SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Anti-Tie2 Antibodies and Uses Thereof

<130> 7100A-WO

<140> To be assigned
<141> Filed herewith

<150> 61/525,308
<151> 2011-08-19

<150> 61/587,213
<151> 2012-01-17

<150> 61/674,405
<151> 2012-07-23

<160> 18

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1124
<212> PRT
<213> Homo sapiens

<400> 1

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Ser Gly Thr Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn Ser Leu
            20                  25                  30
Pro Leu Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly
        35                  40                  45
Trp Arg Pro His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu
    50                  55                  60
Met Asn Gln His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg
65                  70                  75                  80
Glu Trp Ala Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile
                85                  90                  95
Asn Gly Ala Tyr Phe Cys Glu Gly Arg Val Arg Gly Glu Ala Ile Arg
            100                 105                 110
Ile Arg Thr Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr
        115                 120                 125
Leu Thr Met Thr Val Asp Lys Gly Asp Asn Val Asn Ile Ser Phe Lys
    130                 135                 140
Lys Val Leu Ile Lys Glu Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser
145                 150                 155                 160
Phe Ile His Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val
                165                 170                 175
His Leu Pro His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg
            180                 185                 190
Tyr Ile Gly Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val
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         195                 200                 205
Arg Arg Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys
    210                 215                 220
Thr Ala Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys
225                 230                 235                 240
Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu
                245                 250                 255
Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu
            260                 265                 270
Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser
        275                 280                 285
Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu Ala Cys His Pro
    290                 295                 300
Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly
305                 310                 315                 320
Glu Met Cys Asp Arg Phe Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln
                325                 330                 335
Gly Leu Gln Cys Glu Arg Glu Gly Ile Pro Arg Met Thr Pro Lys Ile
            340                 345                 350
Val Asp Leu Pro Asp His Ile Glu Val Asn Ser Gly Lys Phe Asn Pro
        355                 360                 365
Ile Cys Lys Ala Ser Gly Trp Pro Leu Pro Thr Asn Glu Glu Met Thr
    370                 375                 380
Leu Val Lys Pro Asp Gly Thr Val Leu His Pro Lys Asp Phe Asn His
385                 390                 395                 400
Thr Asp His Phe Ser Val Ala Ile Phe Thr Ile His Arg Ile Leu Pro
                405                 410                 415
Pro Asp Ser Gly Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met
            420                 425                 430
Val Glu Lys Pro Phe Asn Ile Ser Val Lys Val Leu Pro Lys Pro Leu
        435                 440                 445
Asn Ala Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala Val Ile Asn
    450                 455                 460
Ile Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys
465                 470                 475                 480
Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln His Ile Gln
                485                 490                 495
Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro Arg Thr Glu
            500                 505                 510
Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly Gly Glu Gly
        515                 520                 525
His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro
    530                 535                 540
Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln Thr Thr Leu Asn
545                 550                 555                 560
Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp Asp Phe Tyr Val
                565                 570                 575
Glu Val Glu Arg Arg Ser Val Gln Lys Ser Asp Gln Gln Asn Ile Lys
            580                 585                 590
Val Pro Gly Asn Leu Thr Ser Val Leu Leu Asn Asn Leu His Pro Arg
        595                 600                 605
Glu Gln Tyr Val Val Arg Ala Arg Val Asn Thr Lys Ala Gln Gly Glu
    610                 615                 620
Trp Ser Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro
625                 630                 635                 640
Gln Pro Glu Asn Ile Lys Ile Ser Asn Ile Thr His Ser Ser Ala Val
                645                 650                 655
Ile Ser Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile
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            660                 665                 670
Arg Tyr Lys Val Gln Gly Lys Asn Glu Asp Gln His Val Asp Val Lys
        675                 680                 685
Ile Lys Asn Ala Thr Ile Thr Gln Tyr Gln Leu Lys Gly Leu Glu Pro
    690                 695                 700
Glu Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser
705                 710                 715                 720
Ser Asn Pro Ala Phe Ser His Glu Leu Val Thr Leu Pro Glu Ser Gln
                725                 730                 735
Ala Pro Ala Asp Leu Gly Gly Gly Lys Met Leu Leu Ile Ala Ile Leu
            740                 745                 750
Gly Ser Ala Gly Met Thr Cys Leu Thr Val Leu Leu Ala Phe Leu Ile
        755                 760                 765
Ile Leu Gln Leu Lys Arg Ala Asn Val Gln Arg Arg Met Ala Gln Ala
    770                 775                 780
Phe Gln Asn Val Arg Glu Glu Pro Ala Val Gln Phe Asn Ser Gly Thr
785                 790                 795                 800
Leu Ala Leu Asn Arg Lys Val Lys Asn Asn Pro Asp Pro Thr Ile Tyr
                805                 810                 815
Pro Val Leu Asp Trp Asn Asp Ile Lys Phe Gln Asp Val Ile Gly Glu
            820                 825                 830
Gly Asn Phe Gly Gln Val Leu Lys Ala Arg Ile Lys Lys Asp Gly Leu
        835                 840                 845
Arg Met Asp Ala Ala Ile Lys Arg Met Lys Glu Tyr Ala Ser Lys Asp
    850                 855                 860
Asp His Arg Asp Phe Ala Gly Glu Leu Glu Val Leu Cys Lys Leu Gly
865                 870                 875                 880
His His Pro Asn Ile Ile Asn Leu Leu Gly Ala Cys Glu His Arg Gly
                885                 890                 895
Tyr Leu Tyr Leu Ala Ile Glu Tyr Ala Pro His Gly Asn Leu Leu Asp
            900                 905                 910
Phe Leu Arg Lys Ser Arg Val Leu Glu Thr Asp Pro Ala Phe Ala Ile
        915                 920                 925
Ala Asn Ser Thr Ala Ser Thr Leu Ser Ser His His Leu Leu His Phe
    930                 935                 940
Ala Ala Asp Val Ala Arg Gly Met Asp Tyr Leu Ser Gln Lys Gln Phe
945                 950                 955                 960
Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Gly Glu Asn Tyr
                965                 970                 975
Val Ala Lys Ile Ala Asp Phe Gly Leu Ser Arg Gly Gln Glu Val Tyr
            980                 985                 990
Val Lys Lys Thr Met Gly Arg Leu Pro Val Arg Trp Met Ala Ile Glu
        995                 1000                1005
Ser Leu Asn Tyr Ser Val Tyr Thr Thr Asn Ser Asp Val Trp Ser Tyr
    1010                1015                1020
Gly Val Leu Leu Trp Glu Ile Val Ser Leu Gly Gly Thr Pro Tyr Cys
1025                1030                1035                1040
Gly Met Thr Cys Ala Glu Leu Tyr Glu Lys Leu Pro Gln Gly Tyr Arg
                1045                1050                1055
Leu Glu Lys Pro Leu Asn Cys Asp Asp Glu Val Tyr Asp Leu Met Arg
            1060                1065                1070
Gln Cys Trp Arg Glu Lys Pro Tyr Glu Arg Pro Ser Phe Ala Gln Ile
        1075                1080                1085
Leu Val Ser Leu Asn Arg Met Leu Glu Glu Arg Lys Thr Tyr Val Asn
    1090                1095                1100
Thr Thr Leu Tyr Glu Lys Phe Thr Tyr Ala Gly Ile Asp Cys Ser Ala
1105                1110                1115                1120
Glu Glu Ala Ala
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<210> 2
<211> 735
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2
Thr Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn Ser Leu Pro Leu
 1   5   10   15
Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly Trp Arg
            20   25   30
Pro His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu Met Asn
        35   40   45
Gln His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg Glu Trp
    50   55   60
Ala Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile Asn Gly
65   70   75   80
Ala Tyr Phe Cys Glu Gly Arg Val Arg Gly Glu Ala Ile Arg Ile Arg
                85   90   95
Thr Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr
            100   105   110
Met Thr Val Asp Lys Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val
        115   120   125
Leu Ile Lys Glu Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile
    130   135   140
His Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu
145   150   155   160
Pro His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile
                165   170   175
Gly Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg
            180   185   190
Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys Thr Ala
        195   200   205
Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys
    210   215   220
Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu Leu His
225   230   235   240
Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu Gly Cys
                245   250   255
Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala
            260   265   270
Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu Ala Cys His Pro Gly Phe
        275   280   285
Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly Glu Met
    290   295   300
Cys Asp Arg Phe Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln Gly Leu
305   310   315   320
Gln Cys Glu Arg Glu Gly Ile Pro Arg Met Thr Pro Lys Ile Val Asp
                325   330   335
Leu Pro Asp His Ile Glu Val Asn Ser Gly Lys Phe Asn Pro Ile Cys
            340   345   350
Lys Ala Ser Gly Trp Pro Leu Pro Thr Asn Glu Glu Met Thr Leu Val
        355   360   365

