gly
					Gly
					Gly
					Gly
					Ser
					270
					Glu
					Val
Gln	Leu	Val	Glu	Ser	Gly
		275			Gly
					Gly
					280
					Leu
					Val
					Gln
					Pro
					Gly
					285
					Gly
					Ser
					Leu
Lys	Leu	Ser	Cys	Ala	Ala
	290				Ser
					295
					Gly
					Phe
					Thr
					Phe
					Asn
					300
					Lys
					Tyr
					Ala
					Met
Asn	Trp	Val	Arg	Gln	Ala
305				310	Pro
					Gly
					Lys
					Gly
					Leu
					315
					Glu
					Trp
					Val
					Ala
					Arg
					320
Ile	Arg	Ser	Lys	Tyr	Asn
				325	Asn
					Tyr
					Ala
					Thr
					330
					Tyr
					Tyr
					Ala
					Asp
					Ser
					335
					Val
Lys	Asp	Arg	Phe	Thr	Ile
			340		Ser
					Arg
					Asp
					345
					Asp
					Ser
					Lys
					Asn
					350
					Thr
					Ala
					Tyr
Leu	Gln	Met	Asn	Asn	Leu
		355			Lys
					Thr
					360
					Glu
					Asp
					Thr
					Ala
					Val
					365
					Tyr
					Tyr
					Cys
Val	Arg	His	Gly	Asn	Phe
	370				Gly
					375
					Asn
					Ser
					Tyr
					Ile
					Ser
					380
					Tyr
					Trp
					Ala
					Tyr
Trp	Gly	Gln	Gly	Thr	Leu
385					390
					Val
					Thr
					Val
					Ser
					Ser
					395
					Gly
					Gly
					Gly
					Gly
					Ser
					400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 240
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<400> 240

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
505560

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65707580

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
859095

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115120125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130135140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145150155160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195200205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 241
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<400> 241

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80



Tyr Tyr Asn Pro Ser₈₅ Leu Lys Ser Arg Val₉₀ Thr Ile Ser Val Asp₉₅ Thr

Ser Lys Asn Gln Phe Ser Leu Lys Leu₁₀₅ Ser Ser Val Thr Ala₁₁₀ Ala Asp

Thr Ala Val₁₁₅ Tyr Tyr Cys Ala Arg₁₂₀ Val Tyr Ser Asn Tyr₁₂₅ Gly Trp Phe

Asp Pro₁₃₀ Trp Gly Gln Gly Thr₁₃₅ Leu Val Thr Val Ser₁₄₀ Ser Gly Gly Gly

Gly₁₄₅ Ser Gly Gly Gly Gly₁₅₀ Ser Gly Gly Gly₁₅₅ Ser Glu Ile Val Leu₁₆₀

Thr Gln Ser Pro Gly₁₆₅ Thr Leu Ser Leu Ser₁₇₀ Pro Gly Glu Arg Ala Thr₁₇₅

Leu Ser Cys Arg₁₈₀ Ala Ser Gln Ser Val₁₈₅ Ser Ser Ser Tyr Leu₁₉₀ Ala Trp

Tyr Gln Gln Lys Pro Gly Gln Ala₂₀₀ Pro Arg Leu Leu Ile₂₀₅ Tyr Gly Ala

Ser Ser Arg Ala Thr Gly Ile₂₁₅ Pro Asp Arg Phe Ser₂₂₀ Gly Ser Gly Ser

Gly₂₂₅ Thr Asp Phe Thr Leu₂₃₀ Thr Ile Ser Arg Leu₂₃₅ Glu Pro Glu Asp Phe₂₄₀

Ala Val Tyr Tyr Cys₂₄₅ Gln Gln Tyr Gly Ser₂₅₀ Ser Pro Leu Thr Phe₂₅₅ Gly

Gly Gly Thr Lys₂₆₀ Leu Glu Ile Lys Ser₂₆₅ Gly Gly Gly Gly Ser₂₇₀ Glu Val

Gln Leu Val Glu Ser Gly Gly Gly₂₈₀ Leu Val Gln Pro Gly₂₈₅ Gly Ser Leu

Lys Leu Ser Cys Ala Ala Ser₂₉₅ Gly Phe Thr Phe Asn₃₀₀ Lys Tyr Ala Met

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

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<400> 242

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 243
- <211> 546
- <212> PRT
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<400> 243

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 244
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<400> 244

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

	260		265		270
Gln	Leu Val	Glu Ser Gly Gly	Gly Leu Val	Gln Pro Gly Gly	Ser Leu
	275		280	285	
Lys	Leu Ser	Cys Ala Ala Ser	Gly Phe Thr Phe	Asn Lys Tyr	Ala Met
	290		295	300	
Asn	Trp Val	Arg Gln Ala Pro	Gly Lys Gly Leu	Glu Trp Val	Ala Arg
305		310	315		320
Ile	Arg Ser	Lys Tyr Asn Asn	Tyr Ala Thr Tyr	Tyr Ala Asp	Ser Val
		325	330		335
Lys	Asp Arg	Phe Thr Ile Ser	Arg Asp Asp Ser	Lys Asn Thr	Ala Tyr
		340	345		350
Leu	Gln Met	Asn Asn Leu Lys	Thr Glu Asp Thr	Ala Val Tyr	Tyr Cys
	355		360	365	
Val	Arg His	Gly Asn Phe Gly	Asn Ser Tyr Ile	Ser Tyr Trp	Ala Tyr
	370		375	380	
Trp	Gly Gln	Gly Thr Leu Val	Thr Val Ser Ser	Gly Gly Gly Gly	Ser
385		390	395		400
Gly	Gly Gly	Gly Ser Gly Gly	Gly Gly Ser Gln	Thr Val Val Thr	Gln
		405	410		415
Glu	Pro Ser	Leu Thr Val Ser	Pro Gly Gly Thr	Val Thr Leu	Thr Cys
		420	425	430	
Gly	Ser Ser	Thr Gly Ala Val	Thr Ser Gly Asn	Tyr Pro Asn	Trp Val
	435		440	445	
Gln	Gln Lys	Pro Gly Gln Ala	Pro Arg Gly Leu	Ile Gly Gly Thr	Lys
	450		455	460	
Phe	Leu Ala	Pro Gly Thr Pro	Ala Arg Phe Ser	Gly Ser Leu	Leu Gly
465		470	475		480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
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20 25 30

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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

100										105					110				
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe				
		115					120					125							
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly				
	130					135					140								
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu				
145					150					155					160				
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr				
				165					170					175					
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp				
			180					185					190						
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala				
		195					200					205							
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe				
225					230					235					240				
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Thr	Phe	Gly	Gly				
				245					250					255					
Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	Gln				
			260					265					270						
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys				
		275					280					285							
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn				
	290					295					300								
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile				
305					310					315					320				

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
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Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

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530 535 540

His His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

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515 520 525

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530 535 540

His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly

500

505

510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

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530 535 540

His
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35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

340345350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355360365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370375380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385390395400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405410415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420425430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435440445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450455460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465470475480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
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Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500505510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
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Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
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His
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 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245250255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
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Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
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202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
505560

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65707580

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
859095

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115120125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130135140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145150155160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 253
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<212> PRT
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
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<210> 254
<211> 546
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190
Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His

530535540

His His

545

<210> 255
<211> 546
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202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 256
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<212> PRT
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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

100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115120125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130135140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145150155160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245250255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 257
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<400> 257

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 258
- <211> 546
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 258

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

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1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly

500

505

510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

<210> 260
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<400> 260

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405410415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420425430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515520525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530535540

His His
545

<210> 261
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

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

180185190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195200205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210215220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225230235240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245250255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260265270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275280285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290295300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305310315320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325330335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340345350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355360365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370375380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385390395400



Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
545 550

<210> 262
<211> 545
<212> PRT
<213> 人工序列

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<400> 262

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His His
530 535 540

His
545

- <210> 263
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 263

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 264
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<400> 264

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 265
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

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Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His

530535540

His His
545

- <210> 266
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 266

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

151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

202530

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475
		480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 267
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<400> 267

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr

100										105					110				
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly				
		115					120					125							
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly				
	130					135					140								
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro				
145					150					155					160				
Leu	Ser	Leu	Pro	Val	Thr	Leu	Gly	Gln	Pro	Ala	Ser	Ile	Ser	Cys	Arg				
				165					170					175					
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp				
			180					185					190						
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly				
		195					200					205							
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val				
225					230					235					240				
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly				
				245					250					255					
Pro	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val				
			260					265					270						
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 268
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<400> 268

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160



Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 269
- <211> 546
- <212> PRT
- <213> 人工序列
- <220>
- <223> 合成多肽
- <400> 269



Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

- <210> 270
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 270

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500

505

510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

515520525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His

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His His

545

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

202530

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln

505560

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn

65707580

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser

859095

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr

100105110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly

115120125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
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<210> 272
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
 1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
 65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp

180										185					190				
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly				
		195					200					205							
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val				
225					230					235					240				
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly				
				245					250						255				
Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val				
			260					265					270						
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val				
				325					330					335					
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr				
			340					345					350						
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
	370					375					380								
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
385					390					395					400				

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 273
<211> 546
<212> PRT
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<400> 273

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

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Lys	Lys	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr				
		35					40					45							
Thr	Phe	Thr	Ser	Tyr	Gly	Ile	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln				
	50					55					60								
Gly	Leu	Glu	Trp	Met	Gly	Trp	Ile	Asn	Pro	Tyr	Thr	Gly	Asn	Arg	Asn				
65					70					75					80				
Tyr	Ala	Gln	Lys	Phe	Gln	Gly	Arg	Val	Thr	Met	Thr	Thr	Asp	Thr	Ser				
				85					90					95					
Thr	Asn	Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr				
			100					105					110						
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly				
		115					120					125							
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly				
	130					135					140								
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro				
145					150					155					160				
Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg				
				165					170					175					
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp				
			180					185					190						
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly				
		195					200					205							
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val				
225					230					235					240				

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 274
<211> 546
<212> PRT
<213> 人工序列

<220>
<223> 合成多肽

<400> 274

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 275
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<212> PRT
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<400> 275

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His His His
530 535 540

His His
545

<210> 276
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<400> 276

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30
Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45
Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80
Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160
Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Cys

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His His

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202530

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

354045



Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly

	260		265		270
Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro	275	280	285		
Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn	290	295	300		
Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu	305	310	315	320	
Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr	325	330			
Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys	340	345	350		
Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala	355	360	365		
Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser	370	375	380		
Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly	385	390	395	400	
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr	405	410	415		
Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val	420	425	430		
Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr	435	440	445		
Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile	450	455	460		
Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly	465	470	475	480	

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly
530 535 540

His His His His His His
545 550

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<400> 278

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20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

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

100										105					110				
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Glu	Phe	Tyr	Tyr	Asp	Ser	Thr	Gly	Tyr				
		115					120					125							
Asp	Tyr	Ser	Thr	Pro	Gly	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr				
	130					135					140								
Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly				
145					150					155					160				
Gly	Ser	Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser				
				165					170						175				
Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser				
			180					185						190					
Ser	Tyr	Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu				
		195					200					205							
Leu	Ile	Tyr	Asp	Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe				
	210					215					220								
Ser	Gly	Ser	Gly	Ser	Gly	Thr	Glu	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu				
225					230					235					240				
Gln	Ala	Glu	Asp	Val	Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Tyr	Ser	Thr				
				245					250					255					
Pro	Leu	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly				
			260					265					270						
Gly	Gly	Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln				
		275					280					285							
Pro	Gly	Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe				
	290					295					300								
Asn	Lys	Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu				
305					310					315					320				

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
545 550

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn
530 535 540

Gly His His His His His His
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20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu
180 185 190

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile Tyr
195 200 205

Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
210 215 220

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
225 230 235 240

Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Leu Thr
245 250 255

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser
260 265 270

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
275 280 285

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr
290 295 300

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
305 310 315 320

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
325 330 335

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
340 345 350

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr
355 360 365

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp
370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe

500

505

510

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

515520525

Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His His

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His His His His

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

354045

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys

505560

Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Ser Asn Lys Tyr

65707580

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser

859095

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr

100105110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr

115120125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn



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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
 65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
 115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
 145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
 165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr

	180							185						190	
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile
		195					200					205			
Tyr	Gly	Ala	Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly
	210					215					220				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro
225					230					235					240
Glu	Asp	Phe	Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Phe
				245					250					255	
Thr	Phe	Gly	Pro	Gly	Thr	Arg	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly
			260					265					270		
Ser	Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly
		275					280					285			
Gly	Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys
	290					295					300				
Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp
305					310					315					320
Val	Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala
				325					330					335	
Asp	Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn
			340					345					350		
Thr	Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val
		355					360					365			
Tyr	Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr
	370					375					380				
Trp	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly
385					390					395					400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Cys Thr Gly His Phe Gly Gly Leu His Pro Cys Asn Gly His
530 535 540

His His His His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val

20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 285
<211> 546
<212> PRT
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<220>
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<400> 285

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 286
<211> 546
<212> PRT
<213> 人工序列

<220>
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<400> 286

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
 195 200 205
 Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240
 Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255
 Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270
 Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285
 Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300
 Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320
 Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335
 Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350
 Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 287
<211> 546
<212> PRT
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<400> 287

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 288
<211> 546
<212> PRT
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<220>
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<400> 288

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260										265					270				
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val				
				325					330					335					
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr				
			340					345					350						
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
	370					375					380								
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
385					390					395					400				
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln				
				405					410					415					
Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys				
			420					425					430						
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val				
		435					440					445							
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys				
		450				455					460								
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly				
465					470					475					480				

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 289
<211> 546
<212> PRT
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<400> 289

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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

100					105					110						
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Asp	Ser	Ser	Ser	Ser	Ser	Arg	Ala	Leu
		115					120						125			
Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	
	130					135					140					
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu	
	145					150					155					160
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr	
				165					170							
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Ser	Tyr	Leu	Ala	Trp
			180					185						190		
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala	
		195					200					205				
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	
	210					215					220					
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe	
	225					230					235					240
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Asp	Ser	Ser	Pro	Arg	Thr	Phe	Gly	
				245					250						255	
Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val	
			260					265					270			
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	
		275					280					285				
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	
	290					295					300					
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	
	305					310					315					320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 290
<211> 546
<212> PRT
<213> 人工序列

<220>
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<400> 290

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 291
<211> 545
<212> PRT
<213> 人工序列

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<223> 合成多肽
<400> 291

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285



Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500

505

510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val

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Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His

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His His

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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro

505560

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

65707580

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr

859095

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

100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe

115120125



Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

340345350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355360365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370375380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385390395400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405410415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420425430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435440445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450455460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465470475480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
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Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500505510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
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Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
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His
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<212> PRT
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160
Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175
Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400



Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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Val	Lys	Pro	Ser	Gln	Thr	Leu	Ser	Leu	Thr	Cys	Thr	Ile	Ser	Gly	Gly
		35					40					45			
Ser	Ile	Ser	Ser	Gly	Gly	Tyr	Tyr	Trp	Ser	Trp	Ile	Arg	Gln	His	Pro
	50					55					60				
Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	Tyr	Ile	Phe	Tyr	Ser	Gly	Arg	Thr
65					70					75					80
Tyr	Tyr	Asn	Pro	Ser	Leu	Lys	Ser	Arg	Val	Thr	Ile	Ser	Val	Asp	Thr
				85					90					95	
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Thr	Ser	Val	Thr	Ala	Ala	Asp
			100					105						110	
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Asn	Ser	Asn	Tyr	Gly	Trp	Phe
		115					120					125			
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
	130					135					140				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu
145					150					155					160
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr
				165					170					175	
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp
			180					185					190		
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala
		195					200					205			
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe
225					230					235					240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Thr Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val

515520525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His

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His His

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

260										265					270				
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys				
		275					280					285							
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn				
	290					295					300								
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile				
305					310					315					320				
Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	Lys				
				325					330					335					
Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr	Leu				
			340					345					350						
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val				
		355					360					365							
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp				
	370					375					380								
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
385				390						395					400				
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu				
				405					410					415					
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly				
			420					425					430						
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln				
		435					440					445							
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe				
	450					455					460								
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly				
465					470					475					480				

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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

100										105					110						
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe						
		115					120					125									
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly						
	130					135					140										
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu						
145					150					155					160						
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr						
				165					170					175							
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp						
			180					185					190								
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala						
		195					200					205									
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser						
	210					215					220										
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe						
225					230					235					240						
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly						
				245					250					255							
Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val						
			260					265					270								
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu						
		275					280					285									
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met						
	290					295					300										
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg						
305					310					315					320						

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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<210> 303
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500

505

510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Val Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395 400
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475 480
Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala		
485	490	495
Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly		
500	505	510
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val		
515	520	525
Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His		
530	535	540
His His		
545		



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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

