SEQUENCE LISTING

<110> Catalyst Biosciences, Inc.
Ed Madison
Jack Nguyen
Sandra Waugh Ruggles
Christopher Thanos

<120> Modified Proteases That Inhibit Complement Activation

<130> 19049-003WO1/4903PC

<150> US 60/729,817
<151> 2005-10-21

<160> 710

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 3149
<212> DNA
<213> Homo sapiens

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<210> 2
<211> 855
<212> PRT
<213> Homo sapiens

<400> 2

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

```
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
```

```
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 3
<211> 934
<212> DNA
<213> Homo sapiens

<400> 3

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aggggagatc atcgggggac atgaggccaa gccccactcc cgcccctaca tggcttatct 120
tatgatctgg gatcagaagt ctctgaagag gtgcggtggc ttcctgatac aagacgactt 180
cgtgctgaca gctgctcact gttggggaag ctccataaat gtcaccttgg gggcccacaa 240
tatcaaagaa caggagccga cccagcagtt tatccctgtg aaaagaccca tcccccatcc 300
agcctataat cctaagaact tctccaacga catcatgcta ctgcagctgg agagaaaggc 360
caagcggacc agagctgtgc agcccctcag gctacctagc aacaaggccc aggtgaagcc 420
agggcagaca tgcagtgtgg ccggctgggg gcagacggcc cccctgggaa aacactcaca 480
cacactacaa gaggtgaaga tgacagtgca ggaagatcga aagtgcgaat ctgacttacg 540
ccattattac gacagtacca ttgagttgtg cgtgggggac ccagagatta aaaagacttc 600
ctttaagggg gactctggag gccctcttgt gtgtaacaag gtggcccagg gcattgtctc 660
ctatggacga aacaatggca tgcctccacg agcctgcacc aaagtctcaa gctttgtaca 720
ctggataaag aaaaccatga aacgctacta actacaggaa gcaaactaag cccccgctgt 780
aatgaaacac cttctctgga gccaagtcca gatttacact gggagaggtg ccagcaactg 840
aataaatacc tctcccagtg taaatctgga gccaagtcca gatttacact gggagaggtg 900
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<210> 4
<211> 247
<212> PRT
<213> Homo sapiens

<400> 4

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

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

<210> 5
<211> 1113
<212> DNA
<213> Rattus norvegicus

<400> 5

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ttgctcctgc tgagcttctc tctggccccc aagacagagg caggggagat catcgggggga 180
catgaagcca agccccactc tcgaccctac atggcctatc ttcagatcat ggatgagtat 240
tctgggagta agaagtgtgg cggcttcctt atacgagaag actttgtgct gactgctgct 300
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gtgaagcctc tcaatctgcc cagacgcaac gtcaaagtga aaccaggaga tgtgtgctat 540
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gagctaacag tacaggagga tcagaagtgt gagtcctact taaaaaatta tttcgacaaa 660
gccaatgaga tatgtgcagg ggacccaaag atcaaacgtg cttcctttcg gggggactct 720
ggagggcctc ttgtgtgtaa aaaagtggcc gcgggcatcg tctcctatgg acaaaatgat 780
ggttcaactc cacgggcatt caccaaagtc tcgactttcc tatcatggat aaagaaaact 840
atgaaaaaga gctaactaca agaagcaaca tggatcattt cctgactaac catctgccct 900
atagctgagt ccaggattgc tctaggacag atggcagcaa ctgaataaag cactttttt 960
ctgagactgg ttgactggtt tcatgtccat tcacagtgat caaccctgtc cttggcagat 1020
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ctctacaaga gaagaagaat gtttgattgt ccg                              1113
```

<210> 6
<211> 248
<212> PRT
<213> Rattus norvegicus

<400> 6

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Met Lys Leu Leu Leu Leu Leu Leu Ser Phe Ser Leu Ala Pro Lys Thr
 1               5                  10                  15
Glu Ala Gly Glu Ile Ile Gly Gly His Glu Ala Lys Pro His Ser Arg
            20                  25                  30
Pro Tyr Met Ala Tyr Leu Gln Ile Met Asp Glu Tyr Ser Gly Ser Lys
        35                  40                  45
Lys Cys Gly Gly Phe Leu Ile Arg Glu Asp Phe Val Leu Thr Ala Ala
    50                  55                  60
His Cys Ser Gly Ser Lys Ile Asn Val Thr Leu Gly Ala His Asn Ile
65                  70                  75                  80
Lys Glu Gln Glu Lys Met Gln Gln Ile Ile Pro Val Val Lys Ile Ile
                85                  90                  95
Pro His Pro Ala Tyr Asn Ser Lys Thr Ile Ser Asn Asp Ile Met Leu
            100                 105                 110
Leu Lys Leu Lys Ser Lys Ala Lys Arg Ser Ser Ala Val Lys Pro Leu
        115                 120                 125
Asn Leu Pro Arg Arg Asn Val Lys Val Lys Pro Gly Asp Val Cys Tyr
    130                 135                 140
Val Ala Gly Trp Gly Lys Leu Gly Pro Met Gly Lys Tyr Ser Asp Thr
145                 150                 155                 160
Leu Gln Glu Val Glu Leu Thr Val Gln Glu Asp Gln Lys Cys Glu Ser
                165                 170                 175
Tyr Leu Lys Asn Tyr Phe Asp Lys Ala Asn Glu Ile Cys Ala Gly Asp
            180                 185                 190
Pro Lys Ile Lys Arg Ala Ser Phe Arg Gly Asp Ser Gly Gly Pro Leu
        195                 200                 205
Val Cys Lys Lys Val Ala Ala Gly Ile Val Ser Tyr Gly Gln Asn Asp
    210                 215                 220
Gly Ser Thr Pro Arg Ala Phe Thr Lys Val Ser Thr Phe Leu Ser Trp
225                 230                 235                 240
Ile Lys Lys Thr Met Lys Lys Ser
                245
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<210> 7
<211> 865
<212> DNA
<213> Homo sapiens

<400> 7

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gaatggggag gacgccgtcc ccggctcctg gccctggcag gtgtccctgc aggacaaaac 180
cggcttccac ttctgcgggg gctccctcat cagcgaggac tgggtggtca ccgctgccca 240
ctgcggggtc aggacctccg acgtggtcgt ggctggggag tttgaccagg gctctgacga 300
ggagaacatc caggtcctga agatcgccaa ggtcttcaag aaccccaagt tcagcattct 360
gaccgtgaac aatgacatca cctgctgaa gctggccaca cctgcccgct tctcccagac 420
agtgtccgcc gtgtgcctgc ccagcgccga cgacgacttc cccgcgggga cactgtgtgc 480
caccacaggc tggggcaaga ccaagtacaa cgccaacaag acccctgaca agctgcagca 540
ggcagccctg ccctcctgt ccaatgccga atgcaagaag tcctggggca ggaggatcac 600
cgacgtgatg atctgtgccg gggccagtgg cgtctcctcc tgcatgggcg actctggcgg 660
tcccctggtc tgccaaaagg atggagcctg gaccctggtg ggcattgtgt cctggggcag 720
cgacacctgc tccacctcca gccctggcgt gtacgcccgt gtcaccaagc tcataccttg 780
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gagcctcagt aaacccatgg aacac                                       865
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<210> 8

<211> 263
<212> PRT
<213> Homo sapiens

<400> 8

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Met Ala Phe Leu Trp Leu Leu Ser Cys Trp Ala Leu Leu Gly Thr Thr
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Phe Gly Cys Gly Val Pro Ala Ile His Pro Val Leu Ser Gly Leu Ser
            20                  25                  30
Arg Ile Val Asn Gly Glu Asp Ala Val Pro Gly Ser Trp Pro Trp Gln
        35                  40                  45
Val Ser Leu Gln Asp Lys Thr Gly Phe His Phe Cys Gly Gly Ser Leu
    50                  55                  60
Ile Ser Glu Asp Trp Val Val Thr Ala Ala His Cys Gly Val Arg Thr
65                  70                  75                  80
Ser Asp Val Val Val Ala Gly Glu Phe Asp Gln Gly Ser Asp Glu Glu
                85                  90                  95
Asn Ile Gln Val Leu Lys Ile Ala Lys Val Phe Lys Asn Pro Lys Phe
            100                 105                 110
Ser Ile Leu Thr Val Asn Asn Asp Ile Thr Leu Leu Lys Leu Ala Thr
        115                 120                 125
Pro Ala Arg Phe Ser Gln Thr Val Ser Ala Val Cys Leu Pro Ser Ala
    130                 135                 140
Asp Asp Asp Phe Pro Ala Gly Thr Leu Cys Ala Thr Thr Gly Trp Gly
145                 150                 155                 160
Lys Thr Lys Tyr Asn Ala Asn Lys Thr Pro Asp Lys Leu Gln Gln Ala
                165                 170                 175
Ala Leu Pro Leu Leu Ser Asn Ala Glu Cys Lys Lys Ser Trp Gly Arg
            180                 185                 190
Arg Ile Thr Asp Val Met Ile Cys Ala Gly Ala Ser Gly Val Ser Ser
        195                 200                 205
Cys Met Gly Asp Ser Gly Gly Pro Leu Val Cys Gln Lys Asp Gly Ala
    210                 215                 220
Trp Thr Leu Val Gly Ile Val Ser Trp Gly Ser Asp Thr Cys Ser Thr
225                 230                 235                 240
Ser Ser Pro Gly Val Tyr Ala Arg Val Thr Lys Leu Ile Pro Trp Val
                245                 250                 255
Gln Lys Ile Leu Ala Ala Asn
            260
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<210> 9
<211> 723
<212> DNA
<213> Homo sapiens

<400> 9

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ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
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tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
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aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 10
<211> 241
<212> PRT
<213> Homo sapiens

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

<210> 11
<211> 723
<212> DNA
<213> Homo sapiens

<400> 11
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ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
gacggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540

agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
ttcccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 12
<211> 241
<212> PRT
<213> Homo sapiens

<400> 12
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 13
<211> 723
<212> DNA
<213> Homo sapiens

<400> 13
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420

tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg cgtcggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 14
<211> 241
<212> PRT
<213> Homo sapiens

<400> 14
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Val Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 15
<211> 723
<212> DNA
<213> Homo sapiens

<400> 15
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacgacacct tcgactatga catcgcgctg 300

ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 16
<211> 241
<212> PRT
<213> Homo sapiens

<400> 16

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

<210> 17
<211> 723
<212> DNA
<213> Homo sapiens

<400> 17
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180

ttcctgggct tgcacgacca gagccagcgc agcgccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacgagacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttcctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 18
<211> 241
<212> PRT
<213> Homo sapiens

<400> 18
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Glu Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 19
<211> 723
<212> DNA
<213> Homo sapiens

<400> 19
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60

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gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacgccacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttcctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta                                                               723
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<210> 20
<211> 241
<212> PRT
<213> Homo spaiens

<400> 20

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Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Ala Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
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<210> 21
<211> 723
<212> DNA
<213> Homo sapiens

<400> 21
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctccccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 22
<211> 241
<212> PRT
<213> Homo sapiens

<400> 22
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35   40   45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50   55   60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65   70   75   80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85   90   95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100   105   110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115   120   125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130   135   140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145   150   155   160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165   170   175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180   185   190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195   200   205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210   215   220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225   230   235   240
Val

<210> 23
<211> 723
<212> DNA

<213> Homo sapiens

<400> 23
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
aacggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 24
<211> 241
<212> PRT
<213> Homo sapiens

<400> 24
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35   40   45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50   55   60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65   70   75   80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85   90   95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100   105   110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115   120   125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asn Gly Gly Thr
    130   135   140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145   150   155   160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165   170   175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180   185   190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195   200   205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210   215   220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225   230   235   240
Val

<210> 25

<211> 723
<212> DNA
<213> Homo sapiens

<400> 25
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ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
gacggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 26
<211> 241
<212> PRT
<213> Homo sapiens

<400> 26
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35   40   45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50   55   60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65   70   75   80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85   90   95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100   105   110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115   120   125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130   135   140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145   150   155   160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165   170   175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180   185   190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195   200   205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210   215   220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225   230   235   240
Val

<210> 27
<211> 723
<212> DNA
<213> Homo sapiens

<400> 27
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ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
gagggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 28
<211> 241
<212> PRT
<213> Homo sapiens

<400> 28
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35   40   45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50   55   60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65   70   75   80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85   90   95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100   105   110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115   120   125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130   135   140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145   150   155   160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165   170   175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180   185   190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195   200   205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210   215   220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225   230   235   240
Val

<210> 29
<211> 723
<212> DNA
<213> Homo sapiens

<400> 29
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
gccggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 30
<211> 241
<212> PRT
<213> Homo sapiens

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

225 230 235 240
Val

<210> 31
<211> 723
<212> DNA
<213> Homo sapiens

<400> 31
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tggggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 32
<211> 241
<212> PRT
<213> Homo sapiens

<400> 32
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Trp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val

```
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 33
<211> 723
<212> DNA
<213> Homo sapiens

<400> 33
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
aggggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 34
<211> 241
<212> PRT
<213> Homo sapiens

<400> 34
```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Arg Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
```

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

<210> 35
<211> 723
<212> DNA
<213> Homo sapiens

<400> 35
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cggggctggg acacacccag 420
aggggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccggggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta   723

<210> 36
<211> 241
<212> PRT
<213> Homo sapiens

<400> 36
```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Arg Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Arg Gly Asp Ser Gly
```

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

<210> 37
<211> 723
<212> DNA
<213> Homo sapiens

<400> 37
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
aggggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccggggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
gcgccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta   723

<210> 38
<211> 241
<212> PRT
<213> Homo sapiens

<400> 38
```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Arg Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
```

```
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Arg Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Ala Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 39
<211> 723
<212> DNA
<213> Homo sapiens

<400> 39
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag acccccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gactggacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
aggggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccggggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
ttcccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta   723

<210> 40
<211> 241
<212> PRT
<213> Homo sapiens

<400> 40
```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Trp Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Arg Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
```

```
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Arg Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 41
<211> 241
<212> PRT
<213> Homo sapiens

<400> 41

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

<210> 42
<211> 241
<212> PRT

<213> Homo sapiens

<400> 42

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

<210> 43
<211> 241
<212> PRT
<213> Homo sapiens

<400> 43

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

```
         115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asn Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 44
<211> 241
<212> PRT
<213> Homo sapiens

<400> 44

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

<210> 45
<211> 241
<212> PRT
<213> Homo sapiens

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

<210> 46
<211> 241
<212> PRT
<213> Homo sapiens

<400> 46
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Val Phe Thr Phe Asp Tyr

```
                    85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
                100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
            115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 47
<211> 241
<212> PRT
<213> *Homo sapiens*

<400> 47

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

225 230 235 240
Val

<210> 48
<211> 241
<212> PRT
<213> Homo sapiens

<400> 48
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Ser Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 49
<211> 241
<212> PRT
<213> Homo sapiens

<400> 49
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu

```
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Thr Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 50
<211> 241
<212> PRT
<213> Homo sapiens

<400> 50

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

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

<210> 51
<211> 241
<212> PRT
<213> Homo sapiens

<400> 51

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

<210> 52
<211> 241
<212> PRT
<213> Homo sapiens

<400> 52

```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
```

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

<210> 53
<211> 241
<212> PRT
<213> Homo sapiens

<400> 53

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

```
                  165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
              180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
          195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
      210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 54
<211> 241
<212> PRT
<213> Homo sapiens

<400> 54

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

<210> 55
<211> 241
<212> PRT
<213> Homo sapiens

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

<210> 56
<211> 241
<212> PRT
<213> Homo sapiens

<400> 56
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Ser Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr

```
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 57
<211> 241
<212> PRT
<213> Homo sapiens

<400> 57

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

<210> 58

<211> 241
<212> PRT
<213> Homo sapiens

<400> 58
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Phe Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 59
<211> 241
<212> PRT
<213> Homo sapiens

<400> 59
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met

```
                100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Tyr Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 60
<211> 241
<212> PRT
<213> Homo sapiens

<400> 60

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

<210> 61
<211> 241
<212> PRT
<213> Homo sapiens

<400> 61
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Val Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 62
<211> 241
<212> PRT
<213> Homo sapiens

<400> 62
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu

65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Phe Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 63
<211> 241
<212> PRT
<213> Homo sapiens

<400> 63
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Arg Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val

```
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 64
<211> 241
<212> PRT
<213> Homo sapiens

<400> 64

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

<210> 65
<211> 241
<212> PRT
<213> Homo sapiens

<400> 65

```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
```

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

<210> 66
<211> 241
<212> PRT
<213> Homo sapiens

<400> 66

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

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

<210> 67
<211> 241
<212> PRT
<213> Homo sapiens

<400> 67

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

<210> 68
<211> 241
<212> PRT
<213> Homo sapiens

<400> 68

```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
```

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

<210> 69
<211> 241
<212> PRT
<213> Homo sapiens

<400> 69

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

```
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 70
<211> 1165
<212> DNA
<213> Homo sapiens

<400> 70

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gctgggagta gagggcagag ctcccacccc gccccgcccc caggggcgc cccgggcccg 60
gcgcgagagg aggcagaggg ggcgtcaggc cgcgggagag gaggccatgg gcgcgcgcgg 120
ggcgctgctg ctggcgctgc tgctggctcg ggctggactc aggaagccgg agtcgcagga 180
ggcggcgccg ttatcaggac catgcggccg acgggtcatc acgtcgcgca tcgtgggtgg 240
agaggacgcc gaactcgggc gttggccgtg gcaggggagc ctgcgcctgt gggattccca 300
cgtatgcgga gtgagcctgc tcagccaccg ctgggcactc acggcggcgc actgctttga 360
aacctatagt gaccttagtg atccctccgg gtggatggtc cagtttggcc agctgacttc 420
catgccatcc ttctggagcc tgcaggccta ctacacccgt tacttcgtat cgaatatcta 480
tctgagccct cgctacctgg ggaattcacc ctatgacatt gccttggtga agctgtctgc 540
acctgtcacc tacactaaac acatccagcc catctgtctc caggcctcca catttgagtt 600
tgagaaccgg acagactgct gggtgactgg ctgggggtac atcaaagagg atgaggcact 660
gccatctccc cacaccctcc aggaagttca ggtcgccatc ataaacaact ctatgtgcaa 720
ccacctcttc ctcaagtaca gtttccgcaa ggacatcttt ggagacatgg tttgtgctgg 780
caatgcccaa ggcgggaagg atgcctgctt cggtgactca ggtggaccct tggcctgtaa 840
caagaatgga ctgtggtatc agattggagt cgtgagctgg ggagtgggct gtggtcggcc 900
caatcggccc ggtgtctaca ccaatatcag ccaccacttt gagtggatcc agaagctgat 960
ggcccagagt ggcatgtccc agccagaccc ctcctggccg ctactctttt tccctcttct 1020
ctgggctctc ccactcctgg ggccggtctg agcctacctg agcccatgca gcctggggcc 1080
actgccaagt caggccctgg ttctcttctg tcttgtttgg taataaacac attccagttg 1140
atgccttgca gggcattctt caaaa                                      1165
```

<210> 71
<211> 314
<212> PRT
<213> Homo sapiens

<400> 71

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

```
Ala His Cys Phe Glu Thr Tyr Ser Asp Leu Ser Asp Pro Ser Gly Trp
                85                  90                  95
Met Val Gln Phe Gly Gln Leu Thr Ser Met Pro Ser Phe Trp Ser Leu
            100                 105                 110
Gln Ala Tyr Tyr Thr Arg Tyr Phe Val Ser Asn Ile Tyr Leu Ser Pro
        115                 120                 125
Arg Tyr Leu Gly Asn Ser Pro Tyr Asp Ile Ala Leu Val Lys Leu Ser
    130                 135                 140
Ala Pro Val Thr Tyr Thr Lys His Ile Gln Pro Ile Cys Leu Gln Ala
145                 150                 155                 160
Ser Thr Phe Glu Phe Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp
                165                 170                 175
Gly Tyr Ile Lys Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln
            180                 185                 190
Glu Val Gln Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe
        195                 200                 205
Leu Lys Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala
    210                 215                 220
Gly Asn Ala Gln Gly Gly Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly
225                 230                 235                 240
Pro Leu Ala Cys Asn Lys Asn Gly Leu Trp Tyr Gln Ile Gly Val Val
                245                 250                 255
Ser Trp Gly Val Gly Cys Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr
            260                 265                 270
Asn Ile Ser His His Phe Glu Trp Ile Gln Lys Leu Met Ala Gln Ser
        275                 280                 285
Gly Met Ser Gln Pro Asp Pro Ser Trp Pro Leu Leu Phe Phe Pro Leu
    290                 295                 300
Leu Trp Ala Leu Pro Leu Leu Gly Pro Val
305                 310
```

<210> 72
<211> 1159
<212> DNA
<213> Homo sapiens

<400> 72

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gctgggagta gagggcagag ctcccacccc gccccgcccc caggggcgc cccgggcccg 60
gcgcgagagg aggcagaggg ggcgtcaggc cgcgggagag gaggccatgg gcgcgcgcgg 120
ggcgctgctg ctggcgctgc tgctggctcg ggctggactc aggaagccgg agtcgcagga 180
ggcggcgccg ttatcaggac catgcggccg acgggtcatc acgtcgcgca tcgtgggtgg 240
agaggacgcc gaactcgggc gttggccgtg gcaggggagc ctgcgcctgt gggattccca 300
cgtatgcgga gtgagcctgc tcagccaccg ctgggcactc acggcggcgc actgctttga 360
aactgacctt agtgatccct ccgggtggat ggtccagttt ggccagctga cttccatgcc 420
atccttctgg agcctgcagg cctactacac ccgttacttc gtatcgaata tctatctgag 480
ccctcgctac ctggggaatt caccctatga cattgccttg gtgaagctgt ctgcacctgt 540
cacctacact aaacacatcc agcccatctg tctccaggcc tccacatttg agtttgagaa 600
ccggacagac tgctgggtga ctggctgggg gtacatcaaa gaggatgagg cactgccatc 660
tcccacacc ctccaggaag ttcaggtcgc catcataaac aactctatgt gcaaccacct 720
cttcctcaag tacagtttcc gcaaggacat ctttggagac atggtttgtg ctggcaatgc 780
ccaaggcggg aaggatgcct gcttcggtga ctcaggtgga cccttggcct gtaacaagaa 840
tggactgtgg tatcagattg gagtcgtgag ctggggagtg ggctgtggtc ggcccaatcg 900
gcccggtgtc tacaccaata tcagccacca ctttgagtgg atccagaagc tgatggccca 960
gagtggcatg tcccagccag acccctcctg gccgctactc ttttttcctc ttctctgggc 1020
tctcccactc ctgggggcgg tctgagccta cctgagccca tgcagcctgg ggccactgcc 1080
aagtcaggcc ctggttctct tctgtcttgt ttggtaataa acacattcca gttgatgcct 1140
tgcagggcat tcttcaaaa                                          1159
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<210> 73
<211> 312
<212> PRT
<213> Homo sapiens

<400> 73
Met Gly Ala Arg Gly Ala Leu Leu Leu Ala Leu Leu Leu Ala Arg Ala
1 5 10 15
Gly Leu Arg Lys Pro Glu Ser Gln Glu Ala Ala Pro Leu Ser Gly Pro
20 25 30
Cys Gly Arg Arg Val Ile Thr Ser Arg Ile Val Gly Gly Glu Asp Ala
35 40 45
Glu Leu Gly Arg Trp Pro Trp Gln Gly Ser Leu Arg Leu Trp Asp Ser
50 55 60
His Val Cys Gly Val Ser Leu Leu Ser His Arg Trp Ala Leu Thr Ala
65 70 75 80
Ala His Cys Phe Glu Thr Asp Leu Ser Asp Pro Ser Gly Trp Met Val
85 90 95
Gln Phe Gly Gln Leu Thr Ser Met Pro Ser Phe Trp Ser Leu Gln Ala
100 105 110
Tyr Tyr Thr Arg Tyr Phe Val Ser Asn Ile Tyr Leu Ser Pro Arg Tyr
115 120 125
Leu Gly Asn Ser Pro Tyr Asp Ile Ala Leu Val Lys Leu Ser Ala Pro
130 135 140
Val Thr Tyr Thr Lys His Ile Gln Pro Ile Cys Leu Gln Ala Ser Thr
145 150 155 160
Phe Glu Phe Glu Asn Arg Thr Asp Cys Trp Val Thr Gly Trp Gly Tyr
165 170 175
Ile Lys Glu Asp Glu Ala Leu Pro Ser Pro His Thr Leu Gln Glu Val
180 185 190
Gln Val Ala Ile Ile Asn Asn Ser Met Cys Asn His Leu Phe Leu Lys
195 200 205
Tyr Ser Phe Arg Lys Asp Ile Phe Gly Asp Met Val Cys Ala Gly Asn
210 215 220
Ala Gln Gly Gly Lys Asp Ala Cys Phe Gly Asp Ser Gly Gly Pro Leu
225 230 235 240
Ala Cys Asn Lys Asn Gly Leu Trp Tyr Gln Ile Gly Val Val Ser Trp
245 250 255
Gly Val Gly Cys Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr Asn Ile
260 265 270
Ser His His Phe Glu Trp Ile Gln Lys Leu Met Ala Gln Ser Gly Met
275 280 285
Ser Gln Pro Asp Pro Ser Trp Pro Leu Leu Phe Phe Pro Leu Leu Trp
290 295 300
Ala Leu Pro Leu Leu Gly Pro Val
305 310

<210> 74
<211> 1135
<212> DNA
<213> Homo sapiens

<400> 74
gctgggagta gagggcagag ctcccacccc gccccgcccc caggggcgc cccgggcccg 60
gcgcgagagg aggcagaggg ggcgtcaggc cgcgggagag gaggccatgg gcgcgcgcgg 120
ggcgctgctg ctggcgctgc tgctggctcg ggctggactc aggaagccgg agtcgcagga 180

```
ggcggcgccg ttatcaggac catgcggccg acgggtcatc acgtcgcgca tcgtgggtgg 240
agaggacgcc gaactcgggc gttggccgtg gcaggggagc ctgcgcctgt gggattccca 300
cgtatgcgga gtgagcctgc tcagccaccg ctgggcactc acggcggcgc actgctttga 360
aacctatagt gaccttagtg atccctccgg gtggatggtc cagtttggcc agctgacttc 420
catgccatcc ttctggagcc tgcaggccta ctacacccgt tacttcgtat cgaatatcta 480
tctgagccct cgctacctgg ggaattcacc ctatgacatt gccttggtga agctgtctgc 540
accgtcacac tacactaaac acatccagcc catctgtctc caggcctcca catttgagtt 600
tgagaaccgg acagactgct gggtgactgg ctgggggtac atcaaagagg atgaggcact 660
gccatctccc cacaccctcc aggaagttca ggtcgccatc ataaacaact ctatgtgcaa 720
ccacctcttc ctcaagtaca gtttccgcaa ggacatcttt ggagacatgg gtgactcagg 780
tggacccttg gcctgtaaca agaatggact gtggtatcag attggagtcg tgagctgggg 840
agtgggctgt ggtcggccca atcggcccgg tgtctacacc aatatcagcc accactttga 900
gtggatccag aagctgatgg cccagagtgg catgtcccag ccagacccct cctggccgct 960
actcttttte cctcttctct gggctctccc actcctgggg ccggtctgag cctacctgag 1020
ccccatgcagc ctggggccac tgccaagtca ggccctggtt ctcttctgtc ttgtttggta 1080
ataaacacat tccagttgat gccttgcagg gcattcttca aaaaaaaaaa aaaaa       1135

<210> 75
<211> 300
<212> PRT
<213> Homo sapiens

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

```
        275                 280                 285
Pro Leu Leu Trp Ala Leu Pro Leu Leu Gly Pro Val
    290                 295                 300
```

<210> 76
<211> 1194
<212> DNA
<213> Homo sapiens

<400> 76

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ccaggccctg cagcgagtgg gcatcgtcgg gggtcaggag gcccccagga gcaagtggcc 180
ctggcaggtg agcctgagag tccacggccc atactggatg cacttctgcg ggggctccct 240
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ggccgccctc agggtgcaac tgcgggagca gcacctctac taccaggacc agctgctgcc 360
ggtcagcagg atcatcgtgc acccacagtt ctacaccgcc cagatcggag cggacatcgc 420
cctgctggag ctggaggagc cggtgaacgt ctccagccac gtccacacgg tcaccctgcc 480
ccctgcctca gagaccttcc ccccggggat gccgtgctgg gtcactggct ggggcgatgt 540
ggacaatgat gagcgcctcc caccgccatt tcctctgaag caggtgaagg tccccataat 600
ggaaaaccac atttgtgacg caaaatacca ccttggcgcc tacacgggag acgacgtccg 660
catcgtccgt gacgacatgc tgtgtgccgg gaacacccgg agggactcat gccagggcga 720
ctccggaggg ccctggtgtt gcaaggtgaa tggcacctgg ctgcaggcgg gcgtggtcag 780
ctggggcgag ggctgtgccc agcccaaccg gcctggcatc tacacccgtg tcacctacta 840
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cctgtcctaa gcctgacgcc tgcaccgggc cctccagccc tcccctgccc agatagctgg 1140
tggtgggcgc taatcctcct gagtgctgga cctcattaaa gtgcatggaa atca       1194
```

<210> 77
<211> 275
<212> PRT
<213> Homo sapiens

<400> 77

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

```
Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro Leu Lys
                  165                 170                 175
Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr
             180                 185                 190
His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg Asp Asp
         195                 200                 205
Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly Asp Ser
     210                 215                 220
Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly
225                 230                 235                 240
Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile
                  245                 250                 255
Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro
             260                 265                 270
Lys Lys Pro
         275
```

<210> 78
<211> 1528
<212> DNA
<213> Homo sapiens

<400> 78

```
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tctgtgcgtc ctgcacccac atcttttctct gtcccctcct tgccctgtct ggaggctgct 180
agactcctat cttctgaatt ctatagtgcc tgggtctcag cgcagtgccg atggtggccc 240
gtccttgtgg ttcctctcta cctggggaaa taaggtgcag cggccatggc tacagcaaga 300
ccccccctgga tgtgggtgct ctgtgctctg atcacagcct tgcttctggg ggtcacagag 360
catgttctcg ccaacaatga tgtttcctgt gaccacccct ctaacaccgt gcccctctggg 420
agcaaccagg acctgggagc tggggccggg gaagacgccc ggtcggatga cagcagcagc 480
cgcatcatca atggatccga ctgcgatatg cacacccagc cgtggcaggc cgcgctgttg 540
ctaaggccca accagctcta ctgcgggggcg gtgttggtgc atccacagtg gctgctcacg 600
gccgcccact gcaggaagaa agttttcaga gtccgtctcg gccactactc cctgtcacca 660
gtttatgaat ctgggcagca gatgttccag ggggtcaaat ccatccccca ccctggctac 720
tcccaccctg gccactctaa cgacctcatg ctcatcaaac tgaacagaag aattcgtccc 780
actaaagatg tcagacccat caacgtctcc tctcattgtc cctctgctgg gacaaagtgc 840
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gatgacacca tgttctgcgc cggtgacaaa gcaggtagag actcctgcca gggtgattct 1020
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tgtgcccggc ccaacagacc gggtgtctac acgaacctct gcaagttcac caagtggatc 1140
caggaaacca tccaggccaa ctcctgagtc atcccaggac tcagcacacc ggcatcccca 1200
cctgctgcag ggacagccct gacactcctt tcagaccctc attccttccc agagatgttg 1260
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aaaaaaaaaa aaaaaaaaaa aaaaaaaa                                    1528
```

<210> 79
<211> 293
<212> PRT
<213> Homo sapiens

<400> 79

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Met Ala Thr Ala Arg Pro Pro Trp Met Trp Val Leu Cys Ala Leu Ile
```

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

<210> 80
<211> 4942
<212> DNA
<213> Homo sapiens

<400> 80

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gaagagcgct gccgcagagc cgggtcccca aagccggtct tgagagctga tgacaataac 180
atgggcaatg gctgctctca gaagctggcg actgctaacc tcctccggtt cctattgctg 240
gtcctgattc catgtatctg tgctctcgtt ctcttgctgg tgatcctgct ttcctatgtt 300
ggaacattac aaaaggtcta ttttaaatca aatgggagtg aacctttggt cactgatggt 360
gaaatccaag ggtccgatgt tattcttaca aatacaattt ataaccagag cactgtggtg 420
tctactgcac atcccgacca acacgttcca gcctggacta cggatgcttc tctcccaggg 480
gaccaaagtc acaggaatac aagtgcctgt atgaacatca cccacagcca gtgtcagatg 540
ctgccctacc acgccacgct gacacctctc ctctcagttg tcagaaacat ggaaatggaa 600
aagttcctca agttttttcac atatctccat cgcctcagtt gctatcaaca tatcatgctg 660
tttggctgta ccctcgcctt ccctgagtgc atcattgatg gcgatgacag tcatggactc 720
ctgccctgta ggtcctttctg tgaggctgca aaagaaggct gtgaatcagt cctggggatg 780
```

```
gtgaattact cctggccgga tttcctcaga tgctcccagt ttagaaacca aactgaaagc 840
agcaatgtca gcagaatttg cttctcacct cagcaggaaa acggaaagca attgctctgt 900
ggaaggggtg agaacttttt gtgtgccagt ggaatctgca tccccgggaa actgcaatgt 960
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gactgtgggg atttgagtga tgagcaaaac tgtgattgca atcccacaac agagcatcgc 1140
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```

```
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```

<210> 81
<211> 1042
<212> PRT
<213> Homo sapiens

<400> 81

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

```
305                 310                 315                 320
Tyr Ser Leu Val Cys Asp Gly Tyr Asp Asp Cys Gly Asp Leu Ser Asp
                325                 330                 335
Glu Gln Asn Cys Asp Cys Asn Pro Thr Thr Glu His Arg Cys Gly Asp
            340                 345                 350
Gly Arg Cys Ile Ala Met Glu Trp Val Cys Asp Gly Asp His Asp Cys
        355                 360                 365
Val Asp Lys Ser Asp Glu Val Asn Cys Ser Cys His Ser Gln Gly Leu
    370                 375                 380
Val Glu Cys Arg Asn Gly Gln Cys Ile Pro Ser Thr Phe Gln Cys Asp
385                 390                 395                 400
Gly Asp Glu Asp Cys Lys Asp Gly Ser Asp Glu Glu Asn Cys Ser Val
                405                 410                 415
Ile Gln Thr Ser Cys Gln Glu Gly Asp Gln Arg Cys Leu Tyr Asn Pro
            420                 425                 430
Cys Leu Asp Ser Cys Gly Gly Ser Ser Leu Cys Asp Pro Asn Asn Ser
        435                 440                 445
Leu Asn Asn Cys Ser Gln Cys Glu Pro Ile Thr Leu Glu Leu Cys Met
    450                 455                 460
Asn Leu Pro Tyr Asn Ser Thr Ser Tyr Pro Asn Tyr Phe Gly His Arg
465                 470                 475                 480
Thr Gln Lys Glu Ala Ser Ile Ser Trp Glu Ser Ser Leu Phe Pro Ala
                485                 490                 495
Leu Val Gln Thr Asn Cys Tyr Lys Tyr Leu Met Phe Phe Ser Cys Thr
            500                 505                 510
Ile Leu Val Pro Lys Cys Asp Val Asn Thr Gly Glu His Ile Pro Pro
        515                 520                 525
Cys Arg Ala Leu Cys Glu His Ser Lys Glu Arg Cys Glu Ser Val Leu
    530                 535                 540
Gly Ile Val Gly Leu Gln Trp Pro Glu Asp Thr Asp Cys Ser Gln Phe
545                 550                 555                 560
Pro Glu Glu Asn Ser Asp Asn Gln Thr Cys Leu Met Pro Asp Glu Tyr
                565                 570                 575
Val Glu Glu Cys Ser Pro Ser His Phe Lys Cys Arg Ser Gly Gln Cys
            580                 585                 590
Val Leu Ala Ser Arg Arg Cys Asp Gly Gln Ala Asp Cys Asp Asp Asp
        595                 600                 605
Ser Asp Glu Glu Asn Cys Gly Cys Lys Glu Arg Asp Leu Trp Glu Cys
    610                 615                 620
Pro Ser Asn Lys Gln Cys Leu Lys His Thr Val Ile Cys Asp Gly Phe
625                 630                 635                 640
Pro Asp Cys Pro Asp Tyr Met Asp Glu Lys Asn Cys Ser Phe Cys Gln
                645                 650                 655
Asp Asp Glu Leu Glu Cys Ala Asn His Ala Cys Val Ser Arg Asp Leu
            660                 665                 670
Trp Cys Asp Gly Glu Ala Asp Cys Ser Asp Ser Ser Asp Glu Trp Asp
        675                 680                 685
Cys Val Thr Leu Ser Ile Asn Val Asn Ser Ser Ser Phe Leu Met Val
    690                 695                 700
His Arg Ala Ala Thr Glu His His Val Cys Ala Asp Gly Trp Gln Glu
705                 710                 715                 720
Ile Leu Ser Gln Leu Ala Cys Lys Gln Met Gly Leu Gly Glu Pro Ser
                725                 730                 735
Val Thr Lys Leu Ile Gln Glu Gln Glu Lys Glu Pro Arg Trp Leu Thr
            740                 745                 750
Leu His Ser Asn Trp Glu Ser Leu Asn Gly Thr Thr Leu His Glu Leu
        755                 760                 765
Leu Val Asn Gly Gln Ser Cys Glu Ser Arg Ser Lys Ile Ser Leu Leu
```

```
    770                 775                 780
Cys Thr Lys Gln Asp Cys Gly Arg Arg Pro Ala Ala Arg Met Asn Lys
785                 790                 795                 800
Arg Ile Leu Gly Gly Arg Thr Ser Arg Pro Gly Arg Trp Pro Trp Gln
                805                 810                 815
Cys Ser Leu Gln Ser Glu Pro Ser Gly His Ile Cys Gly Cys Val Leu
            820                 825                 830
Ile Ala Lys Lys Trp Val Leu Thr Val Ala His Cys Phe Glu Gly Arg
        835                 840                 845
Glu Asn Ala Ala Val Trp Lys Val Val Leu Gly Ile Asn Asn Leu Asp
    850                 855                 860
His Pro Ser Val Phe Met Gln Thr Arg Phe Val Lys Thr Ile Ile Leu
865                 870                 875                 880
His Pro Arg Tyr Ser Arg Ala Val Val Asp Tyr Asp Ile Ser Ile Val
                885                 890                 895
Glu Leu Ser Glu Asp Ile Ser Glu Thr Gly Tyr Val Arg Pro Val Cys
            900                 905                 910
Leu Pro Asn Pro Glu Gln Trp Leu Glu Pro Asp Thr Tyr Cys Tyr Ile
        915                 920                 925
Thr Gly Trp Gly His Met Gly Asn Lys Met Pro Phe Lys Leu Gln Glu
    930                 935                 940
Gly Glu Val Arg Ile Ile Ser Leu Glu His Cys Gln Ser Tyr Phe Asp
945                 950                 955                 960
Met Lys Thr Ile Thr Thr Arg Met Ile Cys Ala Gly Tyr Glu Ser Gly
                965                 970                 975
Thr Val Asp Ser Cys Met Gly Asp Ser Gly Gly Pro Leu Val Cys Glu
            980                 985                 990
Lys Pro Gly Gly Arg Trp Thr Leu Phe Gly Leu Thr Ser Trp Gly Ser
        995                 1000                1005
Val Cys Phe Ser Lys Val Leu Gly Pro Gly Val Tyr Ser Asn Val Ser
    1010                1015                1020
Tyr Phe Val Glu Trp Ile Lys Arg Gln Ile Tyr Ile Gln Thr Phe Leu
1025                1030                1035                1040
Leu Asn
```