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Lys Pro Asp Gly Thr Val Leu His Pro Lys Asp Phe Asn His Thr Asp
    370                 375                 380
His Phe Ser Val Ala Ile Phe Thr Ile His Arg Ile Leu Pro Pro Asp
385                 390                 395                 400
Ser Gly Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met Val Glu
                405                 410                 415
Lys Pro Phe Asn Ile Ser Val Lys Val Leu Pro Lys Pro Leu Asn Ala
            420                 425                 430
Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala Val Ile Asn Ile Ser
        435                 440                 445
Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys Leu Leu
    450                 455                 460
Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln His Ile Gln Val Thr
465                 470                 475                 480
Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro Arg Thr Glu Tyr Glu
                485                 490                 495
Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly Gly Glu Gly His Pro
            500                 505                 510
Gly Pro Val Arg Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro Pro Pro
        515                 520                 525
Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln Thr Thr Leu Asn Leu Thr
    530                 535                 540
Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp Asp Phe Tyr Val Glu Val
545                 550                 555                 560
Glu Arg Arg Ser Val Gln Lys Ser Asp Gln Gln Asn Ile Lys Val Pro
                565                 570                 575
Gly Asn Leu Thr Ser Val Leu Leu Asn Asn Leu His Pro Arg Glu Gln
            580                 585                 590
Tyr Val Val Arg Ala Arg Val Asn Thr Lys Ala Gln Gly Glu Trp Ser
        595                 600                 605
Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro Gln Pro
    610                 615                 620
Glu Asn Ile Lys Ile Ser Asn Ile Thr His Ser Ser Ala Val Ile Ser
625                 630                 635                 640
Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile Arg Tyr
                645                 650                 655
Lys Val Gln Gly Lys Asn Glu Asp Gln His Val Asp Val Lys Ile Lys
            660                 665                 670
Asn Ala Thr Ile Thr Gln Tyr Gln Leu Lys Gly Leu Glu Pro Glu Thr
        675                 680                 685
Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser Ser Asn
    690                 695                 700
Pro Ala Phe Ser His Glu Leu Val Thr Leu Pro Glu Ser Gln Ala Pro
705                 710                 715                 720
Ala Asp Leu Gly Gly Gly Lys Ile Asp His His His His His His
                725                 730                 735
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<210> 3
<211> 958
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3
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 1               5                  10                  15
Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly Trp Arg Pro His Glu Pro
            20                  25                  30
Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu Met Asn Gln His Gln Asp
        35                  40                  45
Pro Leu Glu Val Thr Gln Asp Val Thr Arg Glu Trp Ala Lys Lys Val
    50                  55                  60
Val Trp Lys Arg Glu Lys Ala Ser Lys Ile Asn Gly Ala Tyr Phe Cys
65                  70                  75                  80
Glu Gly Arg Val Arg Gly Glu Ala Ile Arg Ile Arg Thr Met Lys Met
                85                  90                  95
Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met Thr Val Asp
            100                 105                 110
Lys Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu Ile Lys Glu
        115                 120                 125
Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His Ser Val Pro
    130                 135                 140
Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro His Ala Gln
145                 150                 155                 160
Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly Gly Asn Leu
                165                 170                 175
Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg Cys Glu Ala Gln
            180                 185                 190
Lys Trp Gly Pro Glu Cys Asn His Leu Cys Thr Ala Cys Met Asn Asn
        195                 200                 205
Gly Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys Pro Pro Gly Phe
    210                 215                 220
Met Gly Arg Thr Cys Glu Lys Ala Cys Glu Leu His Thr Phe Gly Arg
225                 230                 235                 240
Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu Gly Cys Lys Ser Tyr Val
                245                 250                 255
Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala Thr Gly Trp Lys
            260                 265                 270
Gly Leu Gln Cys Asn Glu Ala Cys His Pro Gly Phe Tyr Gly Pro Asp
        275                 280                 285
Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly Glu Met Cys Asp Arg Phe
    290                 295                 300
Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln Gly Leu Gln Cys Glu Arg
305                 310                 315                 320
Glu Gly Ile Gln Arg Met Thr Pro Lys Ile Val Asp Leu Pro Asp His
                325                 330                 335
Ile Glu Val Asn Ser Gly Lys Phe Asn Pro Ile Cys Lys Ala Ser Gly
            340                 345                 350
Trp Pro Leu Pro Thr Asn Glu Glu Met Thr Leu Val Lys Pro Asp Gly
        355                 360                 365
Thr Val Leu His Pro Lys Asp Phe Asn His Thr Asp His Phe Ser Val
    370                 375                 380
Ala Ile Phe Thr Ile His Arg Ile Leu Pro Pro Asp Ser Gly Val Trp
385                 390                 395                 400
Val Cys Ser Val Asn Thr Val Ala Gly Met Val Glu Lys Pro Phe Asn
                405                 410                 415
Ile Ser Val Lys Val Leu Pro Lys Pro Leu Asn Ala Pro Asn Val Ile
            420                 425                 430
Asp Thr Gly His Asn Phe Ala Val Ile Asn Ile Ser Ser Glu Pro Tyr
        435                 440                 445
Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys Leu Leu Tyr Lys Pro Val
    450                 455                 460
Asn His Tyr Glu Ala Trp Gln His Ile Gln Val Thr Asn Glu Ile Val
```

```
465                 470                 475                 480
Thr Leu Asn Tyr Leu Glu Pro Arg Thr Glu Tyr Glu Leu Cys Val Gln
                485                 490                 495
Leu Val Arg Arg Gly Glu Gly Gly Glu Gly His Pro Gly Pro Val Arg
            500                 505                 510
Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro Pro Pro Arg Gly Leu Asn
        515                 520                 525
Leu Leu Pro Lys Ser Gln Thr Thr Leu Asn Leu Thr Trp Gln Pro Ile
    530                 535                 540
Phe Pro Ser Ser Glu Asp Asp Phe Tyr Val Glu Val Glu Arg Arg Ser
545                 550                 555                 560
Val Gln Lys Ser Asp Gln Gln Asn Ile Lys Val Pro Gly Asn Leu Thr
                565                 570                 575
Ser Val Leu Leu Asn Asn Leu His Pro Arg Glu Gln Tyr Val Val Arg
            580                 585                 590
Ala Arg Val Asn Thr Lys Ala Gln Gly Glu Trp Ser Glu Asp Leu Thr
        595                 600                 605
Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro Gln Pro Glu Asn Ile Lys
    610                 615                 620
Ile Ser Asn Ile Thr His Ser Ser Ala Val Ile Ser Trp Thr Ile Leu
625                 630                 635                 640
Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile Arg Tyr Lys Val Gln Gly
                645                 650                 655
Lys Asn Glu Asp Gln His Val Asp Val Lys Ile Lys Asn Ala Thr Ile
            660                 665                 670
Thr Gln Tyr Gln Leu Lys Gly Leu Glu Pro Glu Thr Ala Tyr Gln Val
        675                 680                 685
Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser Ser Asn Pro Ala Phe Ser
    690                 695                 700
His Glu Leu Val Thr Leu Pro Glu Ser Gln Ala Pro Ala Asp Leu Gly
705                 710                 715                 720
Gly Gly Lys Gly Pro Gly Glu Pro Lys Ser Cys Asp Lys Thr His Thr
                725                 730                 735
Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe
            740                 745                 750
Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        755                 760                 765
Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    770                 775                 780
Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
785                 790                 795                 800
Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                805                 810                 815
Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            820                 825                 830
Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
        835                 840                 845
Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
    850                 855                 860
Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
865                 870                 875                 880
Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                885                 890                 895
Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            900                 905                 910
Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        915                 920                 925
Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
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    930                 935                 940
Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
945                 950                 955