	180		185		190
Tyr	Gln	Gln	Lys	Pro	Gly
	195				Gln
				Ala	Pro
				200	Arg
					Leu
					Leu
					Ile
					205
					Tyr
					Gly
					Ala
Ser	Ser	Arg	Ala	Thr	Gly
	210				Ile
					215
					Pro
					Asp
					Arg
					Phe
					Ser
					220
					Gly
					Ser
					Gly
					Ser
Gly	Thr	Asp	Phe	Thr	Leu
	225				230
					Thr
					Ile
					Ser
					Arg
					Leu
					235
					Glu
					Pro
					Glu
					Asp
					Phe
					240
Ala	Val	Tyr	Tyr	Cys	Gln
				245	Gln
					Tyr
					Gly
					250
					Ser
					Ser
					Pro
					Thr
					Phe
					Gly
					255
					Gln
Gly	Thr	Arg	Leu	Glu	Ile
			260		Lys
					Ser
					Gly
					265
					Gly
					Gly
					Gly
					Ser
					Glu
					270
					Val
					Gln
Leu	Val	Glu	Ser	Gly	Gly
		275			Gly
					Leu
					280
					Val
					Gln
					Pro
					Gly
					285
					Gly
					Ser
					Leu
					Lys
Leu	Ser	Cys	Ala	Ala	Ser
	290				Gly
					295
					Phe
					Thr
					Phe
					Asn
					Lys
					300
					Tyr
					Ala
					Met
					Asn
Trp	Val	Arg	Gln	Ala	Pro
					310
					Gly
					Lys
					Gly
					Leu
					Glu
					315
					Trp
					Val
					Ala
					Arg
					Ile
					320
Arg	Ser	Lys	Tyr	Asn	Asn
				325	Tyr
					Ala
					Thr
					Tyr
					330
					Tyr
					Ala
					Asp
					Ser
					Val
					335
					Lys
Asp	Arg	Phe	Thr	Ile	Ser
					340
					Arg
					Asp
					345
					Ser
					Lys
					Asn
					Thr
					Ala
					350
					Tyr
					Tyr
					Cys
					Val
Gln	Met	Asn	Asn	Leu	Lys
		355			Thr
					Glu
					360
					Asp
					Thr
					Ala
					Val
					Tyr
					365
					Tyr
					Cys
					Val
Arg	His	Gly	Asn	Phe	Gly
	370				Asn
					375
					Ser
					Tyr
					Ile
					Ser
					Tyr
					380
					Trp
					Ala
					Tyr
					Trp
Gly	Gln	Gly	Thr	Leu	Val
					390
					Thr
					Val
					Ser
					Ser
					Gly
					395
					Gly
					Gly
					Gly
					Ser
					Gly
					400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 306
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

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Val	Lys	Pro	Ser	Gln	Thr	Leu	Ser	Leu	Thr	Cys	Thr	Val	Ser	Gly	Gly														
		35					40					45																	
Ser	Ile	Ser	Ser	Gly	Gly	Tyr	Tyr	Trp	Ser	Trp	Ile	Arg	Gln	His	Pro														
	50					55					60																		
Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	Tyr	Ile	Phe	Tyr	Ser	Gly	Lys	Thr														
65					70					75					80														
Tyr	Tyr	Asn	Pro	Ser	Leu	Lys	Ser	Arg	Val	Ser	Ile	Ser	Val	Asp	Thr														
				85					90					95															
Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp														
			100					105						110															
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe														
		115					120					125																	
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly														
	130					135					140																		
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu														
145					150					155					160														
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr														
				165					170					175															
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp														
			180					185					190																
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala														
		195					200					205																	
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser														
	210					215					220																		
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe														
225					230					235					240														

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
50 55 60

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



Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

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<400> 308

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1 5 10 15

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20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

- <210> 309
- <211> 546
- <212> PRT
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<220>
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 310
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val		
325	330	335
Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr		
340	345	350
Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys		
355	360	365
Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr		
370	375	380
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser		
385	390	395
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln		
405	410	415
Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys		
420	425	430
Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val		
435	440	445
Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys		
450	455	460
Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly		
465	470	475
		480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 311
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr

100										105					110				
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly				
		115					120					125							
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly				
	130					135					140								
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Thr	Pro				
145					150					155					160				
Leu	Ser	Leu	Ser	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg				
				165					170					175					
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp				
		180						185					190						
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly				
		195					200					205							
Ser	Tyr	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val				
225					230					235					240				
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly				
				245					250					255					
Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val				
			260					265					270						
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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- <223> 合成多肽
- <400> 313

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
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Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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<400> 315

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Ala Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
 1 5 10 15

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

Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
 65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

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Lys	Lys	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr				
		35					40					45							
Thr	Phe	Thr	Tyr	Tyr	Gly	Ile	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln				
	50					55					60								
Gly	Leu	Glu	Trp	Met	Gly	Trp	Ile	Asn	Pro	Tyr	Thr	Gly	Lys	Thr	Asn				
65					70					75					80				
Tyr	Ala	Gln	Lys	Leu	Gln	Gly	Arg	Val	Thr	Met	Thr	Thr	Asp	Thr	Ser				
				85					90					95					
Thr	Ser	Thr	Ala	Tyr	Met	Glu	Leu	Arg	Ser	Leu	Arg	Ser	Asp	Asp	Thr				
			100					105					110						
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly				
		115					120					125							
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly				
	130					135					140								
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro				
145					150					155					160				
Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg				
				165					170					175					
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp				
			180					185					190						
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly				
		195					200					205							
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val				
225					230					235					240				

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 318
<211> 546
<212> PRT
<213> 人工序列

<220>
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<400> 318

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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<210> 319
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<212> PRT
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<400> 319

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
 195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30
Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45
Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80
Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160
Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val

515520525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His

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His His

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

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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val

202530

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr

354045

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr



Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

- <210> 323
- <211> 550
- <212> PRT
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- <220>
- <223> 合成多肽

<400> 323

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly
260 265 270

Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
275 280 285

Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn
290 295 300

Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu
305 310 315 320

Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr
325 330 335

Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys
340 345 350

Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala
355 360 365

Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser
370 375 380

Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr
405 410 415

Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val
420 425 430

Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr
435 440 445

Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile
450 455 460

Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly
465 470 475 480

Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro
485 490 495

Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp
500 505 510

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser
515 520 525

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
530 535 540

His His His His His His
545 550

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser
180 185 190

Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg
500 505 510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly
515 520 525

Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn
530 535 540

Gly His His His His His His
545 550

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Gly Ile Ser Tyr Ser Gly Thr Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr
115 120 125

Asp Tyr Ser Thr Pro Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr
420 425 430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn
435 440 445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu
450 455 460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser
465 470 475 480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln
485 490 495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg

	500		505		510
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly	515		520		525
Ser Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn	530		535		540
Gly His His His His His His	545		550		
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly	1		5		10
Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val		20		25	30
Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe		35		40	45
Thr Phe Arg Asn Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys		50		55	60
Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Asn Asn Lys Tyr	65		70		75
Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser		85		90	95
Lys Asn Thr Leu Phe Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr		100		105	110
Ala Val Tyr Tyr Cys Ala Arg Glu Phe Tyr Tyr Asp Ser Thr Gly Tyr		115		120	125

Asp Tyr Ser Thr Pro Gly Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr
130 135 140

Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
145 150 155 160

Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
165 170 175

Val Gly Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser
180 185 190

Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
195 200 205

Leu Ile Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu
225 230 235 240

Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Val Asn Leu
245 250 255

Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser



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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20 25 30

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
 35 40 45

Thr Phe Ser Ser Tyr Gly Met Gln Trp Val Arg Gln Ala Pro Gly Lys
 50 55 60

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

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
 85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
 115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
 145 150 155 160

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
 165 170 175

Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu

180										185					190				
Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Val	Pro	Lys	Leu	Leu	Ile	Tyr				
		195					200					205							
Ala	Ala	Ser	Thr	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser				
	210					215					220								
Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu				
225					230					235					240				
Asp	Val	Ala	Thr	Tyr	Tyr	Cys	Gln	Lys	Tyr	Asn	Ser	Ala	Pro	Leu	Thr				
				245					250						255				
Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser				
			260					265					270						
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly				
		275					280					285							
Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr				
	290					295					300								
Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val				
305					310					315					320				
Ala	Arg	Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp				
				325					330					335					
Ser	Val	Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr				
			340					345					350						
Ala	Tyr	Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr				
		355					360					365							
Tyr	Cys	Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp				
	370					375					380								
Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly				
385					390					395					400				

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val
405 410 415

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu
420 425 430

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn
435 440 445

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly
450 455 460

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu
465 470 475 480

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp
485 490 495

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe
500 505 510

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg
515 520 525

Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His
530 535 540

His His His His
545

<210> 328
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<212> PRT
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val

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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
354045

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
505560

Gly Leu Glu Trp Val Ala Val Ile Ser Tyr Ser Gly Ser Asn Lys Tyr
65707580

Tyr Ala Ser Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
859095

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100105110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Arg Tyr
115120125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130135140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145150155160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165170175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr
180185190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195200205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210215220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225230235240