<210> 82
<211> 945
<212> DNA
<213> Homo sapiens

<400> 82

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gcaggtaggt ggacggagag atagcagcga cgaggacagg ccaaacagtg acagccacgt 60
agaggatctg gcagacaaag agacaaggtg agaaggagac tttggaagtg acccaccatg 120
gggctcagca tcttttgct cctgtgtgtt cttgggctca gccaggcagc cacaccgaag 180
attttcaatg gcactgagtg tgggcgtaac tcacagccgt ggcaggtggg gctgtttgag 240
ggcaccagcc tgcgctgcgg gggtgtcctt attgaccaca ggtgggtcct cacagcggct 300
cactgcagcg gcagcaggta ctgggtgcgc ctgggggaac acagcctcag ccagctcgac 360
tggaccgagc agatccggca cagcggcttc tctgtgaccc atcccggcta cctgggagcc 420
tcgacgagcc acgagcacga cctccggctg ctgcggctgc gcctgcccgt ccgcgtaacc 480
agcagcgttc aacccctgcc cctgcccaat gactgtgcaa ccgctggcac cgagtgccac 540
gtctcaggct ggggcatcac caaccaccca cggaacccat tcccggatct gctccagtgc 600
ctcaacctct ccatcgtctc ccatgccacc tgccatggtg tgtatcccgg gagaatcacg 660
agcaacatgg tgtgtgcagg cggcgtcccg gggcaggatg cctgccaggg tgattctggg 720
ggcccctgg tgtgtggggg agtccttcaa ggtctggtgt cctgggggtc tgtgggccc 780
tgtggacaag atggcatccc tggagtctac acctatattt gcaactccac tcttgttggc 840
ctgggaactt cttggaactt taactcctgc cagccttct aagacccacg agcggggtga 900
```

gagaagtgtg caatagtctg gaataaatat aaatgaagga ggggc 945

<210> 83
<211> 254
<212> PRT
<213> Homo sapiens

<400> 83

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

<210> 84
<211> 1074
<212> DNA
<213> Homo sapiens

<400> 84

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gcaggtaggt ggacggagag atagcagcga cgaggacagg ccaaacagtg acagccacgt 60
agaggatctg gcagacaaag agacaaggtg agaaggagac tttggaagtg acccaccatg 120
gggctcagca tcttttgct cctgtgtgtt cttgggctca gccaggcagc cacaccgaag 180
attttcaatg gcactgagtg tgggcgtaac tcacagccgt ggcaggtggg gctgtttgag 240
ggcaccagcc tgcgctgcgg gggtgtcctt attgaccaca ggtgggtcct cacagcggct 300
cactgcagcg gcagcaggta ctgggtgcgc ctgggggaac acagcctcag ccagctcgac 360
tggaccgagc agatccggca cagcggcttc tctgtgaccc atcccggcta cctgggagcc 420
tcgacgagcc acgagcacga cctccggctg ctgcggctgc gcctgcccgt ccgcgtaacc 480
agcagcgttc aacccctgcc cctgcccaat gactgtgcaa ccgctggcac cgagtgccac 540
gtctcaggct ggggcatcac caaccaccca cggaacccat tcccggatct gctccagtgc 600
```

ctcaacctct ccatcgtctc ccatgccacc tgccatggtg tgtatcccgg gagaatcacg 660
agcaacatgg tgtgtgcagg cggcgtcccg gggcaggatg cctgccaggg tgattctggg 720
ggcccctgg tgtgtggggg agtccttcaa ggtctggtgt cctgggggtc tgtggggccc 780
tgtggacaag atggcatccc tggagtctac acctatattt gcaagtatgt ggactggatc 840
cggatgatca tgaggaacaa ctgacctgtt tcctccacct ccacccccac cccttaactt 900
gggtaccccc ctggccctca gagcaccaat atctcctcca tcacttcccc tagctccact 960
cttgttggcc tgggaacttc ttggaacttt aactcctgcc agcccttcta agacccacga 1020
gcggggtgag agaagtgtgc aatagtctgg aataaatata aatgaaggag gggc 1074

<210> 85
<211> 248
<212> PRT
<213> Homo sapiens

<400> 85

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

<210> 86
<211> 814
<212> DNA
<213> Homo sapiens

<400> 86
gcaggtaggt ggacggagag atagcagcga cgaggacagg ccaaacagtg acagccacgt 60
agagcatctg gcagacaaag agacaaggtg agaaggagac tttggaagtg acccaccatg 120
gggctcagca tctttttgct cctgtgtgtt cttgggctca gccaggcagc cacaccgaag 180

attttcaatg gcactgagtg tgggcgtaac tcacagccgt ggcaggtggg gctgtttgag 240
ggcaccagcc tgcgctgcgg gggtgtcctt attgaccaca ggtgggtcct cacagcggct 300
cactgcagcg gcagacccat tcccggatct gctccagtgc ctcaacctct ccatcgtctc 360
ccatgccacc tgccatggtg tgtatcccgg gagaatcacg agcaacatgg tgtgtgcagg 420
cggcgtcccg gggcaggatg cctgccaggg tgattctggg ggccccctgg tgtgtggggg 480
agtccttcaa ggtctggtgt cctgggggtc tgtggggccc tgtggacaag atggcatccc 540
tggagtctac acctatattt gcaagtatgt ggactggatc cggatgatca tgaggaacaa 600
ctgacctgtt tcctccacct ccacccccac cccttaactt gggtaccect ctggccctca 660
gagcaccaat atctcctcca tcacttcccc tagctccact cttgttggcc tgggaacttc 720
ttggaacttt aactcctgcc agcccttcta agacccacga gcgggggtgag agaagtgtgc 780
aatagtctgg aataaatata aatgaaggag gggc 814

<210> 87
<211> 111
<212> PRT
<213> Homo sapiens

<400> 87
Met Gly Leu Ser Ile Phe Leu Leu Leu Cys Val Leu Gly Leu Ser Gln
 1   5   10   15
Ala Ala Thr Pro Lys Ile Phe Asn Gly Thr Glu Cys Gly Arg Asn Ser
            20   25   30
Gln Pro Trp Gln Val Gly Leu Phe Glu Gly Thr Ser Leu Arg Cys Gly
        35   40   45
Gly Val Leu Ile Asp His Arg Trp Val Leu Thr Ala Ala His Cys Ser
    50   55   60
Gly Arg Pro Ile Pro Gly Ser Ala Pro Val Pro Gln Pro Leu His Arg
65   70   75   80
Leu Pro Cys His Leu Pro Trp Cys Val Ser Arg Glu Asn His Glu Gln
                85   90   95
His Gly Val Cys Arg Arg Arg Pro Gly Ala Gly Cys Leu Pro Gly
            100   105   110

<210> 88
<211> 1471
<212> DNA
<213> Homo sapiens

<400> 88
tgacttggat gtagacctcg accttcacag gactcttcat tgctggttgg caatgatgta 60
tcggccagat gtggtgaggg ctaggaaaag agtttgttgg gaaccctggg ttatcggcct 120
cgtcatcttc atatccctga ttgtcctggc agtgtgcatt ggactcactg ttcattatgt 180
gagatataat caaaagaaga cctacaatta ctatagcaca ttgtcattta caactgacaa 240
actatatgct gagtttggca gagaggcttc taacaatttt acagaaatga gccagagact 300
tgaatcaatg gtgaaaaatg cattttataa atctccatta agggaagaat ttgtcaagtc 360
tcaggttatc aagttcagtc aacagaagca tggagtgttg gctcatatgc tgttgatttg 420
tagatttcac tctactgagg atcctgaaac tgtagataaa attgttcaac ttgttttaca 480
tgaaaagctg caagatgctg taggacccec taaagtagat cctcactcag ttaaaattaa 540
aaaaatcaac aagacagaaa cagacagcta tctaaaccat tgctgcggaa cacgaagaag 600
taaaactcta ggtcagagtc tcaggatcgt tggtgggaca gaagtagaag agggtgaatg 660
gccctggcag gctagcctgc agtgggatgg gagtcatcgc tgtggagcaa ccttaattaa 720
tgccacatgg cttgtgagtg ctgctcactg ttttacaaca tataagaacc ctgccagatg 780
gactgcttcc tttggagtaa caataaaacc ttcgaaaatg aaacggggtc tccggagaat 840
aattgtccat gaaaaataca aacacccatc acatgactat gatatttctc ttgcagagct 900
ttctagccct gttccctaca caaatgcagt acatagagtt tgtctccctg atgcatccta 960
tgagtttcaa ccaggtgatg tgatgtttgt gacaggattt ggagcactga aaaatgatgg 1020
ttacagtcaa aatcatcttc gacaagcaca ggtgactctc atagacgcta caacttgcaa 1080

```
tgaacctcaa gcttacaatg acgccataac tcctagaatg ttatgtgctg gctccttaga 1140
aggaaaaaca gatgcatgcc agggtgactc tggaggacca ctggttagtt cagatgctag 1200
agatatctgg taccttgctg gaatagtgag ctggggagat gaatgtgcga aacccaacaa 1260
gcctggtgtt tatactagag ttacggcctt gcggggactgg attacttcaa aaactggtat 1320
ctaagagaga aaagcctcat ggaacagata acatttttt ttgttttttg ggtgtggagg 1380
ccatttttag agatacagaa ttggagaaga cttgcaaaac agctagattt gactgatctc 1440
aataaactgt ttgcttgatg caaaaaaaaa a                                  1471
```

<210> 89
<211> 422
<212> PRT
<213> Homo sapiens

<400> 89

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

```
Pro Arg Met Leu Cys Ala Gly Ser Leu Glu Gly Lys Thr Asp Ala Cys
        355                 360                 365
Gln Gly Asp Ser Gly Gly Pro Leu Val Ser Ser Asp Ala Arg Asp Ile
    370                 375                 380
Trp Tyr Leu Ala Gly Ile Val Ser Trp Gly Asp Glu Cys Ala Lys Pro
385                 390                 395                 400
Asn Lys Pro Gly Val Tyr Thr Arg Val Thr Ala Leu Arg Asp Trp Ile
                405                 410                 415
Thr Ser Lys Thr Gly Ile
            420
```

<210> 90
<211> 1124
<212> DNA
<213> Homo sapiens

<400> 90
ccatggccct tggggcctgt ggcctcctgc tgctcctggc tgtgcccggt gtgtccctca 60
ggactttgca gccagggtgt ggccggccgc aggtttcgga tgcaggcggc cggatcgtgg 120
ggggtcacgc tgccccggcc ggcgcatggc catggcaggc cagcctccgc ctgcggagga 180
tgcacgtgtg cggcgggtca ctgctcagcc cccagtgggt gctcacagct gcccactgct 240
tctccgggtc cctgaactca tccgactacc aggtgcacct gggggaactg gagatcactt 300
tgtctccccа cttctccacc gtgaggcaga tcatcctgca ctccagcccc tcaggacagc 360
cggggaccag cggggacatc gccctggtgg agctcagtgt ccccgtgacc ctctccagcc 420
ggatcctgcc cgtctgcctc ccggaggcct cagatgactt ctgccctggg atccggtgct 480
gggtgaccgg ctgggggctat acgcgggagg gagagcctct gccacccccg tacagcctgc 540
gggaggtgaa agtctccgtg gtggacacag agacctgccg ccgggactat cccggccccg 600
ggggcagcat ccttcagccc gacatgctgt gtgcccgggg ccccggggat gcctgccagg 660
acgactccgg ggggcctctg gtctgccagg tgaacggtgc ctgggtgcag gctggcattg 720
tgagctgggg tgagggctgc ggccgccccа acaggccggg agtctacact cgtgtcctg 780
cctacgtgaa ctggatccgc cgccacatca cagcatcagg gggctcagag tctgggtacc 840
ccaggctccc cctcctggct ggcttcttcc tccccggcct cttccttctg ctagtctcct 900
gtgtcctgct ggccaagtgc ctgctgcacc catctgcgga tggtactccc ttccccgccc 960
ctgactgatg gcaggaatcc aagtgcattt cttaaataag ttactattta ttccgctccg 1020
ccccctccct ctcccttgag aagctgagtc ttctgcatca gattattgca acatttaacc 1080
tgaatttaaa agcacacgaa acaaaaaaaa aaaaaaaaaa aaaa 1124

<210> 91
<211> 321
<212> PRT
<213> Homo sapiens

<400> 91
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Met Ala Leu Gly Ala Cys Gly Leu Leu Leu Leu Leu Ala Val Pro Gly
 1               5                  10                  15
Val Ser Leu Arg Thr Leu Gln Pro Gly Cys Gly Arg Pro Gln Val Ser
            20                  25                  30
Asp Ala Gly Gly Arg Ile Val Gly Gly His Ala Ala Pro Ala Gly Ala
        35                  40                  45
Trp Pro Trp Gln Ala Ser Leu Arg Leu Arg Arg Met His Val Cys Gly
    50                  55                  60
Gly Ser Leu Leu Ser Pro Gln Trp Val Leu Thr Ala Ala His Cys Phe
65                  70                  75                  80
Ser Gly Ser Leu Asn Ser Ser Asp Tyr Gln Val His Leu Gly Glu Leu
                85                  90                  95
Glu Ile Thr Leu Ser Pro His Phe Ser Thr Val Arg Gln Ile Ile Leu
            100                 105                 110
```

```
His Ser Ser Pro Ser Gly Gln Pro Gly Thr Ser Gly Asp Ile Ala Leu
        115                 120                 125
Val Glu Leu Ser Val Pro Val Thr Leu Ser Ser Arg Ile Leu Pro Val
    130                 135                 140
Cys Leu Pro Glu Ala Ser Asp Asp Phe Cys Pro Gly Ile Arg Cys Trp
145                 150                 155                 160
Val Thr Gly Trp Gly Tyr Thr Arg Glu Gly Glu Pro Leu Pro Pro Pro
                165                 170                 175
Tyr Ser Leu Arg Glu Val Lys Val Ser Val Val Asp Thr Glu Thr Cys
            180                 185                 190
Arg Arg Asp Tyr Pro Gly Pro Gly Gly Ser Ile Leu Gln Pro Asp Met
        195                 200                 205
Leu Cys Ala Arg Gly Pro Gly Asp Ala Cys Gln Asp Asp Ser Gly Gly
    210                 215                 220
Pro Leu Val Cys Gln Val Asn Gly Ala Trp Val Gln Ala Gly Ile Val
225                 230                 235                 240
Ser Trp Gly Glu Gly Cys Gly Arg Pro Asn Arg Pro Gly Val Tyr Thr
                245                 250                 255
Arg Val Pro Ala Tyr Val Asn Trp Ile Arg Arg His Ile Thr Ala Ser
            260                 265                 270
Gly Gly Ser Glu Ser Gly Tyr Pro Arg Leu Pro Leu Leu Ala Gly Phe
        275                 280                 285
Phe Leu Pro Gly Leu Phe Leu Leu Leu Val Ser Cys Val Leu Leu Ala
    290                 295                 300
Lys Cys Leu Leu His Pro Ser Ala Asp Gly Thr Pro Phe Pro Ala Pro
305                 310                 315                 320
Asp
```

<210> 92
<211> 1459
<212> DNA
<213> Homo sapiens

<400> 92

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gcacctagca gatcccaagc tggggaatgc cagttctggc accaaccttc ctgctccctg 60
ctggggcctc tgctccccca tctctcagga gtcgaaagtg agaaagcaag acatcaagga 120
gggacctgtg ccctgctcca catcctccca cctgccgccc gcagagcctg caggccccgc 180
ccccctcgtc tctggtcccc acctctctgc tgtgtcttca tgtcccctgag ggtcttgggc 240
tctgggacct ggccctcagc ccctaaaatg ttcctcctgc tgacagcact tcaagtcctg 300
gctatagcca tgacacagag ccaagaggat gagaacaaga taattggtgg ccatacgtgc 360
acccggagct cccagccgtg gcaggcggcc ctgctggcgg gtcccaggcg ccgcttcctc 420
tgcggaggcg ccctgctttc aggccagtgg gtcatcactg ctgctcactg cggccgcccg 480
atccttcagg ttgccctggg caagcacaac ctgaggaggt gggaggccac ccagcaggtg 540
ctgcgcgtgg ttcgtcaggt gacgcacccc aactacaact cccggaccca cgacaacgac 600
ctcatgctgc tgcagctaca gcagcccgca cggatcgggg gggcagtcag gcccattgag 660
gtcacccagg cctgtgccag ccccgggacc tcctgccgag tgtcaggctg gggaactata 720
tccagccccc tcgccaggta ccccgcctct ctgcaatgcg tgaacatcaa catctccccg 780
gatgaggtgt gccagaaggc ctatcctaga accatcacgc ctggcatggt ctgtgcagga 840
gttccccagg gcgggaagga ctcttgtcag ggtgactctg ggggaccccc ggtgtgcaga 900
ggacagctcc agggcctcgt gtcttgggga atggagcgct gcgccctgcc tggctacccc 960
ggtgtctaca ccaacctgtg caagtacaga agctggattg aggaaacgat gcgggacaaa 1020
tgatggtctt cacggtggga tggacctcgt cagctgccca ggccctcctc tctctactca 1080
ggacccagga gtccaggccc cagccccctc tccctcagac ccaggagtcc aggccccccag 1140
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gccccagtcc ccagcatcct gatctttact ccggctctga tctctccttt cccagagcag 1260
ttgcttcagg cgttttctcc ccaccaagcc cccacccttg ctgtgtcacc atcactactc 1320
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aagaccggag gcacagaggg caggagcaca gacccttaa accggcattg tattccaaag 1380
acgacaattt ttaacacgct tagtgtctct aaaaaccgaa taaataatga caataaaaat 1440
ggaatcatcc taaattgta 1459

<210> 93
<211> 251
<212> PRT
<213> Homo sapiens

<400> 93
Met Phe Leu Leu Leu Thr Ala Leu Gln Val Leu Ala Ile Ala Met Thr
1 5 10 15
Gln Ser Gln Glu Asp Glu Asn Lys Ile Ile Gly Gly His Thr Cys Thr
20 25 30
Arg Ser Ser Gln Pro Trp Gln Ala Ala Leu Leu Ala Gly Pro Arg Arg
35 40 45
Arg Phe Leu Cys Gly Gly Ala Leu Leu Ser Gly Gln Trp Val Ile Thr
50 55 60
Ala Ala His Cys Gly Arg Pro Ile Leu Gln Val Ala Leu Gly Lys His
65 70 75 80
Asn Leu Arg Arg Trp Glu Ala Thr Gln Gln Val Leu Arg Val Val Arg
85 90 95
Gln Val Thr His Pro Asn Tyr Asn Ser Arg Thr His Asp Asn Asp Leu
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Met Leu Leu Gln Leu Gln Gln Pro Ala Arg Ile Gly Arg Ala Val Arg
115 120 125
Pro Ile Glu Val Thr Gln Ala Cys Ala Ser Pro Gly Thr Ser Cys Arg
130 135 140
Val Ser Gly Trp Gly Thr Ile Ser Ser Pro Ile Ala Arg Tyr Pro Ala
145 150 155 160
Ser Leu Gln Cys Val Asn Ile Asn Ile Ser Pro Asp Glu Val Cys Gln
165 170 175
Lys Ala Tyr Pro Arg Thr Ile Thr Pro Gly Met Val Cys Ala Gly Val
180 185 190
Pro Gln Gly Gly Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu
195 200 205
Val Cys Arg Gly Gln Leu Gln Gly Leu Val Ser Trp Gly Met Glu Arg
210 215 220
Cys Ala Leu Pro Gly Tyr Pro Gly Val Tyr Thr Asn Leu Cys Lys Tyr
225 230 235 240
Arg Ser Trp Ile Glu Glu Thr Met Arg Asp Lys
245 250

<210> 94
<211> 3008
<212> DNA
<213> Homo sapiens

<400> 94
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ttattggaaa gcctggaccc agactggacc cctgaccagt atgattacag ctacgaggat 240
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tacactgagg accaagctga tccatgccag cccaaccccc gtgaacacgg tggggactgc 360
ctcgtccatg ggagcacctt cacatgcagc tgcctggctc ctttctctgg gaataagtgt 420
cagaaagtgc aaaatacgtg caaggacaac ccatgtggcc ggggccaatg tctcattacc 480

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<210> 95
<211> 560
<212> PRT
<213> Homo sapiens

<400> 95

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            20                  25                  30
Leu Asp Pro Asp Trp Thr Pro Asp Gln Tyr Asp Tyr Ser Tyr Glu Asp
        35                  40                  45
Tyr Asn Gln Glu Glu Asn Thr Ser Ser Thr Leu Thr His Ala Glu Asn
    50                  55                  60
```

```
Pro Asp Trp Tyr Tyr Thr Glu Asp Gln Ala Asp Pro Cys Gln Pro Asn
65                  70                  75                  80
Pro Cys Glu His Gly Gly Asp Cys Leu Val His Gly Ser Thr Phe Thr
                85                  90                  95
Cys Ser Cys Leu Ala Pro Phe Ser Gly Asn Lys Cys Gln Lys Val Gln
            100                 105                 110
Asn Thr Cys Lys Asp Asn Pro Cys Gly Arg Gly Gln Cys Leu Ile Thr
        115                 120                 125
Gln Ser Pro Pro Tyr Tyr Arg Cys Val Cys Lys His Pro Tyr Thr Gly
    130                 135                 140
Pro Ser Cys Ser Gln Val Val Pro Val Cys Arg Pro Asn Pro Cys Gln
145                 150                 155                 160
Asn Gly Ala Thr Cys Ser Arg His Lys Arg Arg Ser Lys Phe Thr Cys
                165                 170                 175
Ala Cys Pro Asp Gln Phe Lys Gly Lys Phe Cys Glu Ile Gly Ser Asp
            180                 185                 190
Asp Cys Tyr Val Gly Asp Gly Tyr Ser Tyr Arg Gly Lys Met Asn Arg
        195                 200                 205
Thr Val Asn Gln His Ala Cys Leu Tyr Trp Asn Ser His Leu Leu Leu
    210                 215                 220
Gln Glu Asn Tyr Asn Met Phe Met Glu Asp Ala Glu Thr His Gly Ile
225                 230                 235                 240
Gly Glu His Asn Phe Cys Arg Asn Pro Asp Ala Asp Glu Lys Pro Trp
                245                 250                 255
Cys Phe Ile Lys Val Thr Asn Asp Lys Val Lys Trp Glu Tyr Cys Asp
            260                 265                 270
Val Ser Ala Cys Ser Ala Gln Asp Val Ala Tyr Pro Glu Glu Ser Pro
        275                 280                 285
Thr Glu Pro Ser Thr Lys Leu Pro Gly Phe Asp Ser Cys Gly Lys Thr
    290                 295                 300
Glu Ile Ala Glu Arg Lys Ile Lys Arg Ile Tyr Gly Gly Phe Lys Ser
305                 310                 315                 320
Thr Ala Gly Lys His Pro Trp Gln Ala Ser Leu Gln Ser Ser Leu Pro
                325                 330                 335
Leu Thr Ile Ser Met Pro Gln Gly His Phe Cys Gly Gly Ala Leu Ile
            340                 345                 350
His Pro Cys Trp Val Leu Thr Ala Ala His Cys Thr Asp Ile Lys Thr
        355                 360                 365
Arg His Leu Lys Val Val Leu Gly Asp Gln Asp Leu Lys Lys Glu Glu
    370                 375                 380
Phe His Glu Gln Ser Phe Arg Val Glu Lys Ile Phe Lys Tyr Ser His
385                 390                 395                 400
Tyr Asn Glu Arg Asp Glu Ile Pro His Asn Asp Ile Ala Leu Leu Lys
                405                 410                 415
Leu Lys Pro Val Asp Gly His Cys Ala Leu Glu Ser Lys Tyr Val Lys
            420                 425                 430
Thr Val Cys Leu Pro Asp Gly Ser Phe Pro Ser Gly Ser Glu Cys His
        435                 440                 445
Ile Ser Gly Trp Gly Val Thr Glu Thr Gly Lys Gly Ser Arg Gln Leu
    450                 455                 460
Leu Asp Ala Lys Val Lys Leu Ile Ala Asn Thr Leu Cys Asn Ser Arg
465                 470                 475                 480
Gln Leu Tyr Asp His Met Ile Asp Asp Ser Met Ile Cys Ala Gly Asn
                485                 490                 495
Leu Gln Lys Pro Gly Gln Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro
            500                 505                 510
Leu Thr Cys Glu Lys Asp Gly Thr Tyr Tyr Val Tyr Gly Ile Val Ser
        515                 520                 525
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Trp Gly Leu Glu Cys Gly Lys Arg Pro Gly Val Tyr Thr Gln Val Thr
    530                 535                 540
Lys Phe Leu Asn Trp Ile Lys Ala Thr Ile Lys Ser Glu Ser Gly Phe
545                 550                 555                 560
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<210> 96
<211> 2124
<212> DNA
<213> Homo sapiens

<400> 96

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tccagccagt gctgaccagg gacttctgac ctgctggcca gccaggacct gtgtggggag 180
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ctggataaat actacttcct ctgcgggcag cctctccact tcatcccgag gaagcagctg 480
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gagacagcct gtaggcagat gggctacagc agcaaaccca ctttcagagc tgtggagatt 720
ggcccagacc aggatctgga tgttgttgaa atcacagaaa acagccagga gcttcgcatg 780
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<210> 97
<211> 437
<212> PRT
<213> Homo sapiens

<400> 97

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Met Leu Gln Asp Pro Asp Ser Asp Gln Pro Leu Asn Ser Leu Asp Val
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Lys Pro Leu Arg Lys Pro Arg Ile Pro Met Glu Thr Phe Arg Lys Val
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```
                20                  25                  30
Gly Ile Pro Ile Ile Ile Ala Leu Leu Ser Leu Ala Ser Ile Ile Ile
            35                  40                  45
Val Val Val Leu Ile Lys Val Ile Leu Asp Lys Tyr Tyr Phe Leu Cys
    50                  55                  60
Gly Gln Pro Leu His Phe Ile Pro Arg Lys Gln Leu Cys Asp Gly Glu
65                  70                  75                  80
Leu Asp Cys Pro Leu Gly Glu Asp Glu Glu His Cys Val Lys Ser Phe
                85                  90                  95
Pro Glu Gly Pro Ala Val Ala Val Arg Leu Ser Lys Asp Arg Ser Thr
            100                 105                 110
Leu Gln Val Leu Asp Ser Ala Thr Gly Asn Trp Phe Ser Ala Cys Phe
        115                 120                 125
Asp Asn Phe Thr Glu Ala Leu Ala Glu Thr Ala Cys Arg Gln Met Gly
    130                 135                 140
Tyr Ser Ser Lys Pro Thr Phe Arg Ala Val Glu Ile Gly Pro Asp Gln
145                 150                 155                 160
Asp Leu Asp Val Val Glu Ile Thr Glu Asn Ser Gln Glu Leu Arg Met
                165                 170                 175
Arg Asn Ser Ser Gly Pro Cys Leu Ser Gly Ser Leu Val Ser Leu His
            180                 185                 190
Cys Leu Ala Cys Gly Lys Ser Leu Lys Thr Pro Arg Val Val Gly Gly
        195                 200                 205
Glu Glu Ala Ser Val Asp Ser Trp Pro Trp Gln Val Ser Ile Gln Tyr
    210                 215                 220
Asp Lys Gln His Val Cys Gly Gly Ser Ile Leu Asp Pro His Trp Val
225                 230                 235                 240
Leu Thr Ala Ala His Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp
                245                 250                 255
Lys Val Arg Ala Gly Ser Asp Lys Leu Gly Ser Phe Pro Ser Leu Ala
            260                 265                 270
Val Ala Lys Ile Ile Ile Ile Glu Phe Asn Pro Met Tyr Pro Lys Asp
        275                 280                 285
Asn Asp Ile Ala Leu Met Lys Leu Gln Phe Pro Leu Thr Phe Ser Gly
    290                 295                 300
Thr Val Arg Pro Ile Cys Leu Pro Phe Phe Asp Glu Glu Leu Thr Pro
305                 310                 315                 320
Ala Thr Pro Leu Trp Ile Ile Gly Trp Gly Phe Thr Lys Gln Asn Gly
                325                 330                 335
Gly Lys Met Ser Asp Ile Leu Leu Gln Ala Ser Val Gln Val Ile Asp
            340                 345                 350
Ser Thr Arg Cys Asn Ala Asp Asp Ala Tyr Gln Gly Glu Val Thr Glu
        355                 360                 365
Lys Met Met Cys Ala Gly Ile Pro Glu Gly Gly Val Asp Thr Cys Gln
    370                 375                 380
Gly Asp Ser Gly Gly Pro Leu Met Tyr Gln Ser Asp Gln Trp His Val
385                 390                 395                 400
Val Gly Ile Val Ser Trp Gly Tyr Gly Cys Gly Gly Pro Ser Thr Pro
                405                 410                 415
Gly Val Tyr Thr Lys Val Ser Ala Tyr Leu Asn Trp Ile Tyr Asn Val
            420                 425                 430
Trp Lys Ala Glu Leu
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<210> 98
<211> 1983
<212> DNA

<213> Homo sapiens

<400> 98
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atgcactgcc ctactgttgg tatgactacc gttacctact gttgtcattg ttattacagc 1920
tatggccact attattaaag agctgtgtaa catctctgga aaaaaaaaaa aaaaaaaaaa 1980
aaa 1983

<210> 99
<211> 335
<212> PRT
<213> Homo sapiens

<400> 99
Met Asp Pro Asp Ser Asp Gln Pro Leu Asn Ser Leu Asp Val Lys Pro
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Leu Arg Lys Pro Arg Ile Pro Met Glu Thr Phe Arg Lys Val Gly Ile
            20   25   30
Pro Ile Ile Ile Ala Leu Leu Ser Leu Ala Ser Ile Ile Ile Val Val
        35   40   45
Val Leu Ile Lys Val Ile Leu Asp Lys Tyr Tyr Phe Leu Cys Gly Gln
    50   55   60
Pro Leu His Phe Ile Pro Arg Lys Gln Leu Cys Asp Gly Glu Leu Asp
65   70   75   80
Cys Pro Leu Gly Glu Asp Glu Glu His Cys Val Lys Ser Phe Pro Glu
                85   90   95
Gly Pro Ala Val Ala Val Arg Leu Ser Lys Asp Arg Ser Thr Leu Gln
            100   105   110

```
Val Leu Asp Ser Ala Thr Gly Asn Trp Phe Ser Ala Cys Phe Asp Asn
        115                 120                 125
Phe Thr Glu Ala Leu Ala Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser
    130                 135                 140
Ser Lys Pro Thr Phe Arg Ala Val Glu Ile Gly Pro Asp Gln Asp Leu
145                 150                 155                 160
Asp Val Val Glu Ile Thr Glu Asn Ser Gln Glu Leu Arg Met Arg Asn
                165                 170                 175
Ser Ser Gly Pro Cys Leu Ser Gly Ser Leu Val Ser Leu His Cys Leu
            180                 185                 190
Ala Cys Gly Lys Ser Leu Lys Thr Pro Arg Val Val Gly Gly Glu Glu
        195                 200                 205
Ala Ser Val Asp Ser Trp Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys
    210                 215                 220
Gln His Val Cys Gly Gly Ser Ile Leu Asp Pro His Trp Val Leu Thr
225                 230                 235                 240
Ala Ala His Cys Phe Arg Lys His Thr Asp Val Phe Asn Trp Lys Val
                245                 250                 255
Arg Ala Gly Ser Asp Lys Leu Gly Ser Phe Pro Ser Leu Ala Val Ala
            260                 265                 270
Lys Ile Ile Ile Ile Glu Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp
        275                 280                 285
Ile Ala Leu Met Lys Leu Gln Phe Pro Leu Thr Phe Ser Gly Thr Val
    290                 295                 300
Arg Pro Ile Cys Leu Pro Phe Phe Asp Glu Glu Leu Thr Pro Ala Thr
305                 310                 315                 320
Pro Leu Trp Ile Ile Gly Trp Gly Phe Thr Lys Gln Asn Gly Gly
                325                 330                 335
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<210> 100
<211> 855
<212> DNA
<213> Homo sapiens

<400> 100
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cgcggcccat actggatgca cttctgcggg ggctccctca tccacccccа gtgggtgcta 240
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cgggagcagc acctctacta ccaggaccag ctgctgccgg tcagcaggat catcgtgcac 360
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ccggggatgc cgtgctgggt cactggctgg ggcgacgtgg acaataatgt gcacctgccg 540
ccgccatacc cgctgaagga ggtggaagtc cccgtagtgg aaaaccacct ttgcaacgcg 600
gaatatcaca ccggcctcca tacgggccac agctttcaaa tcgtccgcga tgacatgctg 660
tgtgcgggga gcgaaaatca cgactcctgc cagggtgact ctggagggcc cctggtctgc 720
aaggtgaatg gcacctaact gcaggcgggc gtggtcagct gggaggagag ctgtgcccag 780
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gtccccaaga agccc 855

<210> 101
<211> 242
<212> PRT
<213> Homo sapiens

<400> 101

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

<210> 102
<211> 1462
<212> DNA
<213> Homo sapiens

<400> 102

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ctgtctcaaa aaattaaaaa aaataataat aataataatg aatgaagctg gacggacttc 60
gcgtgcaccg cggtcagctc ggggtctgct gggggggtctg ggtcagctca gggtccagga 120
accgaggcca acggcacccc gtgctgcgct ggggtgaggg gtctgccctg gggtctcggg 180
gttcagggct aggtcacgga ggagtcggct ctgggcgctt ccttcctgag gagaggagct 240
gggcaggccg ggccgacggg ttgggccgca tagccgggcc tgtgctcatc tccagcataa 300
aactccactt catggagcct gcacctcgct cgtgctccaa cgcttctgcc accgccgacc 360
acggccctgc gccccagcca ggcctgagga catgaggcgg ccggcggcgg tgccgctcct 420
gctgctgctg tgttttgggt ctcagagggc caaggcagca acagcctgtg gtcgccccag 480
gatgctgaac cgaatggtgg gcgggcagga cacgcaggag ggcgagtggc cctggcaagt 540
cagcatccag cgcaacggaa gccacttctg cgggggcagc ctcatcgcgg agcagtgggt 600
cctgacggct gcgcactgct tccgcaacac ctctgagacg tccctgtacc aggtcctgct 660
gggggcaagg cagctagtgc agccgggacc acacgctatg tatgccccgg tgaggcaggt 720
ggagagcaac cccctgtacc agggcacggc ctccagcgct gacgtggccc tggtggagct 780
ggaggcacca gtgcccttca ccaattacat cctccccgtg tgcctgcctg acccctcggt 840
gatctttgag acgggcatga actgctgggt cactggctgg ggcagcccca gtgaggaaga 900
cctcctgccc gaaccgcgga tcctgcagaa actcgctgtg cccatcatcg acacacccaa 960
gtgcaacctg ctctacagca aagacaccga gtttggctac caacccaaaa ccatcaagaa 1020
tgacatgctg tgcgccggct tcgaggaggg caagaaggat gcctgcaagg gcgactcggg 1080
```

```
cggccccctg gtgtgcctcg tgggtcagtc gtggctgcag gcgggggtga tcagctgggg 1140
tgagggctgt gcccgccaga accgcccagg tgtctacatc cgtgtcaccg cccaccacaa 1200
ctggatccat cggatcatcc ccaaactgca gttccagcca gcgaggttgg gcggccagaa 1260
gtgagacccc cggggccagg agccccttga gcagagctct gcacccagcc tgcccgccca 1320
caccatcctg ctggtcctcc cagcgctgct gttgcacctg tgagccccac cagactcatt 1380
tgtaaatagc gctccttcct cccctctcaa atacccttat tttatttatg tttctcccaa 1440
taaaaaccca gcctgtgtgc ca                                          1462
```

<210> 103
<211> 290
<212> PRT
<213> Homo sapiens

<400> 103

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

<210> 104
<211> 1755
<212> DNA
<213> Homo sapiens

<400> 104
ccaggacttc cgtctgagat gggatttctg gacagaacaa tggagcgcag aagctccagc 60
aacgtgtgct ctgcagggag cccagaccag agtccaagcc ctaggcagtg ccacccttac 120
ccagcccagc cttgaagaca gaatgagagg ggtttcctgt ctccaggtcc tgctccttct 180
ggtgctggga gctgctggga ctcagggaag gaagtctgca gcctgcgggc agccccgcat 240
gtccagtcgg atcgttgggg gccgggatgg ccgggacgga gagtggccgt ggcaggcgag 300
catccagcat cgtggggcac acgtgtgcgg ggggtcgctc atcgcccccc agtgggtgct 360
gacagcggcg cactgcttcc ccaggagggc actgccagct gagtaccgcg tgcgcctggg 420
ggcgctgcgt ctgggctcca cctcgccccg cacgctctcg gtgcccgtgc gacgggtgct 480
gctgcccccg gactactccg aggacggggc ccgcggcgac ctggcactgc tgcagctgcg 540
tcgcccggtg cccctgagcg ctcgcgtcca acccgtctgc ctgcccgtgc ccggcgcccg 600
cccgccgccc ggcacaccat gccgggtcac cggctggggc agcctccgcc caggagtgcc 660
cctcccagag tggcgaccgc tacaaggagt aagggtgccg ctgctggact cgcgcacctg 720
cgacggcctc taccacgtgg gcgcggacgt gccccaggct gagcgcattg tgctgcctgg 780
gagtctgtgt gccggctacc cccagggcca caaggacgcc tgccagggtg attctggggg 840
acctctgacc tgcctgcagt ctgggagctg ggtcctggtg ggcgtggtga gctggggcaa 900
gggttgtgcc ctgcccaacc gtccaggggt ctacaccagt gtggccacat atagcccctg 960
gattcaggct cgcgtcagct tctaatgcta gccggtgagg ctgacctgga gccagctgct 1020
ggggtccctc agcctcctgg ttcatccagg cacctgccta taccccacat cccttctgcc 1080
tcgaggccaa gatgcctaaa aaagctaaag gccaccccac cccccaccca ccacctcctg 1140
cctcctctcc tctttgggga tcaccagctc tgactccacc aaccctcatc caggaatctg 1200
ccatgagtcc cagggagtca cactccccac tcccttcctg gcttgtattt acttttcttg 1260
gccctggcca gggctgggcg caaggcacgc agtgatgggc aaaccaattg ctgcccatct 1320
ggcctgtgtg cccatctttt tctggagaaa gtcagattca cagcatgaca gagatttgac 1380
accagggaga tcctccatag ctggctttga ggacacgggg accacagcca tgagcggcct 1440
ctaagagctg agagacagcc ggcagggaat cggaaccctc agacccacag ccgcaaggca 1500
ctggattctg gcagcaccct gaaggagctg ggaagtaagt tcttccccag cctccagata 1560
agagccccgc cggccaatcc cttcatttca acctaaagag accctaagca gagaacctag 1620
ctgagccact cctgacctac aaagttgtga cttaataaat gtgtgctttg aacccaaaaa 1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1740
aaaaaaaaaa aaaaa 1755

<210> 105
<211> 284
<212> PRT
<213> Homo sapiens

<400> 105
Met Arg Gly Val Ser Cys Leu Gln Val Leu Leu Leu Leu Val Leu Gly
 1   5   10   15
Ala Ala Gly Thr Gln Gly Arg Lys Ser Ala Ala Cys Gly Gln Pro Arg
            20   25   30
Met Ser Ser Arg Ile Val Gly Gly Arg Asp Gly Arg Asp Gly Glu Trp
        35   40   45
Pro Trp Gln Ala Ser Ile Gln His Pro Gly Ala His Val Cys Gly Gly
    50   55   60
Ser Leu Ile Ala Pro Gln Trp Val Leu Thr Ala Ala His Cys Phe Pro
65   70   75   80
Arg Arg Ala Leu Pro Ala Glu Tyr Arg Val Arg Leu Gly Ala Leu Arg
                85   90   95
Leu Gly Ser Thr Ser Pro Arg Thr Leu Ser Val Pro Val Arg Arg Val
            100   105   110
Leu Leu Pro Pro Asp Tyr Ser Glu Asp Gly Ala Arg Gly Asp Leu Ala
        115   120   125
Leu Leu Gln Leu Arg Arg Pro Val Pro Leu Ser Ala Arg Val Gln Pro
    130   135   140
Val Cys Leu Pro Val Pro Gly Ala Arg Pro Pro Pro Gly Thr Pro Cys