<210> 4
<211> 981
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4
Met Asp Ser Leu Ala Ser Leu Val Leu Cys Gly Val Ser Leu Leu Leu
 1               5                  10                  15
Ser Gly Thr Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn Ser Leu
            20                  25                  30
Pro Leu Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly
        35                  40                  45
Trp Arg Pro His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu
    50                  55                  60
Met Asn Gln His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg
65                  70                  75                  80
Glu Trp Ala Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile
                85                  90                  95
Asn Gly Ala Tyr Phe Cys Glu Gly Arg Val Arg Gly Glu Ala Ile Arg
            100                 105                 110
Ile Arg Thr Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr
        115                 120                 125
Leu Thr Met Thr Val Asp Lys Gly Asp Asn Val Asn Ile Ser Phe Lys
    130                 135                 140
Lys Val Leu Ile Lys Glu Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser
145                 150                 155                 160
Phe Ile His Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val
                165                 170                 175
His Leu Pro His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg
            180                 185                 190
Tyr Ile Gly Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val
        195                 200                 205
Arg Arg Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys
    210                 215                 220
Thr Ala Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys
225                 230                 235                 240
Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu
                245                 250                 255
Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu
            260                 265                 270
Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser
        275                 280                 285
Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu Ala Cys His Pro
    290                 295                 300
Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly
305                 310                 315                 320
Glu Met Cys Asp Arg Phe Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln
                325                 330                 335
Gly Leu Gln Cys Glu Arg Glu Gly Ile Pro Arg Met Thr Pro Lys Ile
            340                 345                 350
```

Val Asp Leu Pro Asp His Ile Glu Val Asn Ser Gly Lys Phe Asn Pro
355 360 365
Ile Cys Lys Ala Ser Gly Trp Pro Leu Pro Thr Asn Glu Glu Met Thr
370 375 380
Leu Val Lys Pro Asp Gly Thr Val Leu His Pro Lys Asp Phe Asn His
385 390 395 400
Thr Asp His Phe Ser Val Ala Ile Phe Thr Ile His Arg Ile Leu Pro
405 410 415
Pro Asp Ser Gly Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met
420 425 430
Val Glu Lys Pro Phe Asn Ile Ser Val Lys Val Leu Pro Lys Pro Leu
435 440 445
Asn Ala Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala Val Ile Asn
450 455 460
Ile Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys
465 470 475 480
Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln His Ile Gln
485 490 495
Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro Arg Thr Glu
500 505 510
Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly Gly Glu Gly
515 520 525
His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro
530 535 540
Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln Thr Thr Leu Asn
545 550 555 560
Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp Asp Phe Tyr Val
565 570 575
Glu Val Glu Arg Arg Ser Val Gln Lys Ser Asp Gln Gln Asn Ile Lys
580 585 590
Val Pro Gly Asn Leu Thr Ser Val Leu Leu Asn Asn Leu His Pro Arg
595 600 605
Glu Gln Tyr Val Val Arg Ala Arg Val Asn Thr Lys Ala Gln Gly Glu
610 615 620
Trp Ser Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro
625 630 635 640
Gln Pro Glu Asn Ile Lys Ile Ser Asn Ile Thr His Ser Ser Ala Val
645 650 655
Ile Ser Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile
660 665 670
Arg Tyr Lys Val Gln Gly Lys Asn Glu Asp Gln His Val Asp Val Lys
675 680 685
Ile Lys Asn Ala Thr Ile Ile Gln Tyr Gln Leu Lys Gly Leu Glu Pro
690 695 700
Glu Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser
705 710 715 720
Ser Asn Pro Ala Phe Ser His Glu Leu Val Thr Leu Pro Glu Ser Gln
725 730 735
Ala Pro Ala Asp Leu Gly Gly Gly Lys Gly Pro Gly Glu Pro Arg Gly
740 745 750
Pro Thr Ile Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu
755 760 765
Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val
770 775 780
Leu Met Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val
785 790 795 800
Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val
805 810 815

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Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser
            820                 825                 830
Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met
        835                 840                 845
Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala
    850                 855                 860
Pro Ile Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro
865                 870                 875                 880
Gln Val Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln
                885                 890                 895
Val Thr Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr
            900                 905                 910
Val Glu Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr
        915                 920                 925
Glu Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu
    930                 935                 940
Arg Val Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser
945                 950                 955                 960
Val Val His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser
                965                 970                 975
Arg Thr Pro Gly Lys
            980
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<210> 5
<211> 957
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5

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Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn Ser Leu Pro Leu Val
 1               5                  10                  15
Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly Trp His Pro
            20                  25                  30
His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu Met Asn Gln
        35                  40                  45
His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg Glu Trp Ala
    50                  55                  60
Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile Asn Gly Ala
65                  70                  75                  80
Tyr Phe Cys Glu Gly Arg Val Arg Gly Gln Ala Ile Arg Ile Arg Thr
                85                  90                  95
Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met
            100                 105                 110
Thr Val Asp Arg Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu
        115                 120                 125
Ile Lys Glu Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His
    130                 135                 140
Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro
145                 150                 155                 160
His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly
                165                 170                 175
Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg Cys
            180                 185                 190
Glu Ala Gln Lys Trp Gly Pro Asp Cys Asn Arg Pro Cys Thr Thr Cys
```

```
        195                 200                 205
Lys Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys Pro
    210                 215                 220
Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu Pro His Thr
225                 230                 235                 240
Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Ser Glu Gly Cys Lys
                245                 250                 255
Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala Thr
            260                 265                 270
Gly Trp Arg Gly Leu Gln Cys Asn Glu Ala Cys Pro Tyr Gly His Tyr
        275                 280                 285
Gly Pro Asp Cys Lys Leu Arg Cys His Cys Thr Asn Glu Glu Met Cys
    290                 295                 300
Asp Arg Phe Gln Gly Cys Leu Cys Ser Gln Gly Trp Gln Gly Leu Gln
305                 310                 315                 320
Cys Glu Lys Glu Gly Arg Pro Arg Met Thr Pro Gln Ile Glu Asp Leu
                325                 330                 335
Pro Asp His Ile Glu Val Asn Ser Gly Lys Phe Asn Pro Ile Cys Lys
            340                 345                 350
Ala Ser Gly Trp Pro Leu Pro Thr Ser Glu Glu Met Thr Leu Val Lys
        355                 360                 365
Pro Asp Gly Thr Val Leu Gln Pro Asn Asp Phe Asn His Thr Asp His
    370                 375                 380
Phe Ser Val Ala Ile Phe Thr Val Asn Arg Ile Leu Pro Pro Asp Ser
385                 390                 395                 400
Gly Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met Val Glu Lys
                405                 410                 415
Pro Phe Asn Ile Ser Val Lys Val Leu Pro Glu Pro Leu His Ala Pro
            420                 425                 430
Asn Val Ile Asp Thr Gly His Asn Phe Ala Ile Ile Asn Ile Ser Ser
        435                 440                 445
Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys Leu Phe Tyr
    450                 455                 460
Lys Pro Val Asn Gln Ala Trp Lys Tyr Ile Gln Val Met Asn Glu Ile
465                 470                 475                 480
Val Thr Leu Asn Tyr Leu Glu Pro Arg Thr Asp Tyr Glu Leu Cys Val
                485                 490                 495
Gln Leu Val Arg Pro Gly Glu Gly Gly Glu Gly His Pro Gly Pro Val
            500                 505                 510
Arg Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro Pro Pro Arg Gly Leu
        515                 520                 525
Ser Leu Leu Pro Lys Ser Gln Thr Ala Leu Asn Leu Thr Trp Gln Pro
    530                 535                 540
Ile Phe Thr Ser Ser Glu Asp Glu Phe Tyr Val Glu Val Glu Arg Trp
545                 550                 555                 560
Ser Gln Gln Thr Arg Ser Asp Gln Gln Asn Ile Lys Val Pro Gly Asn
                565                 570                 575
Leu Thr Ser Val Leu Leu Asn Asn Leu Leu Pro Arg Glu Gln Tyr Ser
            580                 585                 590
Val Arg Ala Arg Val Asn Thr Lys Ala Gln Gly Glu Trp Ser Glu Glu
        595                 600                 605
Leu Arg Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro Gln Pro Glu Asn
    610                 615                 620
Ile Lys Ile Thr Asn Ile Thr Asp Tyr Thr Ala Leu Val Ser Trp Thr
625                 630                 635                 640
Ile Val Asp Gly Tyr Ser Ile Ser Ser Ile Ile Ile Arg Tyr Lys Val
                645                 650                 655
Gln Gly Lys Asn Glu Asp Gln His Ile Asp Val Lys Ile Lys Asn Ala
```

```
            660                 665                 670
Thr Ile Thr Gln Tyr Gln Leu Lys Gly Leu Glu Pro Glu Thr Thr Tyr
        675                 680                 685
His Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser Ser Asn Pro Ala
    690                 695                 700
Phe Ser Gln Glu Ile Arg Thr Leu Pro Ala Pro Lys Asp Leu Gly Gly
705                 710                 715                 720
Gly Lys Gly Pro Gly Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
                725                 730                 735
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
            740                 745                 750
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
        755                 760                 765
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
    770                 775                 780
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
785                 790                 795                 800
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
                805                 810                 815
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
            820                 825                 830
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
        835                 840                 845
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
    850                 855                 860
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
865                 870                 875                 880
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
                885                 890                 895
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
            900                 905                 910
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
        915                 920                 925
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
    930                 935                 940
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
945                 950                 955
```