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Thr Ser Pro Leu
245 250 255

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

<210> 329
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
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Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Phe Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Ser Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Ser Ser Val Lys Gly Arg Val Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Asp Gly Tyr Pro Ile Phe Tyr Tyr Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
145 150 155 160

Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu
165 170 175

Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
180 185 190

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
195 200 205

Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
210 215 220

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
225 230 235 240

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
245 250 255

Thr Phe Gly Pro Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
 305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
 325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
 340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
 355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
 370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
 385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gln Thr Val
 405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
 420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
 435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
 450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
 465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
 485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
 500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
 515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
530 535 540

His His His His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
20 25 30

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Thr Phe Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Val Ala Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr
65 70 75 80

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser
85 90 95

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Arg Ala Gly Ile Ile Gly Thr Ile Gly
115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145 150 155 160

Ser Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly
165 170 175

Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Gly Glu Lys Tyr
180 185 190

Thr Ser Trp Tyr Gln Gln Arg Pro Gly Gln Ser Pro Leu Leu Val Ile
195 200 205

Tyr Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly
210 215 220

Ser Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala
225 230 235 240

Met Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Glu Ser Ser Thr Val
245 250 255

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Ser Gly Gly Gly Gly
260 265 270

Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
275 280 285

Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys
290 295 300

Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
305 310 315 320

Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala
325 330 335

Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn
340 345 350

Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val
355 360 365

Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr
 370 375 380

Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly
 385 390 395 400

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val
 405 410 415

Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr
 420 425 430

Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro
 435 440 445

Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly
 450 455 460

Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser
 465 470 475 480

Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu
 485 490 495

Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val
 500 505 510

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln
 515 520 525

Arg Phe Val Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His
 530 535 540

His His His His His
 545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Arg Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Phe Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420

425

430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val

435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys

450455460

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

465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala

485490495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500505510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val

515520525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His

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His His

545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly

151015

Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Thr
195 200 205

Ser Asn Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260										265					270				
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val				
				325					330					335					
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr				
			340					345					350						
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
	370					375					380								
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
385					390					395					400				
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln				
				405					410					415					
Glu	Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys				
			420					425					430						
Gly	Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val				
		435					440					445							
Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys				
	450					455					460								
Phe	Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly				
465					470				475						480				

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

- <210> 333
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 333

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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

100										105					110				
Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Val	Tyr	Ser	Asn	Tyr	Gly	Trp	Phe				
		115					120					125							
Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly				
	130					135					140								
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Ile	Val	Leu				
145					150					155					160				
Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly	Glu	Arg	Ala	Thr				
				165					170					175					
Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser	Tyr	Leu	Ala	Trp				
			180					185					190						
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala				
		195					200					205							
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe				
225					230					235					240				
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly				
				245					250					255					
Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val				
			260					265					270						
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
		275					280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 334
<211> 546
<212> PRT
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<400> 334

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
100 105 110
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125
Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255

Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 335
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<212> PRT
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Arg Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ser Ser Ser Arg Ala Leu
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Asp Ser Ser Pro Arg Thr Phe Gly
 245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125
 Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160
 Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175
 Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190
 Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205
 Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
 210 215 220
 Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240
 Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255
 Gly Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270
 Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

500 505 510
 Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525
 Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540
 His His
 545

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 Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30
 Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45
 Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60
 Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80
 Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

340										345					350				
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val				
		355					360					365							
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp				
	370					375					380								
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
385					390					395					400				
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu				
			405						410					415					
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly				
			420					425					430						
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln				
		435					440					445							
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe				
	450					455					460								
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly				
465					470					475					480				
Lys	Ala	Ala	Leu	Thr	Leu	Ser	Gly	Val	Gln	Pro	Glu	Asp	Glu	Ala	Glu				
			485						490					495					
Tyr	Tyr	Cys	Val	Leu	Trp	Tyr	Ser	Asn	Arg	Trp	Val	Phe	Gly	Gly	Gly				
			500					505					510						
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gly	Gly	Gly	Ser	Gln	Arg	Phe	Val	Thr				
		515					520					525							
Gly	His	Phe	Gly	Gly	Leu	His	Pro	Ala	Asn	Gly	His	His	His	His	His				
	530					535					540								
His																			
545																			

<210> 338
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

180										185					190				
Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu	Ile	Tyr	Gly	Ala				
	195						200					205							
Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser				
	210					215					220								
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Arg	Leu	Glu	Pro	Glu	Asp	Phe				
225					230					235					240				
Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro	Leu	Thr	Phe	Gly				
				245					250						255				
Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val				
			260					265					270						
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu				
	275						280					285							
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met				
	290					295					300								
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg				
305					310					315					320				
Ile	Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val				
				325					330					335					
Lys	Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr				
			340					345					350						
Leu	Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys				
		355					360					365							
Val	Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr				
	370					375					380								
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser				
385					390					395					400				

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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<400> 339

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
354045

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
505560

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65707580

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
859095

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100105110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115120125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130135140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145150155160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165170175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180185190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195200205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210215220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225230235240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Pro
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 340
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<400> 340

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
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Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
 530 535 540

His
 545

<210> 341
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ile Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 342
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Asp Trp Ile Gly Tyr Ile Phe Tyr Arg Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Asn Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
 180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
 195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ser Phe Gly Gln
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

260										265										270									
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys														
		275					280					285																	
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn														
	290					295					300																		
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile														
305					310					315					320														
Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	Lys														
				325					330					335															
Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr	Leu														
			340					345					350																
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val														
		355					360					365																	
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp														
	370					375					380																		
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly														
385				390						395					400														
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu														
				405					410					415															
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly														
			420					425					430																
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln														
		435					440					445																	
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe														
	450					455					460																		
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly														
465					470					475				480															

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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<400> 344

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Arg Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

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



Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
 450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
 465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
 485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
 500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
 515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
 530 535 540

His His
545

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<400> 345

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gly
245 250 255

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 346
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<400> 346

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
 225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
 245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 347
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Val Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ile Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

	500		505		510
Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val	515	520	525		
Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His	530	535	540		
His His	545				
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly	1	5	10	15	
Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu	20	25	30		
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly	35	40	45		
Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro	50	55	60		
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr	65	70	75	80	
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr	85	90	95		
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp	100	105	110		
Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe	115	120	125		

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr



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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Arg Thr
 65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
 85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
 100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
 115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
 145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
 165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp

180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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

	20		25		30	
Val	Lys	Pro	Ser	Glu	Thr	Leu
	35					Ser
						Leu
						Thr
						Cys
						Thr
						Val
						Ser
						Gly
						Gly
Ser	Val	Ser	Ser	Gly	Gly	Tyr
50						55
						Tyr
						Trp
						Ser
						Trp
						Ile
						Arg
						Gln
						Pro
						Pro
Gly	Lys	Gly	Leu	Glu	Trp	Ile
65					70	
					Gly	Tyr
					Ile	Tyr
					75	
					Tyr	Tyr
					Arg	Gly
					Arg	Thr
						80
Tyr	Tyr	Asn	Pro	Ser	Leu	Lys
				85		
					Ser	Arg
					Val	Thr
					Ile	Ser
					Val	Asp
						95
						Thr
Ser	Lys	Asn	Gln	Phe	Ser	Leu
						Lys
						Leu
						Ser
						Ser
						Val
						Thr
						Ala
						Ala
						Asp
						110
Thr	Ala	Val	Tyr	Tyr	Cys	Ala
						Arg
						Val
						Tyr
						Ser
						Asn
						Tyr
						Gly
						Trp
						Phe
						125
Asp	Pro	Trp	Gly	Gln	Gly	Thr
130						135
						Leu
						Val
						Thr
						Val
						Ser
						Ser
						Gly
						Gly
						Gly
Gly	Ser	Gly	Gly	Gly	Gly	Ser
145						150
						Gly
						Gly
						Gly
						Gly
						Ser
						Glu
						Ile
						Val
						Leu
						160
Thr	Gln	Ser	Pro	Gly	Thr	Leu
						Ser
						Leu
						Ser
						Pro
						Gly
						Glu
						Arg
						Ala
						Thr
						175
Leu	Ser	Cys	Arg	Ala	Ser	Gln
						Ser
						Val
						Ser
						Ser
						Ser
						Tyr
						Leu
						Ala
						Trp
						190
Tyr	Gln	Gln	Lys	Pro	Gly	Gln
						Ala
						Pro
						Arg
						Leu
						Leu
						Ile
						Tyr
						Gly
						Ala
Ser	Ser	Arg	Ala	Thr	Gly	Ile
210						215
						Pro
						Asp
						Arg
						Phe
						Ser
						Gly
						Ser
						Gly
						Ser
Gly	Thr	Asp	Phe	Thr	Leu	Thr
225						Ile
						Ser
						Arg
						Leu
						Glu
						Pro
						Glu
						Asp
						Phe
						240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Leu Thr Phe Gly
245 250 255

Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 351
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<212> PRT
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
20 25 30

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Arg Gly Arg Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Thr Phe Gly Gln
245 250 255

Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln
260 265 270

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys
275 280 285

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn
290 295 300

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile
305 310 315 320

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys
325 330 335

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu
340 345 350

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val
355 360 365

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp
370 375 380

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
385 390 395 400

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu
405 410 415

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly
420 425 430

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln
435 440 445

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe
450 455 460

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly
465 470 475 480

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
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<210> 352
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
35 40 45

Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Phe Tyr Ser Gly Lys Thr
65 70 75 80

Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Val Tyr Ser Asn Tyr Gly Trp Phe
115 120 125

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
145 150 155 160

Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr
165 170 175

Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp
180 185 190

Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala
195 200 205

Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe
225 230 235 240

Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Ile Thr Phe Gly
245 250 255

Gln Gly Thr Arg Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 353
<211> 551
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30

Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly
 35 40 45

Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
 50 55 60

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

Asn Pro Ser Leu Lys Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys
 85 90 95

Asn Gln Phe Ser Leu Lys Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
 100 105 110

Val Tyr Tyr Cys Ala Arg Asp Gln Arg Arg Ile Val Ala Ala Gly Gly
 115 120 125

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
 130 135 140

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160

Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro
 165 170 175

Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
 180 185 190

Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu
 195 200 205

Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe
210 215 220

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
225 230 235 240

Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser
245 250 255

Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly
260 265 270

Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
275 280 285

Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
290 295 300

Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
305 310 315 320

Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr
325 330 335

Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser
340 345 350

Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr
355 360 365

Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile
370 375 380

Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
405 410 415

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

420

425

430

Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn

435440445

Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu

450455460

Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser

465470475480

Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln

485490495

Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg

500505510

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly

515520525

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

530535540

Gly His His His His His His

545550

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly

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Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu

202530

Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly

354045

Ser Ile Ser Ser Asn Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
50 55 60

Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr
65 70 75 80

Phe Tyr Asn Pro Ser Leu Lys Ser Arg Gly Ala Ile Ser Val Asp Thr
85 90 95

Ser Lys Asn Gln Phe Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp
100 105 110

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Val Tyr Arg Thr Gly Ala Phe
115 120 125

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met
145 150 155 160

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
165 170 175

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr
180 185 190

Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser
195 200 205

Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly
210 215 220

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
225 230 235 240

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Phe Gly Gly
245 250 255

Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln

260										265					270				
Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu	Lys				
		275					280					285							
Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met	Asn				
	290					295					300								
Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg	Ile				
305					310					315					320				
Arg	Ser	Lys	Tyr	Asn	Asn	Tyr	Ala	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	Lys				
				325					330						335				
Asp	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Lys	Asn	Thr	Ala	Tyr	Leu				
			340					345						350					
Gln	Met	Asn	Asn	Leu	Lys	Thr	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Val				
		355					360						365						
Arg	His	Gly	Asn	Phe	Gly	Asn	Ser	Tyr	Ile	Ser	Tyr	Trp	Ala	Tyr	Trp				
	370					375					380								
Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly				
385					390					395					400				
Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Thr	Val	Val	Thr	Gln	Glu				
				405					410					415					
Pro	Ser	Leu	Thr	Val	Ser	Pro	Gly	Gly	Thr	Val	Thr	Leu	Thr	Cys	Gly				
			420					425						430					
Ser	Ser	Thr	Gly	Ala	Val	Thr	Ser	Gly	Asn	Tyr	Pro	Asn	Trp	Val	Gln				
		435					440					445							
Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Gly	Leu	Ile	Gly	Gly	Thr	Lys	Phe				
	450					455					460								
Leu	Ala	Pro	Gly	Thr	Pro	Ala	Arg	Phe	Ser	Gly	Ser	Leu	Leu	Gly	Gly				
465					470					475					480				

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu
485 490 495

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly
500 505 510

Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val Thr
515 520 525

Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His His
530 535 540

His
545

<210> 355
<211> 546
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<400> 355

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr

100					105					110					
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly
		115					120					125			
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly
	130					135					140				
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Thr	Pro
145					150					155					160
Leu	Ser	Leu	Ser	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg
				165					170					175	
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp
			180					185					190		
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly
		195					200					205			
Ser	Tyr	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val
225					230					235					240
Gly	Val	Tyr	Tyr	Cys	Met	Gln	Ala	Leu	Gln	Thr	Pro	Phe	Thr	Phe	Gly
				245					250					255	
Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys	Ser	Gly	Gly	Gly	Gly	Ser	Glu	Val
			260					265					270		
Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	Ser	Leu
		275					280					285			
Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Lys	Tyr	Ala	Met
	290					295					300				
Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	Ala	Arg
305					310					315					320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 356
<211> 546
<212> PRT
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<220>
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<400> 356

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

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

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 357
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<212> PRT
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<223> 合成多肽

<400> 357

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
 245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
 260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
 290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
 305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
 325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
 340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
 355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
 370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
 385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
 405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
 420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
 435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 358
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Tyr Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly

510

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
 1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
 35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
 50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
 65 70 75 80

Tyr Ala Gln Lys Leu Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
 85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
 100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
 165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp

	180							185								190
Tyr	Leu	Gln 195	Lys	Pro	Gly	Gln	Ser 200	Pro	Gln	Leu	Leu	Ile 205	Tyr	Leu	Gly	
Ser	Asn 210	Arg	Ala	Ser	Gly	Val 215	Pro	Asp	Arg	Phe	Ser 220	Gly	Ser	Gly	Ser	
Gly 225	Thr	Asp	Phe	Thr	Leu 230	Lys	Ile	Ser	Arg	Val 235	Glu	Ala	Glu	Asp	Val 240	
Gly	Val	Tyr	Tyr	Cys 245	Met	Gln	Ala	Leu	Gln 250	Thr	Pro	Phe	Thr	Phe	Gly	
Pro	Gly	Thr	Lys 260	Val	Asp	Ile	Lys	Ser 265	Gly	Gly	Gly	Gly	Ser 270	Glu	Val	
Gln	Leu	Val 275	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly 285	Gly	Ser	Leu	
Lys	Leu 290	Ser	Cys	Ala	Ala	Ser 295	Gly	Phe	Thr	Phe	Asn 300	Lys	Tyr	Ala	Met	
Asn 305	Trp	Val	Arg	Gln	Ala 310	Pro	Gly	Lys	Gly	Leu 315	Glu	Trp	Val	Ala	Arg 320	
Ile	Arg	Ser	Lys	Tyr 325	Asn	Asn	Tyr	Ala	Thr 330	Tyr	Tyr	Ala	Asp	Ser 335	Val	
Lys	Asp	Arg	Phe 340	Thr	Ile	Ser	Arg	Asp 345	Asp	Ser	Lys	Asn	Thr 350	Ala	Tyr	
Leu	Gln	Met 355	Asn	Asn	Leu	Lys	Thr 360	Glu	Asp	Thr	Ala	Val 365	Tyr	Tyr	Cys	
Val	Arg 370	His	Gly	Asn	Phe	Gly 375	Asn	Ser	Tyr	Ile	Ser 380	Tyr	Trp	Ala	Tyr	
Trp 385	Gly	Gln	Gly	Thr	Leu 390	Val	Thr	Val	Ser	Ser 395	Gly	Gly	Gly	Gly	Ser 400	

Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 361
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<400> 361

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

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Lys	Lys	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr
		35					40					45			
Thr	Phe	Thr	Thr	Tyr	Gly	Ile	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln
	50					55					60				
Gly	Leu	Glu	Trp	Met	Gly	Trp	Ile	Asn	Pro	Tyr	Thr	Gly	Lys	Thr	Asn
65					70					75					80
Tyr	Ala	Gln	Lys	Leu	Gln	Gly	Arg	Val	Thr	Met	Ala	Thr	Asp	Thr	Ser
				85					90					95	
Thr	Ser	Thr	Ala	Tyr	Met	Glu	Leu	Arg	Ser	Leu	Arg	Ser	Asp	Asp	Thr
			100					105					110		
Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Ser	Gly	Gly	Phe	Asp	Tyr	Trp	Gly
		115					120					125			
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly
	130					135					140				
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro
145					150					155					160
Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg
				165					170					175	
Ser	Ser	Gln	Ser	Leu	Leu	His	Ser	Val	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp
			180					185					190		
Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly
		195					200					205			
Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser
	210					215					220				
Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val
225					230					235					240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

<210> 362
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Glu Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Asp Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Leu Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

- <210> 363
- <211> 546
- <212> PRT
- <213> 人工序列

- <220>
- <223> 合成多肽

<400> 363

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
545

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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
1 5 10 15

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

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys

420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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<400> 365