```
145                 150                 155                 160
Arg Val Thr Gly Trp Gly Ser Leu Arg Pro Gly Val Pro Leu Pro Glu
                165                 170                 175
Trp Arg Pro Leu Gln Gly Val Arg Val Pro Leu Leu Asp Ser Arg Thr
            180                 185                 190
Cys Asp Gly Leu Tyr His Val Gly Ala Asp Val Pro Gln Ala Glu Arg
        195                 200                 205
Ile Val Leu Pro Gly Ser Leu Cys Ala Gly Tyr Pro Gln Gly His Lys
    210                 215                 220
Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Thr Cys Leu Gln Ser
225                 230                 235                 240
Gly Ser Trp Val Leu Val Gly Val Val Ser Trp Gly Lys Gly Cys Ala
                245                 250                 255
Leu Pro Asn Arg Pro Gly Val Tyr Thr Ser Val Ala Thr Tyr Ser Pro
            260                 265                 270
Trp Ile Gln Ala Arg Val Thr Ser Asn Ala Ser Arg
        275                 280
```

<210> 106
<211> 321
<212> DNA
<213> Homo sapiens

<400> 106
gcgctggtgg cgggcggagt ggagtccgcg cgcgggcgct ggccatggca ggccagcctg 60
cgcctgagga gacgccaccg atgtggaggg agcctgctca gccgccgctg ggtgctctcg 120
gctgcgcact gcttcgctcc ccagggtgac tcaggtggac ccttggtctg tgacaaggat 180
ggactgtggt atcaggttgg aatcgtgagc tggggaatgg actgcggtca acccaatcgg 240
cctggtgtct acaccaacat cagtgtgtac ttccactgga tccggagggt gatgtcccac 300
agtacaccca ggccaaaccc c 321

<210> 107
<211> 107
<212> PRT
<213> Homo sapiens

<400> 107
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Ala Leu Val Ala Gly Gly Val Glu Ser Ala Arg Gly Arg Trp Pro Trp
 1               5                  10                  15
Gln Ala Ser Leu Arg Leu Arg Arg Arg His Arg Cys Gly Gly Ser Leu
            20                  25                  30
Leu Ser Arg Arg Trp Val Leu Ser Ala Ala His Cys Phe Ala Pro Gln
        35                  40                  45
Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Lys Asp Gly Leu Trp Tyr
    50                  55                  60
Gln Val Gly Ile Val Ser Trp Gly Met Asp Cys Gly Gln Pro Asn Arg
65                  70                  75                  80
Pro Gly Val Tyr Thr Asn Ile Ser Val Tyr Phe His Trp Ile Arg Arg
                85                  90                  95
Val Met Ser His Ser Thr Pro Arg Pro Asn Pro
            100                 105
```

<210> 108
<211> 2468
<212> DNA
<213> Homo sapiens

<400> 108
acgggcacc ggacggctcg ggtactttcg ttcttaatta ggtcatgccc gtgtgagcca 60
ggaaagggct gtgtttatgg gaagccagta acactgtggc ctactatctc ttccgtggtg 120
ccatctacat ttttgggact cgggaattat gaggtagagg tggaggcgga gccggatgtc 180
agaggtcctg aaatagtcac catgggggaa aatgatccgc ctgctgttga agcccccttc 240
tcattccgat cgcttttttgg ccttgatgat ttgaaaataa gtcctgttgc accagatgca 300
gatgctgttg ctgcacagat cctgtcactg ctgccattga agtttttttcc aatcatcgtc 360
attgggatca ttgcattgat attagcactg gccattggtc tgggcatcca cttcgactgc 420
tcagggaagt acagatgtcg ctcatccttt aagtgtatcg agctgatagc tcgatgtgac 480
ggagtctcgg attgcaaaga cggggaggac gagtaccgct gtgtccgggt gggtggtcag 540
aatgccgtgc tccaggtgtt cacagctgct tcgtggaaga ccatgtgctc cgatgactgg 600
aagggtcact acgcaaatgt tgcctgtgcc caactgggtt tcccaagcta tgtgagttca 660
gataacctca gagtgagctc gctggagggg cagttccggg aggagtttgt gtccatcgat 720
cacctcttgc cagatgacaa ggtgactgca ttacaccact cagtatatgt gagggaggga 780
tgtgcctctg gccacgtggt taccttgcag tgcacagcct gtggtcatag aaggggctac 840
agctcacgca tcgtgggtgg aaacatgtcc ttgctctcgc agtggccctg gcaggccagc 900
cttcagttcc agggctacca cctgtgcggg ggctctgtca tcacgccccc gtggatcatc 960
actgctgcac actgtgttta tgacttgtac ctccccaagt catggaccat ccaggtgggt 1020
ctagtttccc tgttggacaa tccagcccca tcccacttgg tggagaagat tgtctaccac 1080
agcaagtaca agccaaagag gctgggcaat gacatcgccc ttatgaagct ggccgggcca 1140
ctcacgttca atgaaatgat ccagcctgtg tgcctgccca actctgaaga gaacttcccc 1200
gatggaaaag tgtgctggac gtcaggatgg ggggccacag aggatggagc aggtgacgcc 1260
tcccctgtcc tgaaccacgc ggccgtccct ttgatttcca acaagatctg caaccacagg 1320
gacgtgtacg gtggcatcat ctccccctcc atgctctgcg cgggctacct gacgggtggc 1380
gtggacagct gccaggggga cagcgggggg cccctggtgt gtcaagagag gaggctgtgg 1440
aagttagtgg gagcgaccag ctttggcatc ggctgcgcag aggtgaacaa gcctggggtg 1500
tacacccgtg tcacctcctt cctggactgg atccacgagc agatggagag agacctaaaa 1560
acctgaagag gaaggggaca agtagccacc tgagttcctg aggtgatgaa gacagcccga 1620
tcctcccctg gactcccgtg taggaacctg cacacgagca gacacccttg gagctctgag 1680
ttccggcacc agtagcaggc ccgaaagagg cacccttcca tctgattcca gcacaacctt 1740
caagctgctt tttgtttttt gttttttga ggtggagtct cgctctgttg cccaggctgg 1800
agtgcagtgg cgaaatcctt gctcactgca gcctccgctt ccctggttca agcgattctc 1860
ttgcctcagc ttccccagta gctgggacca caggtgcccg ccaccacacc caactaattt 1920
ttgtattttt agtagagaca gggtttcacc atgttggcca ggctgtctct aaacccctga 1980
cctcaaatga tgtgcctgct tcagcctccc acagtgctgg gattacaggc atgggccacc 2040
acgcctagcc tcacgctcct ttctgatctt cactaagaac aaaagaagca gcaacttgca 2100
agggcggcct ttcccactgg tccatctggt tttctctcca ggggtcttgc aaaattcctg 2160
acgagataag cagttatgtg acctcacgtg caaagccacc aacagccact cagaaaagac 2220
gcaccagccc agaagtgcag aactgcagtc actgcacgtt ttcatctcta gggaccagaa 2280
ccaaacccac cctttctact tccaagactt attttcacat gtggggaggt taatctagga 2340
atgactcgtt taaggcctat tttcatgatt tctttgtagc atttggtgct tgacgtatta 2400
ttgtcctttg attccaaata atatgtttcc ttcctcaaa aaaaaaaaaa aaaaaaaaaa 2460
aaaaaaaa 2468

<210> 109
<211> 454
<212> PRT
<213> Homo sapiens

<400> 109
Met Gly Glu Asn Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe Arg
 1   5   10   15
Ser Leu Phe Gly Leu Asp Asp Leu Lys Ile Ser Pro Val Ala Pro Asp
            20   25   30
Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe
        35   40   45
Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala

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

<210> 110
<211> 2554
<212> DNA
<213> Homo sapiens

<400> 110
gccacgttgg attagggccc accctaatga ctcattttaa ctagatgact ctgtaaagac 60
tctccaggcc atctccaaat aagatgccat tctgaggtac taagagttaa gacctcaacg 120
tgtctttctg ggggatacta ttcaacccat agcacatccc ctcatccccc atggaataac 180
cgggtcagag gtggagcagg taggactgaa ctagagaatg tgccccttgg tgggtggccc 240
tttccctaat taaggcacct ttctttgggc tgagacttct ctgcaaagag gggaggggga 300
aaggatagtt aaatttgtaa gtttcatggc actccaagtc aggttctggg gctttctgct 360
cttcctttct ctggttatca gatgcagatg ctgttgctgc acagatcctg tcactgctgc 420
cattgaagtt ttttccaatc atcgtcattg ggatcattgc attgatatta gcactggcca 480
ttggtctggg catccacttc gactgctcag ggaagtacag atgtcgctca tcctttaagt 540
gtatcgagct gatagctcga tgtgacggag tctcggattg caaagacggg gaggacgagt 600
accgctgtgt ccgggtgggt ggtcagaatg ccgtgctcca ggtgttcaca gctgcttcgt 660
ggaagaccat gtgctccgat gactggaagg gtcactacgc aaatgttgcc tgtgcccaac 720
tgggtttccc aagctatgtg agttcagata acctcagagt gagctcgctg gaggggcagt 780
tccgggagga gtttgtgtcc atcgatcacc tcttgccaga tgacaaggtg actgcattac 840
accactcagt atatgtgagg gagggatgtg cctctggcca cgtggttacc ttgcagtgca 900
cagcctgtgg tcatagaagg ggctacagct cacgcatcgt gggtggaaac atgtccttgc 960
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ctgtcatcac gcccctgtgg atcatcactg ctgcacactg tgtttatgac ttgtacctcc 1080
ccaagtcatg gaccatccag gtgggtctag tttccctgtt ggacaatcca gccccatccc 1140
acttggtgga gaagattgtc taccacagca agtacaagcc aaagaggctg ggcaatgaca 1200
tcgcccttat gaagctggcc gggccactca cgttcaatga aatgatccag cctgtgtgcc 1260
tgcccaactc tgaagagaac ttccccgatg gaaaagtgtg ctggacgtca ggatgggggg 1320
ccacagagga tggagcaggt gacgcctccc ctgtcctgaa ccacgcggcc gtcccctttga 1380
tttccaacaa gatctgcaac cacagggacg tgtacggtgg catcatctcc ccctccatgc 1440
tctgcgcggg ctacctgacg ggtggcgtgg acagctgcca gggggacagc gggggggccc 1500
tggtgtgtca agagaggagg ctgtggaagt tagtgggagc gaccagcttt ggcatcggct 1560
gcgcagaggt gaacaagcct ggggtgtaca cccgtgtcac ctccttcctg gactggatcc 1620
acgagcagat ggagagagac ctaaaaacct gaagaggaag gggacaagta gccacctgag 1680
ttcctgaggt gatgaagaca gcccgatcct cccctggact cccgtgtagg aacctgcaca 1740
cgagcagaca cccttggagc tctgagttcc ggcaccagta gcaggcccga aagaggcacc 1800
cttccatctg attccagcac aaccttcaag ctgctttttg ttttttgttt ttttgaggtg 1860
gagtctcgct ctgttgccca ggctggagtg cagtggcgaa atccctgctc actgcagcct 1920
ccgcttccct ggttcaagcg attctcttgc ctcagcttcc ccagtagctg ggaccacagg 1980
tgcccgccac cacacccaac taatttttgt atttttagta gagacagggt ttcaccatgt 2040
tggccaggct gtctcaaac cctgacctc aaatgatgtg cctgcttcag cctcccacag 2100
tgctgggatt acaggcatgg gccaccacgc ctagcctcac gctcctttct gatcttcact 2160
aagaacaaaa gaagcagcaa cttgcaaggg cggcctttcc cactggtcca tctggttttc 2220
tctccagggg tcttgcaaaa ttcctgacga gataagcagt tatgtgacct cacgtgcaaa 2280
gccaccaaca gccactcaga aaagacgcac cagcccagaa gtgcagaact gcagtcactg 2340
cacgttttca tctctaggga ccagaaccaa acccacccct tctacttcca agacttattt 2400
tcacatgtgg ggaggttaat ctaggaatga ctcgtttaag gcctattttc atgatttctt 2460
tgtagcattt ggtgcttgac gtattattgt cctttgattc caaataatat gtttccttcc 2520
ctcaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 2554

<210> 111
<211> 327
<212> PRT
<213> Homo sapiens

<400> 111
Met Cys Ser Asp Asp Trp Lys Gly His Tyr Ala Asn Val Ala Cys Ala
 1   5   10   15
Gln Leu Gly Phe Pro Ser Tyr Val Ser Ser Asp Asn Leu Arg Val Ser
            20   25   30
Ser Leu Glu Gly Gln Phe Arg Glu Glu Phe Val Ser Ile Asp His Leu
        35   40   45
Leu Pro Asp Asp Lys Val Thr Ala Leu His His Ser Val Tyr Val Arg

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

<210> 112
<211> 2135
<212> DNA
<213> Homo sapiens

<400> 112

```
gcaggggac agttgttagt gttgcactct gaaagagctg ttggttaatt cctgccttcc 60
tccctttcc cagtccactt cgactgctca gggaagtaca gatgtcgctc atcctttaag 120
tgtatcgagc tgatagctcg atgtgacgga gtctcggatt gcaaagacgg ggaggacgag 180
taccgctgtg tccgggtggg tggtcagaat gccgtgctcc aggtgttcac agctgcttcg 240
tggaagacca tgtgctccga tgactggaag ggtcactacg caaatgttgc ctgtgcccaa 300
ctgggtttcc caagctatgt gagttcagat aacctcagag tgagctcgct ggaggggcag 360
ttccgggagg agtttgtgtc catcgatcac ctcttgccag atgacaaggt gactgcatta 420
caccactcag tatatgtgag ggagggatgt gcctctggcc acgtggttac cttgcagtgc 480
acagcctgtg gtcatagaag gggctacagc tcacgcatcg tgggtggaaa catgtccttg 540
ctctcgcagt ggccctggca ggccagcctt cagttccagg gctaccacct gtgcgggggc 600
tctgtcatca cgccctgtg gatcatcact gctgcacact gtgtttatga cttgtacctc 660
cccaagtcat ggaccatcca ggtgggtcta gtttccctgt tggacaatcc agccccatcc 720
cacttggtgg agaagattgt ctaccacagc aagtacaagc caaagaggct gggcaatgac 780
atcgccctta tgaagctggc cgggccactc acgttcaatg aaatgatcca gcctgtgtgc 840
ctgcccaact ctgaagagaa cttccccgat ggaaaagtgt gctggacgtc aggatggggg 900
```

```
gccacagagg atggagcagg tgacgcctcc cctgtcctga accacgcggc cgtccctttg 960
atttccaaca agatctgcaa ccacagggac gtgtacggtg gcatcatctc ccctccatg 1020
ctctgcgcgg gctacctgac gggtggcgtg gacagctgcc agggggacag cgggggccc 1080
ctggtgtgtc aagagaggag gctgtggaag ttagtgggag cgaccagctt tggcatcggc 1140
tgcgcagagg tgaacaagcc tggggtgtac acccgtgtca cctccttcct ggactggatc 1200
cacgagcaga tggagagaga cctaaaaacc tgaagaggaa ggggacaagt agccacctga 1260
gttcctgagg tgatgaagac agcccgatcc tcccctggac tcccgtgtag gaacctgcac 1320
acgagcagac acccttggag ctctgagttc cggcaccagt agcaggcccg aaagaggcac 1380
ccttccatct gattccagca caaccttcaa gctgcttttt gttttttgtt tttttgaggt 1440
ggagtctcgc tctgttgccc aggctggagt gcagtggcga aatccctgct cactgcagcc 1500
tccgcttccc tggttcaagc gattctcttg cctcagcttc cccagtagct gggaccacag 1560
gtgcccgcca ccacacccaa ctaatttttg tatttttagt agagacaggg tttcaccatg 1620
ttggccaggc tgctctcaaa cccctgacct caaatgatgt gcctgcttca gcctcccaca 1680
gtgctgggat tacaggcatg ggccaccacg cctagcctca cgctcctttc tgatcttcac 1740
taagaacaaa agaagcagca acttgcaagg gcggcctttc ccactggtcc atctggtttt 1800
ctctccaggg gtcttgcaaa attcctgacg agataagcag ttatgtgacc tcacgtgcaa 1860
agccaccaac agccactcag aaaagacgca ccagcccaga agtgcagaac tgcagtcact 1920
gcacgttttc atctctaggg accagaacca aacccaccct ttctacttcc aagacttatt 1980
ttcacatgtg gggaggttaa tctaggaatg actcgtttaa ggcctatttt catgatttct 2040
ttgtagcatt tggtgcttga cgtattattg tcctttgatt ccaaataata tgtttcctic 2100
cctcaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa                           2135
```

<210> 113
<211> 327
<212> PRT
<213> Homo sapiens

<400> 113

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

```
Lys Ile Cys Asn His Arg Asp Val Tyr Gly Gly Ile Ile Ser Pro Ser
                245                 250                 255
Met Leu Cys Ala Gly Tyr Leu Thr Gly Gly Val Asp Ser Cys Gln Gly
            260                 265                 270
Asp Ser Gly Gly Pro Leu Val Cys Gln Glu Arg Arg Leu Trp Lys Leu
        275                 280                 285
Val Gly Ala Thr Ser Phe Gly Ile Gly Cys Ala Glu Val Asn Lys Pro
    290                 295                 300
Gly Val Tyr Thr Arg Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln
305                 310                 315                 320
Met Glu Arg Asp Leu Lys Thr
                325
```

<210> 114
<211> 1359
<212> DNA
<213> Homo sapiens

<400> 114
accgggcacc ggacggctcg ggtactttcg ttcttaatta ggtcatgccc gtgtgagcca 60
ggaaagggct gtgtttatgg gaagccagta acactgtggc ctactatctc ttccgtggtg 120
ccatctacat ttttgggact cgggaattat gaggtagagg tggaggcgga gccggatgtc 180
agaggtcctg aaatagtcac catgggggaa aatgatccgc ctgctgttga agcccccttc 240
tcattccgat cgcttttttgg ccttgatgat ttgaaaataa gtcctgttgc accagatgca 300
gatgctgttg ctgcacagat cctgtcactg ctgccattga agtttttttcc aatcatcgtc 360
attgggatca ttgcattgat attagcactg gccattggtc tgggcatcca cttcgactgc 420
tcagggaagt acagatgtcg ctcatccttt aagtgtatcg agctgatagc tcgatgtgac 480
ggagtctcgg attgcaaaga cggggaggac gagtaccgct gtgtccgggt gggtggtcag 540
aatgccgtgc tccaggtgtt cacagctgct tcgtggaaga ccatgtgctc cgatgactgg 600
aagggtcact acgcaaatgt tgcctgtgcc caactgggtt tcccaagcta tgtgagttca 660
gataacctca gagtgagctc gctggagggg cagttccggg aggagtttgt gtccatcgat 720
cacctcttgc cagatgacaa ggtgactgca ttacaccact cagtatatgt gagggaggga 780
tgtgcctctg gccacgtggt taccttgcag tgcacagcct gtggtcatag aaggggctac 840
agctcacgca tcgtgggtgg aaacatgtcc ttgctctcgc agtggccctg gcaggccagc 900
cttcagttcc agggctacca cctgtgcggg ggctctgtca tcacgccccc gtggatcatc 960
actgctgcac actgtgttta tgacttgtac ctccccaagt catggaccat ccaggtgggt 1020
ctagtttccc tgttggacaa tccagcccca tcccacttgg tggagaagat tgtctaccac 1080
agcaagtaca agccaaagag gctgggcaat gacatcgccc ttatgaagct ggccgggcca 1140
ctcacgttca atggtacatc tgggtctcta tgtggttctg cagctcttcc tttgtttcaa 1200
gaggatttgc aattgctcat tgaagcattc ttatgatggc tgctttataa tccttgtcag 1260
atattaataa ttccaactcc tgattcatgt tggtgttggc atcagttgat tatcttttct 1320
cattaaaatt gtgatgctcc taaaaaaaaa aaaaaaaaa 1359

<210> 115
<211> 344
<212> PRT
<213> Homo sapiens

<400> 115
```
Met Gly Glu Asn Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe Arg
 1               5                  10                  15
Ser Leu Phe Gly Leu Asp Asp Leu Lys Ile Ser Pro Val Ala Pro Asp
            20                  25                  30
Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe
        35                  40                  45
Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala
    50                  55                  60
```

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

<210> 116
<211> 1191
<212> DNA
<213> Homo sapiens

<400> 116

```
actgcagccg aaccctggtc cctcctccac aatgtggctt ctcctcactc tctccttcct 60
gctggcatcc acagcagccc aggatggtga caagttgctg gaaggtgacg agtgtgcacc 120
ccactcccag ccatggcaag tggctctcta cgagcgtgga cgctttaact gtggcgcttc 180
cctcatctcc ccacactggg tgctgtctgc ggcccactgc caaagccgct tcatgagagt 240
gcgcctggga gagcacaacc tgcgcaagcg cgatggccca gagcaactac ggaccacgtc 300
tcgggtcatt ccacacccgc gctacgaagc gcgcagccac cgcaacgaca tcatgttgct 360
gcgcctagtc cagcccgcac gcctgaaccc ccagtgagtc tcccagatac gttgcattgt 420
gccaacatca gcattatctc ggacacatct tgtgacaaga gctacccagg gcgcctgaca 480
aacaccatgg tgtgtgcagg cgcggagggc agaggcgcag aatcctgtga gggtgactct 540
gggggacccc tggtctgtgg gggcatcctg cagggcattg tgtcctgggg tgacgtccct 600
tgtgacaaca ccaccaagcc tggtgtctat accaaagtct gccactactt ggagtggatc 660
agggaaacca tgaagaggaa ctgactattc tagcctatct cctgtgcccc tgactgagca 720
gaagcccccа cagctggcca gcagccccgc ctgacatgga acagaacgga gccatccccc 780
aagaccctgt ccaaggccca gatgttagcc aaggacttgt cccacctgag gacaaagctg 840
```

```
gcgctcaagg tcacctgttt aatgccaaga taacaaagcg ctgatccaag ttgctctgta 900
ggaatttctg tgacttttt ctggggtcaa agagaaaccc cgagacactg tacactgttc 960
cttttcaccc accacccccga tccctaggtg aggagaagcg gcttgaagca gggctccatt 1020
cattcaacac acatgaccac ccgtgtgatc ttgaacaaga ggcccaatct cacttcgcct 1080
tggtttcctt atctgtaaaa tgagaccatc ttattgctga cttcaaaggg ctgttgtgag 1140
gattaaatga gatgattcgt ctgaactgat taaaatcgtg tctggcactg a          1191
```

<210> 117
<211> 121
<212> PRT
<213> Homo sapiens

<400> 117

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

<210> 118
<211> 1172
<212> DNA
<213> Homo sapiens

<400> 118

```
actgcagccg aaccctggtc cctcctccac aatgtggctt ctcctcactc tctccttcct 60
gctggcatcc acagcagccc aggatggtga caagttgctg gaaggtgacg agtgtgcacc 120
ccactcccag ccatggcaag tggctctcta cgagcgtgga cgctttaact gtggcgcttc 180
cctcatctcc ccacactggg tgctgtctgc ggcccactgc caaagccgct tcatgagagt 240
gcgcctggga gagcacaacc tgcgcaagcg cgatggccca gagcaactac ggaccacgtc 300
tcgggtcatt ccacacccgc gctacgaagc gcgcagccac cgcaacgaca tcatgttgct 360
gcgcctagtc cagcccgcac gcctgaaccc ccaggtgcgc cccgcggtgc tacccacgcg 420
ttgcccccac ccgggggagg cctgtgtggt gtctggctgg ggcctggtgt cccacaacga 480
gcctgggacc gctgggagcc cccggtcaca agggtgactc tgggggaccc ctggtctgtg 540
ggggcatcct gcagggcatt gtgtcctggg gtgacgtccc ttgtgacaac accaccaagc 600
ctggtgtcta taccaaagtc tgccactact tggagtggat cagggaaacc atgaagagga 660
actgactatt ctagcctatc tcctgtgccc ctgactgagc agaagccccc acagctggcc 720
agcagccccg cctgacatgg aacagaacgg agccatcccc caagaccctg tccaaggccc 780
agatgttagc caaggacttg tcccacctga ggacaaagct ggcgctcaag gtcacctgtt 840
taatgccaag ataacaaagc gctgatccaa gttgctctgt aggaatttct gtgacttttt 900
tctggggtca aagagaaacc ccgagacact gtacactgtt ccttttcacc caccaccccg 960
atccctaggt gaggagaagc ggcttgaagc agggctccat tcattcaaca cacatgacca 1020
cccgtgtgat cttgaacaag aggcccaatc tcacttcgcc ttggtttcct tatctgtaaa 1080
atgagaccat cttattgctg acttcaaagg gctgttgtga ggattaaatg agatgattcg 1140
tctgaactga ttaaaatcgt gtctggcact ga                               1172
```

<210> 119
<211> 161
<212> PRT
<213> Homo sapiens

<400> 119

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

<210> 120
<211> 1054
<212> DNA
<213> Homo sapiens

<400> 120
actgcagccg aaccctggtc cctcctccac aatgtggctt ctcctcactc tctccttcct 60
gctggcatcc acagcagccc aggatggtga caagttgctg gaaggtgacg agtgtgcacc 120
ccactcccag ccatggcaag tggctctcta cgagcgtgga cgctttaact gtggcgcttc 180
cctcatctcc ccacactggg tgctgtctgc ggcccactgc caaagccgct tcatgagagt 240
gcgcctggga gagcacaacc tgcgcaagcg cgatggccca gagcaactac ggaccacgtc 300
tcgggtcatt ccacacccgc gctacgaagc gcgcagccac cgcaacgaca tcatgttgct 360
gcgcctagtc cagcccgcac gcctgaaccc ccagggtgac tctgggggac ccctggtctg 420
tgggggcatc ctgcagggca ttgtgtcctg gggtgacgtc ccttgtgaca acaccaccaa 480
gcctggtgtc tataccaaag tctgccacta cttggagtgg atcagggaaa ccatgaagag 540
gaactgacta ttctagccta tctcctgtgc ccctgactga gcagaagccc ccacagctgg 600
ccagcagccc cgcctgacat ggaacagaac ggagccatcc cccaagaccc tgtccaaggc 660
ccagatgtta gccaaggact tgtcccacct gaggacaaag ctggcgctca aggtcacctg 720
tttaatgcca agataacaaa gcgctgatcc aagttgctct gtaggaattt ctgtgacttt 780
tttctggggt caaagagaaa ccccgagaca ctgtacactg ttccttttca cccaccaccc 840
cgatccctag gtgaggagaa gcggcttgaa gcagggctcc attcattcaa cacacatgac 900
cacccgtgtg atcttgaaca agaggcccaa tctcacttcg ccttggtttc cttatctgta 960
aaatgagacc atcttattgc tgacttcaaa gggctgttgt gaggattaaa tgagatgatt 1020
cgtctgaact gattaaaatc gtgtctggca ctga 1054

<210> 121
<211> 171
<212> PRT

<213> Homo sapiens

<400> 121

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

<210> 122
<211> 1309
<212> DNA
<213> Homo sapiens

<400> 122

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actgcagccg aaccctggtc cctcctccac aatgtggctt ctcctcactc tctccttcct 60
gctggcatcc acagcagccc aggatggtga caagttgctg gaaggtgacg agtgtgcacc 120
ccactcccag ccatggcaag tggctctcta cgagcgtgga cgctttaact gtggcgcttc 180
cctcatctcc ccacactggg tgctgtctgc ggcccactgc caaagccgct tcatgagagt 240
gcgcctggga gagcacaacc tgcgcaagcg cgatggccca gagcaactac ggaccacgtc 300
tcgggtcatt ccacacccgc gctacgaagc gcgcagccac cgcaacgaca tcatgttgct 360
gcgcctagtc cagcccgcac gcctgaaccc ccaggtgcgc cccgcggtgc tacccacgcg 420
ttgccccccac ccgggggagg cctgtgtggt gtctggctgg ggcctggtgt cccacaacga 480
gcctgggacc gctgggagcc cccggtcaca agtgagtctc ccagatacgt tgcattgtgc 540
caacatcagc attatctcgg acacatcttg tgacaagagc tacccagggc gcctgacaaa 600
caccatggtg tgtgcaggcg cggagggcag aggcgcagaa tcctgtgagg gtgactctgg 660
gggacccctg gtctgtgggg gcatcctgca gggcattgtg tcctggggtg acgtcccttg 720
tgacaacacc accaagcctg gtgtctatac caaagtctgc cactacttgg agtggatcag 780
ggaaaccatg aagaggaact gactattcta gcctatctcc tgtgccccctg actgagcaga 840
agcccccaca gctggccagc agccccgcct gacatggaac agaacggagc catccccccaa 900
gaccctgtcc aaggcccaga tgttagccaa ggacttgtcc cacctgagga caaagctggc 960
gctcaaggtc acctgtttaa tgccaagata acaaagcgct gatccaagtt gctctgtagg 1020
aatttctgtg actttttttct ggggtcaaag agaaaccccg agacactgta cactgttcct 1080
tttcacccac caccccgatc cctaggtgag gagaagcggc ttgaagcagg gctccattca 1140
ttcaacacac atgaccaccc gtgtgatctt gaacaagagg cccaatctca cttcgccttg 1200
gttttccttat ctgtaaaatg agaccatctt attgctgact tcaaagggct gttgtgagga 1260
ttaaatgaga tgattcgtct gaactgatta aaatcgtgtc tggcactga              1309
```

<210> 123
<211> 256

<212> PRT
<213> Homo sapiens

<400> 123

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

<210> 124
<211> 920
<212> DNA
<213> Homo sapiens

<400> 124

```
cagacaggag gcgtctgtag agatatcatg aacttcaact tagctttgtt ttccagagac 60
tggagctaaa ctgggctttc aacatcatca tgaagtttat cctcctctgg gccctcttga 120
atctgactgt tgctttggcc tttaatccag attacacagt cagctccact ccccttact 180
tggtctattt gaaatctgac tacttgccct gcgctggagt cctgatccac ccgctttggg 240
tgatcacagc tgcacactgc aatttaccaa agcttcgggt gatattgggg gttacaatcc 300
cagcagactc taatgaaaag catctgcaag tgattggcta tgagaagatg attcatcatc 360
cacacttctc agtcacttct attgatcatg acatcatgct aatcaagctg aaaacagagg 420
ctgaactcaa tgactatgtg aaattagcca acctgcccta ccaaactatc tctgaaaata 480
ccatgtgctc tgtctctacc tggagctaca atgtgtgtga tatctacaaa gagcccgatt 540
cactgcaaac tgtgaacatc tctgtaatct ccaagcctca gtgtcgcgat gcctataaaa 600
cctacaacat cacggaaaat atgctgtgtg tgggcattgt gccaggaagg aggcagccct 660
gcaaggaagt ttctgctgcc ccggcaatct gcaatgggat gcttcaagga atcctgtctt 720
ttgcggatgg atgtgttttg agagccgatg ttggcatcta tgccaaaatt ttttactata 780
taccctggat tgaaaatgta atccaaaata actgagctgt ggcagttgtg gaccatatga 840
```

cacagcttgt ccccatcgtt caccttttaga attaaatata aattaactcc tcaaaaaaaa 900
aaaaaaaaaa aaaaaaaaaa 920

<210> 125
<211> 241
<212> PRT
<213> Homo sapiens

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

<210> 126
<211> 2393
<212> DNA
<213> Homo sapiens

<400> 126
cgcccgggca ggttgagaag ccaggggcca agatggatct tctcctcgac atcagctaag 60
cctggaggac tcttcccctc agagaccatg gagagggaca gccacgggaa tgcatctcca 120
gcaagaacac cttcagctgg agcatctcca gcccaggcat ctccagctgg gacacctcca 180
ggccgggcat ctccagccca ggcatctcca gcccaggcat ctccagctgg gacacctccg 240
ggccgggcat ctccagccca ggcatctcca gctggtacac ctccaggccg ggcatctcca 300
ggccgggcat ctccagccca ggcatctcca gcccgggcat ctccggctct ggcatcactt 360
tccaggtcct catccggcag gtcatcatcc gccaggtcag cctcggtgac aacctcccca 420
accagagtgt accttgttag agcaacacca gtgggggctg tacccatccg atcatctcct 480
gccaggtcag caccagcaac cagggccacc agggagagcc caggtacgag cctgcccaag 540

```
ttcacctggc gggagggcca gaagcagcta ccgctcatcg ggtgcgtgct cctcctcatt 600
gccctggtgg tttcgctcat catcctcttc cagttctggc agggccacac agggatcagg 660
cacaaggagc agagggagag ctgtcccaag cacgctgttc gctgtgacgg ggtggtggac 720
tgcaagctga agagtgacga gctgggctgc gtgaggtttg actgggacaa gtctctgctt 780
aaaatctact ctgggtcctc ccatcagtgg cttcccatct gtagcagcaa ctggaatgac 840
tcctactcag agaagacctg ccagcagctg ggtttcgaga gtgctcaccg gacaaccgag 900
gttgcccaca gggattttgc caacagcttc tcaatcttga gatacaactc caccatccag 960
gaaagcctcc acaggtctga atgcccttcc cagcggtata tctccctcca gtgttcccac 1020
tgcggactga gggccatgac cgggcggatc gtgggagggg cgctggcctc ggatagcaag 1080
tggccttggc aagtgagtct gcacttcggc accacccaca tctgtggagg cacgctcatt 1140
gacgcccagt gggtgctcac tgccgcccac tgcttcttcg tgacccggga gaaggtcctg 1200
gagggctgga aggtgtacgc gggcaccagc aacctgcacc agttgcctga ggcagcctcc 1260
attgccgaga tcatcatcaa cagcaattac accgatgagg aggacgacta tgacatcgcc 1320
ctcatgcggc tgtccaagcc cctgaccctg tccgctcaca tccaccctgc ttgcctcccc 1380
atgcatggac agacctttag cctcaatgag acctgctgga tcacaggctt tggcaagacc 1440
agggagacag atgacaagac atccccctte ctccgggagg tgcaggtcaa tctcatcgac 1500
ttcaagaaat gcaatgacta cttggtctat gacagttacc ttaccccaag gatgatgtgt 1560
gctggggacc ttcgtggggg cagagactcc tgccagggag acagcggggg gcctcttgtc 1620
tgtgagcaga acaaccgctg gtacctggca ggtgtcacca gctggggcac aggctgtggc 1680
cagagaaaca aacctggtgt gtacaccaaa gtgacagaag ttcttccctg gatttacagc 1740
aagatggagg taagatccct gcagcaggac actgcaccca gcaggctggg aacttcctca 1800
ggtggggacc ctggaggagc acccagggtg taggcagagg tcccctcagc gtccccatat 1860
tcgggggggtg ttctggacag ggtcaaatgt gatgcctggg gtcaatccca gctgtctgtg 1920
tttctttccc tgcttttctt ccctcagaac agagctcagc gggttgaaaa agggtggacc 1980
tacaggccag gcaggcagtt gctgggcaga tgttctccca gaagtatttt tttgtgtaag 2040
gttgcaatgg actttgaaaa cgtttcagtt tctgcagagg attttgtgat agtctttgtt 2100
atcaagcatt tatgcatggg aatccgctct tcatggcctt tcccagctct gtttgtttta 2160
gtctttttga ttttctttt gttgttgttg ttgtcttttt ttaaaaacac aagtgactcc 2220
attttaactc tgacaacttt cacagctgtc accagaatgc tccctgagaa ctaccattct 2280
ttcccttccc cacttaaaat atttcatcag aacctcacca ctatcataaa agagtataaa 2340
gtaataaaat aataaaaagc gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa        2393
```

<210> 127
<211> 581
<212> PRT
<213> Homo Sapiens

<400> 127

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

```
Leu Pro Leu Ile Gly Cys Val Leu Leu Leu Ile Ala Leu Val Val Ser
                165                 170                 175
Leu Ile Ile Leu Phe Gln Phe Trp Gln Gly His Thr Gly Ile Arg His
            180                 185                 190
Lys Glu Gln Arg Glu Ser Cys Pro Lys His Ala Val Arg Cys Asp Gly
        195                 200                 205
Val Val Asp Cys Lys Leu Lys Ser Asp Glu Leu Gly Cys Val Arg Phe
    210                 215                 220
Asp Trp Asp Lys Ser Leu Leu Lys Ile Tyr Ser Gly Ser Ser His Gln
225                 230                 235                 240
Trp Leu Pro Ile Cys Ser Ser Asn Trp Asn Asp Ser Tyr Ser Glu Lys
                245                 250                 255
Thr Cys Arg Gln Leu Gly Phe Glu Ser Ala His Arg Thr Thr Glu Val
            260                 265                 270
Ala His Arg Asp Phe Ala Asn Ser Phe Ser Ile Leu Arg Tyr Asn Ser
        275                 280                 285
Thr Ile Gln Glu Ser Leu His Arg Ser His Cys Pro Ser Gln Arg Tyr
    290                 295                 300
Ile Ser Leu Gln Cys Ser His Cys Gly Leu Arg Ala Met Thr Gly Arg
305                 310                 315                 320
Ile Val Gly Gly Ala Leu Ala Ser Asp Ser Lys Trp Pro Trp Gln Val
                325                 330                 335
Ser Leu His Phe Gly Thr Thr His Ile Cys Gly Gly Thr Leu Ile Asp
            340                 345                 350
Ala Gln Trp Val Leu Thr Ala Ala His Cys Phe Phe Val Thr Arg Glu
        355                 360                 365
Lys Val Leu Glu Gly Trp Lys Val Tyr Ala Gly Thr Ser Asn Leu His
    370                 375                 380
Gln Leu Pro Glu Ala Ala Ser Ile Ala Glu Ile Ile Ile Asn Ser Asn
385                 390                 395                 400
Tyr Thr Asp Glu Glu Asp Asp Tyr Asp Ile Ala Leu Met Arg Leu Ser
                405                 410                 415
Lys Pro Leu Thr Leu Ser Ala His Ile His Pro Ala Cys Leu Pro Met
            420                 425                 430
His Gly Gln Thr Phe Ser Leu Asn Glu Thr Cys Trp Ile Thr Gly Phe
        435                 440                 445
Gly Lys Thr Arg Glu Thr Asp Asp Lys Thr Ser Pro Phe Leu Arg Glu
    450                 455                 460
Val Gln Val Asn Leu Ile Asp Phe Lys Lys Cys Asn Asp Tyr Leu Val
465                 470                 475                 480
Tyr Asp Ser Tyr Leu Thr Pro Arg Met Met Cys Ala Gly Asp Leu His
                485                 490                 495
Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys
            500                 505                 510
Glu Gln Asn Asn Arg Trp Tyr Leu Ala Gly Val Thr Ser Trp Gly Thr
        515                 520                 525
Gly Cys Gly Gln Arg Asn Lys Pro Gly Val Tyr Thr Lys Val Thr Glu
    530                 535                 540
Val Leu Pro Trp Ile Tyr Ser Lys Met Glu Val Arg Ser Leu Gln Gln
545                 550                 555                 560
Asp Thr Ala Pro Ser Arg Leu Gly Thr Ser Ser Gly Gly Asp Pro Gly
                565                 570                 575
Gly Ala Pro Arg Val
            580
```

<210> 138
<211> 148

<212> PRT
<213> Homo sapiens

<400> 128
Cys Gly Lys Pro Lys Val Val Gly Lys Ile Tyr Gly Gly Arg Asp Ala
1 5 10 15
Ala Ala Gly Gln Trp Pro Trp Gln Ala Ser Leu Leu Tyr Trp Gly Ser
20 25 30
His Leu Cys Gly Ala Val Leu Ile Asp Ser Cys Trp Leu Val Ser Thr
35 40 45
Thr His Cys Phe Leu Asn Lys Ser Gln Ala Pro Lys Asn Tyr Gln Val
50 55 60
Leu Leu Gly Asn Ile Gln Leu Tyr His Gln Thr Gln His Thr Gln Lys
65 70 75 80
Met Ser Val His Arg Ile Ile Thr His Pro Asp Phe Glu Lys Leu His
85 90 95
Pro Phe Gly Ser Asp Ile Ala Met Leu Gln Leu His Leu Pro Met Asn
100 105 110
Phe Thr Ser Tyr Ile Val Pro Val Cys Leu Pro Ser Arg Asp Met Gln
115 120 125
Leu Pro Ser Asn Val Ser Cys Trp Ile Thr Gly Trp Gly Met Ala Ile
130 135 140
Leu Gly Gly Leu
145

<210> 129
<211> 712
<212> DNA
<213> Homo sapiens

<400> 129
cacagagggc tccagcgtga ttgccactgg ttaatgacct gccacccccg ccccccccaac 60
ctctggtgcc gtccaaggac tctgacccca gtgcagtgtc tgtagggaag aggagccatg 120
gggcttcggg caggccccat cctgcttctg ctgctgtggc tgctgccaga atgcggccac 180
tccaaggagg ccgggaggat tgtgggaggc caagacaccc aggaaggacg ctggccgtgg 240
caggttggcc tgtggttgac ctcagtgggg catgtatgtg ggggcttcct catccaccca 300
cgctgggtgc tcacagccgc ccactgcttc ctgagggtga ctccgggggg ccgctggtct 360
gccccatcaa tgatacgtgg atccaggccg gcattgtgag ctggggattc ggctgtgccc 420
ggcctttccg gcctggtgtc tacacccagg tgctaagcta cacagactgg attcagagaa 480
ccctggctga atctcactca ggcatgtctg gggcccgccc aggtgcccca ggatcccact 540
caggcacctc cagatcccac ccagtgctgc tgcttgagct gttgaccgta tgcttgcttg 600
ggtccctgtg aaccatgagc catggagtcc gggatccect ttctggtagg attgatggaa 660
tctaataata aaaactgtag gttttttatg tgaaaaaaaa aaaaaaaaaa aa 712

<210> 130
<211> 146
<212> PRT
<213> Homo sapiens

<400> 130
Met Arg Pro Leu Gln Gly Gly Arg Glu Asp Cys Gly Arg Pro Arg His
1 5 10 15
Pro Gly Arg Thr Leu Ala Val Ala Gly Trp Pro Val Val Asp Leu Ser
20 25 30
Gly Ala Cys Met Trp Gly Leu Pro His Pro Pro Thr Leu Gly Ala His
35 40 45
Ser Arg Pro Leu Leu Pro Glu Gly Asp Ser Gly Gly Pro Leu Val Cys