<210> 6
<211> 957
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6

```
Ala Met Asp Leu Ile Leu Ile Asn Ser Leu Pro Leu Val Ser Asp Ala
 1               5                  10                  15
Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly Trp His Pro His Glu Pro
            20                  25                  30
Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu Met Asn Gln His Gln Asp
        35                  40                  45
Pro Leu Glu Val Thr Gln Asp Val Thr Arg Glu Trp Ala Lys Lys Val
    50                  55                  60
Val Trp Lys Arg Glu Lys Ala Ser Lys Ile Asn Gly Ala Tyr Phe Cys
65                  70                  75                  80
```

```
Glu Gly Arg Val Arg Gly Gln Ala Ile Arg Ile Arg Thr Met Lys Met
                85                  90                  95
Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met Thr Val Asp
            100                 105                 110
Arg Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu Ile Lys Glu
        115                 120                 125
Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His Ser Val Pro
    130                 135                 140
Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro His Ala Gln
145                 150                 155                 160
Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly Gly Asn Leu
                165                 170                 175
Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg Cys Glu Ala Gln
            180                 185                 190
Lys Trp Gly Pro Asp Cys Ser Arg Pro Cys Thr Thr Cys Lys Asn Asn
        195                 200                 205
Gly Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys Pro Pro Gly Phe
    210                 215                 220
Met Gly Arg Thr Cys Glu Lys Ala Cys Glu Pro His Thr Phe Gly Arg
225                 230                 235                 240
Thr Cys Lys Glu Arg Cys Ser Gly Pro Glu Gly Cys Lys Ser Tyr Val
                245                 250                 255
Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala Thr Gly Trp Arg
            260                 265                 270
Gly Leu Gln Cys Asn Glu Ala Cys Pro Ser Gly Tyr Tyr Gly Pro Asp
        275                 280                 285
Cys Lys Leu Arg Cys His Cys Thr Asn Glu Glu Ile Cys Asp Arg Phe
    290                 295                 300
Gln Gly Cys Leu Cys Ser Gln Gly Trp Gln Gly Leu Gln Cys Glu Lys
305                 310                 315                 320
Glu Gly Arg Pro Arg Met Thr Pro Gln Ile Glu Asp Leu Pro Asp His
                325                 330                 335
Ile Glu Val Asn Ser Gly Lys Phe Asn Pro Ile Cys Lys Ala Ser Gly
            340                 345                 350
Trp Pro Leu Pro Thr Ser Glu Glu Met Thr Leu Val Lys Pro Asp Gly
        355                 360                 365
Thr Val Leu Gln Pro Asn Asp Phe Asn Tyr Thr Asp Arg Phe Ser Val
    370                 375                 380
Ala Ile Phe Thr Val Asn Arg Val Leu Pro Pro Asp Ser Gly Val Trp
385                 390                 395                 400
Val Cys Ser Val Asn Thr Val Ala Gly Met Val Glu Lys Pro Phe Asn
                405                 410                 415
Ile Ser Val Lys Val Leu Pro Glu Pro Leu His Ala Pro Asn Val Ile
            420                 425                 430
Asp Thr Gly His Asn Phe Ala Ile Ile Asn Ile Ser Ser Glu Pro Tyr
        435                 440                 445
Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys Leu Phe Tyr Lys Pro Val
    450                 455                 460
Asn Gln Ala Trp Lys Tyr Ile Glu Val Thr Asn Glu Ile Phe Thr Leu
465                 470                 475                 480
Asn Tyr Leu Glu Pro Arg Thr Asp Tyr Glu Leu Cys Val Gln Leu Ala
                485                 490                 495
Arg Pro Gly Glu Gly Gly Glu Gly His Pro Gly Pro Val Arg Arg Phe
            500                 505                 510
Thr Thr Ala Cys Ile Gly Leu Pro Pro Pro Arg Gly Leu Ser Leu Leu
        515                 520                 525
Pro Lys Ser Gln Thr Ala Leu Asn Leu Thr Trp Gln Pro Ile Phe Thr
    530                 535                 540
```

Asn Ser Glu Asp Glu Phe Tyr Val Glu Val Glu Arg Arg Ser Leu Gln
545 550 555 560
Thr Thr Ser Asp Gln Gln Asn Ile Lys Val Pro Gly Asn Leu Thr Ser
565 570 575
Val Leu Leu Ser Asn Leu Val Pro Arg Glu Gln Tyr Thr Val Arg Ala
580 585 590
Arg Val Asn Thr Lys Ala Gln Gly Glu Trp Ser Glu Glu Leu Arg Ala
595 600 605
Trp Thr Leu Ser Asp Ile Leu Pro Pro Gln Pro Glu Asn Ile Lys Ile
610 615 620
Ser Asn Ile Thr Asp Ser Thr Ala Met Val Ser Trp Thr Ile Val Asp
625 630 635 640
Gly Tyr Ser Ile Ser Ser Ile Ile Ile Arg Tyr Lys Val Gln Gly Lys
645 650 655
Asn Glu Asp Gln His Ile Asp Val Lys Ile Lys Asn Ala Thr Val Thr
660 665 670
Gln Tyr Gln Leu Lys Gly Leu Glu Pro Glu Thr Thr Tyr His Val Asp
675 680 685
Ile Phe Ala Glu Asn Asn Ile Gly Ser Ser Asn Pro Ala Phe Ser His
690 695 700
Glu Leu Arg Thr Leu Pro His Ser Pro Gly Ser Ala Asp Leu Gly Gly
705 710 715 720
Gly Lys Gly Pro Gly Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
725 730 735
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
740 745 750
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
755 760 765
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
770 775 780
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
785 790 795 800
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
805 810 815
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
820 825 830
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
835 840 845
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
850 855 860
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
865 870 875 880
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
885 890 895
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
900 905 910
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
915 920 925
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
930 935 940
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
945 950 955

<210> 7
<211> 321
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 7
Met Asp Leu Ile Leu Ile Asn Ser Leu Pro Leu Val Ser Asp Ala Glu
 1   5   10   15
Thr Ser Leu Thr Cys Ile Ala Ser Gly Trp Arg Pro His Glu Pro Ile
            20   25   30
Thr Ile Gly Arg Asp Phe Glu Ala Leu Met Asn Gln His Gln Asp Pro
        35   40   45
Leu Glu Val Thr Gln Asp Val Thr Arg Glu Trp Ala Lys Lys Val Val
    50   55   60
Trp Lys Arg Glu Lys Ala Ser Lys Ile Asn Gly Ala Tyr Phe Cys Glu
65   70   75   80
Gly Arg Val Arg Gly Glu Ala Ile Arg Ile Arg Thr Met Lys Met Arg
                85   90   95
Gln Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met Thr Val Asp Lys
            100   105   110
Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu Ile Lys Glu Glu
        115   120   125
Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His Ser Val Pro Arg
    130   135   140
His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro His Ala Gln Pro
145   150   155   160
Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly Gly Asn Leu Phe
                165   170   175
Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg Cys Glu Ala Gln Lys
            180   185   190
Trp Gly Pro Glu Cys Asn His Leu Cys Thr Ala Cys Met Asn Asn Gly
        195   200   205
Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys Pro Pro Gly Phe Met
    210   215   220
Gly Arg Thr Cys Glu Lys Ala Cys Glu Leu His Thr Phe Gly Arg Thr
225   230   235   240
Cys Lys Glu Arg Cys Ser Gly Gln Glu Gly Cys Lys Ser Tyr Val Phe
                245   250   255
Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala Thr Gly Trp Lys Gly
            260   265   270
Leu Gln Cys Asn Glu Ala Cys His Pro Gly Phe Tyr Gly Pro Asp Cys
        275   280   285
Lys Leu Arg Cys Ser Cys Asn Asn Gly Glu Met Cys Asp Arg Phe Gln
    290   295   300
Gly Cys Leu Cys Ser Pro Gly Trp Gln Gly Leu Gln Cys Glu Arg Glu
305   310   315   320
Gly

<210> 8
<211> 226
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 8

```
Met Ala Gln Ala Ser Phe Leu Pro Ala Thr Leu Thr Met Thr Val Asp
 1               5                  10                  15
Lys Gly Asp Asn Val Asn Ile Ser Phe Lys Lys Val Leu Ile Lys Glu
            20                  25                  30
Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser Phe Ile His Ser Val Pro
        35                  40                  45
Arg His Glu Val Pro Asp Ile Leu Glu Val His Leu Pro His Ala Gln
    50                  55                  60
Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg Tyr Ile Gly Gly Asn Leu
65                  70                  75                  80
Phe Thr Ser Ala Phe Thr Arg Leu Ile Val Arg Arg Cys Glu Ala Gln
                85                  90                  95
Lys Trp Gly Pro Glu Cys Asn His Leu Cys Thr Ala Cys Met Asn Asn
            100                 105                 110
Gly Val Cys His Glu Asp Thr Gly Glu Cys Ile Cys Pro Pro Gly Phe
        115                 120                 125
Met Gly Arg Thr Cys Glu Lys Ala Cys Glu Leu His Thr Phe Gly Arg
    130                 135                 140
Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu Gly Cys Lys Ser Tyr Val
145                 150                 155                 160
Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser Cys Ala Thr Gly Trp Lys
                165                 170                 175
Gly Leu Gln Cys Asn Glu Ala Cys His Pro Gly Phe Tyr Gly Pro Asp
            180                 185                 190
Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly Glu Met Cys Asp Arg Phe
        195                 200                 205
Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln Gly Leu Gln Cys Glu Arg
    210                 215                 220
Glu Gly
225
```

<210> 9
<211> 140
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 9

```
Met Ala Gly Ser Ala Arg Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys
 1               5                  10                  15
Asn His Leu Cys Thr Ala Cys Met Asn Asn Gly Val Cys His Glu Asp
            20                  25                  30
Thr Gly Glu Cys Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu
        35                  40                  45
Lys Ala Cys Glu Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys
    50                  55                  60
Ser Gly Gln Glu Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro
65                  70                  75                  80
Tyr Gly Cys Ser Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu
                85                  90                  95
Ala Cys His Pro Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser
            100                 105                 110
Cys Asn Asn Gly Glu Met Cys Asp Arg Phe Gln Gly Cys Leu Cys Ser
        115                 120                 125
Pro Gly Trp Gln Gly Leu Gln Cys Glu Arg Glu Gly
```