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val

260265270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275280285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290295300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305310315320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325330335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340345350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355360365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370375380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385390395400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405410415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420425430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435440445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450455460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465470475480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Asn Arg Asn
65 70 75 80

Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr

100	105	110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly		
115	120	125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly		
130	135	140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro		
145	150	155
160		
Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg		
165	170	175
Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp		
180	185	190
Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly		
195	200	205
Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser		
210	215	220
Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val		
225	230	235
240		
Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly		
245	250	255
Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val		
260	265	270
Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu		
275	280	285
Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met		
290	295	300
Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg		
305	310	315
320		

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30
Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45
Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60
Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80
Tyr Ala Gln Lys Val Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95
Thr Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Arg Ser Asp Asp Thr
100 105 110
Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125
Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140
Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160



Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly
245 250 255

Pro Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val
260 265 270

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
275 280 285

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met
290 295 300

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg
305 310 315 320

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val
325 330 335

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr
340 345 350

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys
355 360 365

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr
370 375 380

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser
385 390 395 400

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln
405 410 415

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys
420 425 430

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val
435 440 445

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys
450 455 460

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly
465 470 475 480

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala
485 490 495

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly
500 505 510

Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Ser Gln Arg Phe Val
515 520 525

Thr Gly His Phe Gly Gly Leu His Pro Ala Asn Gly His His His His
530 535 540

His His
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Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
20 25 30

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Tyr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
50 55 60

Gly Leu Glu Trp Met Gly Trp Ile Asn Pro Tyr Thr Gly Lys Thr Asn
65 70 75 80

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser
85 90 95

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Gly Gly Phe Asp Tyr Trp Gly
115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro
145 150 155 160

Leu Ser Leu Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Arg
165 170 175

Ser Ser Gln Ser Leu Leu His Ser Val Gly Tyr Asn Tyr Leu Asp Trp
180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly
195 200 205

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
210 215 220

201609811

發明摘要

※ 申請案號：104124964

※ 申請日：104.9.31

※IPC 分類：

C07K16/38

C07K16/30

A61K39/395

A61P35/00

【發明名稱】

具有增強之組織分布之雙特異性單鏈抗體構築體

BISPECIFIC SINGLE CHAIN ANTIBODY CONSTRUCT WITH
ENHANCED TISSUE DISTRIBUTION

【中文】

本發明提供一種經由第一結合結構域結合於標靶細胞表面抗原且經由第二結合結構域結合於T細胞表面抗原CD3的雙特異性單鏈抗體構築體，該構築體包含兩個FcRn結合肽。此外，本發明提供一種編碼該抗體構築體之核酸分子、包含該核酸分子之載體及用該載體轉型或轉染之宿主細胞。此外，本發明提供一種製備本發明之抗體構築體之方法、該抗體構築體之醫療用途及包含該抗體構築體之套組。

【英文】

The present invention provides to a bispecific single chain antibody construct binding to a target cell surface antigen via a first binding domain and to the T cell surface antigen CD3 via a second binding domain, the construct comprising two FcRn binding peptides. Moreover, the invention provides a nucleic acid molecule encoding the antibody construct, a vector comprising said nucleic acid molecule and a host cell transformed or transfected with said vector. Furthermore, the invention provides a process for the production of the antibody construct of the invention, a medical use of said antibody construct and a kit comprising said antibody construct.

【代表圖】

【本案指定代表圖】：第（2(1)）圖。

【本代表圖之符號簡單說明】：

無

【本案若有化學式時，請揭示最能顯示發明特徵的化學式】：

無

申請專利範圍

1. 一種雙特異性單鏈抗體構築體，其經由第一結合結構域結合於標靶細胞表面抗原且經由第二結合結構域結合於T細胞表面抗原CD3，該構築體包含兩個FcRn結合肽，其中：

(a)第一FcRn結合肽包含胺基酸序列**QRFVTGHFGGLX₁PANG** (SEQ ID NO: 1)，其中X₁為Y或H；且

(b)第二FcRn結合肽包含胺基酸序列**TGHFGGLHP** (SEQ ID NO: 4)；

其中該雙特異性單鏈抗體構築體不具有SEQ ID NO: 132-135中所描繪之胺基酸序列。

2. 如請求項1之抗體構築體，其中該第二FcRn結合肽包含胺基酸序列 **QRFVTGHFGGLHPANG** (SEQ ID NO: 3) 或 **QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)。

3. 如請求項1或2之抗體構築體，其包含選自由以下組成之群的N端之FcRn結合肽及C端之FcRn結合肽：

(a) 該 N 端 之 FcRn 結 合 肽 包 含 胺 基 酸 序 列 **QRFVTGHFGGLYPANG** (SEQ ID NO: 2)，且該C端之FcRn結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)；

(b) 該 N 端 之 FcRn 結 合 肽 包 含 胺 基 酸 序 列 **QRFVTGHFGGLYPANG** (SEQ ID NO: 2)，且該C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)；

(c) 該 N 端 之 FcRn 結 合 肽 包 含 胺 基 酸 序 列 **QRFVTGHFGGLHPANG** (SEQ ID NO: 3)，且該C端之FcRn結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)；

(d) 該 N 端 之 FcRn 結 合 肽 包 含 胺 基 酸 序 列

QRFVTGHFGGLHPANG (SEQ ID NO: 3)，且該C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)；

(e) 該 N 端之 FcRn 結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)，且該C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLYPANG** (SEQ ID NO: 2)；且

(f) 該 N 端之 FcRn 結合肽包含胺基酸序列**QRFCTGHFGGLHPCNG** (SEQ ID NO: 5)，且該C端之FcRn結合肽包含胺基酸序列**QRFVTGHFGGLHPANG** (SEQ ID NO: 3)。

4. 如前述請求項中任一項之抗體構築體，其中該等FcRn結合肽經由一或多個肽連接子連接於該抗體構築體。
5. 如請求項4之抗體構築體，其中該肽連接子具有胺基酸序列(GGGGS)_n (SEQ ID NO: 6)_n，其中n為在1至5範圍內之整數。
6. 如前述請求項中任一項之抗體構築體，其中該構築體包含結合於血清白蛋白之另一結構域。
7. 如前述請求項中任一項之抗體構築體，其中該標靶細胞表面抗原為腫瘤抗原。
8. 如請求項7之抗體構築體，其中該腫瘤抗原選自由CDH19、間皮素(MSLN)、DLL3、FLT3、CD33、CD20及EGFRvIII組成之群。
9. 如前述請求項中任一項之抗體構築體，其中該第二結合結構域結合於人類及白鬚狨(*Callithrix jacchus*)、棉頂狨(*Saguinus oedipus*)或松鼠猴(*Saimiri sciureus*) CD3 ϵ 鏈之抗原決定基，其中該抗原決定基為包含於由以下組成之群中的胺基酸序列之一部分：SEQ ID NO: 7、8、9及10，且包含至少胺基酸序列Gln-Asp-Gly-Asn-Glu (SEQ ID NO: 11)。
10. 如請求項9之抗體構築體，其中該第二結合結構域包含具有CDR-L1-L3之VL區及具有CDR-H1-H3的VH區，該CDR-L1-L3及CDR-

H1-H3選自由以下組成之群：

(a) SEQ ID NO: 12-14中所描繪之CDR-L1-L3及SEQ ID NO: 15-17中所描繪之CDR-H1-H3；

(b) SEQ ID NO: 24-26中所描繪之CDR-L1-L3及SEQ ID NO: 27-29中所描繪之CDR-H1-H3；

(c) SEQ ID NO: 36-38中所描繪之CDR-L1-L3及SEQ ID NO: 39-41中所描繪之CDR-H1-H3；

(d) SEQ ID NO: 48-50中所描繪之CDR-L1-L3及SEQ ID NO: 51-53中所描繪之CDR-H1-H3；

(e) SEQ ID NO: 60-62中所描繪之CDR-L1-L3及SEQ ID NO: 63-65中所描繪之CDR-H1-H3；

(f) SEQ ID NO: 72-74中所描繪之CDR-L1-L3及SEQ ID NO: 75-77中所描繪之CDR-H1-H3；

(g) SEQ ID NO: 84-86中所描繪之CDR-L1-L3及SEQ ID NO: 87-89中所描繪之CDR-H1-H3；

(h) SEQ ID NO: 96-98中所描繪之CDR-L1-L3及SEQ ID NO: 99-101中所描繪之CDR-H1-H3；

(i) SEQ ID NO: 108-110中所描繪之CDR-L1-L3及SEQ ID NO: 111-113中所描繪之CDR-H1-H3；

(j) SEQ ID NO: 120-122中所描繪之CDR-L1-L3及SEQ ID NO: 123-125中所描繪之CDR-H1-H3；

(k) SEQ ID NO: 616-618中所描繪之CDR-L1-L3及SEQ ID NO: 613-615中所描繪之CDR-H1-H3；

(l) SEQ ID NO: 626-628中所描繪之CDR-L1-L3及SEQ ID NO: 623-625中所描繪之CDR-H1-H3；

(m) SEQ ID NO: 636-638中所描繪之CDR-L1-L3及SEQ ID NO:

633-635中所描繪之CDR-H1-H3；

(n) SEQ ID NO: 646-648中所描繪之CDR-L1-L3及SEQ ID NO: 643-645中所描繪之CDR-H1-H3；

(o) SEQ ID NO: 656-658中所描繪之CDR-L1-L3及SEQ ID NO: 653-655中所描繪之CDR-H1-H3；

(p) SEQ ID NO: 666-668中所描繪之CDR-L1-L3及SEQ ID NO: 663-665中所描繪之CDR-H1-H3；

(q) SEQ ID NO: 676-678中所描繪之CDR-L1-L3及SEQ ID NO: 673-675中所描繪之CDR-H1-H3；及

(r) SEQ ID NO: 686-688中所描繪之CDR-L1-L3及SEQ ID NO: 683-685中所描繪之CDR-H1-H3。

11. 如請求項9或10之抗體構築體，其中該第二結合結構域包含選自由以下組成之群的成對VH及VL鏈：

(a) SEQ ID NO: 18中所描繪之VH鏈及SEQ ID NO: 20中所描繪之VL鏈；

(b) SEQ ID NO: 30中所描繪之VH鏈及SEQ ID NO: 32中所描繪之VL鏈；

(c) SEQ ID NO: 42中所描繪之VH鏈及SEQ ID NO: 44中所描繪之VL鏈；

(d) SEQ ID NO: 54中所描繪之VH鏈及SEQ ID NO: 56中所描繪之VL鏈；

(e) SEQ ID NO: 66中所描繪之VH鏈及SEQ ID NO: 68中所描繪之VL鏈；

(f) SEQ ID NO: 78中所描繪之VH鏈及SEQ ID NO: 80中所描繪之VL鏈；

(g) SEQ ID NO: 90中所描繪之VH鏈及SEQ ID NO: 92中所描繪

之VL鏈；

(h) SEQ ID NO: 102中所描繪之VH鏈及SEQ ID NO: 104中所描繪之VL鏈；

(i) SEQ ID NO: 114中所描繪之VH鏈及SEQ ID NO: 116中所描繪之VL鏈；

(j) SEQ ID NO: 126中所描繪之VH鏈及SEQ ID NO: 128中所描繪之VL鏈；

(k) SEQ ID NO: 619中所描繪之VH鏈及SEQ ID NO: 620中所描繪之VL鏈；

(l) SEQ ID NO: 629中所描繪之VH鏈及SEQ ID NO: 630中所描繪之VL鏈；

(m) SEQ ID NO: 639中所描繪之VH鏈及SEQ ID NO: 640中所描繪之VL鏈；

(n) SEQ ID NO: 649中所描繪之VH鏈及SEQ ID NO: 650中所描繪之VL鏈；

(o) SEQ ID NO: 659中所描繪之VH鏈及SEQ ID NO: 660中所描繪之VL鏈；

(p) SEQ ID NO: 669中所描繪之VH鏈及SEQ ID NO: 670中所描繪之VL鏈；

(q) SEQ ID NO: 679中所描繪之VH鏈及SEQ ID NO: 680中所描繪之VL鏈；及

(r) SEQ ID NO: 689中所描繪之VH鏈及SEQ ID NO: 690中所描繪之VL鏈。

12. 如請求項9至11中任一項之抗體構築體，其中該第二結合結構域包含SEQ ID NO: 22、SEQ ID NO: 34、SEQ ID NO: 46、SEQ ID NO: 58、SEQ ID NO: 70、SEQ ID NO: 82、SEQ ID NO: 94、

SEQ ID NO: 106、SEQ ID NO: 118、SEQ ID NO: 130、SEQ ID NO: 621、SEQ ID NO: 631、SEQ ID NO: 641、SEQ ID NO: 651、SEQ ID NO: 661、SEQ ID NO: 671、SEQ ID NO: 681或SEQ ID NO: 691中所描繪之胺基酸序列。

13. 如請求項1至12中任一項之抗體構築體，其中該等結構域自N端至C端排列如下：

(包含SEQ ID NO: 1之FcRn結合肽)-(該第一結合結構域之VH鏈)-(該第一結合結構域之VL鏈)-(該第二結合結構域之VH鏈)-(該第二結合結構域之VL鏈)-(包含SEQ ID NO: 4之FcRn結合肽)

或

(包含SEQ ID NO: 4之FcRn結合肽)-(該第一結合結構域之VH鏈)-(該第一結合結構域之VL鏈)-(該第二結合結構域之VH鏈)-(該第二結合結構域之VL鏈)-(包含SEQ ID NO: 1之FcRn結合肽)。

14. 一種聚核苷酸，其編碼如請求項1至13中任一項所定義之抗體構築體。
15. 一種載體，其包含如請求項14所定義之聚核苷酸。
16. 一種宿主細胞，其使用如請求項14所定義之聚核苷酸或使用如請求項15所定義之載體轉型或轉染。
17. 一種製備如請求項1至13中任一項之抗體構築體的方法，該方法包含在可以讓如請求項1至13中任一項所定義之抗體構築體表現的條件下培養如請求項16所定義之宿主細胞，及自培養物回收所產生之抗體構築體。
18. 一種醫藥組合物，其包含如請求項1至13中任一項之抗體構築體或根據如請求項17之方法製備的抗體構築體。
19. 如請求項1至13中任一項之抗體構築體，或根據如請求項17之方法製備之抗體構築體，其係用於預防、治療或改善選自增生性

疾病、腫瘤性疾病、病毒性疾病或免疫病症的疾病。

20. 一種用於治療或改善增生性疾病、腫瘤性疾病、病毒性疾病或免疫病症之方法，其包含為有需要之個體投與如請求項1至13中任一項之抗體構築體或根據如請求項17之方法製備的抗體構築體的步驟。
21. 一種套組，其包含如請求項1至13中任一項之抗體構築體或根據如請求項17之方法製備的抗體構築體、如請求項15所定義之載體及/或如請求項16所定義之宿主細胞。