```
    50                  55                  60
Pro Ile Asn Asp Thr Trp Ile Gln Ala Gly Ile Val Ser Trp Gly Phe
65                  70                  75                  80
Gly Cys Ala Arg Pro Phe Arg Pro Gly Val Tyr Thr Gln Val Leu Ser
                85                  90                  95
Tyr Thr Asp Trp Ile Gln Arg Thr Leu Ala Glu Ser His Ser Gly Met
            100                 105                 110
Ser Gly Ala Arg Pro Gly Ala Pro Gly Ser His Ser Gly Thr Ser Arg
        115                 120                 125
Ser His Pro Val Leu Leu Leu Glu Leu Leu Thr Val Cys Leu Leu Gly
    130                 135                 140
Ser Leu
145
```

<210> 131
<211> 800
<212> DNA
<213> Homo sapiens

<400> 131
```
accaccatga atccactcct gatccttacc tttgtggcag ctgctcttgc tgccccctttt 60
gatgatgatg acaagatcgt tgggggctac aactgtgagg agaattctgt ccctaccag 120
gtgtccctga attctggcta ccacttctgt ggtggctccc tcatcaacga acagtgggtg 180
gtatcagcag gccactgcta caagtcccgc atccaggtga gactgggaga gcacaacatc 240
gaagtcctgg aggggaatga gcagttcatc aatgcagcca agatcatccg ccacccccaa 300
tacgacagga agactctgaa caatgacatc atgttaatca agctctcctc acgtgcagta 360
atcaacgccc gcgtgtccac catctctctg cccaccgccc ctccagccac tggcacgaag 420
tgcctcatct ctggctgggg caacactgcg agctctggcg ccgactaccc agacgagctg 480
cagtgcctgg acgctcctgt gctgagccag gctaagtgtg aagcctccta ccctggaaag 540
attaccagca acatgttctg tgtgggcttc cttgagggag gcaaggattc atgtcagggt 600
gattctggtg gccctgtggt ctgcaatgga cagctccaag gagttgtctc ctggggtgat 660
ggctgtgccc agaagaacaa gcctggagtc tacaccaagg tctacaacta tgtgaaatgg 720
attaagaaca ccatagctgc caatagctaa agcccccagt atctcttcag tctctatacc 780
aataaagtga ccctgttctc                                             800
```

<210> 132
<211> 247
<212> PRT
<213> Homo sapiens

<400> 132
```
Met Asn Pro Leu Leu Ile Leu Thr Phe Val Ala Ala Ala Leu Ala Ala
 1               5                  10                  15
Pro Phe Asp Asp Asp Asp Lys Ile Val Gly Gly Tyr Asn Cys Glu Glu
            20                  25                  30
Asn Ser Val Pro Tyr Gln Val Ser Leu Asn Ser Gly Tyr His Phe Cys
        35                  40                  45
Gly Gly Ser Leu Ile Asn Glu Gln Trp Val Val Ser Ala Gly His Cys
    50                  55                  60
Tyr Lys Ser Arg Ile Gln Val Arg Leu Gly Glu His Asn Ile Glu Val
65                  70                  75                  80
Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His
                85                  90                  95
Pro Gln Tyr Asp Arg Lys Thr Leu Asn Asn Asp Ile Met Leu Ile Lys
            100                 105                 110
Leu Ser Ser Arg Ala Val Ile Asn Ala Arg Val Ser Thr Ile Ser Leu
        115                 120                 125
```

```
Pro Thr Ala Pro Pro Ala Thr Gly Thr Lys Cys Leu Ile Ser Gly Trp
    130                 135                 140
Gly Asn Thr Ala Ser Ser Gly Ala Asp Tyr Pro Asp Glu Leu Gln Cys
145                 150                 155                 160
Leu Asp Ala Pro Val Leu Ser Gln Ala Lys Cys Glu Ala Ser Tyr Pro
                165                 170                 175
Gly Lys Ile Thr Ser Asn Met Phe Cys Val Gly Phe Leu Glu Gly Gly
            180                 185                 190
Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Val Val Cys Asn Gly
        195                 200                 205
Gln Leu Gln Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln Lys Asn
    210                 215                 220
Lys Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Lys Trp Ile Lys
225                 230                 235                 240
Asn Thr Ile Ala Ala Asn Ser
                245
```

<210> 133
<211> 938
<212> DNA
<213> Homo sapiens

<400> 133
gcacggaggg gcagagaccc cggagccccа gccccaccat gaccctcggc cgccgactcg 60
cgtgtctttt cctcgcctgt gtcctgccgg ccttgctgct gggggggcacc gcgctggcct 120
cggagattgt gggggggccgg cgagcgcggc cccacgcgtg gcccttcatg gtgtccctgc 180
agctgcgcgg aggccacttc tgcggcgcca ccctgattgc gcccaacttc gtcatgtcgg 240
ccgcgcactg cgtggcgaat gtaaacgtcc gcgcggtgcg ggtggtcctg ggagcccata 300
acctctcgcg gcgggagccc acccggcagg tgttcgccgt gcagcgcatc ttcgaaaacg 360
gctacgaccc cgtaaacttg ctcaacgaca tcgtgattct ccagctcaac gggtcggcca 420
ccatcaacgc caacgtgcag gtggcccagc tgccggctca gggacgccgc ctgggcaacg 480
gggtgcagtg cctggccatg ggctgggggcc ttctgggcag gaaccgtggg atcgccagcg 540
tcctgcagga gctcaacgtg acggtggtga cgtccctctg ccgtcgcagc aacgtctgca 600
ctctcgtgag gggccggcag gccggcgtct gtttcggggа ctccggcagc cccttggtct 660
gcaacgggct aatccacgga attgcctcct tcgtccgggg aggctgcgcc tcagggctct 720
accccgatgc ctttgccccg gtggcacagt ttgtaaactg gatcgactct atcatccaac 780
gctccgagga caaccctgt ccccaccccc gggacccgga cccggccagc aggacccact 840
gagaagggct gcccgggtca cctcagctgc ccacacccac actctccagc atctggcaca 900
ataaacattc tctgttttgt agaaaaaaaa aaaaaaaa 938

<210> 134
<211> 267
<212> PRT
<213> Homo sapiens

<400> 134
```
Met Thr Leu Gly Arg Arg Leu Ala Cys Leu Phe Leu Ala Cys Val Leu
 1                5                  10                  15
Pro Ala Leu Leu Leu Gly Gly Thr Ala Leu Ala Ser Glu Ile Val Gly
            20                  25                  30
Gly Arg Arg Ala Arg Pro His Ala Trp Pro Phe Met Val Ser Leu Gln
        35                  40                  45
Leu Arg Gly Gly His Phe Cys Gly Ala Thr Leu Ile Ala Pro Asn Phe
    50                  55                  60
Val Met Ser Ala Ala His Cys Val Ala Asn Val Asn Val Arg Ala Val
65                  70                  75                  80
Arg Val Val Leu Gly Ala His Asn Leu Ser Arg Arg Glu Pro Thr Arg
```

```
                85                  90                  95
Gln Val Phe Ala Val Gln Arg Ile Phe Glu Asn Gly Tyr Asp Pro Val
            100                 105                 110
Asn Leu Leu Asn Asp Ile Val Ile Leu Gln Leu Asn Gly Ser Ala Thr
        115                 120                 125
Ile Asn Ala Asn Val Gln Val Ala Gln Leu Pro Ala Gln Gly Arg Arg
    130                 135                 140
Leu Gly Asn Gly Val Gln Cys Leu Ala Met Gly Trp Gly Leu Leu Gly
145                 150                 155                 160
Arg Asn Arg Gly Ile Ala Ser Val Leu Gln Glu Leu Asn Val Thr Val
                165                 170                 175
Val Thr Ser Leu Cys Arg Arg Ser Asn Val Cys Thr Leu Val Arg Gly
            180                 185                 190
Arg Gln Ala Gly Val Cys Phe Gly Asp Ser Gly Ser Pro Leu Val Cys
        195                 200                 205
Asn Gly Leu Ile His Gly Ile Ala Ser Phe Val Arg Gly Gly Cys Ala
    210                 215                 220
Ser Gly Leu Tyr Pro Asp Ala Phe Ala Pro Val Ala Gln Phe Val Asn
225                 230                 235                 240
Trp Ile Asp Ser Ile Ile Gln Arg Ser Glu Asp Asn Pro Cys Pro His
                245                 250                 255
Pro Arg Asp Pro Asp Pro Ala Ser Arg Thr His
            260                 265
```

<210> 135
<211> 3895
<212> DNA
<213> Homo sapiens

<400> 135

```
attccggcac agggacacaa acaagctcac ccaacaaagc caagctggga ggaccaaggc 60
cgggcagccg ggagcaccca aggcaggaaa atgaggtggc tgcttctcta ttatgctctg 120
tgcttctccc tgtcaaaggc ttcagcccac accgtggagc taaacaatat gtttggccag 180
atccagtcgc ctggttatcc agactcctat cccagtgatt cagaggtgac ttggaatatc 240
actgtcccag atgggtttcg gatcaagctt tacttcatgc acttcaactt ggaatcctcc 300
taccttttgtg aatatgacta tgtgaaggta gaaactgagg accaggtgct ggcaaccttc 360
tgtggcaggg agaccacaga cacagagcag actcccggcc aggaggtggt cctctcccct 420
ggctccttca tgtccatcac tttccggtca gatttctcca atgaggagcg tttcacaggc 480
tttgatgccc actacatggc tgtggatgtg gacgagtgca aggagaggga ggacgaggag 540
ctgtcctgtg accactactg ccacaactac attggcggct actactgctc ctgccgcttc 600
ggctacatcc tccacacaga caacaggacc tgccgagtgg agtgcagtga caacctcttc 660
actcaaagga ctggggtgat caccagccct gacttcccaa accccttacc caagagctct 720
gaatgcctgt ataccatcga gctggaggag ggtttcatgg tcaacctgca gtttgaggac 780
atatttgaca ttgaggacca tcctgaggtg ccctgccccc atgactacat caagatcaaa 840
gttggtccaa aagttttggg gcctttctgt ggagagaaag ccccagaacc catcagcacc 900
cagagccaca gtgtcctgat cctgttccat agtgacaact cgggagagaa ccggggctgg 960
aggctctcat acagggctgc aggaaatgag tgcccagagc tacagcctcc tgtccatggg 1020
aaaatcgagc cctcccaagc caagtatttc ttcaaagacc aagtgctcgt cagctgtgac 1080
acaggctaca aagtgctgaa ggataatgtg gagatggaca cattccagat tgagtgtctg 1140
aaggatggga cgtggagtaa caagattccc acctgtaaaa ttgtagactg tagagcccca 1200
ggagagctgg aacacgggct gatcaccttc tctacaagga acaacctcac cacatacaag 1260
tctgagatca aatactcctg tcaggagccc tattacaaga tgctcaacaa taacacaggt 1320
atatatacct gttctgccca aggagtctgg atgaataaag tattggggag aagcctaccc 1380
acctgccttc cagagtgtgg tcagccctcc cgctccctgc caagcctggt caagaggatc 1440
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gacacttcga gagtgccaaa tgacaagtgg tttgggagtg gggccctgct ctctgcgtcc 1560
tggatcctca cagcagctca tgtgctgcgc tcccagcgta gagacaccac ggtgatacca 1620
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gtctccaagg agcatgtcac cgtctacctg ggcttgcatg atgtgcgaga caaatcgggg 1680
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aaccacgata tagctctggt gcagctgcag gagcctgtgc ccctgggacc ccacgttatg 1800
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gccggctggg gcatctccaa tcccaatgtg acagtggatg agatcatcag cagtggcaca 1920
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gacttacttc ctcggggcct gcctcccctg agcgaagcta caccgcactt ccgacagcac 2340
actccacatt acttatcaga ccatatggaa tggaacacac tgacctagcg gtggcttctc 2400
ctaccgagac agcccccagg accctgagag gcagagtgtg gtatagggaa aaggctccag 2460
gcaggagacc tgtgttcctg agcttgtcca agtctctttc cctgtctggg cctcactcta 2520
ccgagtaata caatgcagga gctcaaccaa ggcctctgtg ccaatcccag cactcctttc 2580
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ggagtcctgg gttctagtcc ctgctctgcc cccaactggc tgtataacct ttgaaaaatc 3480
attttctttg tctgagtctc tggttctccg tcagcaacag gctggcataa ggtcccctgc 3540
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gctcatcaaa cacactcctt tgtctatgaa tggcacatgt aaatgatgtt atattttgta 3780
tcttttatat catatgcttc accattctgt aaagggcctc tgcattgttg ctcccatcag 3840
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<210> 136
<211> 728
<212> PRT
<213> Homo sapiens

<400> 136

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

```
                100                 105                 110
Phe Met Ser Ile Thr Phe Arg Ser Asp Phe Ser Asn Glu Glu Arg Phe
            115                 120                 125
Thr Gly Phe Asp Ala His Tyr Met Ala Val Asp Val Asp Glu Cys Lys
    130                 135                 140
Glu Arg Glu Asp Glu Glu Leu Ser Cys Asp His Tyr Cys His Asn Tyr
145                 150                 155                 160
Ile Gly Gly Tyr Tyr Cys Ser Cys Arg Phe Gly Tyr Ile Leu His Thr
                165                 170                 175
Asp Asn Arg Thr Cys Arg Val Glu Cys Ser Asp Asn Leu Phe Thr Gln
            180                 185                 190
Arg Thr Gly Val Ile Thr Ser Pro Asp Phe Pro Asn Pro Tyr Pro Lys
        195                 200                 205
Ser Ser Glu Cys Leu Tyr Thr Ile Glu Leu Glu Glu Gly Phe Met Val
    210                 215                 220
Asn Leu Gln Phe Glu Asp Ile Phe Asp Ile Glu Asp His Pro Glu Val
225                 230                 235                 240
Pro Cys Pro Tyr Asp Tyr Ile Lys Ile Lys Val Gly Pro Lys Val Leu
                245                 250                 255
Gly Pro Phe Cys Gly Glu Lys Ala Pro Glu Pro Ile Ser Thr Gln Ser
            260                 265                 270
His Ser Val Leu Ile Leu Phe His Ser Asp Asn Ser Gly Glu Asn Arg
        275                 280                 285
Gly Trp Arg Leu Ser Tyr Arg Ala Ala Gly Asn Glu Cys Pro Glu Leu
    290                 295                 300
Gln Pro Pro Val His Gly Lys Ile Glu Pro Ser Gln Ala Lys Tyr Phe
305                 310                 315                 320
Phe Lys Asp Gln Val Leu Val Ser Cys Asp Thr Gly Tyr Lys Val Leu
                325                 330                 335
Lys Asp Asn Val Glu Met Asp Thr Phe Gln Ile Glu Cys Leu Lys Asp
            340                 345                 350
Gly Thr Trp Ser Asn Lys Ile Pro Thr Cys Lys Ile Val Asp Cys Arg
        355                 360                 365
Ala Pro Gly Glu Leu Glu His Gly Leu Ile Thr Phe Ser Thr Arg Asn
    370                 375                 380
Asn Leu Thr Thr Tyr Lys Ser Glu Ile Lys Tyr Ser Cys Gln Glu Pro
385                 390                 395                 400
Tyr Tyr Lys Met Leu Asn Asn Asn Thr Gly Ile Tyr Thr Cys Ser Ala
                405                 410                 415
Gln Gly Val Trp Met Asn Lys Val Leu Gly Arg Ser Leu Pro Thr Cys
            420                 425                 430
Leu Pro Glu Cys Gly Gln Pro Ser Arg Ser Leu Pro Ser Leu Val Lys
        435                 440                 445
Arg Ile Ile Gly Gly Arg Asn Ala Glu Pro Gly Leu Phe Pro Trp Gln
    450                 455                 460
Ala Leu Ile Val Val Glu Asp Thr Ser Arg Val Pro Asn Asp Lys Trp
465                 470                 475                 480
Phe Gly Ser Gly Ala Leu Leu Ser Ala Ser Trp Ile Leu Thr Ala Ala
                485                 490                 495
His Val Leu Arg Ser Gln Arg Arg Asp Thr Thr Val Ile Pro Val Ser
            500                 505                 510
Lys Glu His Val Thr Val Tyr Leu Gly Leu His Asp Val Arg Asp Lys
        515                 520                 525
Ser Gly Ala Val Asn Ser Ser Ala Ala Arg Val Val Leu His Pro Asp
    530                 535                 540
Phe Asn Ile Gln Asn Tyr Asn His Asp Ile Ala Leu Val Gln Leu Gln
545                 550                 555                 560
Glu Pro Val Pro Leu Gly Pro His Val Met Pro Val Cys Leu Pro Arg
```

```
                565                 570                 575
Leu Glu Pro Glu Gly Pro Ala Pro His Met Leu Gly Leu Val Ala Gly
            580                 585                 590
Trp Gly Ile Ser Asn Pro Asn Val Thr Val Asp Glu Ile Ile Ser Ser
        595                 600                 605
Gly Thr Arg Thr Leu Ser Asp Val Leu Gln Tyr Val Lys Leu Pro Val
    610                 615                 620
Val Pro His Ala Glu Cys Lys Thr Ser Tyr Glu Ser Arg Ser Gly Asn
625                 630                 635                 640
Tyr Ser Val Thr Glu Asn Met Phe Cys Ala Gly Tyr Tyr Glu Gly Gly
                645                 650                 655
Lys Asp Thr Cys Leu Gly Asp Ser Gly Gly Ala Phe Val Ile Phe Asp
            660                 665                 670
Asp Leu Ser Gln Arg Trp Val Val Gln Gly Leu Val Ser Trp Gly Gly
        675                 680                 685
Pro Glu Glu Cys Gly Ser Lys Gln Val Tyr Gly Val Tyr Thr Lys Val
    690                 695                 700
Ser Asn Tyr Val Asp Trp Val Trp Glu Gln Met Gly Leu Pro Gln Ser
705                 710                 715                 720
Val Val Glu Pro Gln Val Glu Arg
                725
```

<210> 137
<211> 924
<212> DNA
<213> Homo sapiens

<400> 137

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gcacagcagc aactgactgg gcagcctttc aggaaagatg cagccactcc tgcttctgct 60
ggcctttctc ctacccactg gggctgaggc aggggagatc atcggaggcc gggagagcag 120
gccccactcc cgcccctaca tggcgtatct tcagatccag agtccagcag gtcagagcag 180
atgtggaggg ttcctggtgc gagaagactt tgtgctgaca gcagctcatt gctggggaag 240
caatataaat gtcaccctgg gcgcccacaa tatccagaga cgggaaaaca cccagcaaca 300
catcactgcg cgcagagcca tccgccaccc tcaatataat cagcggacca tccagaatga 360
catcatgtta ttgcagctga gcagaagagt cagacggaat cgaaacgtga acccagtggc 420
tctgcctaga gcccaggagg gactgagacc cgggacgctg tgcactgtgg ccggctgggg 480
cagggtcagc atgaggaggg gaacagatac actccgagag gtgcagctga gagtgcagag 540
ggataggcag tgcctccgca tcttcggttc ctacgacccc cgaaggcaga tttgtgtggg 600
ggaccggcgg gaacggaagg ctgccttcaa gggggattcc ggaggccccc tgctgtgtaa 660
caatgtggcc cacggcatcg tctcctatgg aaagtcgtca ggggttcctc cagaagtctt 720
caccagggtc tcaagtttcc tgccctggat aaggacaaca atgagaagct tcaaactgct 780
ggatcagatg gagacccccc tgtgactgac tcttcttctc ggggacacag gccagctcca 840
cagtgttgcc agagccttaa taaacgtcca cagagtataa ataaccaatt cctcatttgt 900
tcattaaacg tcattcagta ctta                                        924
```

<210> 138
<211> 255
<212> PRT
<213> Homo sapiens

<400> 138

```
Met Gln Pro Leu Leu Leu Leu Leu Ala Phe Leu Leu Pro Thr Gly Ala
 1               5                  10                  15
Glu Ala Gly Glu Ile Ile Gly Gly Arg Glu Ser Arg Pro His Ser Arg
            20                  25                  30
Pro Tyr Met Ala Tyr Leu Gln Ile Gln Ser Pro Ala Gly Gln Ser Arg
        35                  40                  45
```

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

<210> 139
<211> 1001
<212> DNA
<213> Homo sapiens

<400> 139

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cgtgggtgca ccctggaccc caccatggct caccggcccc ccagccctgc cctggcgtcc 60
gtgctgctgg ccttgctgct gagcggtgct gcccgagctg cggagatcgt gggcgggcac 120
gaggcgcagc cacactcccg gccctacatg gcctccctgc agatgcgggg gaacccgggc 180
agccacttct gcggaggcac cttgatccac ccccagcttc tgctgacggc cgcgcactgc 240
ctgcgggaca taccccagcg cctggtgaac gtggtgctcg gagcccacaa cgtgcggacg 300
caggagccca cccagcagca cttctcggtg gctcaggtgt ttctgaacaa ctacgacgcg 360
gagaacaaac tgaacgacgt tctcctcatc cagctgagca gcccagccaa cctcagtgcc 420
tccgtcgcca cagtccagct gccacagcag gaccagccag tgccccacgg cacccagtgc 480
ctggccatgg gctggggccg cgtgggtgcc cacgaccccc cagcccaggt cctgcaggag 540
ctcaatgtca ccgtggtcac cttcttctgc cggccacata acatttgcac tttcgtcctt 600
cgccgcaagg ccggcatctg cttcggagac tcaggtggcc ccctgatctg tgatggcatc 660
atccaaggaa tagactcctt cgtgatctgg ggatgtgcca cccgcctttt ccctgacttc 720
ttcacgcggg tagccctcta cgtggactgg atccgttcca cgctgcgccg tgtggaggcc 780
aagggccgcc cctgaaccgc ccctcccaca gcgctggccg ggacccccgag cctggctcca 840
aaccctcgag gcggatcttt ggacagaagc agctcttccc cgaacactgt ggcgtccggg 900
acggccccac ccgtcccccc acactccctc ccacggggct ccgggagaca ggccggccct 960
gcacctcacc ccaccgtgac ctcaataaac gttgaaactc c                    1001
```

<210> 140
<211> 256
<212> PRT
<213> Homo sapiens

<400> 140

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

<210> 141
<211> 878
<212> DNA
<213> Homo sapiens

<400> 141
cagattttca ggttgattga tgtgggacag cagccacaat gaggaactcc tatagatttc 60
tggcatcctc tctctcagtt gtcgtttctc tcctgctaat tcctgaagat gtctgtgaaa 120
aaattattgg aggaaatgaa gtaactcctc attcaagacc ctacatggtc ctacttagtc 180
ttgacagaaa aaccatctgt gctggggctt tgattgcaaa agactgggtg ttgactgcag 240
ctcactgtaa cttgaacaaa aggtcccagg tcattcttgg ggctcactca ataaccaggg 300
aagagccaac aaaacagata atgcttgtta agaaagagtt tccctatcca tgctatgacc 360
cagccacacg cgaaggtgac cttaaacttt tacagctgac ggaaaaagca aaaattaaca 420
aatatgtgac tatccttcat ctacctaaaa agggggatga tgtgaaacca ggaaccatgt 480
gccaagttgc agggtggggg aggactcaca atagtgcatc ttggtccgat actctgagag 540
aagtcaatat caccatcata gacagaaaag tctgcaatga tcgaaatcac tataatttta 600
accctgtgat tggaatgaat atggtttgtg ctggaagcct ccgaggtgga agagactcgt 660
gcaatggaga ttctggaagc cctttgttgt gcgagggtgt tttccgaggg gtcacttcct 720
ttggccttga aaataaatgc ggagaccctc gtgggcctgg tgtctatatt cttctctcaa 780
agaaacacct caactggata attatgacta tcaagggagc agtttaaata accgtttcct 840
ttcatttact gtggcttctt aatcttttca caaataaa 878

<210> 142
<211> 262

<212> PRT
<213> Homo sapiens

<400> 142

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

<210> 143
<211> 947
<212> DNA
<213> Homo sapiens

<400> 143

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ggctcggggc cggggccagc acccacactg ggtctccaca gcggcatgga ggcctgcgtg 60
tcttcactgc tggtgctggc cctgggggcc ctgtcagtag gcagctcctt tgggacccag 120
atcatcgggg gccgggaggt gatcccccac tcgcgcccgt acatggcctc actgcagaga 180
aatggctccc acctgtgcgg gggtgtcctg gtgcacccaa agtgggtgct gacggctgcc 240
cactgcctgg cccagcggat ggcccagctg aggctggtgc tggggctcca caccctggac 300
agccccggtc tcaccttcca catcaaggca gccatccagc accctcgcta caagcccgtc 360
cctgccctgg agaacgacct cgcgctgctt cagctggacg ggaaagtgaa gcccagccgg 420
accatccggc cgttggccct gcccagtaag cgccaggtgg tggcagcagg gactcggtgc 480
agcatggccg gctgggggct gacccaccag ggcgggcgcc tgtcccgggt gctgcgggag 540
ctggacctcc aagtgctgga cacccgcatg tgtaacaaca gccgcttctg gaacggcagc 600
ctctccccca gcatggtctg cctggcggcc gactccaagg accaggctcc ctgcaagggt 660
gactcgggcg ggccccctggt gtgtggcaaa ggccgggtgt tggccggagt cctgtccttc 720
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agctccaggg tctgcactga catcttcaag cctcccgtgg ccaccgctgt ggcgccttac 780
gtgtcctgga tcaggaaggt caccggccga tcggcctgat gccctggggt gatggggacc 840
ccctcgctgt ctccacagga cccttcccct ccaggggtgc agtggggtgg gtgaggacgg 900
gtgggaggga cagggaggga ccaataaatc ataatgaaga aacgctc 947

<210> 144
<211> 257
<212> PRT
<213> Homo sapiens

<400> 144
Met Glu Ala Cys Val Ser Ser Leu Leu Val Leu Ala Leu Gly Ala Leu
1 5 10 15
Ser Val Gly Ser Ser Phe Gly Thr Gln Ile Ile Gly Gly Arg Glu Val
20 25 30
Ile Pro His Ser Arg Pro Tyr Met Ala Ser Leu Gln Arg Asn Gly Ser
35 40 45
His Leu Cys Gly Gly Val Leu Val His Pro Lys Trp Val Leu Thr Ala
50 55 60
Ala His Cys Leu Ala Gln Arg Met Ala Gln Leu Arg Leu Val Leu Gly
65 70 75 80
Leu His Thr Leu Asp Ser Pro Gly Leu Thr Phe His Ile Lys Ala Ala
85 90 95
Ile Gln His Pro Arg Tyr Lys Pro Val Pro Ala Leu Glu Asn Asp Leu
100 105 110
Ala Leu Leu Gln Leu Asp Gly Lys Val Lys Pro Ser Arg Thr Ile Arg
115 120 125
Pro Leu Ala Leu Pro Ser Lys Arg Gln Val Val Ala Ala Gly Thr Arg
130 135 140
Cys Ser Met Ala Gly Trp Gly Leu Thr His Gln Gly Gly Arg Leu Ser
145 150 155 160
Arg Val Leu Arg Glu Leu Asp Leu Gln Val Leu Asp Thr Arg Met Cys
165 170 175
Asn Asn Ser Arg Phe Trp Asn Gly Ser Leu Ser Pro Ser Met Val Cys
180 185 190
Leu Ala Ala Asp Ser Lys Asp Gln Ala Pro Cys Lys Gly Asp Ser Gly
195 200 205
Gly Pro Leu Val Cys Gly Lys Gly Arg Val Leu Ala Gly Val Leu Ser
210 215 220
Phe Ser Ser Arg Val Cys Thr Asp Ile Phe Lys Pro Pro Val Ala Thr
225 230 235 240
Ala Val Ala Pro Tyr Val Ser Trp Ile Arg Lys Val Thr Gly Arg Ser
245 250 255
Ala

<210> 145
<211> 784
<212> DNA
<213> Homo sapiens

<400> 145
agcatttgct caggcagcct ctctgggaag atgctgcttc ttcctctccc cctgctgctc 60
tttctcttgt gctccagagc tgaagctggg gagatcatcg ggggcacaga atgcaagcca 120
cattcccgcc cctacatggc ctacctggaa attgtaactt ccaacggtcc ctcaaaattt 180
tgtggtggtt tcttataaag acggaacttt gtgctgacgg ctgctcattg tgcaggaagg 240
tctataacag tcacccttgg agcccataac ataacagagg aagaagacac atggcagaag 300

```
cttgaggtta taaagcaatt ccgtcatcca aaatataaca cttctactct tcaccacgat 360
atcatgttac taaagttgaa ggagaaagcc agcctgaccc tggctgtggg gacactcccc 420
ttcccatcac aattcaactt tgtcccacct gggagaatgt gccgggtggc tggctgggga 480
agaacaggtg tgttgaagcc gggctcagac actctgcaag aggtgaagct gagactcatg 540
gatccccagg cctgcagcca cttcagagac tttgaccaca atcttcagct gtgtgtgggc 600
aatcccagga agacaaaatc tgcatttaag ggagactctg ggggccctct tctgtgtgct 660
ggggtggccc agggcatcgt atcctatgga cggtcggatg caaagccccc tgctgtcttc 720
acccgaatct cccattaccg gccctggatc aaccagatcc tgcaggcaaa ttaatcctgg 780
atcc                                                              784
```

<210> 146
<211> 247
<212> PRT
<213> Homo sapiens

<400> 146

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

<210> 147
<211> 1194
<212> DNA
<213> Homo sapiens

<400> 147

```
ataaatgggg aggggagagc ccactgggta gaaggaacag ggagcggcca ggatgctgaa 60
tctgctgctg ctggcgctgc ccgtcctggc gagccgcgcc tacgcggccc ctgccccagg 120
```

```
ccaggccctg cagcgagtgg gcatcgtcgg gggtcaggag gccccccagga gcaagtggcc 180
ctggcaggtg agcctgagag tccacggccc atactggatg cacttctgcg ggggctcccc 240
catccacccc cagtgggtgc tgaccgcagc gcactgcgtg ggaccggacg tcaaggatct 300
ggccgccctc agggtgcaac tgcgggagca gcacctctac taccaggacc agctgctgcc 360
ggtcagcagg atcatcgtgc acccacagtt ctacaccgcc cagatcggag cggacatcgc 420
cctgctggag ctggaggagc cggtgaacgt ctccagccac gtccacacgg tcaccctgcc 480
ccctgcctca gagaccttcc ccccggggat gccgtgctgg gtcactggct ggggcgatgt 540
ggacaatgat gagcgcctcc caccgccatt tcctctgaag caggtgaagg tccccataat 600
ggaaaaccac atttgtgacg caaaatacca ccttggcgcc tacacgggag acgacgtccg 660
catcgtccgt gacgacatgc tgtgtgccgg gaacacccgg agggactcat gccagggcga 720
ctccggaggg cccctggtgt gcaaggtgaa tggcacctgg ctgcaggcgg gcgtggtcag 780
ctggggcgag ggctgtgccc agcccaaccg gcctggcatc tacacccgtg tcacctacta 840
cttggactgg atccaccact atgtccccaa aaagccgtga gtcaggcctg ggttggccac 900
ctgggtcact ggaggaccaa cccctgctgt ccaaaacacc actgcttcct acccaggtgg 960
cgactgcccc ccacaccttc cctgcccccgt cctgagtgcc ccttcctgtc ctaagccccc 1020
tgctctcttc tgagcccctt cccctgtcct gaggaccctt ccctatcctg agccccccttc 1080
cctgtcctaa gcctgacgcc tgcaccgggc cctccagccc tcccctgccc agatagctgg 1140
tggtgggcgc taatcctcct gagtgctgga cctcattaaa gtgcatggaa atca       1194

<210> 148
<211> 275
<212> PRT
<213> Homo sapiens

<400> 148
Met Leu Asn Leu Leu Leu Leu Ala Leu Pro Val Leu Ala Ser Arg Ala
 1               5                  10                  15
Tyr Ala Ala Pro Ala Pro Gly Gln Ala Leu Gln Arg Val Gly Ile Val
            20                  25                  30
Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val Ser Leu
        35                  40                  45
Arg Val His Gly Pro Tyr Trp Met His Phe Cys Gly Gly Ser Leu Ile
    50                  55                  60
His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro Asp Val
65                  70                  75                  80
Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His Leu Tyr
                85                  90                  95
Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His Pro Gln
            100                 105                 110
Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu Leu Glu
        115                 120                 125
Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu Pro Pro
    130                 135                 140
Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr Gly Trp
145                 150                 155                 160
Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro Leu Lys
                165                 170                 175
Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr
            180                 185                 190
His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg Asp Asp
        195                 200                 205
Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly Asp Ser
    210                 215                 220
Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly
225                 230                 235                 240
Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile
                245                 250                 255
Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro
```

```
            260                 265                 270
Lys Lys Pro
        275
```

<210> 149
<211> 1074
<212> DNA
<213> Homo sapiens

<400> 149
gatcaacaca tttcatctgg gcttcttaaa tctaaatctt taaaatgact aagttttctt 60
ccttttctct gtttttccta atagttgggg cttatatgac tcatgtgtgt ttcaatatgg 120
aaattattgg agggaaagaa gtgtcacctc attccaggcc atttatggcc tccatccagt 180
atggcggaca tcacgtttgt ggaggtgttc tgattgatcc acagtgggtg ctgacagcag 240
cccactgcca atatcggttt accaaaggcc agtctcccac tgtggtttta ggcgcacact 300
ctctctcaaa gaatgaggcc tccaaacaaa cactggagat caaaaaattt ataccattct 360
caagagttac atcagatcct caatcaaatg atatcatgct ggttaagctt caaacagccg 420
caaaactcaa taaacatgtc aagatgctcc acataagatc caaaaccttct cttagatctg 480
gaaccaaatg caaggttact ggctggggag ccaccgatcc agattcatta agacctttctg 540
acaccctgcg agaagtcact gttactgtcc taagtcgaaa actttgcaac agccaaagtt 600
actacaacgg cgacccttttt atcaccaaag acatggtctg tgcaggagat gccaaaggcc 660
agaaggattc ctgtaagggt gactcagggg gcccccttgat ctgtaaaggt gtcttccacg 720
ctatagtctc tggaggtcat gaatgtggtg ttgccacaaa gcctggaatc tacaccctgt 780
taaccaagaa ataccagact tggatcaaaa gcaaccttgt cccgcctcat acaaattaag 840
ttacaaataa ttttattgga tgcacttgct tctttttcc taatatgctc gcaggttaga 900
gttgggtgta agtaaagcag agcacatatg gggtccattt ttgcacttgt aagtcatttt 960
attaaggaat caagttcttt ttcacttgta tcactgatgt atttctacca tgctggtttt 1020
attctaaata aaatttagaa gactcaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1074

<210> 150
<211> 264
<212> PRT
<213> Homo sapiens

<400> 150
```
Met Thr Lys Phe Ser Ser Phe Ser Leu Phe Phe Leu Ile Val Gly Ala
 1               5                  10                  15
Tyr Met Thr His Val Cys Phe Asn Met Glu Ile Ile Gly Gly Lys Glu
            20                  25                  30
Val Ser Pro His Ser Arg Pro Phe Met Ala Ser Ile Gln Tyr Gly Gly
        35                  40                  45
His His Val Cys Gly Gly Val Leu Ile Asp Pro Gln Trp Val Leu Thr
    50                  55                  60
Ala Ala His Cys Gln Tyr Arg Phe Thr Lys Gly Gln Ser Pro Thr Val
65                  70                  75                  80
Val Leu Gly Ala His Ser Leu Ser Lys Asn Glu Ala Ser Lys Gln Thr
                85                  90                  95
Leu Glu Ile Lys Lys Phe Ile Pro Phe Ser Arg Val Thr Ser Asp Pro
            100                 105                 110
Gln Ser Asn Asp Ile Met Leu Val Lys Leu Gln Thr Ala Ala Lys Leu
        115                 120                 125
Asn Lys His Val Lys Met Leu His Ile Arg Ser Lys Thr Ser Leu Arg
    130                 135                 140
Ser Gly Thr Lys Cys Lys Val Thr Gly Trp Gly Ala Thr Asp Pro Asp
145                 150                 155                 160
Ser Leu Arg Pro Ser Asp Thr Leu Arg Glu Val Thr Val Thr Val Leu
                165                 170                 175
```

```
Ser Arg Lys Leu Cys Asn Ser Gln Ser Tyr Tyr Asn Gly Asp Pro Phe
            180                 185                 190
Ile Thr Lys Asp Met Val Cys Ala Gly Asp Ala Lys Gly Gln Lys Asp
        195                 200                 205
Ser Cys Lys Gly Asp Ser Gly Gly Pro Leu Ile Cys Lys Gly Val Phe
    210                 215                 220
His Ala Ile Val Ser Gly Gly His Glu Cys Gly Val Ala Thr Lys Pro
225                 230                 235                 240
Gly Ile Tyr Thr Leu Leu Thr Lys Lys Tyr Gln Thr Trp Ile Lys Ser
                245                 250                 255
Asn Leu Val Pro Pro His Thr Asn
            260
```