130 135 140

<210> 10
<211> 381
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 10
Pro Lys Ile Val Asp Leu Pro Asp His Ile Glu Val Asn Ser Gly Lys
1 5 10 15
Phe Asn Pro Ile Cys Lys Ala Ser Gly Trp Pro Leu Pro Thr Asn Glu
20 25 30
Glu Met Thr Leu Val Lys Pro Asp Gly Thr Val Leu His Pro Lys Asp
35 40 45
Phe Asn His Thr Asp His Phe Ser Val Ala Ile Phe Thr Ile His Arg
50 55 60
Ile Leu Pro Pro Asp Ser Gly Val Trp Val Cys Ser Val Asn Thr Val
65 70 75 80
Ala Gly Met Val Glu Lys Pro Phe Asn Ile Ser Val Lys Val Leu Pro
85 90 95
Lys Pro Leu Asn Ala Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala
100 105 110
Val Ile Asn Ile Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys
115 120 125
Ser Lys Lys Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln
130 135 140
His Ile Gln Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro
145 150 155 160
Arg Thr Glu Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly
165 170 175
Gly Glu Gly His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser Ile
180 185 190
Gly Leu Pro Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln Thr
195 200 205
Thr Leu Asn Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp Asp
210 215 220
Phe Tyr Val Glu Val Glu Arg Arg Ser Val Gln Lys Ser Asp Gln Gln
225 230 235 240
Asn Ile Lys Val Pro Gly Asn Leu Thr Ser Val Leu Leu Asn Asn Leu
245 250 255
His Pro Arg Glu Gln Tyr Val Val Arg Ala Arg Val Asn Thr Lys Ala
260 265 270
Gln Gly Glu Trp Ser Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp Ile
275 280 285
Leu Pro Pro Gln Pro Glu Asn Ile Lys Ile Ser Asn Ile Thr His Ser
290 295 300
Ser Ala Val Ile Ser Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser Ser
305 310 315 320
Ile Thr Ile Arg Tyr Lys Val Gln Gly Lys Asn Glu Asp Gln His Val
325 330 335
Asp Val Lys Ile Lys Asn Ala Thr Ile Thr Gln Tyr Gln Leu Lys Gly
340 345 350
Leu Glu Pro Glu Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn
355 360 365

```
Ile Gly Ser Ser Asn Pro Ala Phe Ser His Glu Leu Val
    370                 375                 380


<210> 11
<211> 286
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 11
Pro Lys Pro Leu Asn Ala Pro Asn Val Ile Asp Thr Gly His Asn Phe
 1               5                  10                  15
Ala Val Ile Asn Ile Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile
            20                  25                  30
Lys Ser Lys Lys Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp
        35                  40                  45
Gln His Ile Gln Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu
    50                  55                  60
Pro Arg Thr Glu Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu
65                  70                  75                  80
Gly Gly Glu Gly His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser
                85                  90                  95
Ile Gly Leu Pro Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln
            100                 105                 110
Thr Thr Leu Asn Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp
        115                 120                 125
Asp Phe Tyr Val Glu Val Glu Arg Arg Ser Val Gln Lys Ser Asp Gln
    130                 135                 140
Gln Asn Ile Lys Val Pro Gly Asn Leu Thr Ser Val Leu Leu Asn Asn
145                 150                 155                 160
Leu His Pro Arg Glu Gln Tyr Val Val Arg Ala Arg Val Asn Thr Lys
                165                 170                 175
Ala Gln Gly Glu Trp Ser Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp
            180                 185                 190
Ile Leu Pro Pro Gln Pro Glu Asn Ile Lys Ile Ser Asn Ile Thr His
        195                 200                 205
Ser Ser Ala Val Ile Ser Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser
    210                 215                 220
Ser Ile Thr Ile Arg Tyr Lys Val Gln Gly Lys Asn Glu Asp Gln His
225                 230                 235                 240
Val Asp Val Lys Ile Lys Asn Ala Thr Ile Thr Gln Tyr Gln Leu Lys
                245                 250                 255
Gly Leu Glu Pro Glu Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn
            260                 265                 270
Asn Ile Gly Ser Ser Asn Pro Ala Phe Ser His Glu Leu Val
        275                 280                 285


<210> 12
<211> 995
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic
```

<400> 12

```
Met Val Trp Arg Val Pro Pro Phe Leu Leu Pro Ile Leu Phe Leu Ala
 1               5                  10                  15
Ser His Val Gly Ala Ala Val Asp Leu Thr Leu Leu Ala Asn Leu Arg
            20                  25                  30
Leu Thr Asp Pro Gln Arg Phe Phe Leu Thr Cys Val Ser Gly Glu Ala
        35                  40                  45
Gly Ala Gly Arg Gly Ser Asp Ala Trp Gly Pro Pro Leu Leu Leu Glu
    50                  55                  60
Lys Asp Asp Arg Ile Val Arg Thr Pro Pro Gly Pro Pro Leu Arg Leu
65                  70                  75                  80
Ala Arg Asn Gly Ser His Gln Val Thr Leu Arg Gly Phe Ser Lys Pro
                85                  90                  95
Ser Asp Leu Val Gly Val Phe Ser Cys Val Gly Gly Ala Gly Ala Arg
            100                 105                 110
Arg Thr Arg Val Ile Tyr Val His Asn Ser Pro Gly Ala His Leu Leu
        115                 120                 125
Pro Asp Lys Val Thr His Thr Val Asn Lys Gly Asp Thr Ala Val Leu
    130                 135                 140
Ser Ala Arg Val His Lys Glu Lys Gln Thr Asp Val Ile Trp Lys Ser
145                 150                 155                 160
Asn Gly Ser Tyr Phe Tyr Thr Leu Asp Trp His Glu Ala Gln Asp Gly
                165                 170                 175
Arg Phe Leu Leu Gln Leu Pro Asn Val Gln Pro Pro Ser Ser Gly Ile
            180                 185                 190
Tyr Ser Ala Thr Tyr Leu Glu Ala Ser Pro Leu Gly Ser Ala Phe Phe
        195                 200                 205
Arg Leu Ile Val Arg Gly Cys Gly Ala Gly Arg Trp Gly Pro Gly Cys
    210                 215                 220
Thr Lys Glu Cys Pro Gly Cys Leu His Gly Gly Val Cys His Asp His
225                 230                 235                 240
Asp Gly Glu Cys Val Cys Pro Pro Gly Phe Thr Gly Thr Arg Cys Glu
                245                 250                 255
Gln Ala Cys Arg Glu Gly Arg Phe Gly Gln Ser Cys Gln Glu Gln Cys
            260                 265                 270
Pro Gly Ile Ser Gly Cys Arg Gly Leu Thr Phe Cys Leu Pro Asp Pro
        275                 280                 285
Tyr Gly Cys Ser Cys Gly Ser Gly Trp Arg Gly Ser Gln Cys Gln Glu
    290                 295                 300
Ala Cys Ala Pro Gly His Phe Gly Ala Asp Cys Arg Leu Gln Cys Gln
305                 310                 315                 320
Cys Gln Asn Gly Gly Thr Cys Asp Arg Phe Ser Gly Cys Val Cys Pro
                325                 330                 335
Ser Gly Trp His Gly Val His Cys Glu Lys Ser Asp Arg Ile Pro Gln
            340                 345                 350
Ile Leu Asn Met Ala Ser Glu Leu Glu Phe Asn Leu Glu Thr Met Pro
        355                 360                 365
Arg Ile Asn Cys Ala Ala Ala Gly Asn Pro Phe Pro Val Arg Gly Ser
    370                 375                 380
Ile Glu Leu Arg Lys Pro Asp Gly Thr Val Leu Leu Ser Thr Lys Ala
385                 390                 395                 400
Ile Val Glu Pro Glu Lys Thr Thr Ala Glu Phe Glu Val Pro Arg Leu
                405                 410                 415
Val Leu Ala Asp Ser Gly Phe Trp Glu Cys Arg Val Ser Thr Ser Gly
            420                 425                 430
Gly Gln Asp Ser Arg Arg Phe Lys Val Asn Val Lys Val Pro Pro Val
        435                 440                 445
```

```
Pro Leu Ala Ala Pro Arg Leu Leu Thr Lys Gln Ser Arg Gln Leu Val
    450                 455                 460
Val Ser Pro Leu Val Ser Phe Ser Gly Asp Gly Pro Ile Ser Thr Val
465                 470                 475                 480
Arg Leu His Tyr Arg Pro Gln Asp Ser Thr Met Asp Trp Ser Thr Ile
                485                 490                 495
Val Val Asp Pro Ser Glu Asn Val Thr Leu Met Asn Leu Arg Pro Lys
            500                 505                 510
Thr Gly Tyr Ser Val Arg Val Gln Leu Ser Arg Pro Gly Glu Gly Gly
        515                 520                 525
Glu Gly Ala Trp Gly Pro Pro Thr Leu Met Thr Thr Asp Cys Pro Glu
    530                 535                 540
Pro Leu Leu Gln Pro Trp Leu Glu Gly Trp His Val Glu Gly Thr Asp
545                 550                 555                 560
Arg Leu Arg Val Ser Trp Ser Leu Pro Leu Val Pro Gly Pro Leu Val
                565                 570                 575
Gly Asp Gly Phe Leu Leu Arg Leu Trp Asp Gly Thr Arg Gly Gln Glu
            580                 585                 590
Arg Arg Glu Asn Val Ser Ser Pro Gln Ala Arg Thr Ala Leu Leu Thr
        595                 600                 605
Gly Leu Thr Pro Gly Thr His Tyr Gln Leu Asp Val Gln Leu Tyr His
    610                 615                 620
Cys Thr Leu Leu Gly Pro Ala Ser Pro Pro Ala His Val Leu Leu Pro
625                 630                 635                 640
Pro Ser Gly Pro Pro Ala Pro Arg His Leu His Ala Gln Ala Leu Ser
                645                 650                 655
Asp Ser Glu Ile Gln Leu Thr Trp Lys His Pro Glu Ala Leu Pro Gly
            660                 665                 670
Pro Ile Ser Lys Tyr Val Val Glu Val Gln Val Ala Gly Gly Ala Gly
        675                 680                 685
Asp Pro Leu Trp Ile Asp Val Asp Arg Pro Glu Glu Thr Ser Thr Ile
    690                 695                 700
Ile Arg Gly Leu Asn Ala Ser Thr Arg Tyr Leu Phe Arg Met Arg Ala
705                 710                 715                 720
Ser Ile Gln Gly Leu Gly Asp Trp Ser Asn Thr Val Glu Glu Ser Thr
                725                 730                 735
Leu Gly Asn Gly Leu Gln Ala Glu Gly Pro Val Gln Glu Ser Arg Ala
            740                 745                 750
Ala Glu Glu Gly Leu Asp Gln Gln Gly Pro Gly Glu Pro Lys Ser Cys
        755                 760                 765
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
    770                 775                 780
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
785                 790                 795                 800
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
                805                 810                 815
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
            820                 825                 830
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
        835                 840                 845
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
    850                 855                 860
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
865                 870                 875                 880
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
                885                 890                 895
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
            900                 905                 910
```

```
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
        915                 920                 925
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
    930                 935                 940
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
945                 950                 955                 960
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
                965                 970                 975
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
            980                 985                 990
Pro Gly Lys
        995
```