圖式

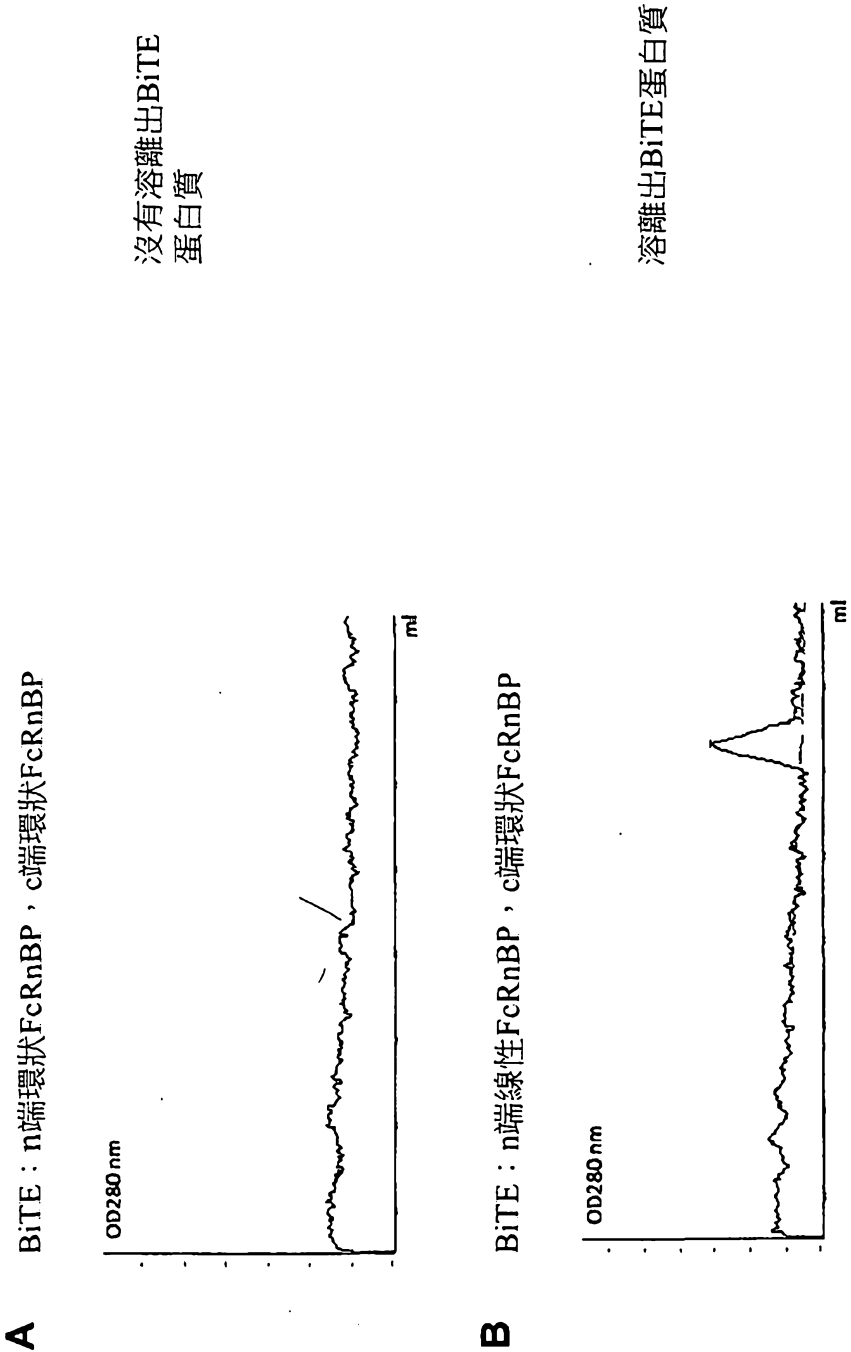
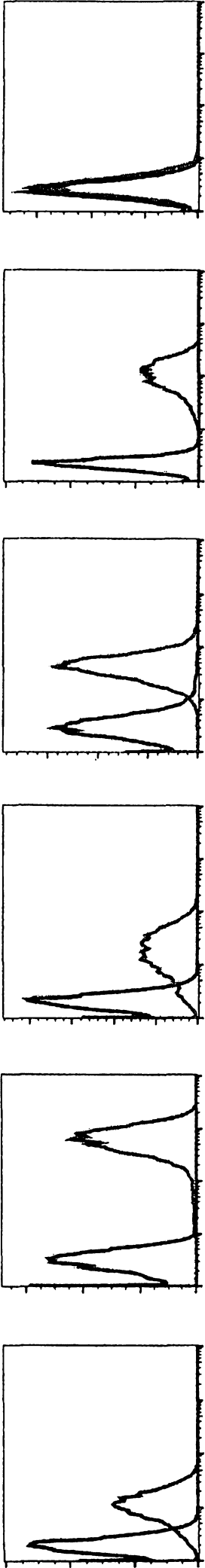


圖1

CHO 人類	HPB-ALL 人類	CHO 獼猴	LnPx4119 獼猴	CHL-1 天然	未轉染 CHO
CDH19	CD3	CDH19	CD3	CDH19	

2G6 302 x I2C6-3GS-D3HALB



2G6 302 x I2C6-HALB

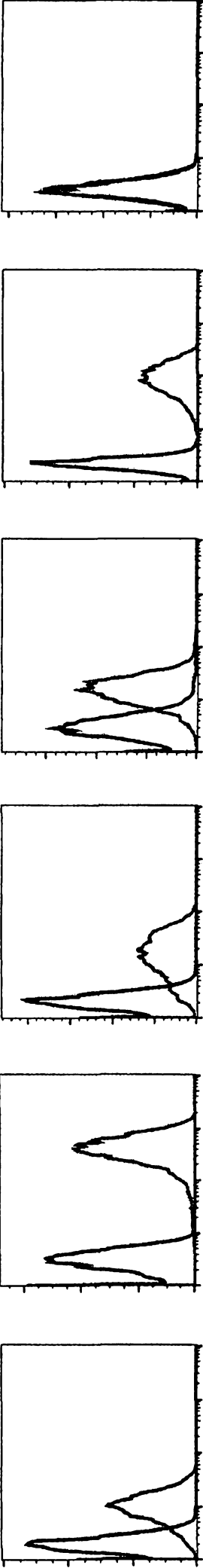


圖2(1)

CHO
人類

HPB-ALL
人類

CHO
獼猴

LnPx4119
獼猴

CHL-1
天然

未轉染
CHO

CDH19

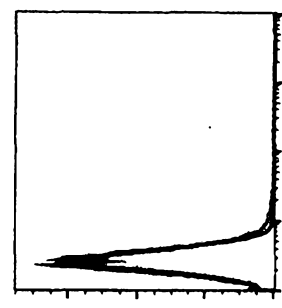
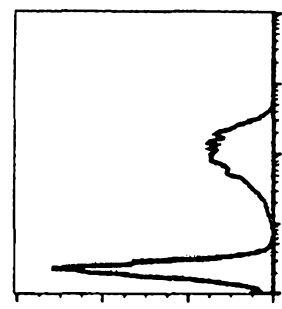
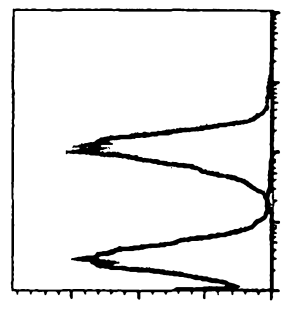
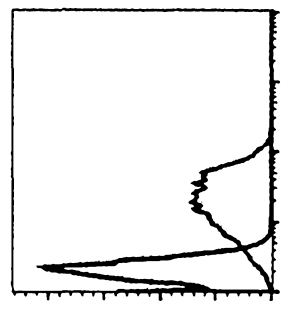
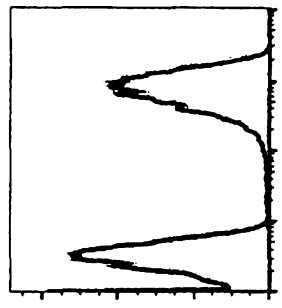
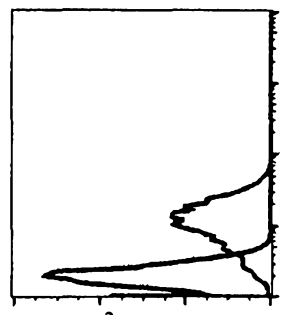
CD3

CDH19

CD3

CDH19

2G6 302 x I2C6-LFcBY



2G6 302 x I2C6-LFcBY-156

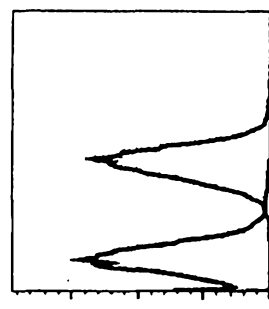
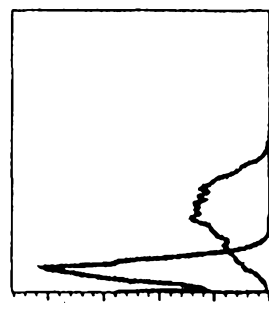
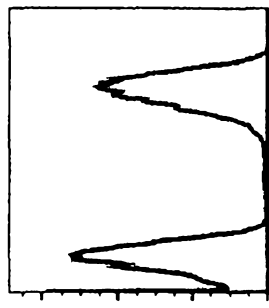
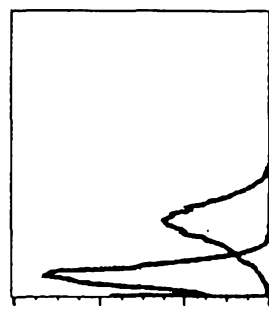


圖2(2)

CHO 人類	HPB-ALL 人類	CHO 獼猴	LnPx4119 獼猴	CHL-1 天然	未轉染 CHO
CDH19	CD3	CDH19	CD3	CDH19	

2G6 302 x I2C6-156

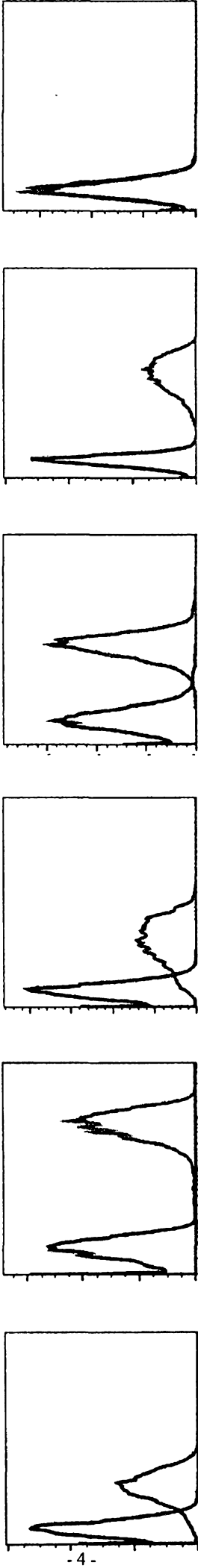


圖2(3)