<210> 151
<211> 1047
<212> DNA
<213> Homo sapiens

<400> 151
ggagtcaaca ccaacagctc tgacctgggc agccttcctg agaaaatgca gccattcctc 60
ctcctgttgg cctttcttct gacccctggg gctgggacag aggagatcat cgggggccat 120
gaggccaagc cccactcccg cccctacatg gcctttgttc agtttctgca agagaagagt 180
cggaagaggt gtggcggcat cctagtgaga aaggactttg tgctgacagc tgctcactgc 240
cagggaagct ccataaatgt caccttgggg gcccacaata tcaaggaaca ggagcggacc 300
cagcagttta tccctgtgaa aagacccatc ccccatccag cctataatcc taagaacttc 360
tccaacgaca tcatgctact gcagctggag agaaaggcca agtggaccac agctgtgcgg 420
cctctcaggc tacctagcag caaggcccag gtgaagccag ggcagctgtg cagtgtggct 480
ggctggggtt atgtctcaat gagcacttta gcaaccacac tgcaggaagt gttgctgaca 540
gtgcagaagg actgccagtg tgaacgtctc ttccatggca attacagcag agccactgag 600
atttgtgtgg gggatccaaa gaagacacag accggtttca agggggactc cgggggccc 660
ctcgtgtgta aggacgtagc ccaaggtatt ctctcctatg gaaacaaaaa agggacacct 720
ccaggagtct acatcaaggt ctcacacttc ctgccctgga taaagagaac aatgaagcgc 780
ctctaacagc aggcatgaga ctaaccttcc tctgggcctg accatctctg ggacagaggc 840
aagaatcccc aaggggtggg cagtcagggt tgcaggactg taataaatgg atctctggtg 900
tagaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 960
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020
aaaaaaaaaa aaaaaaaaaa aaaaaaa   1047

<210> 152
<211> 246
<212> PRT
<213> Homo sapiens

<400> 152
```
Met Gln Pro Phe Leu Leu Leu Leu Ala Phe Leu Leu Thr Pro Gly Ala
 1               5                  10                  15
Gly Thr Glu Glu Ile Ile Gly Gly His Glu Ala Lys Pro His Ser Arg
            20                  25                  30
Pro Tyr Met Ala Phe Val Gln Phe Leu Gln Glu Lys Ser Arg Lys Arg
        35                  40                  45
Cys Gly Gly Ile Leu Val Arg Lys Asp Phe Val Leu Thr Ala Ala His
    50                  55                  60
Cys Gln Gly Ser Ser Ile Asn Val Thr Leu Gly Ala His Asn Ile Lys
65                  70                  75                  80
Glu Gln Glu Arg Thr Gln Gln Phe Ile Pro Val Lys Arg Pro Ile Pro
                85                  90                  95
His Pro Ala Tyr Asn Pro Lys Asn Phe Ser Asn Asp Ile Met Leu Leu
```

```
            100                 105                 110
Gln Leu Glu Arg Lys Ala Lys Trp Thr Thr Ala Val Arg Pro Leu Arg
        115                 120                 125
Leu Pro Ser Ser Lys Ala Gln Val Lys Pro Gly Gln Leu Cys Ser Val
    130                 135                 140
Ala Gly Trp Gly Tyr Val Ser Met Ser Thr Leu Ala Thr Thr Leu Gln
145                 150                 155                 160
Glu Val Leu Leu Thr Val Gln Lys Asp Cys Gln Cys Glu Arg Leu Phe
                165                 170                 175
His Gly Asn Tyr Ser Arg Ala Thr Glu Ile Cys Val Gly Asp Pro Lys
            180                 185                 190
Lys Thr Gln Thr Gly Phe Lys Gly Asp Ser Gly Gly Pro Leu Val Cys
        195                 200                 205
Lys Asp Val Ala Gln Gly Ile Leu Ser Tyr Gly Asn Lys Lys Gly Thr
    210                 215                 220
Pro Pro Gly Val Tyr Ile Lys Val Ser His Phe Leu Pro Trp Ile Lys
225                 230                 235                 240
Arg Thr Met Lys Arg Leu
                245
```

<210> 153
<211> 952
<212> DNA
<213> Homo sapiens

<400> 153

```
ttggtccaag caagaaggca gtggtctact ccatcggcaa catgctggtc ctttatggac 60
acagcaccca ggaccttccg gaaaccaatg cccgcgtagt cggagggact gaggccggga 120
ggaattcctg gccctctcag atttccctcc agtaccggtc tggaggttcc cggtatcaca 180
cctgtggagg gacccttatc agacagaact gggtgatgac agctgctcac tgcgtggatt 240
accagaagac tttccgcgtg gtggctggag accataacct gagccagaat gatggcactg 300
agcagtacgt gagtgtgcag aagatcgtgg tgcatccata ctggaacagc gataacgtgg 360
ctgccggcta tgacatcgcc ctgctgcgcc tggcccagag cgttaccctc aatagctatg 420
tccagctggg tgttctgccc caggagggag ccatcctggc taacaacagt ccctgctaca 480
tcacaggctg gggcaagacc aagaccaatg ggcagctggc ccagaccctg cagcaggctt 540
acctgccctc tgtggactac gccatctgct ccagctcctc ctactggggc tccactgtga 600
agaacaccat ggtgtgtgct ggtggagatg gagttcgctc tggatgccag ggtgactctg 660
ggggcccccc ccattgcttg gtgaatggca agtattctgt ccatggagtg accagctttg 720
tgtccagccg gggctgtaat gtctccagga agcctacagt cttcacccag gtctctgctt 780
acatctcctg gataaataat gtcatcgcct ccaactgaac attttcctga gtccaacgac 840
cttcccaaaa tggttcttag atctgcaata ggacttgcga tcaaaaagta aaacacattc 900
tgaaagacta ttgagccatt gatagaaaag caaataaaac tagatataca tt          952
```

<210> 154
<211> 258
<212> PRT
<213> Homo sapiens

<400> 154

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

```
Val Asp Tyr Gln Lys Thr Phe Arg Val Val Ala Gly Asp His Asn Leu
65                  70                  75                  80
Ser Gln Asn Asp Gly Thr Glu Gln Tyr Val Ser Val Gln Lys Ile Val
                85                  90                  95
Val His Pro Tyr Trp Asn Ser Asp Asn Val Ala Ala Gly Tyr Asp Ile
            100                 105                 110
Ala Leu Leu Arg Leu Ala Gln Ser Val Thr Leu Asn Ser Tyr Val Gln
        115                 120                 125
Leu Gly Val Leu Pro Gln Glu Gly Ala Ile Leu Ala Asn Asn Ser Pro
    130                 135                 140
Cys Tyr Ile Thr Gly Trp Gly Lys Thr Lys Thr Asn Gly Gln Leu Ala
145                 150                 155                 160
Gln Thr Leu Gln Gln Ala Tyr Leu Pro Ser Val Asp Tyr Ala Ile Cys
                165                 170                 175
Ser Ser Ser Ser Tyr Trp Gly Ser Thr Val Lys Asn Thr Met Val Cys
            180                 185                 190
Ala Gly Gly Asp Gly Val Arg Ser Gly Cys Gln Gly Asp Ser Gly Gly
        195                 200                 205
Pro Leu His Cys Leu Val Asn Gly Lys Tyr Ser Val His Gly Val Thr
    210                 215                 220
Ser Phe Val Ser Ser Arg Gly Cys Asn Val Ser Arg Lys Pro Thr Val
225                 230                 235                 240
Phe Thr Gln Val Ser Ala Tyr Ile Ser Trp Ile Asn Asn Val Ile Ala
                245                 250                 255
Ser Asn
```

<210> 155
<211> 963
<212> DNA
<213> Homo sapiens

<400> 155

```
tcctatcatc acaaaactca tgatgctccg gctgctcagt tccctcctcc ttgtggccgt 60
tgcctcaggc tatggcccac cttcctctca ctcttccagc cgcgttgtcc atggtgagga 120
tgcggtcccc tacagctggc cctggcaggt ttccctgcag tatgagaaaa gtggaagctt 180
ctaccacacg tgtggcggta gcctcatcgc ccccgattgg gttgtgactg ccggccactg 240
catctcgagg gatctgacct accaggtggt gttgggtgag tacaaccttg ctgtgaagga 300
gggccccgag caggtgatcc ccatcaactc tgaggagctg tttgtgcatc cactctggaa 360
ccgctcgtgt gtggcctgtg gcaatgacat cgccctcatc aagctctcac gcagcgccca 420
gctgggagat gccgtccagc tcgcctcact ccctcccgct ggtgacatcc ttcccaacaa 480
gacaccctgc tacatcaccg gctggggccg tctctatacc aatgggccac tcccagacaa 540
gctgcagcag gcccggctgc ccgtggtgga ctataagcac tgctccaggt ggaactggtg 600
gggttccacc gtgaagaaaa ccatggtgtg tgctggaggg tacatccgct ccggctgcaa 660
cggtgactct ggaggacccc tcaactgccc cacagaggat ggtggctggc aggtccacgg 720
tgtgaccagc tttgtttctg gctttggctg caacttcatc tggaagccca cggtgttcac 780
tcgagtctcc gccttcatcg actggattga ggagaccata gcaagccact agaaccaagg 840
cccagctggc agtgctgatc gatcccacat cctgaataaa gaataaagat ctctcagaaa 900
attccaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 960
aaa                                                               963
```

<210> 156
<211> 270
<212> PRT
<213> Homo sapiens

<400> 156

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

<210> 157
<211> 914
<212> DNA
<213> Homo sapiens

<400> 157
ttttacagaa ctcccacgga cacaccatga taaggacgct gctgctgtcc actttggtgg 60
ctggagccct cagttgtggg gaccccactt acccacctta tgtgactagg gtggttggcg 120
gtgaagaagc gaggcccaac agctggccct ggcaggtctc cctgcagtac agctccaatg 180
gcaagtggta ccacacctgc ggagggtccc tgatagccaa cagctgggtc ctgacggctg 240
cccactgcat cagctcctcc aggacctacc gcgtggggct gggccggcac aacctctacg 300
ttgcggagtc cggctcgctg gcagtcagtg tctctaagat tgtggtgcac aaggactgga 360
actccaacca aatctccaaa gggaacgaca ttgccctgct caaactggct aaccccgtct 420
ccctcaccga caagatccag ctggcctgcc tccctcctgc cggcaccatt ctacccaaca 480
actacccctg ctacgtcacg ggctggggaa ggctgcagac caacggggct gttcctgatg 540
tcctgcagca gggccggttg ctggttgtgg actatgccac ctgctccagc tctgccctgg 600
ggggcagcag cgtgaaaacc agtatgatct gtgctggggg tgatggcgtg atctccagct 660
gcaacggaga ctctggcggg ccactgaact gtcaggcgtc tgacggccgg tggcaggtgc 720
acggcatcgt cagcttcggg tctcgcctcg gctgcaacta ctaccacaag ccctccgtct 780
tcacgcgggt ctccaattac atcgactgga tcaattcggt gattgcaaat aactaaccaa 840
aagaagtccc tgggactgtt tcagacttgg aaaggtcaca gaaggaaaat aatataataa 900
agtgacaact atgc 914

<210> 158
<211> 269
<212> PRT
<213> Homo sapiens

<400> 158

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

<210> 159
<211> 3696
<212> DNA
<213> Homo sapiens

<400> 159

```
accagacagt tcttaaatta gcaagccttc aaaaccaaaa atggggtcga aaagaggcat 60
atcttctagg catcattctc tcagctccta tgaaatcatg tttgcagctc tctttgccat 120
attggtagtg ctctgtgctg gattaattgc agtatcctgc ctgacaatca aggaatccca 180
acgaggtgca gcacttggac agagtcatga agccagagcg acatttaaaa taacatccgg 240
agttacatat aatcctaatt tgcaagacaa actctcagtg gatttcaaag ttcttgcttt 300
tgaccttcag caaatgatag atgagatctt tctatcaagc aatctgaaga atgaatataa 360
gaactcaaga gttttacaat ttgaaaatgg cagcattata gtcgtatttg acctttttctt 420
tgcccagtgg gtgtcagatc aaaatgtaaa agaagaactg attcaaggcc ttgaagcaaa 480
taaatccagc caactggtca ctttccatat tgatttgaac agcgttgata tcctagacaa 540
```

gctaacaacc accagtcatc tggcaactcc aggaaatgtc tcaatagagt gcctgcctgg 600
ttcaagtcct tgtactgatg ctctaacgtg tataaaagct gatttatttt gtgatggaga 660
agtaaactgt ccagatggtt ctgacgaaga caataaaatg tgtgccacag tttgtgatgg 720
aagatttttg ttaactggat catctgggtc tttccaggct actcattatc caaaaccttc 780
tgaaacaagt gttgtctgcc agtggatcat acgtgtaaac caaggacttt ccattaaact 840
gagcttcgat gattttaata catattatac agatatatta gatatttatg aaggtgtagg 900
atcaagcaag attttaagag cttctatttg ggaaactaat cctggcacaa taagaatttt 960
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aaggattcag ggaagcacct tttctccttt tactggaccc aattttgacc acacttttgg 1200
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aaaataccat taaatacatt tgtatttcat tgtgaacagg tatttcttca cagatctcat 3360
ttttaaaatt cttaatgatt atttttatta cttactgttg tttaaaggga tgttatttta 3420
aagcatatac catacactta agaaatttga gcagaattta aaaaagaaag aaaataaatt 3480
gtttttccca aagtatgtca ctgttggaaa taaactgcca taaattttct agttccagtt 3540
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<210> 160
<211> 1019
<212> PRT
<213> Homo sapiens

<400> 160

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

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

```
Ala Gly Trp Gly Thr Val Val Tyr Gln Gly Thr Thr Ala Asn Ile Leu
        915                 920                 925
Gln Glu Ala Asp Val Pro Leu Leu Ser Asn Glu Arg Cys Gln Gln Gln
    930                 935                 940
Met Pro Glu Tyr Asn Ile Thr Glu Asn Met Ile Cys Ala Gly Tyr Glu
945                 950                 955                 960
Glu Gly Gly Ile Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Met
                965                 970                 975
Cys Gln Glu Asn Asn Arg Trp Phe Leu Ala Gly Val Thr Ser Phe Gly
            980                 985                 990
Tyr Lys Cys Ala Leu Pro Asn Arg Pro Gly Val Tyr Ala Arg Val Ser
        995                 1000                1005
Arg Phe Thr Glu Trp Ile Gln Ser Phe Leu His
    1010                1015
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<210> 161
<211> 917
<212> DNA
<213> Homo sapiens

<400> 161

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gagaggatgc ccggccccac agctggccct ggcagatctc cctccagtac ctcaagaacg 180
acacgtggag gcatacgtgt ggcgggactt tgattgctag caacttcgtc ctcactgccg 240
cccactgcat cagcaacacc cggacctacc gtgtggccgt gggaaagaac aacctggagg 300
tggaagacga agaaggatcc ctgtttgtgg gtgtggacac catccacgtc cacaagagat 360
ggaatgccct cctgttgcgc aatgatattg ccctcatcaa gcttgcagag catgtggagc 420
tgagtgacac catccaggtg gcctgcctgc cagagaagga ctccctgctc cccaaggact 480
acccctgcta tgtcaccggc tggggccgcc tctggaccaa cggccccatt gctgataagc 540
tgcagcaggg cctgcagccc gtggtggatc acgccacgtg ctccaggatt gactggtggg 600
gcttcagggt gaagaaaacc atggtgtgcg ctgggggcga tggcgtcatc tcagcctgca 660
atggggactc cggtggccca ctgaactgcc agttggagaa cggttcctgg gaggtgtttg 720
gcatcgtcag ctttggctcc cggcgggggt gcaacacccg caagaagccg gtagtctaca 780
cccgggtgtc cgcctacatc gactggatca acgagaaaat gcagctgtga tttgttgctg 840
ggagcggcgg cagcgagtcc ctgcaacagc aataaacttc cttctcctcg ggccacctga 900
aaaaaaaaaa aaaaaaa                                                 917
```

<210> 162
<211> 268
<212> PRT
<213> Homo sapiens

<400> 162

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

```
            100                 105                 110
Trp Asn Ala Leu Leu Leu Arg Asn Asp Ile Ala Leu Ile Lys Leu Ala
        115                 120                 125
Glu His Val Glu Leu Ser Asp Thr Ile Gln Val Ala Cys Leu Pro Glu
    130                 135                 140
Lys Asp Ser Leu Leu Pro Lys Asp Tyr Pro Cys Tyr Val Thr Gly Trp
145                 150                 155                 160
Gly Arg Leu Trp Thr Asn Gly Pro Ile Ala Asp Lys Leu Gln Gln Gly
                165                 170                 175
Leu Gln Pro Val Val Asp His Ala Thr Cys Ser Arg Ile Asp Trp Trp
            180                 185                 190
Gly Phe Arg Val Lys Lys Thr Met Val Cys Ala Gly Gly Asp Gly Val
        195                 200                 205
Ile Ser Ala Cys Asn Gly Asp Ser Gly Gly Pro Leu Asn Cys Gln Leu
    210                 215                 220
Glu Asn Gly Ser Trp Glu Val Phe Gly Ile Val Ser Phe Gly Ser Arg
225                 230                 235                 240
Arg Gly Cys Asn Thr Arg Lys Lys Pro Val Val Tyr Thr Arg Val Ser
                245                 250                 255
Ala Tyr Ile Asp Trp Ile Asn Glu Lys Met Gln Leu
            260                 265
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<210> 163
<211> 1938
<212> DNA
<213> Homo sapoens

<400> 163

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gggcaggtag gtgcagccac tcctgggagg accctgcgtg gccagacggt gctggtgact 120
cgtccacact gctcgcttcg gatactccag gcgtctcccg ttgcggccgc tccctgcctt 180
agaggccagc cttggacact tgctgccccc ttccagcccg gattctggga tccttccctc 240
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cggaaggggc agaagctccc tgcggtgtgg ccccccaagc acgcatcaca ggtggcagca 480
gtgcagtcgc cggtcagtgg ccctggcagg tcagcatcac ctatgaaggc gtccatgtgt 540
gtggtggctc tctcgtgtct gagcagtggg tgctgtcagc tgctcactgc ttccccagcg 600
agcaccacaa ggaagcctat gaggtcaagc tgggggccca ccagctagac tcctactccg 660
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ttactgcctg tagcaatggc cagagcctct ggcccctcac ccaccatgga ccagcccatt 1620
ggccgagctc ctggggagct cctgggaccc ttggctatga aaatgagccc tggctcccac 1680
ctgtttctgg aagactgctc ccggccccgcc tgcccagact gatgagcaca tctctctgcc 1740
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ctctccctgt gttctgggct ggggccacct ttgtgcagct tcgaggacag gaaaggcccc 1800
aatcttgccc actggccgct gagcgccccc gagccctgac tcctggactc cggaggactg 1860
agcccccacc ggaactgggc tggcgcttgg atctggggtg ggagtaacag ggcagaaatg 1920
attaaaatgt ttgagcac 1938

<210> 164
<211> 343
<212> PRT
<213> Homo sapiens

<400> 164

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

<210> 165

<211> 874
<212> DNA
<213> Homo sapiens

<400> 165
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ggctgggagt gtgagcagca ttcccagccc tggcaggcgg ctctgtacca tttcagcact 180
ttccagtgtg ggggcatcct ggtgcaccgc cagtgggtgc tcacagctgc tcattgcatc 240
agcgacaatt accagctctg gctgggtcgc cacaacttgt ttgacgacga aaacacagcc 300
cagtttgttc atgtcagtga gagcttccca caccctggct tcaacatgag cctcctggag 360
aaccacaccc gccaagcaga cgaggactac agccacgacc tcatgctgct ccgcctgaca 420
gagcctgctg ataccatcac agatgctgtg aaggtcgtgg agttgcccac cgaggaaccc 480
gaagtgggga gcacctgttt ggcttccggc tggggcagca tcgaaccaga gaatttctca 540
tttccagatg atctccagtg tgtggacctc aaaatcctgc ctaatgatga gtgcaaaaaa 600
gcccacgtcc agaaggtgac agacttcatg ctgtgtgtcg gacacctgga aggtggcaaa 660
gacacctgtg tgggtgattc aggggggccg ctgatgtgtg atggtgtgct ccaaggtgtc 720
acatcatggg gctacgtccc ttgtggcacc cccaataagc cttctgtcgc cgtcagagtg 780
ctgtcttatg tgaagtggat cgaggacacc atagcggaga actcctgaac gcccagcccc 840
gtcccctacc cccagtaaaa tcaaatgtgc atcc 874

<210> 166
<211> 262
<212> PRT
<213> Homo sapiens

<400> 166
Met Trp Phe Leu Val Leu Cys Leu Ala Leu Ser Leu Gly Gly Thr Gly
 1   5   10   15
Ala Ala Pro Pro Ile Gln Ser Arg Ile Val Gly Gly Trp Glu Cys Glu
            20   25   30
Gln His Ser Gln Pro Trp Gln Ala Ala Leu Tyr His Phe Ser Thr Phe
        35   40   45
Gln Cys Gly Gly Ile Leu Val His Arg Gln Trp Val Leu Thr Ala Ala
    50   55   60
His Cys Ile Ser Asp Asn Tyr Gln Leu Trp Leu Gly Arg His Asn Leu
65   70   75   80
Phe Asp Asp Glu Asn Thr Ala Gln Phe Val His Val Ser Glu Ser Phe
                85   90   95
Pro His Pro Gly Phe Asn Met Ser Leu Leu Glu Asn His Thr Arg Gln
            100   105   110
Ala Asp Glu Asp Tyr Ser His Asp Leu Met Leu Leu Arg Leu Thr Glu
        115   120   125
Pro Ala Asp Thr Ile Thr Asp Ala Val Lys Val Val Glu Leu Pro Thr
    130   135   140
Glu Glu Pro Glu Val Gly Ser Thr Cys Leu Ala Ser Gly Trp Gly Ser
145   150   155   160
Ile Glu Pro Glu Asn Phe Ser Phe Pro Asp Asp Leu Gln Cys Val Asp
                165   170   175
Leu Lys Ile Leu Pro Asn Asp Glu Cys Lys Lys Ala His Val Gln Lys
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Val Thr Asp Phe Met Leu Cys Val Gly His Leu Glu Gly Gly Lys Asp
        195   200   205
Thr Cys Val Gly Asp Ser Gly Gly Pro Leu Met Cys Asp Gly Val Leu
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Gln Gly Val Thr Ser Trp Gly Tyr Val Pro Cys Gly Thr Pro Asn Lys
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<210> 167
<211> 2855
<212> DNA
<213> *Homo sapiens*

<400> 167
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<210> 168
<211> 261
<212> PRT
<213> Homo sapiens

<400> 168

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			20					25					30		
Lys	His	Ser	Gln	Pro	Trp	Gln	Val	Ala	Val	Tyr	Ser	His	Gly	Trp	Ala
		35					40					45			
His	Cys	Gly	Gly	Val	Leu	Val	His	Pro	Gln	Trp	Val	Leu	Thr	Ala	Ala
	50					55					60				
His	Cys	Leu	Lys	Lys	Asn	Ser	Gln	Val	Trp	Leu	Gly	Arg	His	Asn	Leu
65					70					75					80
Phe	Glu	Pro	Glu	Asp	Thr	Gly	Gln	Arg	Val	Pro	Val	Ser	His	Ser	Phe
				85					90					95	
Pro	His	Pro	Leu	Tyr	Asn	Met	Ser	Leu	Leu	Lys	His	Gln	Ser	Leu	Arg
			100					105					110		
Pro	Asp	Glu	Asp	Ser	Ser	His	Asp	Leu	Met	Leu	Leu	Arg	Leu	Ser	Glu
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Glu	Pro	Glu	Glu	Phe	Leu	Arg	Pro	Arg	Ser	Leu	Gln	Cys	Val	Ser	Leu
				165					170					175	
His	Leu	Leu	Ser	Asn	Asp	Met	Cys	Ala	Arg	Ala	Tyr	Ser	Glu	Lys	Val
			180					185					190		
Thr	Glu	Phe	Met	Leu	Cys	Ala	Gly	Leu	Trp	Thr	Gly	Gly	Lys	Asp	Thr
		195					200					205			
Cys	Gly	Gly	Asp	Ser	Gly	Gly	Pro	Leu	Val	Cys	Asn	Gly	Val	Leu	Gln
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Gly	Ile	Thr	Ser	Trp	Gly	Pro	Glu	Pro	Cys	Ala	Leu	Pro	Glu	Lys	Pro
225					230					235					240
Ala	Val	Tyr	Thr	Lys	Val	Val	His	Tyr	Arg	Lys	Trp	Ile	Lys	Asp	Thr
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			260												

<210> 169
<211> 2892
<212> DNA
<213> Homo sapiens

<400> 169

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<210> 170
<211> 223
<212> PRT
<213> Homo sapiens

<400> 170

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Ala Val Pro Leu Ile Gln Ser Arg Ile Val Gly Gly Trp Glu Cys Glu
            20                  25                  30
Lys His Ser Gln Pro Trp Gln Val Ala Val Tyr Ser His Gly Trp Ala
        35                  40                  45
His Cys Gly Gly Val Leu Val His Pro Gln Trp Val Leu Thr Ala Ala
    50                  55                  60
His Cys Leu Lys Lys Asn Ser Gln Val Trp Leu Gly Arg His Asn Leu
65                  70                  75                  80
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Phe Glu Pro Glu Asp Thr Gly Gln Arg Val Pro Val Ser His Ser Phe
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Pro His Pro Leu Tyr Asn Met Ser Leu Leu Lys His Gln Ser Leu Arg
            100                 105                 110
Pro Asp Glu Asp Ser Ser His Asp Leu Met Leu Leu Arg Leu Ser Glu
        115                 120                 125
Pro Ala Lys Ile Thr Asp Val Val Lys Val Leu Gly Leu Pro Thr Gln
    130                 135                 140
Glu Pro Ala Leu Gly Thr Thr Cys Tyr Ala Ser Gly Trp Gly Ser Ile
145                 150                 155                 160
Glu Pro Glu Glu Phe Leu Arg Pro Arg Ser Leu Gln Cys Val Ser Leu
                165                 170                 175
His Leu Leu Ser Asn Asp Met Cys Ala Arg Ala Tyr Ser Glu Lys Val
            180                 185                 190
Thr Glu Phe Met Leu Cys Ala Gly Leu Trp Thr Gly Gly Lys Asp Thr
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Cys Gly Val Ser His Pro Tyr Ser Gln His Leu Glu Gly Lys Gly
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<210> 171
<211> 2879
<212> DNA
<213> Homo sapiens

<400> 171

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<210> 172
<211> 164
<212> PRT
<213> Homo sapiens

<400> 172
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            20   25   30
Lys His Ser Gln Pro Trp Gln Val Ala Val Tyr Ser His Gly Trp Ala
        35   40   45
His Cys Gly Gly Val Leu Val His Pro Gln Trp Val Leu Thr Ala Ala
    50   55   60
His Cys Leu Lys Lys Asn Ser Gln Val Trp Leu Gly Arg His Asn Leu
65   70   75   80
Phe Glu Pro Glu Asp Thr Gly Gln Arg Val Pro Val Ser His Ser Phe
                85   90   95
Pro His Pro Leu Tyr Asn Met Ser Leu Leu Lys His Gln Ser Leu Arg
            100   105   110
Pro Asp Glu Asp Ser Ser His Asp Leu Met Leu Leu Arg Leu Ser Glu
        115   120   125
Pro Ala Lys Ile Thr Asp Val Val Lys Val Leu Gly Leu Pro Thr Gln
    130   135   140
Glu Pro Ala Leu Gly Thr Thr Cys Tyr Ala Ser Gly Trp Gly Ser Ile
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<210> 173
<211> 1464
<212> DNA
<213> Homo sapiens

<400> 173
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<210> 174
<211> 261
<212> PRT
<213> Homo sapiens

<400> 174

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

```
                245                 250                 255
Ile Val Ala Asn Pro
            260
```

<210> 175
<211> 1906
<212> DNA
<213> Homo sapiens

<400> 175

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agccccaagc ttaccacctg cacccggaga gctgtgtcac catgtgggtc ccggttgtct 60
tcctcaccct gtccgtgacg tggattggtg ctgcacccct catcctgtct cggattgtgg 120
gaggctggga gtgcgagaag cattcccaac cctggcaggt gcttgtggcc tctcgtggca 180
gggcagtctg cggcggtgtt ctggtgcacc cccagtgggt cctcacagct gcccactgca 240
tcaggaacaa aagcgtgatc ttgctgggtc ggcacagcct gtttcatcct gaagacacag 300
gccaggtatt tcaggtcagc cacagcttcc cacacccgct ctacgatatg agcctcctga 360
agaatcgatt cctcaggcca ggtgatgact ccagccacga cctcatgctg ctccgcctgt 420
cagagcctgc cgagctcacg gatgctgtga aggtcatgga cctgcccacc caggagccag 480
cactggggac cacctgctac gcctcaggct ggggcagcat tgaaccagag gagttcttga 540
ccccaaagaa acttcagtgt gtggacctcc atgttatttc caatgacgtg tgtgcgcaag 600
ttcaccctca gaaggtgacc aagttcatgc tgtgtgctgg acgctggaca gggggcaaaa 660
gcacctgctc gtgggtcatt ctgatcaccg aactgaccat gccagccctg ccgatggtcc 720
tccatggctc cctagtgccc tggagaggag gtgtctagtc agagagtagt cctggaaggt 780
ggcctctgtg aggagccacg gggacagcat cctgcagatg gtcctggccc ttgtcccacc 840
gacctgtcta caaggactgt cctcgtggac cctccccctct gcacaggagc tggaccctga 900
agtcccttcc ccaccggcca ggactggagc ccctaccct ctgttggaat ccctgcccac 960
cttcttctgg aagtcggctc tggagacatt tctctcttct tccaaagctg ggaactgcta 1020
tctgttatct gcctgtccag gtctgaaaga taggattgcc caggcagaaa ctgggactga 1080
cctatctcac tctctccctg cttttaccct tagggtgatt ctgggggccc acttgtctgt 1140
aatggtgtgc ttcaaggtat cacgtcatgg ggcagtgaac catgtgccct gcccgaaagg 1200
ccttccctgt acaccaaggt ggtgcattac cggaagtgga tcaaggacac catcgtggcc 1260
aacccctgag cacccctatc aacccccctat tgtagtaaac ttggaacctt ggaaatgacc 1320
aggccaagac tcaagcctcc ccagttctac tgacctttgt ccttaggtgt gaggtccagg 1380
gttgctagga aaagaaatca gcagacacag gtgtagacca gagtgtttct taaatggtgt 1440
aattttgtcc tctctgtgtc ctggggaata ctggccatgc ctggagacat atcactcaat 1500
ttctctgagg acacagatag gatggggtgt ctgtgttatt tgtggggtac agagatgaaa 1560
gaggggtggg atccacactg agagagtgga gagtgacatg tgctggacac tgtccatgaa 1620
gcactgagca gaagctggag gcacaacgca ccagacactc acagcaagga tggagctgaa 1680
aacataaccc actctgtcct ggaggcactg ggaagcctag agaaggctgt gagccaagga 1740
gggagggtct tcctttggca tgggatgggg atgaagtaag gagagggact ggacccctg 1800
gaagctgatt cactatgggg ggaggtgtat tgaagtcctc cagacaaccc tcagatttga 1860
tgatttccta gtagaactca cagaaataaa gagctgttat actgtg                1906
```

<210> 176
<211> 238
<212> PRT
<213> Homo sapiens

<400> 176

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

```
His Cys Ile Arg Asn Lys Ser Val Ile Leu Leu Gly Arg His Ser Leu
65                  70                  75                  80
Phe His Pro Glu Asp Thr Gly Gln Val Phe Gln Val Ser His Ser Phe
                85                  90                  95
Pro His Pro Leu Tyr Asp Met Ser Leu Leu Lys Asn Arg Phe Leu Arg
            100                 105                 110
Pro Gly Asp Asp Ser Ser His Asp Leu Met Leu Leu Arg Leu Ser Glu
        115                 120                 125
Pro Ala Glu Leu Thr Asp Ala Val Lys Val Met Asp Leu Pro Thr Gln
    130                 135                 140
Glu Pro Ala Leu Gly Thr Thr Cys Tyr Ala Ser Gly Trp Gly Ser Ile
145                 150                 155                 160
Glu Pro Glu Glu Phe Leu Thr Pro Lys Lys Leu Gln Cys Val Asp Leu
                165                 170                 175
His Val Ile Ser Asn Asp Val Cys Ala Gln Val His Pro Gln Lys Val
            180                 185                 190
Thr Lys Phe Met Leu Cys Ala Gly Arg Trp Thr Gly Gly Lys Ser Thr
        195                 200                 205
Cys Ser Trp Val Ile Leu Ile Thr Glu Leu Thr Met Pro Ala Leu Pro
    210                 215                 220
Met Val Leu His Gly Ser Leu Val Pro Trp Arg Gly Gly Val
225                 230                 235
```

<210> 177
<211> 1335
<212> DNA
<213> Homo sapiens

<400> 177

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agccccaagc ttaccacctg cacccggaga gctgtgtcac catgtgggtc ccggttgtct 60
tcctcaccct gtccgtgacg tggattggtg ctgcacccct catcctgtct cggattgtgg 120
gaggctggga gtgcgagaag cattcccaac cctggcaggt gcttgtggcc tctcgtggca 180
gggcagtctg cggcggtgtt ctggtgcacc cccagtgggt cctcacagct gcccactgca 240
tcaggaagcc aggtgatgac tccagccacg acctcatgct gctccgcctg tcagagcctg 300
ccgagctcac ggatgctgtg aaggtcatgg acctgcccac ccaggagcca gcactgggga 360
ccacctgcta cgcctcaggc tggggcagca ttgaaccaga ggagttcttg accccaaaga 420
aacttcagtg tgtggacctc catgttattt ccaatgacgt gtgtgcgcaa gttcaccctc 480
agaaggtgac caagttcatg ctgtgtgctg gacgctggac agggggcaaa agcacctgct 540
cgggtgattc tgggggccca cttgtctgta atggtgtgct tcaaggtatc acgtcatggg 600
gcagtgaacc atgtgccctg cccgaaaggc cttccctgta caccaaggtg gtgcattacc 660
ggaagtggat caaggacacc atcgtggcca acccctgagc acccctatca acccccctatt 720
gtagtaaact tggaaccttg gaaatgacca ggccaagact caagcctccc cagttctact 780
gacctttgtc cttaggtgtg aggtccaggg ttgctaggaa aagaaatcag cagacacagg 840
tgtagaccag agtgtttctt aaatggtgta attttgtcct ctctgtgtcc tggggaatac 900
tggccatgcc tggagacata tcactcaatt tctctgagga cacagatagg atggggtgtc 960
tgtgttattt gtggggtaca gagatgaaag aggggtggga tccacactga gagagtggag 1020
agtgacatgt gctggacact gtccatgaag cactgagcag aagctggagg cacaacgcac 1080
cagacactca cagcaaggat ggagctgaaa acataaccca ctctgtcctg gaggcactgg 1140
gaagcctaga gaaggctgtg agccaaggag ggagggtctt cctttggcat gggatgggga 1200
tgaagtaagg agagggactg gacccccctgg aagctgattc actatggggg gaggtgtatt 1260
gaagtcctcc agacaaccct cagatttgat gatttcctag tagaactcac agaaataaag 1320
agctgttata ctgtg                                                  1335
```

<210> 178
<211> 218
<212> PRT
<213> Homo sapiens

<400> 178
Met Trp Val Pro Val Val Phe Leu Thr Leu Ser Val Thr Trp Ile Gly
1 5 10 15
Ala Ala Pro Leu Ile Leu Ser Arg Ile Val Gly Gly Trp Glu Cys Glu
20 25 30
Lys His Ser Gln Pro Trp Gln Val Leu Val Ala Ser Arg Gly Arg Ala
35 40 45
Val Cys Gly Gly Val Leu Val His Pro Gln Trp Val Leu Thr Ala Ala
50 55 60
His Cys Ile Arg Lys Pro Gly Asp Asp Ser Ser His Asp Leu Met Leu
65 70 75 80
Leu Arg Leu Ser Glu Pro Ala Glu Leu Thr Asp Ala Val Lys Val Met
85 90 95
Asp Leu Pro Thr Gln Glu Pro Ala Leu Gly Thr Thr Cys Tyr Ala Ser
100 105 110
Gly Trp Gly Ser Ile Glu Pro Glu Glu Phe Leu Thr Pro Lys Lys Leu
115 120 125
Gln Cys Val Asp Leu His Val Ile Ser Asn Asp Val Cys Ala Gln Val
130 135 140
His Pro Gln Lys Val Thr Lys Phe Met Leu Cys Ala Gly Arg Trp Thr
145 150 155 160
Gly Gly Lys Ser Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu Val Cys
165 170 175
Asn Gly Val Leu Gln Gly Ile Thr Ser Trp Gly Ser Glu Pro Cys Ala
180 185 190
Leu Pro Glu Arg Pro Ser Leu Tyr Thr Lys Val Val His Tyr Arg Lys
195 200 205
Trp Ile Lys Asp Thr Ile Val Ala Asn Pro
210 215

<210> 179
<211> 1341
<212> DNA
<213> Homo sapiens

<400> 179
agccccaagc ttaccacctg cacccggaga gctgtgtcac catgtgggtc ccggttgtct 60
tcctcaccct gtccgtgacg tggattggtg ctgcaccccc catcctgtct cggattgtgg 120
gaggctggga gtgcgagaag cattcccaac cctggcaggt gcttgtggcc tctcgtggca 180
gggcagtctg cggcggtgtt ctggtgcacc cccagtgggt cctcacagct gcccactgca 240
tcaggaacaa aagcgtgatc ttgctgggtc ggcacagcct gtttcatcct gaagacacag 300
gccaggtatt tcaggtcagc cacagcttcc cacacccgct ctacgatatg agcctcctga 360
agaatcgatt cctcaggcca ggtgatgact ccagcattga accagaggag ttcttgaccc 420
caaagaaact tcagtgtgtg gacctccatg ttatttccaa tgacgtgtgt gcgcaagttc 480
accctcagaa ggtgaccaag ttcatgctgt gtgctggacg ctggacaggg ggcaaaagca 540
cctgctcggg tgattctggg ggcccacttg tctgtaatgg tgtgcttcaa ggtatcacgt 600
catggggcag tgaaccatgt gccctgcccg aaaggccttc cctgtacacc aaggtggtgc 660
attaccggaa gtggatcaag gacaccatcg tggccaaccc ctgagcaccc ctatcaaccc 720
cctattgtag taaacttgga accttggaaa tgaccaggcc aagactcaag cctccccagt 780
tctactgacc tttgtcctta ggtgtgaggt ccagggttgc taggaaaaga aatcagcaga 840
cacaggtgta gaccagagtg tttcttaaat ggtgtaattt tgtcctctct gtgtcctggg 900
gaatactggc catgcctgga gacatatcac tcaatttctc tgaggacaca gataggatgg 960
ggtgtctgtg ttatttgtgg ggtacagaga tgaaagaggg gtgggatcca cactgagaga 1020
gtggagagtg acatgtgctg gacactgtcc atgaagcact gagcagaagc tggaggcaca 1080
acgcaccaga cactcacagc aaggatggag ctgaaaacat aacccactct gtcctggagg 1140
cactgggaag cctagagaag gctgtgagcc aaggagggag ggtcttcctt tggcatggga 1200

tggggatgaa gtaaggagag ggactggacc ccctggaagc tgattcacta tgggggggagg 1260
tgtattgaag tcctccagac aaccctcaga tttgatgatt tcctagtaga actcacagaa 1320
ataaagagct gttatactgt g 1341

<210> 180
<211> 220
<212> PRT
<213> Homo sapiens

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

<210> 181
<211> 555
<212> DNA
<213> Homo sapiens

<400> 181
agccccaagc ttaccacctg cacccggaga gctgtgtcac catgtgggtc ccggttgtct 60
tcctcaccct gtccgtgacg tggattggtg ctgcaccect catcctgtct cggattgtgg 120
gaggctggga gtgcgagaag cattcccaac cctggcaggt gcttgtggcc tctcgtggca 180
gggcagtctg cggcggtgtt ctggtgcacc cccagtgggt cctcacagct gcccactgca 240
tcaggaagtg agtaggggcc tggggtctgg ggagcaggtg tctgtgtccc agaggaataa 300
cagctgggca ttttccccag gataacctct aaggccagcc ttgggactgg gggagagagg 360
gaaagttctg gttcaggtca catggggagg cagggttggg gctggaccac cctccccatg 420
gctgcctggg tctccatctg tgttcctcta tgtctctttg tgtcgctttc attatgtctc 480
ttggtaactg gcttcggttg tgtctctccg tgtgactatt ttgttctctc tctccctctc 540
ttctctgtct tcagt 555

<210> 182

<211> 69
<212> PRT
<213> Homo sapiens

<400> 182
Met Trp Val Pro Val Val Phe Leu Thr Leu Ser Val Thr Trp Ile Gly
 1   5   10   15
Ala Ala Pro Leu Ile Leu Ser Arg Ile Val Gly Gly Trp Glu Cys Glu
            20   25   30
Lys His Ser Gln Pro Trp Gln Val Leu Val Ala Ser Arg Gly Arg Ala
        35   40   45
Val Cys Gly Gly Val Leu Val His Pro Gln Trp Val Leu Thr Ala Ala
    50   55   60
His Cys Ile Arg Lys
65

<210> 183
<211> 807
<212> DNA
<213> Homo sapiens

<400> 183
acactctacc accatgaatc cattcctgat ccttgccttt gtgggagctg ctgttgctgt 60
ccccttttgac gatgatgaca agattgttgg gggctacacc tgtgaggaga attctctccc 120
ctaccaggtg tccctgaatt ctggctccca cttctgcggt ggctccctca tcagcgaaca 180
gtgggtggta tcagcagctc actgctacaa gacccgcatc caggtgagac tgggagagca 240
caacatcaaa gtcctggagg ggaatgagca gttcatcaat gcggccaaga tcatccgcca 300
ccctaaatac aacagggaca ctctggacaa tgacatcatg ctgatcaaac tctcctcacc 360
tgccgtcatc aatgcccgcg tgtccaccat ctctctgccc accgcccctc cagctgctgg 420
cactgagtgc ctcatctccg gctggggcaa cactctgagc tttggtgctg actacccaga 480
cgagctgaag tgcctggatg ctccggtgct gacccaggct gagtgtaaag cctcctaccc 540
tggaaagatt accaacagca tgttctgtgt gggcttcctt gagggaggca aggattcctg 600
ccagcgtgac tctggtggcc ctgtggtctg caacggacag ctccaaggag ttgtctcctg 660
gggccatggc tgtgcctgga agaacaggcc tggagtctac accaaggtct acaactatgt 720
ggactggatt aaggacacca tcgctgccaa cagctaaagc ccccggtccc tctgcagtct 780
ctataccaat aaagtggccc tgctctc   807

<210> 184
<211> 247
<212> PRT
<213> Homo sapiens

<400> 184
Met Asn Pro Phe Leu Ile Leu Ala Phe Val Gly Ala Ala Val Ala Val
 1   5   10   15
Pro Phe Asp Asp Asp Asp Lys Ile Val Gly Gly Tyr Thr Cys Glu Glu
            20   25   30
Asn Ser Leu Pro Tyr Gln Val Ser Leu Asn Ser Gly Ser His Phe Cys
        35   40   45
Gly Gly Ser Leu Ile Ser Glu Gln Trp Val Val Ser Ala Ala His Cys
    50   55   60
Tyr Lys Thr Arg Ile Gln Val Arg Leu Gly Glu His Asn Ile Lys Val
65   70   75   80
Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His
                85   90   95
Pro Lys Tyr Asn Arg Asp Thr Leu Asp Asn Asp Ile Met Leu Ile Lys
            100   105   110