<210> 13
<211> 657
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 13

```
Arg Asp Cys Ala Glu Val Phe Lys Ser Gly His Thr Thr Asn Gly Ile
 1               5                  10                  15
Tyr Thr Leu Thr Phe Pro Asn Ser Thr Glu Glu Ile Lys Ala Tyr Cys
            20                  25                  30
Asp Met Glu Ala Gly Gly Gly Gly Trp Thr Ile Ile Gln Arg Arg Glu
        35                  40                  45
Asp Gly Ser Val Asp Phe Gln Arg Thr Trp Lys Glu Tyr Lys Val Gly
    50                  55                  60
Phe Gly Asn Pro Ser Gly Glu Tyr Trp Leu Gly Asn Glu Phe Val Ser
65                  70                  75                  80
Gln Leu Thr Asn Gln Gln Arg Tyr Val Leu Lys Ile His Leu Lys Asp
                85                  90                  95
Trp Glu Gly Asn Glu Ala Tyr Ser Leu Tyr Glu His Phe Tyr Leu Ser
            100                 105                 110
Ser Glu Glu Leu Asn Tyr Arg Ile His Leu Lys Gly Leu Thr Gly Thr
        115                 120                 125
Ala Gly Lys Ile Ser Ser Ile Ser Gln Pro Gly Asn Asp Phe Ser Thr
    130                 135                 140
Lys Asp Gly Asp Asn Asp Lys Cys Ile Cys Lys Cys Ser Gln Met Leu
145                 150                 155                 160
Thr Gly Gly Trp Trp Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly
                165                 170                 175
Met Tyr Tyr Pro Gln Arg Gln Asn Thr Asn Lys Phe Asn Gly Ile Lys
            180                 185                 190
Trp Tyr Tyr Trp Lys Gly Ser Gly Tyr Ser Leu Lys Ala Thr Thr Met
        195                 200                 205
Met Ile Arg Pro Ala Asp Phe Asp Lys Thr His Thr Cys Pro Pro Cys
    210                 215                 220
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
225                 230                 235                 240
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
                245                 250                 255
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
            260                 265                 270
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
```

```
        275                 280                 285
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
    290                 295                 300
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
305                 310                 315                 320
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
                325                 330                 335
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
            340                 345                 350
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
        355                 360                 365
Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
    370                 375                 380
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
385                 390                 395                 400
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
                405                 410                 415
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
            420                 425                 430
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Arg Asp Cys Ala Glu Val
        435                 440                 445
Phe Lys Ser Gly His Thr Thr Asn Gly Ile Tyr Thr Leu Thr Phe Pro
    450                 455                 460
Asn Ser Thr Glu Glu Ile Lys Ala Tyr Cys Asp Met Glu Ala Gly Gly
465                 470                 475                 480
Gly Gly Trp Thr Ile Ile Gln Arg Arg Glu Asp Gly Ser Val Asp Phe
                485                 490                 495
Gln Arg Thr Trp Lys Glu Tyr Lys Val Gly Phe Gly Asn Pro Ser Gly
            500                 505                 510
Glu Tyr Trp Leu Gly Asn Glu Phe Val Ser Gln Leu Thr Asn Gln Gln
        515                 520                 525
Arg Tyr Val Leu Lys Ile His Leu Lys Asp Trp Glu Gly Asn Glu Ala
    530                 535                 540
Tyr Ser Leu Tyr Glu His Phe Tyr Leu Ser Ser Glu Glu Leu Asn Tyr
545                 550                 555                 560
Arg Ile His Leu Lys Gly Leu Thr Gly Thr Ala Gly Lys Ile Ser Ser
                565                 570                 575
Ile Ser Gln Pro Gly Asn Asp Phe Ser Thr Lys Asp Gly Asp Asn Asp
            580                 585                 590
Lys Cys Ile Cys Lys Cys Ser Gln Met Leu Thr Gly Gly Trp Trp Phe
        595                 600                 605
Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Tyr Tyr Pro Gln Arg
    610                 615                 620
Gln Asn Thr Asn Lys Phe Asn Gly Ile Lys Trp Tyr Tyr Trp Lys Gly
625                 630                 635                 640
Ser Gly Tyr Ser Leu Lys Ala Thr Thr Met Met Ile Arg Pro Ala Asp
                645                 650                 655
Phe
```

<210> 14
<211> 674
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 14

```
Arg Asp Cys Ala Asp Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile
 1               5                  10                  15
Tyr Thr Ile Tyr Ile Asn Asn Met Pro Glu Pro Lys Lys Val Phe Cys
            20                  25                  30
Asn Met Asp Val Asn Gly Gly Gly Trp Thr Val Ile Gln His Arg Glu
        35                  40                  45
Asp Gly Ser Leu Asp Phe Gln Arg Gly Trp Lys Glu Tyr Lys Met Gly
    50                  55                  60
Phe Gly Asn Pro Ser Gly Glu Tyr Trp Leu Gly Asn Glu Phe Ile Phe
65                  70                  75                  80
Ala Ile Thr Ser Gln Arg Gln Tyr Met Leu Arg Ile Glu Leu Met Asp
                85                  90                  95
Trp Glu Gly Asn Arg Ala Tyr Ser Gln Tyr Asp Arg Phe His Ile Gly
            100                 105                 110
Asn Glu Lys Gln Asn Tyr Arg Leu Tyr Leu Lys Gly His Thr Gly Thr
        115                 120                 125
Ala Gly Lys Gln Ser Ser Leu Ile Leu His Gly Ala Asp Phe Ser Thr
    130                 135                 140
Lys Asp Ala Asp Asn Asp Asn Cys Met Cys Lys Cys Ala Leu Met Leu
145                 150                 155                 160
Thr Gly Gly Trp Trp Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly
                165                 170                 175
Met Phe Tyr Thr Ala Gly Gln Asn His Gly Lys Leu Asn Gly Ile Lys
            180                 185                 190
Trp His Tyr Phe Lys Gly Pro Ser Tyr Ser Leu Arg Ser Thr Thr Met
        195                 200                 205
Met Ile Arg Pro Leu Asp Phe Gly Pro Gly Glu Pro Lys Ser Cys Asp
    210                 215                 220
Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225                 230                 235                 240
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
                245                 250                 255
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
            260                 265                 270
Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
        275                 280                 285
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
    290                 295                 300
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305                 310                 315                 320
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
                325                 330                 335
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
            340                 345                 350
Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
        355                 360                 365
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
    370                 375                 380
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385                 390                 395                 400
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
                405                 410                 415
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
            420                 425                 430
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
        435                 440                 445
```

```
Gly Lys Gly Gly Gly Gly Ser Gly Ala Pro Phe Arg Asp Cys Ala Asp
    450                 455                 460
Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile Tyr Thr Ile Tyr Ile
465                 470                 475                 480
Asn Asn Met Pro Glu Pro Lys Lys Val Phe Cys Asn Met Asp Val Asn
                485                 490                 495
Gly Gly Gly Trp Thr Val Ile Gln His Arg Glu Asp Gly Ser Leu Asp
            500                 505                 510
Phe Gln Arg Gly Trp Lys Glu Tyr Lys Met Gly Phe Gly Asn Pro Ser
        515                 520                 525
Gly Glu Tyr Trp Leu Gly Asn Glu Phe Ile Phe Ala Ile Thr Ser Gln
    530                 535                 540
Arg Gln Tyr Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg
545                 550                 555                 560
Ala Tyr Ser Gln Tyr Asp Arg Phe His Ile Gly Asn Glu Lys Gln Asn
                565                 570                 575
Tyr Arg Leu Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser
            580                 585                 590
Ser Leu Ile Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn
        595                 600                 605
Asp Asn Cys Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp
    610                 615                 620
Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala
625                 630                 635                 640
Gly Gln Asn His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys
                645                 650                 655
Gly Pro Ser Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu
            660                 665                 670
Asp Phe
```

<210> 15
<211> 498
<212> PRT
<213> Homo sapiens

<400> 15

```
Met Thr Val Phe Leu Ser Phe Ala Phe Leu Ala Ala Ile Leu Thr His
 1                5                  10                  15
Ile Gly Cys Ser Asn Gln Arg Arg Ser Pro Glu Asn Ser Gly Arg Arg
            20                  25                  30
Tyr Asn Arg Ile Gln His Gly Gln Cys Ala Tyr Thr Phe Ile Leu Pro
        35                  40                  45
Glu His Asp Gly Asn Cys Arg Glu Ser Thr Thr Asp Gln Tyr Asn Thr
    50                  55                  60
Asn Ala Leu Gln Arg Asp Ala Pro His Val Glu Pro Asp Phe Ser Ser
65                  70                  75                  80
Gln Lys Leu Gln His Leu Glu His Val Met Glu Asn Tyr Thr Gln Trp
                85                  90                  95
Leu Gln Lys Leu Glu Asn Tyr Ile Val Glu Asn Met Lys Ser Glu Met
            100                 105                 110
Ala Gln Ile Gln Gln Asn Ala Val Gln Asn His Thr Ala Thr Met Leu
        115                 120                 125
Glu Ile Gly Thr Ser Leu Leu Ser Gln Thr Ala Glu Gln Thr Arg Lys
    130                 135                 140
Leu Thr Asp Val Glu Thr Gln Val Leu Asn Gln Thr Ser Arg Leu Glu
145                 150                 155                 160
```

```
Ile Gln Leu Leu Glu Asn Ser Leu Ser Thr Tyr Lys Leu Glu Lys Gln
                165                 170                 175
Leu Leu Gln Gln Thr Asn Glu Ile Leu Lys Ile His Glu Lys Asn Ser
            180                 185                 190
Leu Leu Glu His Lys Ile Leu Glu Met Glu Gly Lys His Lys Glu Glu
        195                 200                 205
Leu Asp Thr Leu Lys Glu Glu Lys Glu Asn Leu Gln Gly Leu Val Thr
    210                 215                 220
Arg Gln Thr Tyr Ile Ile Gln Glu Leu Glu Lys Gln Leu Asn Arg Ala
225                 230                 235                 240
Thr Thr Asn Asn Ser Val Leu Gln Lys Gln Gln Leu Glu Leu Met Asp
                245                 250                 255
Thr Val His Asn Leu Val Asn Leu Cys Thr Lys Glu Gly Val Leu Leu
            260                 265                 270
Lys Gly Gly Lys Arg Glu Glu Glu Lys Pro Phe Arg Asp Cys Ala Asp
        275                 280                 285
Val Tyr Gln Ala Gly Phe Asn Lys Ser Gly Ile Tyr Thr Ile Tyr Ile
    290                 295                 300
Asn Asn Met Pro Glu Pro Lys Lys Val Phe Cys Asn Met Asp Val Asn
305                 310                 315                 320
Gly Gly Gly Trp Thr Val Ile Gln His Arg Glu Asp Gly Ser Leu Asp
                325                 330                 335
Phe Gln Arg Gly Trp Lys Glu Tyr Lys Met Gly Phe Gly Asn Pro Ser
            340                 345                 350
Gly Glu Tyr Trp Leu Gly Asn Glu Phe Ile Phe Ala Ile Thr Ser Gln
        355                 360                 365
Arg Gln Tyr Met Leu Arg Ile Glu Leu Met Asp Trp Glu Gly Asn Arg
    370                 375                 380
Ala Tyr Ser Gln Tyr Asp Arg Phe His Ile Gly Asn Glu Lys Gln Asn
385                 390                 395                 400
Tyr Arg Leu Tyr Leu Lys Gly His Thr Gly Thr Ala Gly Lys Gln Ser
                405                 410                 415
Ser Leu Ile Leu His Gly Ala Asp Phe Ser Thr Lys Asp Ala Asp Asn
            420                 425                 430
Asp Asn Cys Met Cys Lys Cys Ala Leu Met Leu Thr Gly Gly Trp Trp
        435                 440                 445
Phe Asp Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Phe Tyr Thr Ala
    450                 455                 460
Gly Gln Asn His Gly Lys Leu Asn Gly Ile Lys Trp His Tyr Phe Lys
465                 470                 475                 480
Gly Pro Ser Tyr Ser Leu Arg Ser Thr Thr Met Met Ile Arg Pro Leu
                485                 490                 495
Asp Phe
```

<210> 16
<211> 496
<212> PRT
<213> Homo sapiens

<400> 16

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

```
Glu Met Asp Asn Cys Arg Ser Ser Ser Ser Pro Tyr Val Ser Asn Ala
    50                  55                  60
Val Gln Arg Asp Ala Pro Leu Glu Tyr Asp Asp Ser Val Gln Arg Leu
65                  70                  75                  80
Gln Val Leu Glu Asn Ile Met Glu Asn Asn Thr Gln Trp Leu Met Lys
                85                  90                  95
Leu Glu Asn Tyr Ile Gln Asp Asn Met Lys Lys Glu Met Val Glu Ile
            100                 105                 110
Gln Gln Asn Ala Val Gln Asn Gln Thr Ala Val Met Ile Glu Ile Gly
        115                 120                 125
Thr Asn Leu Leu Asn Gln Thr Ala Glu Gln Thr Arg Lys Leu Thr Asp
    130                 135                 140
Val Glu Ala Gln Val Leu Asn Gln Thr Thr Arg Leu Glu Leu Gln Leu
145                 150                 155                 160
Leu Glu His Ser Leu Ser Thr Asn Lys Leu Glu Lys Gln Ile Leu Asp
                165                 170                 175
Gln Thr Ser Glu Ile Asn Lys Leu Gln Asp Lys Asn Ser Phe Leu Glu
            180                 185                 190
Lys Lys Val Leu Ala Met Glu Asp Lys His Ile Ile Gln Leu Gln Ser
        195                 200                 205
Ile Lys Glu Glu Lys Asp Gln Leu Gln Val Leu Val Ser Lys Gln Asn
    210                 215                 220
Ser Ile Ile Glu Glu Leu Glu Lys Lys Ile Val Thr Ala Thr Val Asn
225                 230                 235                 240
Asn Ser Val Leu Gln Lys Gln Gln His Asp Leu Met Glu Thr Val Asn
                245                 250                 255
Asn Leu Leu Thr Met Met Ser Thr Ser Asn Ser Ala Lys Asp Pro Thr
            260                 265                 270
Val Ala Lys Glu Glu Gln Ile Ser Phe Arg Asp Cys Ala Glu Val Phe
        275                 280                 285
Lys Ser Gly His Thr Thr Asn Gly Ile Tyr Thr Leu Thr Phe Pro Asn
    290                 295                 300
Ser Thr Glu Glu Ile Lys Ala Tyr Cys Asp Met Glu Ala Gly Gly Gly
305                 310                 315                 320
Gly Trp Thr Ile Ile Gln Arg Arg Glu Asp Gly Ser Val Asp Phe Gln
                325                 330                 335
Arg Thr Trp Lys Glu Tyr Lys Val Gly Phe Gly Asn Pro Ser Gly Glu
            340                 345                 350
Tyr Trp Leu Gly Asn Glu Phe Val Ser Gln Leu Thr Asn Gln Gln Arg
        355                 360                 365
Tyr Val Leu Lys Ile His Leu Lys Asp Trp Glu Gly Asn Glu Ala Tyr
    370                 375                 380
Ser Leu Tyr Glu His Phe Tyr Leu Ser Ser Glu Glu Leu Asn Tyr Arg
385                 390                 395                 400
Ile His Leu Lys Gly Leu Thr Gly Thr Ala Gly Lys Ile Ser Ser Ile
                405                 410                 415
Ser Gln Pro Gly Asn Asp Phe Ser Thr Lys Asp Gly Asp Asn Asp Lys
            420                 425                 430
Cys Ile Cys Lys Cys Ser Gln Met Leu Thr Gly Gly Trp Trp Phe Asp
        435                 440                 445
Ala Cys Gly Pro Ser Asn Leu Asn Gly Met Tyr Tyr Pro Gln Arg Gln
    450                 455                 460
Asn Thr Asn Lys Phe Asn Gly Ile Lys Trp Tyr Tyr Trp Lys Gly Ser
465                 470                 475                 480
Gly Tyr Ser Leu Lys Ala Thr Thr Met Met Ile Arg Pro Ala Asp Phe
                485                 490                 495
```