```
Leu Ser Ser Pro Ala Val Ile Asn Ala Arg Val Ser Thr Ile Ser Leu
        115                 120                 125
Pro Thr Ala Pro Pro Ala Ala Gly Thr Glu Cys Leu Ile Ser Gly Trp
    130                 135                 140
Gly Asn Thr Leu Ser Phe Gly Ala Asp Tyr Pro Asp Glu Leu Lys Cys
145                 150                 155                 160
Leu Asp Ala Pro Val Leu Thr Gln Ala Glu Cys Lys Ala Ser Tyr Pro
                165                 170                 175
Gly Lys Ile Thr Asn Ser Met Phe Cys Val Gly Phe Leu Glu Gly Gly
            180                 185                 190
Lys Asp Ser Cys Gln Arg Asp Ser Gly Gly Pro Val Val Cys Asn Gly
        195                 200                 205
Gln Leu Gln Gly Val Val Ser Trp Gly His Gly Cys Ala Trp Lys Asn
    210                 215                 220
Arg Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Asp Trp Ile Lys
225                 230                 235                 240
Asp Thr Ile Ala Ala Asn Ser
                245
```

<210> 185
<211> 1055
<212> DNA
<213> Homo sapiens

<400> 185
acctgcattt ccaccacctg ttctgggagt ggggcccagt cagcccccct tgcttacctt 60
ctgccctata ttagagcccc aggttctgtg ccctttccct atcatcgcaa aactcatgat 120
gctccggctg ctcagttccc tcctccttgt ggccgttgcc tcaggctatg gcccaccttc 180
ctctcgccct tccagccgcg ttgtcaatgg tgaggatgcg gtcccctaca gctggccctg 240
gcaggtttcc ctgcagtatg agaaaagcgg aagcttctac cacacctgtg gcggtagcct 300
catcgccccc gactgggttg tgactgccgg ccactgcatc tcgagctccc ggacctacca 360
ggtggtgttg ggcgagtacg accgtgctgt gaaggagggc cccgagcagg tgatccccat 420
caactctggg gacctctttg tgcatccact ctggaaccgc tcgtgtgtgg cctgtggcaa 480
tgacatcgcc ctcatcaagc tctcacgcag cgcccagctg ggagacgccg tccagctcgc 540
ctcactccct ccggctggtg acatccttcc caacgagaca ccctgctaca tcaccggctg 600
gggccgtctc tataccaacg ggccactccc agacaagctg caggaggccc tgctgccggt 660
ggtggactat gaacactgct ccaggtggaa ctggtggggt tcctccgtga agaagaccat 720
ggtgtgtgct ggaggggaca tccgctccgg ctgcaatggt gactctggag gacccctcaa 780
ctgccccaca gaggatggtg gctggcaggt ccatggcgtg accagctttg tttctgcctt 840
tggctgcaac acccgcagga agcccacggt gttcactcga gtctccgcct tcattgactg 900
gattgaggag accatagcaa gccactagaa ccaaggccca gctggcagtg ctgatcgatc 960
ccacatcctg aataaagaat aaagatctct cagaaaattc caaaaaaaaa aaaaaaaaaa 1020
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa   1055

<210> 186
<211> 270
<212> PRT
<213> Homo sapiens

<400> 186
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Met Met Leu Arg Leu Leu Ser Ser Leu Leu Leu Val Ala Val Ala Ser
 1               5                  10                  15
Gly Tyr Gly Pro Pro Ser Ser Arg Pro Ser Ser Arg Val Val Asn Gly
            20                  25                  30
Glu Asp Ala Val Pro Tyr Ser Trp Pro Trp Gln Val Ser Leu Gln Tyr
        35                  40                  45
Glu Lys Ser Gly Ser Phe Tyr His Thr Cys Gly Gly Ser Leu Ile Ala
```

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

<210> 187
<211> 941
<212> DNA
<213> Homo sapiens

<400> 187

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cttacagaac tcccacggac acaccatgat taggaccctg ctgctgtcca ctttggtggc 60
tggagccctc agttgtgggg tctccactta cgcgcctgat atgtctagga tgcttggagg 120
tgaagaagcg aggcccaaca gctggccctg gcaggtctcc ctgcagtaca gctccaatgg 180
ccagtggtac cacacctgcg gagggtccct gatagccaac agctgggtcc tgacggctgc 240
ccactgcatc agctcctccg ggatctaccg cgtgatgctg ggccagcata acctctacgt 300
tgcagagtcc ggctcgctgg ccgtcagtgt ctctaagatt gtggtgcaca aggactggaa 360
ctccgaccag gtctccaaag ggaacgacat tgccctgctc aaactggcta accccgtctc 420
cctcaccgac aagatccagc tggcctgcct ccctcctgcc ggcaccattc tacccaacaa 480
ctaccctgc tacgtcacgg gctggggaag gctgcagacc aacggggctc tccctgatga 540
cctgaagcag ggccggttgc tggttgtgga ctatgccacc tgctccagct ctggctggtg 600
gggcagcacc gtgaagacga atatgatctg tgctgggggt gatggcgtga tatgcacctg 660
caacggagac tccggtgggc cgctgaactg tcaggcatct gacggccggt gggaggtgca 720
tggcatcggc agcctcacgt cggtccttgg ttgcaactac tactacaagc cctccatctt 780
cacgcgggtc tccaactaca acgactggat caattcggtg attgcaaata actaaccaaa 840
agaagtccct gggactgttt cagacttgga aaggtcacag aaggaaaata atattatata 900
aagtgacaac tatgcaaatc acaaaaaaaa aaaaaaaaaa a                      941
```

<210> 188
<211> 269
<212> PRT
<213> Homo sapiens

<400> 188

```
Met Ile Arg Thr Leu Leu Leu Ser Thr Leu Val Ala Gly Ala Leu Ser
 1               5                  10                  15
Cys Gly Val Ser Thr Tyr Ala Pro Asp Met Ser Arg Met Leu Gly Gly
            20                  25                  30
Glu Glu Ala Arg Pro Asn Ser Trp Pro Trp Gln Val Ser Leu Gln Tyr
        35                  40                  45
Ser Ser Asn Gly Gln Trp Tyr His Thr Cys Gly Gly Ser Leu Ile Ala
    50                  55                  60
Asn Ser Trp Val Leu Thr Ala Ala His Cys Ile Ser Ser Ser Gly Ile
65                  70                  75                  80
Tyr Arg Val Met Leu Gly Gln His Asn Leu Tyr Val Ala Glu Ser Gly
                85                  90                  95
Ser Leu Ala Val Ser Val Ser Lys Ile Val Val His Lys Asp Trp Asn
            100                 105                 110
Ser Asp Gln Val Ser Lys Gly Asn Asp Ile Ala Leu Leu Lys Leu Ala
        115                 120                 125
Asn Pro Val Ser Leu Thr Asp Lys Ile Gln Leu Ala Cys Leu Pro Pro
    130                 135                 140
Ala Gly Thr Ile Leu Pro Asn Asn Tyr Pro Cys Tyr Val Thr Gly Trp
145                 150                 155                 160
Gly Arg Leu Gln Thr Asn Gly Ala Leu Pro Asp Asp Leu Lys Gln Gly
                165                 170                 175
Arg Leu Leu Val Val Asp Tyr Ala Thr Cys Ser Ser Ser Gly Trp Trp
            180                 185                 190
Gly Ser Thr Val Lys Thr Asn Met Ile Cys Ala Gly Gly Asp Gly Val
        195                 200                 205
Ile Cys Thr Cys Asn Gly Asp Ser Gly Gly Pro Leu Asn Cys Gln Ala
    210                 215                 220
Ser Asp Gly Arg Trp Glu Val His Gly Ile Gly Ser Leu Thr Ser Val
225                 230                 235                 240
Leu Gly Cys Asn Tyr Tyr Tyr Lys Pro Ser Ile Phe Thr Arg Val Ser
                245                 250                 255
Asn Tyr Asn Asp Trp Ile Asn Ser Val Ile Ala Asn Asn
            260                 265
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<210> 189
<211> 2048
<212> DNA
<213> Homo sapiens

<400> 189
ctattgatct ggactcctgg ataggcagct ggaccaacgg acggacgcca tgagggctct 60
gctgctcctg gggttcctgc tggtgagctt ggagtcaaca ctttcgattc caccttggga 120
agcccccaag gagcataagt acaaagctga agagcacaca gtcgttctca ctgtcaccgg 180
ggagccctgc cacttccccc tccagtacca ccggcagctg taccacaaat gtacccacaa 240
gggccggcca ggccctcagc cctggtgtgc taccaccccc aactttgatc aggaccagcg 300
atggggatac tgtttggagc ccaagaaagt gaaagaccac tgcagcaaac acagcccctg 360
ccagaaagga gggacctgtg tgaacatgcc aagcggcccc cactgtctct gtccacaaca 420
cctcactgga aaccactgcc agaaagagaa gtgctttgag cctcagcttc tccggttttt 480
ccacaagaat gagatatggt atagaactga gcaagcagct gtggccagat gccagtgcaa 540
gggtcctgat gcccactgcc agcggctggc cagccaggcc tgccgcacca acccgtgcct 600
ccatgggggt cgctgcctag aggtggaggg ccaccgcctg tgccactgcc cggtgggcta 660
caccggaccc ttctgcgacg tggacaccaa ggcaagctgc tatgatggcc gcgggctcag 720
ctaccgcggc ctggccagga ccacgctctc gggtgcgccc tgtcagccgt gggcctcgga 780
ggccacctac cggaacgtga ctgccgagca agcgcggaac tggggactgg gcggccacgc 840
cttctgccgg aacccggaca acgacatccg cccgtggtgc ttcgtgctga accgcgaccg 900
gctgagctgg gagtactgcg acctggcaca gtgccagacc ccaacccagg cggcgcctcc 960

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gaccccggtg tcccctaggc ttcatgtccc actcatgccc gcgcagccgg caccgccgaa 1020
gcctcagccc acgaccccga ccccgcctca gtcccagacc ccgggagcct tgccggcgaa 1080
gcgggagcag ccgccttccc tgaccaggaa cggcccactg agctgcgggc agcggctccg 1140
caagagtctg tcttcgatga cccgcgtcgt tggcgggctg gtggcgctac gcgggggcgca 1200
ccctacatc gccgcgctgt actggggcca cagtttctgc gccggcagcc tcatcgcccc 1260
ctgctgggtg ctgacggccg ctcactgcct gcaggaccgg cccgcacccg aggatctgac 1320
ggtggtgctc ggccaggaac gccgtaacca cagctgtgag ccgtgccaga cgttggccgt 1380
gcgctcctac cgcttgcacg aggccttctc gcccgtcagc taccagcacg acctggctct 1440
gttgcgcctt caggaggatg cggacggcag ctgcgcgctc ctgtcgcctt acgttcagcc 1500
ggtgtgcctg ccaagcggcg ccgcgcgacc ctccgagacc acgctctgcc aggtggccgg 1560
ctggggccac cagttcgagg gggcggagga atatgccagc ttcctgcagg aggcgcaggt 1620
accgttcctc tccctggagc gctgctcagc cccggacgtg cacggatcct ccatcctccc 1680
cggcatgctc tgcgcagggt tcctcgaggg cggcaccgat gcgtgccagg gtgattccgg 1740
aggcccgctg gtgtgtgagg accaagctgc agagcgccgg ctcaccctgc aaggcatcat 1800
cagctgggga tcgggctgtg gtgaccgcaa caagccaggc gtctacaccg atgtggccta 1860
ctacctggcc tggatccggg agcacaccgt ttcctgattg ctcagggact catctttccc 1920
tccttggtga ttccgcagtg agagagtggc tggggcatgg aaggcaagat tgtgtcccat 1980
tcccccagtg cggccagctc cgcgccagga tggcgaggaa ctcaataaag tgctttgaaa 2040
atgctgag                                                          2048

<210> 190
<211> 615
<212> PRT
<213> Homo sapiens

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

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Asn Trp Gly Leu Gly Gly His Ala Phe Cys Arg Asn Pro Asp Asn Asp
            260                 265                 270
Ile Arg Pro Trp Cys Phe Val Leu Asn Arg Asp Arg Leu Ser Trp Glu
        275                 280                 285
Tyr Cys Asp Leu Ala Gln Cys Gln Thr Pro Thr Gln Ala Ala Pro Pro
    290                 295                 300
Thr Pro Val Ser Pro Arg Leu His Val Pro Leu Met Pro Ala Gln Pro
305                 310                 315                 320
Ala Pro Pro Lys Pro Gln Pro Thr Thr Arg Thr Pro Pro Gln Ser Gln
                325                 330                 335
Thr Pro Gly Ala Leu Pro Ala Lys Arg Glu Gln Pro Pro Ser Leu Thr
            340                 345                 350
Arg Asn Gly Pro Leu Ser Cys Gly Gln Arg Leu Arg Lys Ser Leu Ser
        355                 360                 365
Ser Met Thr Arg Val Val Gly Gly Leu Val Ala Leu Arg Gly Ala His
    370                 375                 380
Pro Tyr Ile Ala Ala Leu Tyr Trp Gly His Ser Phe Cys Ala Gly Ser
385                 390                 395                 400
Leu Ile Ala Pro Cys Trp Val Leu Thr Ala Ala His Cys Leu Gln Asp
                405                 410                 415
Arg Pro Ala Pro Glu Asp Leu Thr Val Val Leu Gly Gln Glu Arg Arg
            420                 425                 430
Asn His Ser Cys Glu Pro Cys Gln Thr Leu Ala Val Arg Ser Tyr Arg
        435                 440                 445
Leu His Glu Ala Phe Ser Pro Val Ser Tyr Gln His Asp Leu Ala Leu
    450                 455                 460
Leu Arg Leu Gln Glu Asp Ala Asp Gly Ser Cys Ala Leu Leu Ser Pro
465                 470                 475                 480
Tyr Val Gln Pro Val Cys Leu Pro Ser Gly Ala Ala Arg Pro Ser Glu
                485                 490                 495
Thr Thr Leu Cys Gln Val Ala Gly Trp Gly His Gln Phe Glu Gly Ala
            500                 505                 510
Glu Glu Tyr Ala Ser Phe Leu Gln Glu Ala Gln Val Pro Phe Leu Ser
        515                 520                 525
Leu Glu Arg Cys Ser Ala Pro Asp Val His Gly Ser Ser Ile Leu Pro
    530                 535                 540
Gly Met Leu Cys Ala Gly Phe Leu Glu Gly Gly Thr Asp Ala Cys Gln
545                 550                 555                 560
Gly Asp Ser Gly Gly Pro Leu Val Cys Glu Asp Gln Ala Ala Glu Arg
                565                 570                 575
Arg Leu Thr Leu Gln Gly Ile Ile Ser Trp Gly Ser Gly Cys Gly Asp
            580                 585                 590
Arg Asn Lys Pro Gly Val Tyr Thr Asp Val Ala Tyr Tyr Leu Ala Trp
        595                 600                 605
Ile Arg Glu His Thr Val Ser
    610                 615
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<210> 191
<211> 2245
<212> DNA
<213> Homo sapiens

<400> 191
agaacagctt gaagaccgtt catttttaag tgacaagaga ctcacctcca agaagcaatt 60
gtgttttcag aatgatttta ttcaagcaag caacttattt catttccttg tttgctacag 120
tttcctgtgg atgtctgact caactctatg aaaacgcctt cttcagaggt ggggatgtag 180
cttccatgta caccccaaat gcccaatact gccagatgag gtgcacattc cacccaaggt 240

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gtttgctatt cagttttctt ccagcaagtt caatcaatga catggagaaa aggtttggtt 300
gcttcttgaa agatagtgtt acaggaaccc tgccaaaagt acatcgaaca ggtgcagttt 360
ctggacattc cttgaagcaa tgtggtcatc aaataagtgc ttgccatcga gacatttata 420
aaggagttga tatgagagga gtcaatttta atgtgtctaa ggttagcagt gttgaagaat 480
gccaaaaaag gtgcaccaat aacattcgct gccagttttt ttcatatgcc acgcaaacat 540
ttcacaaggc agagtaccgg aacaattgcc tattaaagta cagtcccgga ggaacaccta 600
ccgctataaa ggtgctgagt aacgtggaat ctggattctc actgaagccc tgtgcccttt 660
cagaaattgg ttgccacatg aacatcttcc agcatcttgc gttctcagat gtggatgttg 720
ccagggttct cactccagat gcttttgtgt gtcggaccat ctgcacctat caccccaact 780
gcctcttctt tacattctat acaaatgtat ggaaaatcga gtcacaaaga aatgtttgtc 840
ttcttaaaac atctgaaagt ggcacaccaa gttcctctac tcctcaagaa aacaccatat 900
ctggatatag ccttttaacc tgcaaaagaa ctttacctga accctgccat tctaaaattt 960
acccgggagt tgactttgga ggagaagaat tgaatgtgac ttttgttaaa ggagtgaatg 1020
tttgccaaga gacttgcaca aagatgattc gctgtcagtt tttcacttat tctttactcc 1080
cagaagactg taaggaagag aagtgtaagt gtttcttaag attatctatg gatggttctc 1140
caactaggat tgcgtatggg acacaaggga gctctggtta ctctttgaga ttgtgtaaca 1200
ctggggacaa ctctgtctgc acaacaaaaa caagcacacg cattgttgga ggaacaaact 1260
cttcttgggg agagtggccc tggcaggtga gcctgcaggt gaagctgaca gctcagaggc 1320
acctgtgtgg agggtcactc ataggacacc agtgggtcct cactgctgcc cactgctttg 1380
atgggcttcc cctgcaggat gtttggcgca tctatagtgg cattttaaat ctgtcagaca 1440
ttacaaaaga tacaccttte tcacaaataa aagagattat tattcaccaa aactataaag 1500
tctcagaagg gaatcatgat atcgccttga taaaactcca ggctcctttg aattacactg 1560
aattccaaaa accaatatgc ctaccttcca aaggtgacac aagcacaatt tataccaact 1620
gttgggtaac cggatggggc ttctcgaagg agaaaggtga aatccaaaat attctacaaa 1680
aggtaaatat tcctttggta acaaatgaag aatgccagaa aagatatcaa gattataaaa 1740
taacccaacg gatggtctgt gctggctata aagaaggggg aaaagatgct tgtaagggag 1800
attcaggtgg tcccttagtt tgcaaacaca acggaatgtg gcgtttggtg ggcatcacaa 1860
gctggggtga aggctgtgcc cgcagggagc aacctggtgt ctacaccaaa gtcgctgagt 1920
acatggactg gattttagag aaaacacaga gcagtgatgg aaaagctcag atgcagtcac 1980
cagcatgaga agcagtccag agtctaggca atttttacaa cctgagttca agtcaaattc 2040
tgagcctggg gggtcctcat ctgcaaagca tggagagtgg catcttcttt gcatcctaag 2100
gacgaaagac acagtgcact cagagctgct gaggacaatg tctgctgaag cccgctttca 2160
gcacgccgta accaggggct gacaatgcga ggtcgcaact gagatctcca tgactgtgtg 2220
ttgtgaaata aaatggtgaa agatc                                      2245
```

<210> 192
<211> 638
<212> PRT
<213> Homo sapiens

<400> 192

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

```
    130                 135                 140
Ile Arg Cys Gln Phe Phe Ser Tyr Ala Thr Gln Thr Phe His Lys Ala
145                 150                 155                 160
Glu Tyr Arg Asn Asn Cys Leu Leu Lys Tyr Ser Pro Gly Gly Thr Pro
                165                 170                 175
Thr Ala Ile Lys Val Leu Ser Asn Val Glu Ser Gly Phe Ser Leu Lys
            180                 185                 190
Pro Cys Ala Leu Ser Glu Ile Gly Cys His Met Asn Ile Phe Gln His
        195                 200                 205
Leu Ala Phe Ser Asp Val Asp Val Ala Arg Val Leu Thr Pro Asp Ala
    210                 215                 220
Phe Val Cys Arg Thr Ile Cys Thr Tyr His Pro Asn Cys Leu Phe Phe
225                 230                 235                 240
Thr Phe Tyr Thr Asn Val Trp Lys Ile Glu Ser Gln Arg Asn Val Cys
                245                 250                 255
Leu Leu Lys Thr Ser Glu Ser Gly Thr Pro Ser Ser Ser Thr Pro Gln
            260                 265                 270
Glu Asn Thr Ile Ser Gly Tyr Ser Leu Leu Thr Cys Lys Arg Thr Leu
        275                 280                 285
Pro Glu Pro Cys His Ser Lys Ile Tyr Pro Gly Val Asp Phe Gly Gly
    290                 295                 300
Glu Glu Leu Asn Val Thr Phe Val Lys Gly Val Asn Val Cys Gln Glu
305                 310                 315                 320
Thr Cys Thr Lys Met Ile Arg Cys Gln Phe Phe Thr Tyr Ser Leu Leu
                325                 330                 335
Pro Glu Asp Cys Lys Glu Glu Lys Cys Lys Cys Phe Leu Arg Leu Ser
            340                 345                 350
Met Asp Gly Ser Pro Thr Arg Ile Ala Tyr Gly Thr Gln Gly Ser Ser
        355                 360                 365
Gly Tyr Ser Leu Arg Leu Cys Asn Thr Gly Asp Asn Ser Val Cys Thr
    370                 375                 380
Thr Lys Thr Ser Thr Arg Ile Val Gly Gly Thr Asn Ser Ser Trp Gly
385                 390                 395                 400
Glu Trp Pro Trp Gln Val Ser Leu Gln Val Lys Leu Thr Ala Gln Arg
                405                 410                 415
His Leu Cys Gly Gly Ser Leu Ile Gly His Gln Trp Val Leu Thr Ala
            420                 425                 430
Ala His Cys Phe Asp Gly Leu Pro Leu Gln Asp Val Trp Arg Ile Tyr
        435                 440                 445
Ser Gly Ile Leu Asn Leu Ser Asp Ile Thr Lys Asp Thr Pro Phe Ser
    450                 455                 460
Gln Ile Lys Glu Ile Ile Ile His Gln Asn Tyr Lys Val Ser Glu Gly
465                 470                 475                 480
Asn His Asp Ile Ala Leu Ile Lys Leu Gln Ala Pro Leu Asn Tyr Thr
                485                 490                 495
Glu Phe Gln Lys Pro Ile Cys Leu Pro Ser Lys Gly Asp Thr Ser Thr
            500                 505                 510
Ile Tyr Thr Asn Cys Trp Val Thr Gly Trp Gly Phe Ser Lys Glu Lys
        515                 520                 525
Gly Glu Ile Gln Asn Ile Leu Gln Lys Val Asn Ile Pro Leu Val Thr
    530                 535                 540
Asn Glu Glu Cys Gln Lys Arg Tyr Gln Asp Tyr Lys Ile Thr Gln Arg
545                 550                 555                 560
Met Val Cys Ala Gly Tyr Lys Glu Gly Gly Lys Asp Ala Cys Lys Gly
                565                 570                 575
Asp Ser Gly Gly Pro Leu Val Cys Lys His Asn Gly Met Trp Arg Leu
            580                 585                 590
Val Gly Ile Thr Ser Trp Gly Glu Gly Cys Ala Arg Arg Glu Gln Pro
```

595 600 605
Gly Val Tyr Thr Lys Val Ala Glu Tyr Met Asp Trp Ile Leu Glu Lys
610 615 620
Thr Gln Ser Ser Asp Gly Lys Ala Gln Met Gln Ser Pro Ala
625 630 635

<210> 193
<211> 2217
<212> DNA
<213> Homo sapiens

<400> 193
tgctgtactg agagagaatg ttacataaca ttgagaacta gtacaagtaa atattaaagt 60
gaagtgacca tttcctacac aagctcattc agaggaggat gaagaccatt ttggaggaag 120
aaaagcaccc ttattaagaa ttgcagcaag taagccaaca aggtcttttc aggatgattt 180
tcttatatca agtggtacat ttcatttttat ttacttcagt ttctggtgaa tgtgtgactc 240
agttgttgaa ggacacctgc tttgaaggag gggacattac tacggtcttc acaccaagcg 300
ccaagtactg ccaggtagtc tgcacttacc acccaagatg tttactcttc actttcacgg 360
cggaatcacc atctgaggat cccaccccgat ggtttacttg tgtcctgaaa gacagtgtta 420
cagaaacact gccaagagtg aataggacag cagcgatttc tgggtattct ttcaagcaat 480
gctcacacca aataagcgct tgcaacaaag acatttatgt ggacctagac atgaagggca 540
taaactataa cagctcagtt gccaagagtg ctcaagaatg ccaagaaaga tgcacggatg 600
acgtccactg ccacttttttc acgtacgcca caaggcagtt tcccagcctg gagcatcgta 660
acatttgtct actgaagcac acccaaacag ggacaccaac cagaataacg aagctcgata 720
aagtggtgtc tggattttca ctgaaatcct gtgcactttc taatctggct tgtattaggg 780
acatttttccc taatacggtg tttgcagaca gcaacatcga cagtgtcatg gctcccgatg 840
cttttgtctg tggccgaatc tgcactcatc atcccggttg cttgtttttt accttctttt 900
cccaggaatg gcccaaagaa tctcaaagaa atctttgtct ccttaaaaca tctgagagtg 960
gattgcccag tacacgcatt aaaaagagca aagctctttc tggtttcagt ctacaaagct 1020
gcaggcacag catcccagtg ttctgccatt cttcatttta ccatgacact gatttcttgg 1080
gagaagaact ggatattgtt gctgcaaaaa gtcacgaggc ctgccagaaa ctgtgcacca 1140
atgccgtccg ctgccagttt tttacctata ccccagccca agcatcctgc aacgaaggga 1200
agggcaagtg ttacttaaag ctttcttcaa acggatctcc aactaaaata cttcacggga 1260
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tgaccctgca cacaacctca cccactcaga gacacctgtg tggaggctcc atcattggaa 1440
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gtgtctacag tggcatttta aatcaatctg aaataaaaga ggacacatct ttctttgggg 1560
ttcaagaaat aataatccat gatcagtata aaatggcaga aagcgggtat gatattgcct 1620
tgttgaaact ggaaaccaca gtgaattaca cagattctca acgacccata tgcctgcctt 1680
ccaaaggaga tagaaatgta atatacactg attgctgggt gactggatgg gggtacagaa 1740
aactaagaga caaaatacaa aatactctcc agaaagccaa gataccctta gtgaccaacg 1800
aagagtgcca gaagagatac agaggacata aaataaccca taagatgatc tgtgccggct 1860
acagggaagg agggaaggac gcttgcaagg gagattcggg aggccctctg tcctgcaaac 1920
acaatgaggt ctggcatctg gtaggcatca cgagctgggg cgaaggctgt gctcaaaggg 1980
agcggccagg tgtttacacc aacgtggtcg agtacgtgga ctggattctg gagaaaactc 2040
aagcagtgtg aatgggttcc caggggccat tggagtccct gaaggaccca ggatttgctg 2100
ggagagggtg ttgagttcac tgtgccagca tgcttcctcc acagtaacac gctgaagggg 2160
cttggtgttt gtaagaaaat gctagaagaa aacaaactgt cacaagttgt tatgtcc 2217

<210> 194
<211> 625
<212> PRT
<213> Homo sapiens

<400> 194
Met Ile Phe Leu Tyr Gln Val Val His Phe Ile Leu Phe Thr Ser Val

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

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465                 470                 475                 480
Ile Ala Leu Leu Lys Leu Glu Thr Thr Val Asn Tyr Thr Asp Ser Gln
                485                 490                 495
Arg Pro Ile Cys Leu Pro Ser Lys Gly Asp Arg Asn Val Ile Tyr Thr
            500                 505                 510
Asp Cys Trp Val Thr Gly Trp Gly Tyr Arg Lys Leu Arg Asp Lys Ile
        515                 520                 525
Gln Asn Thr Leu Gln Lys Ala Lys Ile Pro Leu Val Thr Asn Glu Glu
    530                 535                 540
Cys Gln Lys Arg Tyr Arg Gly His Lys Ile Thr His Lys Met Ile Cys
545                 550                 555                 560
Ala Gly Tyr Arg Glu Gly Gly Lys Asp Ala Cys Lys Gly Asp Ser Gly
                565                 570                 575
Gly Pro Leu Ser Cys Lys His Asn Glu Val Trp His Leu Val Gly Ile
            580                 585                 590
Thr Ser Trp Gly Glu Gly Cys Ala Gln Arg Glu Arg Pro Gly Val Tyr
        595                 600                 605
Thr Asn Val Val Glu Tyr Val Asp Trp Ile Leu Glu Lys Thr Gln Ala
    610                 615                 620
Val
625
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<210> 195
<211> 2055
<212> DNA
<213> Homo sapiens

<400> 195

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<210> 196
<211> 571
<212> PRT
<213> Homo sapiens

<400> 196

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			20					25					30		
Gly	Asp	Ile	Thr	Thr	Val	Phe	Thr	Pro	Ser	Ala	Lys	Tyr	Cys	Gln	Val
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Val	Cys	Thr	Tyr	His	Pro	Arg	Cys	Leu	Leu	Phe	Thr	Phe	Thr	Ala	Glu
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Ser	Pro	Ser	Glu	Asp	Pro	Thr	Arg	Trp	Phe	Thr	Cys	Val	Leu	Lys	Asp
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Ser	Val	Thr	Glu	Thr	Leu	Pro	Arg	Val	Asn	Arg	Thr	Ala	Ala	Ile	Ser
				85					90					95	
Gly	Tyr	Ser	Phe	Lys	Gln	Cys	Ser	His	Gln	Ile	Ser	Asn	Ile	Cys	Leu
			100					105					110		
Leu	Lys	His	Thr	Gln	Thr	Gly	Thr	Pro	Thr	Arg	Ile	Thr	Lys	Leu	Asp
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Lys	Val	Val	Ser	Gly	Phe	Ser	Leu	Lys	Ser	Cys	Ala	Leu	Ser	Asn	Leu
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Ala	Cys	Ile	Arg	Asp	Ile	Phe	Pro	Asn	Thr	Val	Phe	Ala	Asp	Ser	Asn
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Ile	Asp	Ser	Val	Met	Ala	Pro	Asp	Ala	Phe	Val	Cys	Gly	Arg	Ile	Cys
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Thr	His	His	Pro	Gly	Cys	Leu	Phe	Phe	Thr	Phe	Phe	Ser	Gln	Glu	Trp
			180					185					190		
Pro	Lys	Glu	Ser	Gln	Arg	Asn	Leu	Cys	Leu	Leu	Lys	Thr	Ser	Glu	Ser
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225					230					235					240
Phe	Tyr	His	Asp	Thr	Asp	Phe	Leu	Gly	Glu	Glu	Leu	Asp	Ile	Val	Ala
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Ala	Lys	Ser	His	Glu	Ala	Cys	Gln	Lys	Leu	Cys	Thr	Asn	Ala	Val	Arg
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Cys	Gln	Phe	Phe	Thr	Tyr	Thr	Pro	Ala	Gln	Ala	Ser	Cys	Asn	Glu	Gly
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Lys	Gly	Lys	Cys	Tyr	Leu	Lys	Leu	Ser	Ser	Asn	Gly	Ser	Pro	Thr	Lys
	290					295					300				
Ile	Leu	His	Gly	Arg	Gly	Gly	Ile	Ser	Gly	Tyr	Thr	Leu	Arg	Leu	Cys
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Lys	Met	Asp	Asn	Glu	Cys	Thr	Thr	Lys	Ile	Lys	Pro	Arg	Ile	Val	Gly
				325					330					335	
Gly	Thr	Ala	Ser	Val	Arg	Gly	Glu	Trp	Pro	Trp	Gln	Val	Thr	Leu	His
			340					345					350		
Thr	Thr	Ser	Pro	Thr	Gln	Arg	His	Leu	Cys	Gly	Gly	Ser	Ile	Ile	Gly

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         355                 360                 365
Asn Gln Trp Ile Leu Thr Ala Ala His Cys Phe Tyr Gly Val Glu Ser
    370                 375                 380
Pro Lys Ile Leu Arg Val Tyr Ser Gly Ile Leu Asn Gln Ser Glu Ile
385                 390                 395                 400
Lys Glu Asp Thr Ser Phe Phe Gly Val Gln Glu Ile Ile Ile His Asp
                405                 410                 415
Gln Tyr Lys Met Ala Glu Ser Gly Tyr Asp Ile Ala Leu Leu Lys Leu
            420                 425                 430
Glu Thr Thr Val Asn Tyr Thr Asp Ser Gln Arg Pro Ile Cys Leu Pro
        435                 440                 445
Ser Lys Gly Asp Arg Asn Val Ile Tyr Thr Asp Cys Trp Val Thr Gly
    450                 455                 460
Trp Gly Tyr Arg Lys Leu Arg Asp Lys Ile Gln Asn Thr Leu Gln Lys
465                 470                 475                 480
Ala Lys Ile Pro Leu Val Thr Asn Glu Glu Cys Gln Lys Arg Tyr Arg
                485                 490                 495
Gly His Lys Ile Thr His Lys Met Ile Cys Ala Gly Tyr Arg Glu Gly
            500                 505                 510
Gly Lys Asp Ala Cys Lys Gly Asp Ser Gly Gly Pro Leu Ser Cys Lys
        515                 520                 525
His Asn Glu Val Trp His Leu Val Gly Ile Thr Ser Trp Gly Glu Gly
    530                 535                 540
Cys Ala Gln Arg Glu Arg Pro Gly Val Tyr Thr Asn Val Val Glu Tyr
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Val Asp Trp Ile Leu Glu Lys Thr Gln Ala Val
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<210> 197
<211> 2804
<212> DNA
<213> Homo sapiens

<400> 197

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aattggaaga gtttgttcaa gggaaccttg agagagaatg tatggaagaa aagtgtagtt 240
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acaaggtggt ttgctcctgt actgagggat atcgacttgc agaaaaccag aagtcctgtg 540
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gtgctgagac tgtttttcct gatgtggact atgtaaattc tactgaagct gaaaccattt 660
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<210> 198
<211> 461
<212> PRT
<213> Homo sapiens

<400> 198

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

```
    210                 215                 220
Thr Arg Val Val Gly Gly Glu Asp Ala Lys Pro Gly Gln Phe Pro Trp
225                 230                 235                 240
Gln Val Val Leu Asn Gly Lys Val Asp Ala Phe Cys Gly Gly Ser Ile
                245                 250                 255
Val Asn Glu Lys Trp Ile Val Thr Ala Ala His Cys Val Glu Thr Gly
            260                 265                 270
Val Lys Ile Thr Val Val Ala Gly Glu His Asn Ile Glu Glu Thr Glu
        275                 280                 285
His Thr Glu Gln Lys Arg Asn Val Ile Arg Ile Ile Pro His His Asn
    290                 295                 300
Tyr Asn Ala Ala Ile Asn Lys Tyr Asn His Asp Ile Ala Leu Leu Glu
305                 310                 315                 320
Leu Asp Glu Pro Leu Val Leu Asn Ser Tyr Val Thr Pro Ile Cys Ile
                325                 330                 335
Ala Asp Lys Glu Tyr Thr Asn Ile Phe Leu Lys Phe Gly Ser Gly Tyr
            340                 345                 350
Val Ser Gly Trp Gly Arg Val Phe His Lys Gly Arg Ser Ala Leu Val
        355                 360                 365
Leu Gln Tyr Leu Arg Val Pro Leu Val Asp Arg Ala Thr Cys Leu Arg
    370                 375                 380
Ser Thr Lys Phe Thr Ile Tyr Asn Asn Met Phe Cys Ala Gly Phe His
385                 390                 395                 400
Glu Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro His Val
                405                 410                 415
Thr Glu Val Glu Gly Thr Ser Phe Leu Thr Gly Ile Ile Ser Trp Gly
            420                 425                 430
Glu Glu Cys Ala Met Lys Gly Lys Tyr Gly Ile Tyr Thr Lys Val Ser
        435                 440                 445
Arg Tyr Val Asn Trp Ile Lys Glu Lys Thr Lys Leu Thr
    450                 455                 460
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<210> 199
<211> 2478
<212> DNA
<213> Homo sapiens