<210> 17
<211> 509
<212> PRT
<213> Mus musculus

<400> 17
Met Leu Cys Gln Pro Ala Met Leu Leu Asp Gly Leu Leu Leu Leu Ala
 1   5   10   15
Thr Met Ala Ala Ala Gln His Arg Gly Pro Glu Ala Gly Gly His Arg
            20   25   30
Gln Ile His Gln Val Arg Arg Gly Gln Cys Ser Tyr Thr Phe Val Val
        35   40   45
Pro Glu Pro Asp Ile Cys Gln Leu Ala Pro Thr Ala Ala Pro Glu Ala
    50   55   60
Leu Gly Gly Ser Asn Ser Leu Gln Arg Asp Leu Pro Ala Ser Arg Leu
65   70   75   80
His Leu Thr Asp Trp Arg Ala Gln Arg Ala Gln Arg Ala Gln Arg Val
                85   90   95
Ser Gln Leu Glu Lys Ile Leu Glu Asn Asn Thr Gln Trp Leu Leu Lys
            100   105   110
Leu Glu Gln Ser Ile Lys Val Asn Leu Arg Ser His Leu Val Gln Ala
        115   120   125
Gln Gln Asp Thr Ile Gln Asn Gln Thr Thr Thr Met Leu Ala Leu Gly
    130   135   140
Ala Asn Leu Met Asn Gln Thr Lys Ala Gln Thr His Lys Leu Thr Ala
145   150   155   160
Val Glu Ala Gln Val Leu Asn Gln Thr Leu His Met Lys Thr Gln Met
                165   170   175
Leu Glu Asn Ser Leu Ser Thr Asn Lys Leu Glu Arg Gln Met Leu Met
            180   185   190
Gln Ser Arg Glu Leu Gln Arg Leu Gln Gly Arg Asn Arg Ala Leu Glu
        195   200   205
Thr Arg Leu Gln Ala Leu Glu Ala Gln His Gln Ala Gln Leu Asn Ser
    210   215   220
Leu Gln Glu Lys Arg Glu Gln Leu His Ser Leu Leu Gly His Gln Thr
225   230   235   240
Gly Thr Leu Ala Asn Leu Lys His Asn Leu His Ala Leu Ser Ser Asn
                245   250   255
Ser Ser Ser Leu Gln Gln Gln Gln Gln Gln Leu Thr Glu Phe Val Gln
            260   265   270
Arg Leu Val Arg Ile Val Ala Gln Asp Gln His Pro Val Ser Leu Lys
        275   280   285
Thr Pro Lys Pro Val Phe Gln Asp Cys Ala Glu Ile Lys Arg Ser Gly
    290   295   300
Val Asn Thr Ser Gly Val Tyr Thr Ile Tyr Glu Thr Asn Met Thr Lys
305   310   315   320
Pro Leu Lys Val Phe Cys Asp Met Glu Thr Asp Gly Gly Gly Trp Thr
                325   330   335
Leu Ile Gln His Arg Glu Asp Gly Ser Val Asn Phe Gln Arg Thr Trp
            340   345   350
Glu Glu Tyr Lys Glu Gly Phe Gly Asn Val Ala Arg Glu His Trp Leu
        355   360   365
Gly Asn Glu Ala Val His Arg Leu Thr Ser Arg Thr Ala Tyr Leu Leu
    370   375   380
Arg Val Glu Leu His Asp Trp Glu Gly Arg Gln Thr Ser Ile Gln Tyr
385   390   395   400
Glu Asn Phe Gln Leu Gly Ser Glu Arg Gln Arg Tyr Ser Leu Ser Val
                405   410   415

```
Asn Asp Ser Ser Ser Ser Ala Gly Arg Lys Asn Ser Leu Ala Pro Gln
            420                 425                 430
Gly Thr Lys Phe Ser Thr Lys Asp Met Asp Asn Asp Asn Cys Met Cys
        435                 440                 445
Lys Cys Ala Gln Met Leu Ser Gly Gly Trp Trp Phe Asp Ala Cys Gly
    450                 455                 460
Leu Ser Asn Leu Asn Gly Ile Tyr Tyr Ser Val His Gln His Leu His
465                 470                 475                 480
Lys Ile Asn Gly Ile Arg Trp His Tyr Phe Arg Gly Pro Ser Tyr Ser
                485                 490                 495
Leu His Gly Thr Arg Met Met Leu Arg Pro Met Gly Ala
            500                 505
```

<210> 18
<211> 503
<212> PRT
<213> Homo sapiens

<400> 18

```
Met Leu Ser Gln Leu Ala Met Leu Gln Gly Ser Leu Leu Leu Val Val
 1               5                  10                  15
Ala Thr Met Ser Val Ala Gln Gln Thr Arg Gln Glu Ala Asp Arg Gly
            20                  25                  30
Cys Glu Thr Leu Val Val Gln His Gly His Cys Ser Tyr Thr Phe Leu
        35                  40                  45
Leu Pro Lys Ser Glu Pro Cys Pro Pro Gly Pro Glu Val Ser Arg Asp
    50                  55                  60
Ser Asn Thr Leu Gln Arg Glu Ser Leu Ala Asn Pro Leu His Leu Gly
65                  70                  75                  80
Lys Leu Pro Thr Gln Gln Val Lys Gln Leu Glu Gln Ala Leu Gln Asn
                85                  90                  95
Asn Thr Gln Trp Leu Lys Lys Leu Glu Arg Ala Ile Lys Thr Ile Leu
            100                 105                 110
Arg Ser Lys Leu Glu Gln Val Gln Gln Gln Met Ala Gln Asn Gln Thr
        115                 120                 125
Ala Pro Met Leu Glu Leu Gly Thr Ser Leu Leu Asn Gln Thr Thr Ala
    130                 135                 140
Gln Ile Arg Lys Leu Thr Asp Met Glu Ala Gln Leu Leu Asn Gln Thr
145                 150                 155                 160
Ser Arg Met Asp Ala Gln Met Pro Glu Thr Phe Leu Ser Thr Asn Lys
                165                 170                 175
Leu Glu Asn Gln Leu Leu Leu Gln Arg Gln Lys Leu Gln Gln Leu Gln
            180                 185                 190
Gly Gln Asn Ser Ala Leu Glu Lys Arg Leu Gln Ala Leu Glu Thr Lys
        195                 200                 205
Gln Gln Glu Glu Leu Ala Ser Ile Leu Ser Lys Lys Ala Lys Leu Leu
    210                 215                 220
Asn Thr Leu Ser Arg Gln Ser Ala Ala Leu Thr Asn Ile Glu Arg Gly
225                 230                 235                 240
Leu Arg Gly Val Arg His Asn Ser Ser Leu Leu Gln Asp Gln Gln His
                245                 250                 255
Ser Leu Arg Gln Leu Leu Val Leu Leu Arg His Leu Val Gln Glu Arg
            260                 265                 270
Ala Asn Ala Ser Ala Pro Ala Phe Ile Met Ala Gly Glu Gln Val Phe
        275                 280                 285
Gln Asp Cys Ala Glu Ile Gln Arg Ser Gly Ala Ser Ala Ser Gly Val
    290                 295                 300
```

```
Tyr Thr Ile Gln Val Ser Asn Ala Thr Lys Pro Arg Lys Val Phe Cys
305                 310                 315                 320
Asp Leu Gln Ser Ser Gly Gly Arg Trp Thr Leu Ile Gln Arg Arg Glu
                325                 330                 335
Asn Gly Thr Val Asn Phe Gln Arg Asn Trp Lys Asp Tyr Lys Gln Gly
            340                 345                 350
Phe Gly Asp Pro Ala Gly Glu His Trp Leu Gly Asn Glu Val Val His
        355                 360                 365
Gln Leu Thr Arg Arg Ala Ala Tyr Ser Leu Arg Val Glu Leu Gln Asp
    370                 375                 380
Trp Glu Gly His Glu Ala Tyr Ala Gln Tyr Glu His Phe His Leu Gly
385                 390                 395                 400
Ser Glu Asn Gln Leu Tyr Arg Leu Ser Val Val Gly Tyr Ser Gly Ser
                405                 410                 415
Ala Gly Arg Gln Ser Ser Leu Val Leu Gln Asn Thr Ser Phe Ser Thr
            420                 425                 430
Leu Asp Ser Asp Asn Asp His Cys Leu Cys Lys Cys Ala Gln Val Met
        435                 440                 445
Ser Gly Gly Trp Trp Phe Asp Ala Cys Gly Leu Ser Asn Leu Asn Gly
    450                 455                 460
Val Tyr Tyr His Ala Pro Asp Asn Lys Tyr Lys Met Asp Gly Ile Arg
465                 470                 475                 480
Trp His Tyr Phe Lys Gly Pro Ser Tyr Ser Leu Arg Ala Ser Arg Met
                485                 490                 495
Met Ile Arg Pro Leu Asp Ile
            500
```