<400> 199

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<210> 200
<211> 466
<212> PRT
<213> Homo sapiens

<400> 200

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

```
Pro Trp Gln Val Leu Leu Leu Val Asn Gly Ala Gln Leu Cys Gly Gly
225                 230                 235                 240
Thr Leu Ile Asn Thr Ile Trp Val Val Ser Ala Ala His Cys Phe Asp
                245                 250                 255
Lys Ile Lys Asn Trp Arg Asn Leu Ile Ala Val Leu Gly Glu His Asp
            260                 265                 270
Leu Ser Glu His Asp Gly Asp Glu Gln Ser Arg Arg Val Ala Gln Val
        275                 280                 285
Ile Ile Pro Ser Thr Tyr Val Pro Gly Thr Thr Asn His Asp Ile Ala
    290                 295                 300
Leu Leu Arg Leu His Gln Pro Val Val Leu Thr Asp His Val Val Pro
305                 310                 315                 320
Leu Cys Leu Pro Glu Arg Thr Phe Ser Glu Arg Thr Leu Ala Phe Val
                325                 330                 335
Arg Phe Ser Leu Val Ser Gly Trp Gly Gln Leu Leu Asp Arg Gly Ala
            340                 345                 350
Thr Ala Leu Glu Leu Met Val Leu Asn Val Pro Arg Leu Met Thr Gln
        355                 360                 365
Asp Cys Leu Gln Gln Ser Arg Lys Val Gly Asp Ser Pro Asn Ile Thr
    370                 375                 380
Glu Tyr Met Phe Cys Ala Gly Tyr Ser Asp Gly Ser Lys Asp Ser Cys
385                 390                 395                 400
Lys Gly Asp Ser Gly Gly Pro His Ala Thr His Tyr Arg Gly Thr Trp
                405                 410                 415
Tyr Leu Thr Gly Ile Val Ser Trp Gly Gln Gly Cys Ala Thr Val Gly
            420                 425                 430
His Phe Gly Val Tyr Thr Arg Val Ser Gln Tyr Ile Glu Trp Leu Gln
        435                 440                 445
Lys Leu Met Arg Ser Glu Pro Arg Pro Gly Val Leu Leu Arg Ala Pro
    450                 455                 460
Phe Pro
465
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<210> 201
<211> 2412
<212> DNA
<213> Homo sapiens

<400> 201

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gcggtgctgg gcgagcacga cctcagcgag cacgacgggg atgagcagag ccggcgggtg 840
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<210> 202
<211> 444
<212> PRT
<213> Homo sapiens

<400> 202

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

```
Trp Val Val Ser Ala Ala His Cys Phe Asp Lys Ile Lys Asn Trp Arg
225                 230                 235                 240
Asn Leu Ile Ala Val Leu Gly Glu His Asp Leu Ser Glu His Asp Gly
                245                 250                 255
Asp Glu Gln Ser Arg Arg Val Ala Gln Val Ile Ile Pro Ser Thr Tyr
            260                 265                 270
Val Pro Gly Thr Thr Asn His Asp Ile Ala Leu Leu Arg Leu His Gln
        275                 280                 285
Pro Val Val Leu Thr Asp His Val Val Pro Leu Cys Leu Pro Glu Arg
    290                 295                 300
Thr Phe Ser Glu Arg Thr Leu Ala Phe Val Arg Phe Ser Leu Val Ser
305                 310                 315                 320
Gly Trp Gly Gln Leu Leu Asp Arg Gly Ala Thr Ala Leu Glu Leu Met
                325                 330                 335
Val Leu Asn Val Pro Arg Leu Met Thr Gln Asp Cys Leu Gln Gln Ser
            340                 345                 350
Arg Lys Val Gly Asp Ser Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala
        355                 360                 365
Gly Tyr Ser Asp Gly Ser Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly
    370                 375                 380
Pro His Ala Thr His Tyr Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val
385                 390                 395                 400
Ser Trp Gly Gln Gly Cys Ala Thr Val Gly His Phe Gly Val Tyr Thr
                405                 410                 415
Arg Val Ser Gln Tyr Ile Glu Trp Leu Gln Lys Leu Met Arg Ser Glu
            420                 425                 430
Pro Arg Pro Gly Val Leu Leu Arg Ala Pro Phe Pro
        435                 440
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<210> 203
<211> 1502
<212> DNA
<213> Homo sapiens

<400> 203
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caacatcctg gcgagggtca cgagggccaa ttcctttctt gaagagatga agaaaggaca 180
cctcgaaaga gagtgcatgg aagagacctg ctcatacgaa gaggcccgcg aggtctttga 240
ggacagcgac aagacgaatg aattctggaa taaatacaaa gatggcgacc agtgtgagac 300
cagtccttgc cagaaccagg gcaaatgtaa agacggcctc ggggaataca cctgcacctg 360
tttagaagga ttcgaaggca aaaactgtga attattcaca cggaagctct gcagcctgga 420
caacggggac tgtgaccagt tctgccacga ggaacagaac tctgtggtgt gctcctgcgc 480
ccgcgggtac accctggctg acaacggcaa ggcctgcatt cccacagggc cctacccctg 540
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gtccagcagc ttcatcatca cccagaacat gttctgtgcc ggctacgaca ccaagcagga 1260
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cgtgacaggc atcgtcagct ggggagaggg ctgtgcccgt aaggggaagt acgggatcta 1380
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caaggccaag agccatgccc cggaggtcat aacgtcctct ccattaaagt gagatcccac 1500
tc 1502

<210> 204
<211> 488
<212> PRT
<213> Homo sapiens

<400> 204

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

```
    370                 375                 380
Val Asp Arg Asn Ser Cys Lys Leu Ser Ser Ser Phe Ile Ile Thr Gln
385                 390                 395                 400
Asn Met Phe Cys Ala Gly Tyr Asp Thr Lys Gln Glu Asp Ala Cys Gln
                405                 410                 415
Gly Asp Ser Gly Gly Pro His Val Thr Arg Phe Lys Asp Thr Tyr Phe
            420                 425                 430
Val Thr Gly Ile Val Ser Trp Gly Glu Gly Cys Ala Arg Lys Gly Lys
        435                 440                 445
Tyr Gly Ile Tyr Thr Lys Val Thr Ala Phe Leu Lys Trp Ile Asp Arg
    450                 455                 460
Ser Met Lys Thr Arg Gly Leu Pro Lys Ala Lys Ser His Ala Pro Glu
465                 470                 475                 480
Val Ile Thr Ser Ser Pro Leu Lys
                485
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<210> 205
<211> 1997
<212> DNA
<213> Homo sapiens

<400> 205

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<210> 206
<211> 622
<212> PRT
<213> Homo sapiens

<400> 206

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

```
Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg Thr
            420                 425                 430
Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile Tyr
        435                 440                 445
Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile Ala
    450                 455                 460
Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His Pro
465                 470                 475                 480
Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala Gly
                485                 490                 495
Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp Thr
            500                 505                 510
Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn Leu
        515                 520                 525
Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg Ile
    530                 535                 540
Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys Arg
545                 550                 555                 560
Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys Ser
                565                 570                 575
Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly Glu
            580                 585                 590
Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe Arg
        595                 600                 605
Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
    610                 615                 620
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<210> 207
<211> 1843
<212> DNA
<213> Homo sapiens

<400> 207

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actctgttta tgaaaaagaa taaaaaacac aaccacgaaa aaaaaaaaaa aaaaaaaaaa 1800
aaaaaaaaaa aaaaaaaccc cccccgccc ccccccctg cag 1843

<210> 208
<211> 461
<212> PRT
<213> Homo sapiens

<400> 208
Met Trp Gln Leu Thr Ser Leu Leu Leu Phe Val Ala Thr Trp Gly Ile
1 5 10 15
Ser Gly Thr Pro Ala Pro Leu Asp Ser Val Phe Ser Ser Ser Glu Arg
20 25 30
Ala His Gln Val Leu Arg Ile Arg Lys Arg Ala Asn Ser Phe Leu Glu
35 40 45
Glu Leu Arg His Ser Ser Leu Glu Arg Glu Cys Ile Glu Glu Ile Cys
50 55 60
Asp Phe Glu Glu Ala Lys Glu Ile Phe Gln Asn Val Asp Asp Thr Leu
65 70 75 80
Ala Phe Trp Ser Lys His Val Asp Gly Asp Gln Cys Leu Val Leu Pro
85 90 95
Leu Glu His Pro Cys Ala Ser Leu Cys Cys Gly His Gly Thr Cys Ile
100 105 110
Asp Gly Ile Gly Ser Phe Ser Cys Asp Cys Arg Ser Gly Trp Glu Gly
115 120 125
Arg Phe Cys Gln Arg Glu Val Ser Phe Leu Asn Cys Ser Leu Asp Asn
130 135 140
Gly Gly Cys Thr His Tyr Cys Leu Glu Glu Val Gly Trp Arg Arg Cys
145 150 155 160
Ser Cys Ala Pro Gly Tyr Lys Leu Gly Asp Asp Leu Leu Gln Cys His
165 170 175
Pro Ala Val Lys Phe Pro Cys Gly Arg Pro Trp Lys Arg Met Glu Lys
180 185 190
Lys Arg Ser His Leu Lys Arg Asp Thr Glu Asp Gln Glu Asp Gln Val
195 200 205
Asp Pro Arg Leu Ile Asp Gly Lys Met Thr Arg Arg Gly Asp Ser Pro
210 215 220
Trp Gln Val Val Leu Leu Asp Ser Lys Lys Lys Leu Ala Cys Gly Ala
225 230 235 240
Val Leu Ile His Pro Ser Trp Val Leu Thr Ala Ala His Cys Met Asp
245 250 255
Glu Ser Lys Lys Leu Leu Val Arg Leu Gly Glu Tyr Asp Leu Arg Arg
260 265 270
Trp Glu Lys Trp Glu Leu Asp Leu Asp Ile Lys Glu Val Phe Val His
275 280 285
Pro Asn Tyr Ser Lys Ser Thr Thr Asp Asn Asp Ile Ala Leu Leu His
290 295 300
Leu Ala Gln Pro Ala Thr Leu Ser Gln Thr Ile Val Pro Ile Cys Leu
305 310 315 320
Pro Asp Ser Gly Leu Ala Glu Arg Glu Leu Asn Gln Ala Gly Gln Glu
325 330 335
Thr Leu Val Thr Gly Trp Gly Tyr His Ser Ser Arg Glu Lys Glu Ala
340 345 350

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Lys Arg Asn Arg Thr Phe Val Leu Asn Phe Ile Lys Ile Pro Val Val
        355                 360                 365
Pro His Asn Glu Cys Ser Glu Val Met Ser Asn Met Val Ser Glu Asn
    370                 375                 380
Met Leu Cys Ala Gly Ile Leu Gly Asp Arg Gln Asp Ala Cys Glu Gly
385                 390                 395                 400
Asp Ser Gly Gly Pro Met Val Ala Ser Phe His Gly Thr Trp Phe Leu
                405                 410                 415
Val Gly Leu Val Ser Trp Gly Glu Gly Cys Gly Leu Leu His Asn Tyr
            420                 425                 430
Gly Val Tyr Thr Lys Val Ser Arg Tyr Leu Asp Trp Ile His Gly His
        435                 440                 445
Ile Arg Asp Lys Glu Ala Pro Gln Lys Ser Trp Ala Pro
    450                 455                 460
```

<210> 209
<211> 1388
<212> DNA
<213> Homo sapiens

<400> 209

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caggcagtgc aggagtatgg ttgagatgct accaactgcc attctgctgg tcttggcagt 60
gtccgtggtt gctaaagata acgccacgtg tgatggcccc tgtgggttac ggttcaggca 120
aaacccacag ggtggtgtcc gcatcgtcgg cgggaaggct gcacagcatg gggcctggcc 180
ctggatggtc agcctccaga tcttcacgta caacagccac aggtaccaca catgtggagg 240
cagcttgctg aattcacgat gggtgctcac tgctgctcac tgcttcgtcg gcaaaaataa 300
tgtgcatgac tggagactgg ttttcggagc aaaggaaatt acatatggga acaataaacc 360
agtaaaggcg cctgtgcaag agagatatgt ggagaaaatc atcattcatg aaaaatacaa 420
ctctgcgaca gagggaaatg acattgccct cgtggagatc acccctccca tttcgtgtgg 480
gcgcttcatt gggccgggct gcctgcccca cttgaaggca ggcctcccca gaggctccca 540
gagctgctgg gtggccggct ggggatatat agaagagaaa gcccccaggc catcatctat 600
actgatggag gcacgtgtgg atctcatcga cctggacttg tgtaactcga cccagtggta 660
caatgggcgc gttcagccaa ccaatgtgtg cgcggggtat cctgtaggca agatcgacac 720
ctgccaggga gacagcggcg ggcctctcat gtgcaaagac agcaaggaaa gcgcctatgt 780
ggtcgtggga atcacaagct gggggggtagg ctgtgcccgt gccaagcgcc ccggaatcta 840
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tatgattcaa tcggccaccc ctccaccgcc caccactcga ccgccccgga ttcgaccccc 960
cttctcccac cctatctctg ctcaccttcc ttggtatttc caaccgcccc ctcgaccact 1020
tccaccccga ccaccggcag cccagccccg acccccacct tcaccccccgc ccccaccccc 1080
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cacaaaactt ccccaaggac tttcttttgc caagcgccta cagcagctca tagaggtctt 1200
gaaggggaag acctattccg acggaaagaa ccattatgac atggagacca cagagctccc 1260
agaactgacc tcgacctcct gatctgacct ggttctcaac agacccagtg agcccttcac 1320
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aaaaaaaa                                                        1388
```

<210> 210
<211> 421
<212> PRT
<213> Homo sapiens

<400> 210

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Met Val Glu Met Leu Pro Thr Ala Ile Leu Leu Val Leu Ala Val Ser
 1               5                  10                  15
Val Val Ala Lys Asp Asn Ala Thr Cys Asp Gly Pro Cys Gly Leu Arg
            20                  25                  30
Phe Arg Gln Asn Pro Gln Gly Gly Val Arg Ile Val Gly Gly Lys Ala
```

```
        35                  40                  45
Ala Gln His Gly Ala Trp Pro Trp Met Val Ser Leu Gln Ile Phe Thr
    50                  55                  60
Tyr Asn Ser His Arg Tyr His Thr Cys Gly Gly Ser Leu Leu Asn Ser
65                  70                  75                  80
Arg Trp Val Leu Thr Ala Ala His Cys Phe Val Gly Lys Asn Asn Val
                85                  90                  95
His Asp Trp Arg Leu Val Phe Gly Ala Lys Glu Ile Thr Tyr Gly Asn
            100                 105                 110
Asn Lys Pro Val Lys Ala Pro Val Gln Glu Arg Tyr Val Glu Lys Ile
        115                 120                 125
Ile Ile His Glu Lys Tyr Asn Ser Ala Thr Glu Gly Asn Asp Ile Ala
    130                 135                 140
Leu Val Glu Ile Thr Pro Pro Ile Ser Cys Gly Arg Phe Ile Gly Pro
145                 150                 155                 160
Gly Cys Leu Pro His Leu Lys Ala Gly Leu Pro Arg Gly Ser Gln Ser
                165                 170                 175
Cys Trp Val Ala Gly Trp Gly Tyr Ile Glu Glu Lys Ala Pro Arg Pro
            180                 185                 190
Ser Ser Ile Leu Met Glu Ala Arg Val Asp Leu Ile Asp Leu Asp Leu
        195                 200                 205
Cys Asn Ser Thr Gln Trp Tyr Asn Gly Arg Val Gln Pro Thr Asn Val
    210                 215                 220
Cys Ala Gly Tyr Pro Val Gly Lys Ile Asp Thr Cys Gln Gly Asp Ser
225                 230                 235                 240
Gly Gly Pro Leu Met Cys Lys Asp Ser Lys Glu Ser Ala Tyr Val Val
                245                 250                 255
Val Gly Ile Thr Ser Trp Gly Val Gly Cys Ala Arg Ala Lys Arg Pro
            260                 265                 270
Gly Ile Tyr Thr Ala Thr Trp Pro Tyr Leu Asn Trp Ile Ala Ser Lys
        275                 280                 285
Ile Gly Ser Asn Ala Leu Arg Met Ile Gln Ser Ala Thr Pro Pro Pro
    290                 295                 300
Pro Thr Thr Arg Pro Pro Pro Ile Arg Pro Pro Phe Ser His Pro Ile
305                 310                 315                 320
Ser Ala His Leu Pro Trp Tyr Phe Gln Pro Pro Pro Arg Pro Leu Pro
                325                 330                 335
Pro Arg Pro Pro Ala Ala Gln Pro Arg Pro Pro Pro Ser Pro Pro Pro
            340                 345                 350
Pro Pro Pro Pro Pro Ala Ser Pro Leu Pro Pro Pro Pro Pro Pro Pro
        355                 360                 365
Pro Pro Thr Pro Ser Ser Thr Thr Lys Leu Pro Gln Gly Leu Ser Phe
    370                 375                 380
Ala Lys Arg Leu Gln Gln Leu Ile Glu Val Leu Lys Gly Lys Thr Tyr
385                 390                 395                 400
Ser Asp Gly Lys Asn His Tyr Asp Met Glu Thr Thr Glu Leu Pro Glu
                405                 410                 415
Leu Thr Ser Thr Ser
            420
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<210> 211
<211> 2363
<212> DNA
<213> Homo sapiens

<400> 211
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tgcccaggcc tggagactga cccgaccccg gcactacctc gaggctccgc ccccacctgc 180
tggaccccag ggtaaggaca agggcccccа gactcacagt tccagccctg aggacagggg 240
ttcccctcatc cccccaccca gcctaatgcc cacctcctaa tagaggggtt cctggggacc 300
tgaagagggg gcactatgac gtctccccaa gcacctaggt gttctgtcct gctcttcctt 360
cagactcagc cgttggaccc cagtcctttc ctccccagac ccaggagttc cagccctcag 420
gcccctcctc cctcatacta gggagtcctg gcccccaaat tcctccttтc ccaagactta 480
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caggctcagg catgggggtc cccatccctg caaatccagg cgtccccccg ctgctggtca 600
gacactgacc ccatccttga acccagccca atctgcgtcc gtgatcacgg cgtgctctgg 660
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gggctgggct gggctccccc aggccctgcc tccccgtcca tctcctcaca ggtcccaccc 780
tggcccagga ggtcagccag ggaatcatta acaagaggca gtgacatggc gcagaaggag 840
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ctgctacttc tgacagccat cggggcggca tcctgggcca ttgtggctgt tctcctcagg 960
agtgaccagg agccgctgta cccagtgcag gtcagctctg cggacgctcg gctcatggtc 1020
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gccggactca gctgcgagga gatgggcttc ctcagggcac tgacccactc cgagctggac 1140
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aagccaggcg tctacaccaa agtcagtgac ttccgggagt ggatcttcca ggccataaag 2040
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gcctccaggg cccgaggtga tcccggtggt gggatccacg ctgggccgag gatgggacgt 2160
ttttcttctt gggccccggtc cacaggtcca aggacaccct ccctccaggg tcctctcttc 2220
cacagtggcg ggcccactca gccccgagac cacccaacct caccctcctg acccccatgt 2280
aaatattgtt ctgctgtctg ggactcctgt ctaggtgccc ctgatgatgg gatgctcttt 2340
aaataataaa gatggttttg att                                        2363
```

<210> 212
<211> 417
<212> PRT
<213> Homo sapiens

<400> 212

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

```
Arg Ala Leu Thr His Ser Glu Leu Asp Val Arg Thr Ala Gly Ala Asn
            100                 105                 110
Gly Thr Ser Gly Phe Phe Cys Val Asp Glu Gly Arg Leu Pro His Thr
        115                 120                 125
Gln Arg Leu Leu Glu Val Ile Ser Val Cys Asp Cys Pro Arg Gly Arg
    130                 135                 140
Phe Leu Ala Ala Ile Cys Gln Asp Cys Gly Arg Arg Lys Leu Pro Val
145                 150                 155                 160
Asp Arg Ile Val Gly Gly Arg Asp Thr Ser Leu Gly Arg Trp Pro Trp
                165                 170                 175
Gln Val Ser Leu Arg Tyr Asp Gly Ala His Leu Cys Gly Gly Ser Leu
            180                 185                 190
Leu Ser Gly Asp Trp Val Leu Thr Ala Ala His Cys Phe Pro Glu Arg
        195                 200                 205
Asn Arg Val Leu Ser Arg Trp Arg Val Phe Ala Gly Ala Val Ala Gln
    210                 215                 220
Ala Ser Pro His Gly Leu Gln Leu Gly Val Gln Ala Val Val Tyr His
225                 230                 235                 240
Gly Gly Tyr Leu Pro Phe Arg Asp Pro Asn Ser Glu Glu Asn Ser Asn
                245                 250                 255
Asp Ile Ala Leu Val His Leu Ser Ser Pro Leu Pro Leu Thr Glu Tyr
            260                 265                 270
Ile Gln Pro Val Cys Leu Pro Ala Ala Gly Gln Ala Leu Val Asp Gly
        275                 280                 285
Lys Ile Cys Thr Val Thr Gly Trp Gly Asn Thr Gln Tyr Tyr Gly Gln
    290                 295                 300
Gln Ala Gly Val Leu Gln Glu Ala Arg Val Pro Ile Ile Ser Asn Asp
305                 310                 315                 320
Val Cys Asn Gly Ala Asp Phe Tyr Gly Asn Gln Ile Lys Pro Lys Met
                325                 330                 335
Phe Cys Ala Gly Tyr Pro Glu Gly Gly Ile Asp Ala Cys Gln Gly Asp
            340                 345                 350
Ser Gly Gly Pro Phe Val Cys Glu Asp Ser Ile Ser Arg Thr Pro Arg
        355                 360                 365
Trp Arg Leu Cys Gly Ile Val Ser Trp Gly Thr Gly Cys Ala Leu Ala
    370                 375                 380
Gln Lys Pro Gly Val Tyr Thr Lys Val Ser Asp Phe Arg Glu Trp Ile
385                 390                 395                 400
Phe Gln Ala Ile Lys Thr His Ser Glu Ala Ser Gly Met Val Thr Gln
                405                 410                 415
Leu
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<210> 213
<211> 1783
<212> DNA
<213> Homo sapiens

<400> 213

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tcgagcccgc tttccaggga ccctacctga gggcccacag gtgaggcagc ctggcctagc 60
aggccccacg ccaccgcctc tgcctccagg ccgcccgctg ctgcgggggcc accatgctcc 120
tgcccaggcc tggagactga cccgaccccg gcactacctc gaggctccgc ccccacctgc 180
tggaccccag ggtcccaccc tggcccagga ggtcagccag ggaatcatta acaagaggca 240
gtgacatggc gcagaaggag ggtggccgga ctgtgccatg ctgctccaga cccaaggtgg 300
cagctctcac tgcggggacc ctgctacttc tgacagccat cggggcggca tcctgggcca 360
ttgtggctgt tctcctcagg agtgaccagg agccgctgta cccagtgcag gtcagctctg 420
cggacgctcg gctcatggtc tttgacaaga cggaagggac gtggcggctg ctgtgctcct 480
```

```
cgcgctccaa cgccagggta gccggactca gctgcgagga gatgggcttc ctcagggcac 540
tgacccactc cgagctggac gtgcgaacgg cgggcgccaa tggcacgtcg ggcttctttct 600
gtgtggacga ggggaggctg ccccacaccc agaggctgct ggaggtcatc tccgtgtgtg 660
attgccccag aggccgtttc ttggccgcca tctgccaaga ctgtggccgc aggaagctgc 720
ccgtggaccg catcgtggga ggccgggaca ccagcttggg ccggtggccg tggcaagtca 780
gccttcgcta tgatggagca cacctctgtg ggggatccct gctctccggg gactgggtgc 840
tgacagccgc ccactgcttc ccggagcgga accgggtcct gtcccgatgg cgagtgtttg 900
ccggtgccgt ggcccaggcc tctcccccacg gtctgcagct gggggtgcag gctgtggtct 960
accacggggg ctatcttccc tttcgggacc ccaacagcga ggagaacagc aacgatattg 1020
ccctggtcca cctctccagt cccctgcccc tcacagaata catccagcct gtgtgcctcc 1080
cagctgccgg ccaggccctg gtggatggca agatctgtac cgtgacgggc tggggcaaca 1140
cgcagtacta tggccaacag gccgggggtac tccaggaggc tcgagtcccc ataatcagca 1200
atgatgtctg caatggcgct gacttctatg gaaaccagat caagcccaag atgttctgtg 1260
ctggctaccc cgagggtggc attgatgcct gccagggcga cagcggtggt ccctttgtgt 1320
gtgaggacag catctctcgg acgccacgtt ggcggctgtg tggcattgtg agttggggca 1380
ctggctgtgc cctggcccag aagccaggcg tctacaccaa agtcagtgac ttccgggagt 1440
ggatcttcca ggccataaag actcactccg aagccagcgg catggtgacc cagctctgac 1500
cggtggcttc tcgctgcgca gcctccaggg cccgaggtga tcccggtggt gggatccacg 1560
ctgggccgag gatgggacgt ttttcttctt gggcccggtc cacaggtcca aggacaccct 1620
ccctccaggg tcctctcttc cacagtggcg ggcccactca gccccgagac cacccaacct 1680
caccctcctg acccccatgt aaatattgtt ctgctgtctg ggactcctgt ctaggtgccc 1740
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<210> 214
<211> 417
<212> PRT
<213> Homo sapiens

<400> 214
Met Ala Gln Lys Glu Gly Gly Arg Thr Val Pro Cys Cys Ser Arg Pro
 1               5                  10                  15
Lys Val Ala Ala Leu Thr Ala Gly Thr Leu Leu Leu Leu Thr Ala Ile
            20                  25                  30
Gly Ala Ala Ser Trp Ala Ile Val Ala Val Leu Leu Arg Ser Asp Gln
        35                  40                  45
Glu Pro Leu Tyr Pro Val Gln Val Ser Ser Ala Asp Ala Arg Leu Met
    50                  55                  60
Val Phe Asp Lys Thr Glu Gly Thr Trp Arg Leu Leu Cys Ser Ser Arg
65                  70                  75                  80
Ser Asn Ala Arg Val Ala Gly Leu Ser Cys Glu Glu Met Gly Phe Leu
                85                  90                  95
Arg Ala Leu Thr His Ser Glu Leu Asp Val Arg Thr Ala Gly Ala Asn
            100                 105                 110
Gly Thr Ser Gly Phe Phe Cys Val Asp Glu Gly Arg Leu Pro His Thr
        115                 120                 125
Gln Arg Leu Leu Glu Val Ile Ser Val Cys Asp Cys Pro Arg Gly Arg
    130                 135                 140
Phe Leu Ala Ala Ile Cys Gln Asp Cys Gly Arg Arg Lys Leu Pro Val
145                 150                 155                 160
Asp Arg Ile Val Gly Gly Arg Asp Thr Ser Leu Gly Arg Trp Pro Trp
                165                 170                 175
Gln Val Ser Leu Arg Tyr Asp Gly Ala His Leu Cys Gly Gly Ser Leu
            180                 185                 190
Leu Ser Gly Asp Trp Val Leu Thr Ala Ala His Cys Phe Pro Glu Arg
        195                 200                 205
Asn Arg Val Leu Ser Arg Trp Arg Val Phe Ala Gly Ala Val Ala Gln
    210                 215                 220
Ala Ser Pro His Gly Leu Gln Leu Gly Val Gln Ala Val Val Tyr His
```

```
225                 230                 235                 240
Gly Gly Tyr Leu Pro Phe Arg Asp Pro Asn Ser Glu Glu Asn Ser Asn
                245                 250                 255
Asp Ile Ala Leu Val His Leu Ser Ser Pro Leu Pro Leu Thr Glu Tyr
            260                 265                 270
Ile Gln Pro Val Cys Leu Pro Ala Ala Gly Gln Ala Leu Val Asp Gly
        275                 280                 285
Lys Ile Cys Thr Val Thr Gly Trp Gly Asn Thr Gln Tyr Tyr Gly Gln
    290                 295                 300
Gln Ala Gly Val Leu Gln Glu Ala Arg Val Pro Ile Ile Ser Asn Asp
305                 310                 315                 320
Val Cys Asn Gly Ala Asp Phe Tyr Gly Asn Gln Ile Lys Pro Lys Met
                325                 330                 335
Phe Cys Ala Gly Tyr Pro Glu Gly Gly Ile Asp Ala Cys Gln Gly Asp
            340                 345                 350
Ser Gly Gly Pro Phe Val Cys Glu Asp Ser Ile Ser Arg Thr Pro Arg
        355                 360                 365
Trp Arg Leu Cys Gly Ile Val Ser Trp Gly Thr Gly Cys Ala Leu Ala
    370                 375                 380
Gln Lys Pro Gly Val Tyr Thr Lys Val Ser Asp Phe Arg Glu Trp Ile
385                 390                 395                 400
Phe Gln Ala Ile Lys Thr His Ser Glu Ala Ser Gly Met Val Thr Gln
                405                 410                 415
Leu
```

<210> 215
<211> 2038
<212> DNA
<213> Homo sapiens

<400> 215

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aaccgtacgg agtccccaga acctaatgcc acagcgaccc ctgcgatccc cactatcctg 180
gtgacctctg tgacctctga gaccccagca acaagtgctc cagaggcaga gggaccccaa 240
agtggggggc tcccgccccc gcccagggca gttccctcga gcagtagccc ccaggcccaa 300
gcactcaccg aggacgggag gccctgcagg ttcccccttcc gctacggggg ccgcatgctg 360
catgcctgca cttcggaggg cagtgcacac aggaagtggt gtgccacaac tcacaactac 420
gaccgggaca gggcctgggg ctactgtgtg gaggccaccc cgcctccagg gggcccagct 480
gccctggatc cctgtgcctc cggcccctgc ctcaatggag gctcctgctc caatacccag 540
gaccccagt cctatcactg cagctgcccc cgggccttca ccggcaagga ctgcggcaca 600
gagaaatgct ttgatgagac ccgctacgag tacctggagg ggggcgaccg ctgggcccgc 660
gtgcgccagg gccacgtgga acagtgcgag tgcttcgggg gccggacctg gtgcgaaggc 720
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gtggccaccg ggaccaccgt gtgtgcctgc ccaccaggct tcgctggacg gctctgcaac 840
atcgagcctg atgagcgctg cttcttgggg aacggcactg ggtaccgtgg cgtggccagc 900
acctcagcct cgggcctcag ctgcctggcc tggaactccg atctgctcta ccaggagctg 960
cacgtggact ccgtgggcgc cgcggccctg ctgggcctgg gccccatgc ctactgccgg 1020
aatccggaca atgacgagag gccctggtgc tacgtggtga aggacagcgc gctctcctgg 1080
gagtactgcc gcctggaggc ctgcgaatcc ctcaccagag tccaactgtc accggatctc 1140
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tgctgggtgg tgtcggccgc ccactgcttc tcccacagcc ccccaggga cagcgtctcc 1380
gtggtgctgg gccagcactt cttcaaccgc acgacggacg tgacgcagac cttcggcatc 1440
gagaagtaca tcccgtacac cctgtactcg gtgttcaacc ccagcgacca cgacctcgtc 1500
```

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gggcccctgg cctgcgagaa gaacggcgtg gcttacctct acggcatcat cagctggggt 1860
gacggctgcg ggcggctcca caagccgggg gtctacaccc gcgtggccaa ctatgtggac 1920
tggatcaacg accggatacg gcctcccagg cggcttgtgg ctccctcctg accctccagc 1980
gggacaccct ggttcccacc attccctgcc ttgctgacaa taaagatatt tccaagaa   2038

<210> 216
<211> 655
<212> PRT
<213> Homo sapiens

<400> 216
Met Gly Arg Trp Ala Trp Val Pro Ser Pro Trp Pro Pro Pro Gly Leu
 1               5                  10                  15
Gly Pro Phe Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Arg Gly
            20                  25                  30
Phe Gln Pro Gln Pro Gly Gly Asn Arg Thr Glu Ser Pro Glu Pro Asn
        35                  40                  45
Ala Thr Ala Thr Pro Ala Ile Pro Thr Ile Leu Val Thr Ser Val Thr
    50                  55                  60
Ser Glu Thr Pro Ala Thr Ser Ala Pro Glu Ala Glu Gly Pro Gln Ser
65                  70                  75                  80
Gly Gly Leu Pro Pro Pro Pro Arg Ala Val Pro Ser Ser Ser Ser Pro
                85                  90                  95
Gln Ala Gln Ala Leu Thr Glu Asp Gly Arg Pro Cys Arg Phe Pro Phe
            100                 105                 110
Arg Tyr Gly Gly Arg Met Leu His Ala Cys Thr Ser Glu Gly Ser Ala
        115                 120                 125
His Arg Lys Trp Cys Ala Thr Thr His Asn Tyr Asp Arg Asp Arg Ala
    130                 135                 140
Trp Gly Tyr Cys Val Glu Ala Thr Pro Pro Pro Gly Gly Pro Ala Ala
145                 150                 155                 160
Leu Asp Pro Cys Ala Ser Gly Pro Cys Leu Asn Gly Gly Ser Cys Ser
                165                 170                 175
Asn Thr Gln Asp Pro Gln Ser Tyr His Cys Ser Cys Pro Arg Ala Phe
            180                 185                 190
Thr Gly Lys Asp Cys Gly Thr Glu Lys Cys Phe Asp Glu Thr Arg Tyr
        195                 200                 205
Glu Tyr Leu Glu Gly Gly Asp Arg Trp Ala Arg Val Arg Gln Gly His
    210                 215                 220
Val Glu Gln Cys Glu Cys Phe Gly Gly Arg Thr Trp Cys Glu Gly Thr
225                 230                 235                 240
Arg His Thr Ala Cys Leu Ser Ser Pro Cys Leu Asn Gly Gly Thr Cys
                245                 250                 255
His Leu Ile Val Ala Thr Gly Thr Thr Val Cys Ala Cys Pro Pro Gly
            260                 265                 270
Phe Ala Gly Arg Leu Cys Asn Ile Glu Pro Asp Glu Arg Cys Phe Leu
        275                 280                 285
Gly Asn Gly Thr Gly Tyr Arg Gly Val Ala Ser Thr Ser Ala Ser Gly
    290                 295                 300
Leu Ser Cys Leu Ala Trp Asn Ser Asp Leu Leu Tyr Gln Glu Leu His
305                 310                 315                 320
Val Asp Ser Val Gly Ala Ala Ala Leu Leu Gly Leu Gly Pro His Ala
                325                 330                 335
```

```
Tyr Cys Arg Asn Pro Asp Asn Asp Glu Arg Pro Trp Cys Tyr Val Val
                340                 345                 350
Lys Asp Ser Ala Leu Ser Trp Glu Tyr Cys Arg Leu Glu Ala Cys Glu
            355                 360                 365
Ser Leu Thr Arg Val Gln Leu Ser Pro Asp Leu Leu Ala Thr Leu Pro
    370                 375                 380
Glu Pro Ala Ser Pro Gly Arg Gln Ala Cys Gly Arg Arg His Lys Lys
385                 390                 395                 400
Arg Thr Phe Leu Arg Pro Arg Ile Ile Gly Gly Ser Ser Ser Leu Pro
                405                 410                 415
Gly Ser His Pro Trp Leu Ala Ala Ile Tyr Ile Gly Asp Ser Phe Cys
                420                 425                 430
Ala Gly Ser Leu Val His Thr Cys Trp Val Val Ser Ala Ala His Cys
            435                 440                 445
Phe Ser His Ser Pro Pro Arg Asp Ser Val Ser Val Val Leu Gly Gln
    450                 455                 460
His Phe Phe Asn Arg Thr Thr Asp Val Thr Gln Thr Phe Gly Ile Glu
465                 470                 475                 480
Lys Tyr Ile Pro Tyr Thr Leu Tyr Ser Val Phe Asn Pro Ser Asp His
                485                 490                 495
Asp Leu Val Leu Ile Arg Leu Lys Lys Lys Gly Asp Arg Cys Ala Thr
                500                 505                 510
Arg Ser Gln Phe Val Gln Pro Ile Cys Leu Pro Glu Pro Gly Ser Thr
            515                 520                 525
Phe Pro Ala Gly His Lys Cys Gln Ile Ala Gly Trp Gly His Leu Asp
    530                 535                 540
Glu Asn Val Ser Gly Tyr Ser Ser Ser Leu Arg Glu Ala Leu Val Pro
545                 550                 555                 560
Leu Val Ala Asp His Lys Cys Ser Ser Pro Glu Val Tyr Gly Ala Asp
                565                 570                 575
Ile Ser Pro Asn Met Leu Cys Ala Gly Tyr Phe Asp Cys Lys Ser Asp
                580                 585                 590
Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Ala Cys Glu Lys Asn Gly
            595                 600                 605
Val Ala Tyr Leu Tyr Gly Ile Ile Ser Trp Gly Asp Gly Cys Gly Arg
    610                 615                 620
Leu His Lys Pro Gly Val Tyr Thr Arg Val Ala Asn Tyr Val Asp Trp
625                 630                 635                 640
Ile Asn Asp Arg Ile Arg Pro Pro Arg Arg Leu Val Ala Pro Ser
                645                 650                 655
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<210> 217
<211> 2360
<212> DNA
<213> Homo sapiens

<400> 217
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gctcgcgccc tcctgccgca gccaccgagc cgccgtctag cgccccgacc tcgccaccat 120
gagagccctg ctggcgcgcc tgcttctctg cgtcctggtc gtgagcgact ccaaaggcag 180
caatgaactt catcaagttc atcgaactg tgactgtcta aatggaggaa catgtgtgtc 240
caacaagtac ttctccaaca ttcactggtg caactgccca aagaaattcg gagggcagca 300
ctgtgaaata gataagtcaa aaacctgcta tgaggggaat ggtcactttt accgaggaaa 360
ggccagcact gacaccatgg gccggccctg cctgccctgg aactctgcca ctgtccttca 420
gcaaacgtac catgcccaca gatctgatgc tcttcagctg ggcctgggga aacataatta 480
ctgcaggaac ccagacaacc ggaggcgacc ctggtgctat gtgcaggtgg gcctaaagcc 540
gcttgtccaa gagtgcatgg tgcatgactg cgcagatgga aaaaagcccc cctctcctcc 600

```
agaagaatta aaatttcagt gtggccaaaa gactctgagg ccccgcttta agattattgg 660
gggagaattc accaccatcg agaaccagcc ctggtttgcg gccatctaca ggaggcaccg 720
gggggggtct gtcacctacg tgtgtggagg cagcctcatc agcccttgct gggtgatcag 780
cgccacacac tgcttcattg attacccaaa gaaggaggac tacatcgtct acctgggtcg 840
ctcaaggctt aactccaaca cgcaagggga gatgaagttt gaggtggaaa acctcatcct 900
acacaaggac tacagcgctg acacgcttgc tcaccacaac gacattgcct tgctgaagat 960
ccgttccaag gagggcaggt gtgcgcagcc atcccggact atacagacca tctgcctgcc 1020
ctcgatgtat aacgatcccc agtttggcac aagctgtgag atcactggct ttggaaaaga 1080
gaattctacc gactatctct atccggagca gctgaaaatg actgttgtga agctgatttc 1140
ccaccgggag tgtcagcagc cccactacta cggctctgaa gtcaccacca aaatgctgtg 1200
tgctgctgac ccacagtgga aaacagattc ctgccaggga gactcagggg gacccctcgt 1260
ctgttccctc caaggccgca tgactttgac tggaattgtg agctggggcc gtggatgtgc 1320
cctgaaggac aagccaggcg tctacacgag agtctcacac ttcttaccct ggatccgcag 1380
tcacaccaag gaagagaatg gcctggcccc ctgagggtcc ccagggagga aacgggcacc 1440
acccgctttc ttgctggttg tcatttttgc agtagagtca tctccatcag ctgtaagaag 1500
agactgggaa gataggctct gcacagatgg atttgcctgt gccacccacc agggcgaacg 1560
acaatagctt taccctcagg cataggcctg ggtgctggct gcccagaccc ctctggccag 1620
gatggagggg tggtcctgac tcaacatgtt actgaccagc aacttgtctt tttctggact 1680
gaagcctgca ggagttaaaa agggcagggc atctcctgtg catgggtgaa gggagagcca 1740
gctccccccga cggtgggcat ttgtgaggcc catggttgag aaatgaataa tttcccaatt 1800
aggaagtgta acagctgagg tctcttgagg gagcttagcc aatgtgggag cagcggtttg 1860
gggagcagag acactaacga cttcagggca gggctctgat attccatgaa tgtatcagga 1920
aatatatatg tgtgtgtatg tttgcacact tgtgtgtggg ctgtgagtgt aagtgtgagt 1980
aagagctggt gtctgattgt taagtctaaa tatttcctta aactgtgtgg actgtgatgc 2040
cacacagagt ggtctttctg gagaggttat aggtcactcc tggggcctct tgggtccccc 2100
acgtgacagt gcctgggaat gtattattct gcagcatgac ctgtgaccag cactgtctca 2160
gtttcacttt cacatagatg tccctttctt ggccagttat cccttccttt tagcctagtt 2220
catccaatcc tcactgggtg gggtgaggac cactcctgta cactgaatat ttatatttca 2280
ctatttttat ttatattttt gtaattttaa ataaaagtga tcaataaaat gtgatttttc 2340
tgatgaaaaa aaaaaaaaaa                                           2360
```

<210> 218
<211> 431
<212> PRT
<213> Homo sapiens

<400> 218

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

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

<210> 219
<211> 2653
<212> DNA
<213> Homo sapiens

<400> 219

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accccacccc ctgcctggaa acttaaggag gccggagctg tggggagctc agagctgaga 120
tcctacagga gtccagggct ggagagaaaa cctctgcgag gaaagggaag gagcaagccg 180
tgaatttaag ggacgctgtg aagcaatcat ggatgcaatg aagagagggc tctgctgtgt 240
gctgctgctg tgtggagcag tcttcgtttc gcccagccag gaaatccatg cccgattcag 300
aagaggagcc agatcttacc aagtgatctg cagagatgaa aaaacgcaga tgatatacca 360
gcaacatcag tcatggctgc gccctgtgct cagaagcaac cgggtggaat attgctggtg 420
caacagtggc agggcacagt gccactcagt gcctgtcaaa agttgcagcg agccaaggtg 480
tttcaacggg ggcacctgcc agcaggccct gtacttctca gatttcgtgt gccagtgccc 540
cgaaggattt gctgggaagt gctgtgaaat agataccagg gccacgtgct acgaggacca 600
gggcatcagc tacaggggca cgtggagcac agcggagagt ggcgccgagt gcaccaactg 660
gaacagcagc gcgttggccc agaagcccta cagcgggcgg aggccagacg ccatcaggct 720
gggcctgggg aaccacaact actgcagaaa cccagatcga gactcaaagc cctggtgcta 780
cgtctttaag gcggggaagt acagctcaga gttctgcagc acccctgcct gctctgaggg 840
aaacagtgac tgctactttg ggaatgggtc agcctaccgt ggcacgcaca gcctcaccga 900
gtcgggtgcc tcctgcctcc cgtggaattc catgatcctg ataggcaagg tttacacagc 960
acagaacccc agtgcccagg cactgggcct gggcaaacat aattactgcc ggaatcctga 1020
```

```
tggggatgcc aagccctggt gccacgtgct gaagaaccgc aggctgacgt gggagtactg 1080
tgatgtgccc tcctgctcca cctgcggcct gagacagtac agccagcctc agtttcgcat 1140
caaaggaggg ctctttcgcg acatcgcctc ccacccctgg caggctgcca tctttgccaa 1200
gcacaggagg tcgcccggag agcggttcct gtgcgggggc atactcatca gctcctgctg 1260
gattctctct gccgcccact gcttccagga gaggtttccg ccccaccacc tgacggtgat 1320
cttgggcaga acataccggg tggtccctgg cgaggaggag cagaaatttg aagtcgaaaa 1380
atacattgtc cataaggaat tcgatgatga cacttacgac aatgacattg cgctgctgca 1440
gctgaaatcg gattcgtccc gctgtgccca ggagagcagc gtggtccgca ctgtgtgcct 1500
tccccggcg gacctgcagc tgccggactg gacggagtgt gagctctccg gctacggcaa 1560
gcatgaggcc ttgtctcctt tctattcgga gcggctgaag gaggctcatg tcagactgta 1620
cccatccagc cgctgcacat cacaacattt acttaacaga acagtcaccg acaacatgct 1680
gtgtgctgga gacactcgga gcggcgggcc ccaggcaaac ttgcacgacg cctgccaggg 1740
cgattcggga ggccccctgg tgtgtctgaa cgatggccgc atgactttgg tgggcatcat 1800
cagctggggc ctgggctgtg gacagaagga tgtcccgggt gtgtacacca aggttaccaa 1860
ctacctagac tggattcgtg acaacatgcg accgtgacca ggaacacccg actcctcaaa 1920
agcaaatgag atcccgcctc ttcttcttca gaagacactg caaaggcgca gtgcttctct 1980
acagacttct ccagacccac cacaccgcag aagcgggacg agaccctaca ggagagggaa 2040
gagtgcattt tcccagatac ttcccatttt ggaagttttc aggacttggt ctgatttcag 2100
gatactctgt cagatgggaa gacatgaatg cacactagcc tctccaggaa tgcctcctcc 2160
ctgggcagaa agtggccatg ccaccctgtt ttcagctaaa gcccaacctc ctgacctgtc 2220
accgtgagca gctttggaaa caggaccaca aaaatgaaag catgtctcaa tagtaaaaga 2280
taacaagatc tttcaggaaa gacggattgc attagaaata gacagtatat ttatagtcac 2340
aagagcccag cagggcctca aagttggggc aggctggctg gcccgtcatg ttcctcaaaa 2400
gcacccttga cgtcaagtct ccttcccctt tccccactcc ctggctctca gaaggtattc 2460
cttttgtgta cagtgtgtaa agtgtaaatc ctttttcttt ataaacttta gagtagcatg 2520
agagaattgt atcatttgaa caactaggct tcagcatatt tatagcaatc catgttagtt 2580
tttacttttct gttgccacaa ccctgtttta tactgtactt aataaattca gatatatttt 2640
tcacagtttt tcc                                                    2653
```

<210> 220
<211> 562
<212> PRT
<213> Homo sapiens

<400> 220

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

```
                180                 185                 190
Phe Lys Ala Gly Lys Tyr Ser Ser Glu Phe Cys Ser Thr Pro Ala Cys
        195                 200                 205
Ser Glu Gly Asn Ser Asp Cys Tyr Phe Gly Asn Gly Ser Ala Tyr Arg
    210                 215                 220
Gly Thr His Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro Trp Asn
225                 230                 235                 240
Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro Ser Ala
                245                 250                 255
Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Gly
            260                 265                 270
Asp Ala Lys Pro Trp Cys His Val Leu Lys Asn Arg Arg Leu Thr Trp
        275                 280                 285
Glu Tyr Cys Asp Val Pro Ser Cys Ser Thr Cys Gly Leu Arg Gln Tyr
    290                 295                 300
Ser Gln Pro Gln Phe Arg Ile Lys Gly Gly Leu Phe Ala Asp Ile Ala
305                 310                 315                 320
Ser His Pro Trp Gln Ala Ala Ile Phe Ala Lys His Arg Arg Ser Pro
                325                 330                 335
Gly Glu Arg Phe Leu Cys Gly Gly Ile Leu Ile Ser Ser Cys Trp Ile
            340                 345                 350
Leu Ser Ala Ala His Cys Phe Gln Glu Arg Phe Pro Pro His His Leu
        355                 360                 365
Thr Val Ile Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu Glu Glu
    370                 375                 380
Gln Lys Phe Glu Val Glu Lys Tyr Ile Val His Lys Glu Phe Asp Asp
385                 390                 395                 400
Asp Thr Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Lys Ser Asp Ser
                405                 410                 415
Ser Arg Cys Ala Gln Glu Ser Ser Val Val Arg Thr Val Cys Leu Pro
            420                 425                 430
Pro Ala Asp Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu Ser Gly
        435                 440                 445
Tyr Gly Lys His Glu Ala Leu Ser Pro Phe Tyr Ser Glu Arg Leu Lys
    450                 455                 460
Glu Ala His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser Gln His
465                 470                 475                 480
Leu Leu Asn Arg Thr Val Thr Asp Asn Met Leu Cys Ala Gly Asp Thr
                485                 490                 495
Arg Ser Gly Gly Pro Gln Ala Asn Leu His Asp Ala Cys Gln Gly Asp
            500                 505                 510
Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr Leu Val
        515                 520                 525
Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly
    530                 535                 540
Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp Asn Met
545                 550                 555                 560
Arg Pro
```

<210> 221
<211> 2160
<212> DNA
<213> Homo sapiens

<400> 221
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```
accccacccc ctgcctggaa acttaaggag gccggagctg tggggagctc agagctgaga 120
tcctacagga gtccagggct ggagagaaaa cctctgcgag gaaagggaag gagcaagccg 180
tgaatttaag ggacgctgtg aagcaatcat ggatgcaatg aagagagggc tctgctgtgt 240
gctgctgctg tgtggagcag tcttcgtttc gcccagccag gaaatccatg cccgattcag 300
aagaggagcc agatcttacc aagtgatctg cagagatgaa aaaacgcaga tgatatacca 360
gcaacatcag tcatggctgc gccctgtgct cagaagcaac cgggtggaat attgctggtg 420
caacagtggc agggcacagt gccactcagt gcctgtcaaa agttgcagcg agccaaggtg 480
tttcaacggg ggcacctgcc agcaggccct gtacttctca gatttcgtgt gccagtgccc 540
cgaaggattt gctgggaagt gctgtgaaat agataccagg gccacgtgct acgaggacca 600
gggcatcagc tacaggggca cgtggagcac agcggagagt ggcgccgagt gcaccaactg 660
gaacagcagc gcgttggccc agaagcccta cagcgggcgg aggccagacg ccatcaggct 720
gggcctgggg aaccacaact actgcagaaa cccagatcga gactcaaagc cctggtgcta 780
cgtctttaag gcggggaagt acagctcaga gttctgcagc acccctgcct gctctgaggg 840
aaacagtgac tgctactttg ggaatgggtc agcctaccgt ggcacgcaca gcctcaccga 900
gtcgggtgcc tcctgcctcc cgtggaattc catgatcctg ataggcaagg tttacacagc 960
acagaacccc agtgcccagg cactgggcct gggcaaacat aattactgcc ggactggacg 1020
gagtgtgagc tctccggcta cggcaagcat gaggccttgt ctcctttcta ttcggagcgg 1080
ctgaaggagg ctcatgtcag actgtaccca tccagccgct gcacatcaca acatttactt 1140
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gcaaacttgc acgacgcctg ccagggcgat tcgggaggcc ccctggtgtg tctgaacgat 1260
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ccgggtgtgt acaccaaggt taccaactac ctagactgga ttcgtgacaa catgcgaccg 1380
tgaccaggaa cacccgactc ctcaaaagca aatgagatcc cgcctcttct tcttcagaag 1440
acactgcaaa ggcgcagtgc ttctctacag acttctccag acccaccaca ccgcagaagc 1500
gggacgagac cctacaggag agggaagagt gcattttccc agatacttcc cattttggaa 1560
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ctagcctctc caggaatgcc tcctccctgg gcagaaagtg gccatgccac cctgttttca 1680
gctaaagccc aacctcctga cctgtcaccg tgagcagctt tggaaacagg accacaaaaa 1740
tgaaagcatg tctcaatagt aaaagataac aagatctttc aggaaagacg gattgcatta 1800
gaaatagaca gtatatttat agtcacaaga gcccagcagg gcctcaaagt tggggcaggc 1860
tggctggccc gtcatgttcc tcaaaagcac ccttgacgtc aagtctcctt ccccttccc 1920
cactccctgg ctctcagaag gtattccttt tgtgtacagt gtgtaaagtg taaatccttt 1980
ttctttataa actttagagt agcatgagag aattgtatca tttgaacaac taggcttcag 2040
catatttata gcaatccatg ttagttttta ctttctgttg ccacaaccct gttttatact 2100
gtacttaata aattcagata tatttttcac agtttttcca aaaaaaaaaa aaaaaaaaaa 2160
```

<210> 222
<211> 291
<212> PRT
<213> Homo sapiens

<400> 222

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

```
        115                 120                 125
Glu Asp Gln Gly Ile Ser Tyr Arg Gly Thr Trp Ser Thr Ala Glu Ser
    130                 135                 140
Gly Ala Glu Cys Thr Asn Trp Asn Ser Ser Ala Leu Ala Gln Lys Pro
145                 150                 155                 160
Tyr Ser Gly Arg Arg Pro Asp Ala Ile Arg Leu Gly Leu Gly Asn His
                165                 170                 175
Asn Tyr Cys Arg Asn Pro Asp Arg Asp Ser Lys Pro Trp Cys Tyr Val
            180                 185                 190
Phe Lys Ala Gly Lys Tyr Ser Ser Glu Phe Cys Ser Thr Pro Ala Cys
        195                 200                 205
Ser Glu Gly Asn Ser Asp Cys Tyr Phe Gly Asn Gly Ser Ala Tyr Arg
    210                 215                 220
Gly Thr His Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro Trp Asn
225                 230                 235                 240
Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro Ser Ala
                245                 250                 255
Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Thr Gly Arg Ser
            260                 265                 270
Val Ser Ser Pro Ala Thr Ala Ser Met Arg Pro Cys Leu Leu Ser Ile
        275                 280                 285
Arg Ser Gly
    290
```

<210> 223
<211> 2534
<212> DNA
<213> *Homo sapiens*

<400> 223

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tcctacagga gtccagggct ggagagaaaa cctctgcgag gaaagggaag gagcaagccg 180
tgaatttaag ggacgctgtg aagcaatcat ggatgcaatg aagagagggc tctgctgtgt 240
gctgctgctg tgtggagcag tcttcgtttc gcccagccag gaaatccatg cccgattcag 300
aagaggagcc agatcttacc aaggttgcag cgagccaagg tgtttcaacg ggggcacctg 360
ccagcaggcc ctgtacttct cagatttcgt gtgccagtgc cccgaaggat ttgctgggaa 420
gtgctgtgaa atagatacca gggccacgtg ctacgaggac cagggcatca gctacagggg 480
cacgtggagc acagcggaga gtggcgccga gtgcaccaac tggaacagca gcgcgttggc 540
ccagaagccc tacagcgggc ggaggccaga cgccatcagg ctgggcctgg ggaaccacaa 600
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gtacagctca gagttctgca gcacccctgc ctgctctgag ggaaacagtg actgctactt 720
tgggaatggg tcagcctacc gtggcacgca cagcctcacc gagtcgggtg cctcctgcct 780
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ccgctgtgcc caggagagca gcgtggtccg cactgtgtgc cttccccccgg cggacctgca 1380
gctgccggac tggacggagt gtgagctctc cggctacggc aagcatgagg ccttgtctcc 1440
tttctattcg gagcggctga aggaggctca tgtcagactg tacccatcca gccgctgcac 1500
atcacaacat ttacttaaca gaacagtcac cgacaacatg ctgtgtgctg gagacactcg 1560
gagcggcggg ccccaggcaa acttgcacga cgcctgccag ggcgattcgg gaggcccctt 1620
```

```
ggtgtgtctg aacgatggcc gcatgacttt ggtgggcatc atcagctggg gcctgggctg 1680
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tcttcttctt cagaagacac tgcaaaggcg cagtgcttct ctacagactt ctccagaccc 1860
accacaccgc agaagcggga cgagacccta caggagaggg aagagtgcat tttcccagat 1920
acttcccatt ttggaagttt tcaggacttg gtctgatttc aggatactct gtcagatggg 1980
aagacatgaa tgcacactag cctctccagg aatgcctcct ccctgggcag aaagtggcca 2040
tgccaccctg ttttcagcta aagcccaacc tcctgacctg tcaccgtgag cagctttgga 2100
aacaggacca caaaaatgaa agcatgtctc aatagtaaaa gataacaaga tctttcagga 2160
aagacggatt gcattagaaa tagacagtat atttatagtc acaagagccc agcagggcct 2220
caaagttggg gcaggctggc tggcccgtca tgttcctcaa aagcaccctt gacgtcaagt 2280
ctccttcccc tttccccact ccctggctct cagaaggtat tccttttgtg tacagtgtgt 2340
aaagtgtaaa tcctttttct ttataaactt tagagtagca tgagagaatt gtatcatttg 2400
aacaactagg cttcagcata tttatagcaa tccatgttag ttttttacttt ctgttgccac 2460
aaccctgttt tatactgtac ttaataaatt cagatatatt tttcacagtt tttccaaaaa 2520
aaaaaaaaaa aaaa                                                   2534

<210> 224
<211> 516
<212> PRT
<213> Homo sapiens

<400> 224
Met Asp Ala Met Lys Arg Gly Leu Cys Cys Val Leu Leu Leu Cys Gly
 1               5                  10                  15
Ala Val Phe Val Ser Pro Ser Gln Glu Ile His Ala Arg Phe Arg Arg
            20                  25                  30
Gly Ala Arg Ser Tyr Gln Gly Cys Ser Glu Pro Arg Cys Phe Asn Gly
        35                  40                  45
Gly Thr Cys Gln Gln Ala Leu Tyr Phe Ser Asp Phe Val Cys Gln Cys
    50                  55                  60
Pro Glu Gly Phe Ala Gly Lys Cys Cys Glu Ile Asp Thr Arg Ala Thr
65                  70                  75                  80
Cys Tyr Glu Asp Gln Gly Ile Ser Tyr Arg Gly Thr Trp Ser Thr Ala
                85                  90                  95
Glu Ser Gly Ala Glu Cys Thr Asn Trp Asn Ser Ser Ala Leu Ala Gln
            100                 105                 110
Lys Pro Tyr Ser Gly Arg Arg Pro Asp Ala Ile Arg Leu Gly Leu Gly
        115                 120                 125
Asn His Asn Tyr Cys Arg Asn Pro Asp Arg Asp Ser Lys Pro Trp Cys
    130                 135                 140
Tyr Val Phe Lys Ala Gly Lys Tyr Ser Ser Glu Phe Cys Ser Thr Pro
145                 150                 155                 160
Ala Cys Ser Glu Gly Asn Ser Asp Cys Tyr Phe Gly Asn Gly Ser Ala
                165                 170                 175
Tyr Arg Gly Thr His Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro
            180                 185                 190
Trp Asn Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro
        195                 200                 205
Ser Ala Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro
    210                 215                 220
Asp Gly Asp Ala Lys Pro Trp Cys His Val Leu Lys Asn Arg Arg Leu
225                 230                 235                 240
Thr Trp Glu Tyr Cys Asp Val Pro Ser Cys Ser Thr Cys Gly Leu Arg
                245                 250                 255
Gln Tyr Ser Gln Pro Gln Phe Arg Ile Lys Gly Gly Leu Phe Ala Asp
            260                 265                 270
Ile Ala Ser His Pro Trp Gln Ala Ala Ile Phe Ala Lys His Arg Arg
```

```
        275                 280                 285
Ser Pro Gly Glu Arg Phe Leu Cys Gly Gly Ile Leu Ile Ser Ser Cys
    290                 295                 300
Trp Ile Leu Ser Ala Ala His Cys Phe Gln Glu Arg Phe Pro Pro His
305                 310                 315                 320
His Leu Thr Val Ile Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu
                325                 330                 335
Glu Glu Gln Lys Phe Glu Val Glu Lys Tyr Ile Val His Lys Glu Phe
            340                 345                 350
Asp Asp Asp Thr Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Lys Ser
        355                 360                 365
Asp Ser Ser Arg Cys Ala Gln Glu Ser Ser Val Val Arg Thr Val Cys
    370                 375                 380
Leu Pro Pro Ala Asp Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu
385                 390                 395                 400
Ser Gly Tyr Gly Lys His Glu Ala Leu Ser Pro Phe Tyr Ser Glu Arg
                405                 410                 415
Leu Lys Glu Ala His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser
            420                 425                 430
Gln His Leu Leu Asn Arg Thr Val Thr Asp Asn Met Leu Cys Ala Gly
        435                 440                 445
Asp Thr Arg Ser Gly Gly Pro Gln Ala Asn Leu His Asp Ala Cys Gln
    450                 455                 460
Gly Asp Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr
465                 470                 475                 480
Leu Val Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val
                485                 490                 495
Pro Gly Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp
            500                 505                 510
Asn Met Arg Pro
        515
```

<210> 225
<211> 2732
<212> DNA
<213> Homo sapiens

<400> 225

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aacaacatcc tgggattggg acccactttc tgggcactgc tggccagtcc caaaatggaa 60
cataaggaag tggttcttct acttctttta tttctgaaat caggtcaagg agagcctctg 120
gatgactatg tgaataccca gggggcttca ctgttcagtg tcactaagaa gcagctggga 180
gcaggaagta tagaagaatg tgcagcaaaa tgtgaggagg acgaagaatt cacctgcagg 240
gcattccaat atcacagtaa agagcaacaa tgtgtgataa tggctgaaaa caggaagtcc 300
tccataatca ttaggatgag agatgtagtt ttatttgaaa agaaagtgta tctctcagag 360
tgcaagactg ggaatggaaa gaactacaga gggacgatgt ccaaaacaaa aaatggcatc 420
acctgtcaaa aatggagttc cacttctccc cacagaccta gattctcacc tgctacacac 480
ccctcagagg gactggagga gaactactgc aggaatccag acaacgatcc gcaggggccc 540
tggtgctata ctactgatcc agaaaagaga tatgactact gcgacattct tgagtgtgaa 600
gaggaatgta tgcattgcag tggagaaaac tatgacggca aaatttccaa gaccatgtct 660
ggactggaat gccaggcctg ggactctcag agcccacacg ctcatggata cattccttcc 720
aaatttccaa acaagaacct gaagaagaat tactgtcgta accccgatag ggagctgcgg 780
ccttggtgtt tcaccaccga ccccaacaag cgctgggaac tttgcgacat ccccccgctgc 840
acaacacctc caccatcttc tggtcccacc taccagtgtc tgaagggaac aggtgaaaac 900
tatcgcggga atgtggctgt taccgtttcc gggcacacct gtcagcactg gagtgcacag 960
acccctcaca cacataacag gacaccagaa aacttccccc gcaaaaattt ggatgaaaac 1020
tactgccgca atcctgacgg aaaaagggcc ccatggtgcc atacaaccaa cagccaagtg 1080
cggtgggagt actgtaagat accgtcctgt gactcctccc cagtatccac ggaacaattg 1140
```

```
gctcccacag caccacctga gctaacccct gtggtccagg actgctacca tggtgatgga 1200
cagagctacc gaggcacatc ctccaccacc accacaggaa agaagtgtca gtcttggtca 1260
tctatgacac cacaccggca ccagaagacc ccagaaaact acccaaatgc tggcctgaca 1320
atgaactact gcaggaatcc agatgccgat aaaggcccct ggtgttttac cacagacccc 1380
agcgtcaggt gggagtactg caacctgaaa aaatgctcag gaacagaagc gagtgttgta 1440
gcacctccgc ctgttgtcct gcttccagat gtagagactc ctccgaaga agactgtatg 1500
tttgggaatg ggaaaggata ccgaggcaag agggcgacca ctgttactgg gacgccatgc 1560
caggactggg ctgcccagga gccccataga cacagcattt tcactccaga gacaaatcca 1620
cgggcgggtc tggaaaaaaa ttactgccgt aaccctgatg gtgatgtagg tggtccctgg 1680
tgctacacga caaatccaag aaaactttac gactactgtg atgtccctca gtgtgcggcc 1740
ccttcatttg attgtgggaa gcctcaagtg gagccgaaga aatgtcctgg aagggttgtg 1800
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ggaatgcact tctgtggagg caccttgata tccccagagt gggtgttgac tgctgcccac 1920
tgcttggaga agtccccaag gccttcatcc tacaaggtca tcctgggtgc acaccaagaa 1980
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ccagcttgtc tgccatcccc aaattatgtg gtcgctgacc ggaccgaatg tttcatcact 2160
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cctctggttt gcttcgagaa ggacaaatac attttacaag gagtcacttc ttggggtctt 2400
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gaagacactg tccccagcta ccagctacgc caaacctcgg catttttgt gttatttttct 2640
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acttaacttt gatttgagta aattttggtt tt                              2732
```

<210> 226
<211> 810
<212> PRT
<213> Homo sapiens

<400> 226

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

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

```
Leu Phe Leu Glu Pro Thr Arg Lys Asp Ile Ala Leu Leu Lys Leu Ser
            660                 665                 670
Ser Pro Ala Val Ile Thr Asp Lys Val Ile Pro Ala Cys Leu Pro Ser
        675                 680                 685
Pro Asn Tyr Val Val Ala Asp Arg Thr Glu Cys Phe Ile Thr Gly Trp
    690                 695                 700
Gly Glu Thr Gln Gly Thr Phe Gly Ala Gly Leu Leu Lys Glu Ala Gln
705                 710                 715                 720
Leu Pro Val Ile Glu Asn Lys Val Cys Asn Arg Tyr Glu Phe Leu Asn
                725                 730                 735
Gly Arg Val Gln Ser Thr Glu Leu Cys Ala Gly His Leu Ala Gly Gly
            740                 745                 750
Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Phe Glu
        755                 760                 765
Lys Asp Lys Tyr Ile Leu Gln Gly Val Thr Ser Trp Gly Leu Gly Cys
    770                 775                 780
Ala Arg Pro Asn Lys Pro Gly Val Tyr Val Arg Val Ser Arg Phe Val
785                 790                 795                 800
Thr Trp Ile Glu Gly Val Met Arg Asn Asn
                805                 810
```

<210> 227
<211> 1527
<212> DNA
<213> Homo sapiens

<400> 227

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gccccggggca ggggcggggg ccagtgtggt gacacacgct gtagctgtct ccccggctgg 120
ctggctcgct ctctcctggg gacacagagg tcggcaggca gcacacagag ggacctacgg 180
gcagctgttc cttcccccga ctcaagaatc cccggaggcc cggaggcctg cagcaggagc 240
ggccatgaag aagctgatgg tggtgctgag tctgattgct gcagcctggg cagaggagca 300
gaataagttg gtgcatggcg gaccctgcga caagacatct caccctaccc aagctgccct 360
ctacacctcg ggccacttgc tctgtggtgg ggtccttatc catccactgt gggtcctcac 420
agctgcccac tgcaaaaaac cgaatcttca ggtcttcctg gggaagcata accttcggca 480
aagggagagt tcccaggagc agagttctgt tgtccgggct gtgatccacc ctgactatga 540
tgccgccagc catgaccagg acatcatgct gttgcggctg gcacgcccag ccaaactctc 600
tgaactcatc cagccccttc ccctggagag ggactgctca gccaacacca ccagctgcca 660
catcctgggc tggggcaaga cagcagatgg tgatttccct gacaccatcc agtgtgcata 720
catccacctg gtgtcccgtg aggagtgtga gcatgcctac cctggccaga tcacccagaa 780
catgttgtgt gctggggatg agaagtacgg gaaggattcc tgccagggtg attctggggg 840
tccgctggta tgtggagacc acctccgagg ccttgtgtca tggggtaaca tccccctgtgg 900
atcaaaggag aagccaggag tctacaccaa cgtctgcaga tacacgaact ggatccaaaa 960
aaccattcag gccaagtgac cctgacatgt gacatctacc tcccgaccta ccacccccact 1020
ggctggttcc agaacgtctc tcacctagac cttgcctccc ctcctctcct gcccagctct 1080
gaccctgatg cttaataaac gcagcgacgt gagggtcctg attctccctg gttttacccc 1140
agctccatcc ttgcatcact ggggaggacg tgatgagtga ggacttgggt cctcggtctt 1200
acccccacca ctaagagaat acaggaaaat cccttctagg catctcctct ccccaaccct 1260
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tgcttactgt cggtgtcccc ttgggatgta cctttcttca ctgcagattt ctcacctgta 1380
agatgaagat aaggatgata cagtctccat aaggcagtgg ctgttggaaa gatttaaggt 1440
ttcacaccta tgacatacat ggaatagcac ctgggccacc atgcactcaa taaagaatga 1500
attttattat gaaaaaaaaa aaaaaaa                                    1527
```

<210> 228
<211> 244
<212> PRT

<213> Homo sapiens

<400> 228

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

<210> 229
<211> 1527
<212> DNA
<213> Homo sapiens

<400> 229

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aggacgttcc agaagcatct ggggacagaa ccagcctctt ccagggaggc ctgggagctg 60
ggggtgtgtg tctggcagtc cctgcagccc tgggctctgc ggcccctgcg tcctccgctt 120
ggctctgcca ctgcatctga gtgtcttctc tcctcacggc tccccgcatt tctaactctt 180
tctgcctcct cgtctcaaag ctgttccttc ccccgactca agaatccccg gaggcccgga 240
ggcctgcagc aggagcggcc atgaagaagc tgatggtggt gctgagtctg attgctgcag 300
cctgggcaga ggagcagaat aagttggtgc atggcggacc ctgcgacaag acatctcacc 360
cctaccaagc tgccctctac acctcgggcc acttgctctg tggtggggtc cttatccatc 420
cactgtgggt cctcacagct gcccactgca aaaaaccgaa tcttcaggtc ttcctgggga 480
agcataacct tcggcaaagg gagagttccc aggagcagag ttctgttgtc cgggctgtga 540
tccaccctga ctatgatgcc gccagccatg accaggacat catgctgttg cgcctggcac 600
gcccagccaa actctctgaa ctcatccagc cccttccccc ggagagggac tgctcagcca 660
acaccaccag ctgccacatc ctgggctggg gcaagacagc agatggtgat ttccctgaca 720
ccatccagtg tgcatacatc cacctggtgt cccgtgagga gtgtgagcat gcctaccctg 780
gccagatcac ccagaacatg ttgtgtgctg gggatgagaa gtacgggaag gattcctgcc 840
agggtgattc tgggggtccg ctggtatgtg gagaccacct ccgaggcctt gtgtcatggg 900
```

```
gtaacatccc ctgtggatca aaggagaagc caggagtcta caccaacgtc tgcagataca 960
cgaactggat ccaaaaaacc attcaggcca agtgaccctg acatgtgaca tctacctccc 1020
gacctaccac cccactggct ggttccagaa cgtctctcac ctagaccttg cctccctcc 1080
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ttgggtcctc ggtcttaccc ccaccactaa gagaatacag gaaaatccct tctaggcatc 1260
tcctctcccc aacccttcca cacgtttgat ttcttcctgc agaggcccag ccacgtgtct 1320
ggaatcccag ctccgctgct tactgtcggt gtccccttgg gatgtacctt tcttcactgc 1380
agatttctca cctgtaagat gaagataagg atgatacagt ctccataagg cagtggctgt 1440
tggaaagatt taaggtttca cacctatgac atacatggaa tagcacctgg gccaccatgc 1500
actcaataaa gaatgaattt tattatg                                     1527
```

<210> 230
<211> 244
<212> PRT
<213> Homo sapiens

<400> 230

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

<210> 231
<211> 1495
<212> DNA
<213> Homo sapiens

<400> 231

```
aggacgttcc agaagcatct ggggacagaa ccagcctctt ccagggaggc ctgggagctg 60
ggggtgtgtg tctggcagtc cctgcagccc tgggctctgc ggcccctgcg tcctccgctt 120
ggctctgcca ctgcatctga gtgtcttctc tcctcacggc tccccgcatt tctaactctt 180
tctgcctcct cgtctcaaag ctgttccttc ccccgactca agaatccccg gaggcccgga 240
ggcctgcagc agcctgggca gaggagcaga ataagttggt gcatggcgga ccctgcgaca 300
agacatctca ccctaccaa gctgccctct acacctcggg ccacttgctc tgtggtgggg 360
tccttatcca tccactgtgg gtcctcacag ctgcccactg caaaaaaccg aatcttcagg 420
tcttcctggg gaagcataac cttcggcaaa gggagagttc ccaggagcag agttctgttg 480
tccgggctgt gatccaccct gactatgatg ccgccagcca tgaccaggac atcatgctgt 540
tgcgcctggc acgcccagcc aaactctctg aactcatcca gcccccttcc ctggagaggg 600
actgctcagc caacaccacc agctgccaca tcctgggctg gggcaagaca gcagatggtg 660
atttccctga caccatccag tgtgcataca tccacctggt gtcccgtgag gagtgtgagc 720
atgcctaccc tggccagatc acccagaaca tgttgtgtgc tggggatgag aagtacggga 780
aggattcctg ccagggtgat tctgggggtc cgctggtatg tggagaccac ctccgaggcc 840
ttgtgtcatg gggtaacatc ccctgtggat caaaggagaa gccaggagtc tacaccaacg 900
tctgcagata cacgaactgg atccaaaaaa ccattcaggc caagtgaccc tgacatgtga 960
catctacctc ccgacctacc accccactgg ctggttccag aacgtctctc acctagacct 1020
tgcctccact cctctcctgc ccagctctga ccctgatgct taataaacgc agcgacgtga 1080
gggtcctgat tctccctggt tttaccccag ctccatcctt gcatcactgg ggaggacgtg 1140
atgagtgagg acttgggtcc tcggtcttac ccccaccact aagagaatac aggaaaatcc 1200
cttctaggca tctcctctcc ccaacccttc cacacgtttg atttcttcct gcagaggccc 1260
agccacgtgt ctggaatccc agctccgctg cttactgtcg gtgtcccctt gggatgtacc 1320
tttcttcact gcagatttct cacctgtaag atgaagataa ggatgataca gtctccataa 1380
ggcagtggct gttggaaaga tttaaggttt cacacctatg acatacatgg aatagcacct 1440
gggccaccat gcactcaata aagaatgaat tttattatga aaaaaaaaaa aaaaa      1495
```

<210> 232
<211> 137
<212> PRT
<213> Homo sapiens

<400> 232

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

<210> 233
<211> 1386
<212> DNA
<213> Homo sapiens

<400> 233

```
aggacgttcc agaagcatct ggggacagaa ccagcctctt ccagggaggc ctgggagctg 60
ggggtgtgtg tctggcagtc cctgcagccc tgggctctgc ggcccctgcg tcctccgctt 120
ggctctgcca ctgcatctga gtgtctttct tcctcacggc tccccgcatt tctaactctt 180
tctgcctcct cgtctcaaag ctgttccttc ccccgactca agaatccccg gaggcccgga 240
ggcctgcagc aggagcggcc atgaagaagc tgatggtggt gctgagtctg attgctgcag 300
gaatcttcag gtcttcctgg ggaagcataa ccttcggcaa agggagagtt cccaggagca 360
gagttctgtt gtccgggctg tgatccaccc tgactatgat gccgccagcc atgaccagga 420
catcatgctg ttgcgcctgg cacgcccagc caaactctct gaactcatcc agccccttcc 480
cctggagagg gactgctcag ccaacaccac cagctgccac atcctgggct ggggcaagac 540
agcagatggt gatttccctg acaccatcca gtgtgcatac atccacctgg tgtcccgtga 600
ggagtgtgag catgcctacc ctggccagat cacccagaac atgttgtgtg ctggggatga 660
gaagtacggg aaggattcct gccagggtga ttctgggggt ccgctggtat gtggagacca 720
cctccgaggc cttgtgtcat ggggtaacat cccctgtgga tcaaaggaga agccaggagt 780
ctacaccaac gtctgcagat acacgaactg gatccaaaaa accattcagg ccaagtgacc 840
ctgacatgtg acatctacct ccgacctac cacccactg gctggttcca gaacgtctct 900
cacctagacc ttgcctcccc tcctctcctg cccagctctg accctgatgc ttaataaacg 960
cagcgacgtg agggtcctga ttctccctgg ttttacccca gctccatcct tgcatcactg 1020
gggaggacgt gatgagtgag gacttgggtc ctcggtctta cccccaccac taagagaata 1080
caggaaaatc ccttctaggc atctcctctc cccaacccct ccacacgttt gatttcttcc 1140
tgcagaggcc cagccacgtg tctggaatcc cagctccgct gcttactgtc ggtgtcccct 1200
tgggatgtac ctttcttcac tgcagatttc tcacctgtaa gatgaagata aggatgatac 1260
agtctccata aggcagtggc tgttggaaag atttaaggtt tcacacctat gacatacatg 1320
gaatagcacc tgggccacca tgcactcaat aaagaatgaa ttttattatg aaaaaaaaaa 1380
aaaaaa                                                          1386
```

<210> 234
<211> 40
<212> PRT
<213> Homo sapiens

<400> 234

```
Met Lys Lys Leu Met Val Val Leu Ser Leu Ile Ala Ala Gly Ile Phe
 1               5                  10                  15
Arg Ser Ser Trp Gly Ser Ile Thr Phe Gly Lys Gly Arg Val Pro Arg
            20                  25                  30
Ser Arg Val Leu Leu Ser Gly Leu
        35                  40
```

<210> 235
<211> 3351
<212> DNA
<213> Homo sapiens

<400> 235

```
gcccgagaag ctggggagca tggaccagac cccgcagcgc tggcaccatg acgctcgccc 60
gcttcgtgct agccctgatg ttaggggcgc tccccgaagt ggtcggcttt gattctgtcc 120
tcaatgattc cctccaccac agccaccgcc attcgccccc tgcgggtccg cactaccgct 180
attaccttcc cacccagcag cggcccccga cgacgcgtcc gccgccgcct ctcccgcgct 240
tcccgcgccc cccgcgggcg ctccctgccc agcgcccgca cgccctccag gccgggcaca 300
cgccccggcc gcaccctgg ggctgccccg ccggcgagcc atgggtcagc gtgacggact 360
tcggcgcccc gtgtctgcgg tgggcggagg tgccaccctt cctggagcgg tcgcccccag 420
cgagctgggc tcagctgcga ggacagcgcc acaacttttg tcggagcccc gacggcgcgg 480
gcagaccctg gtgtttctac ggagacgccc gtggcaaggt ggactggggc tactgcgact 540
gcagacacgg atcagtacga cttcgtggcg gcaaaaatga gtttgaaggc acagtggaag 600
tatatgcaag tggagtttgg ggcactgtct gtagcagcca ctgggatgat tctgatgcat 660
cagtcatttg tcaccagctg cagctgggag gaaaaggaat agcaaaacaa acccccgtttt 720
ctggactggg ccttattccc atttattgga gcaatgtccg ttgccgagga gatgaagaaa 780
```

```
atatactgct ttgtgaaaaa gacatctggc agggtggggt gtgtcctcag aagatggcag 840
ctgctgtcac gtgtagcttt tcccatggcc caacgttccc catcattcgc cttgctggag 900
gcagcagtgt gcatgaaggc cgggtggagc tctaccatgc tggccagtgg ggaaccgttt 960
gtgatgacca atgggatgat gccgatgcag aagtgatctg caggcagctg ggcctcagtg 1020
gcattgccaa agcatggcat caggcatatt ttggggaagg gtctggccca gttatgttgg 1080
atgaagtacg ctgcactggg aatgagcttt caattgagca gtgtccaaag agctcctggg 1140
gagagcataa ctgtggccat aaagaagatg ctggagtgtc ctgtaccccc ctaacagatg 1200
gggtcatcag acttgcaggt gggaaaggca gccatgaggg tcgcttggag gtatattaca 1260
gaggccagtg gggaactgtc tgtgatgatg gctggactga gctgaataca tacgtggttt 1320
gtcgacagtt gggatttaaa tatggtaaac aagcatctgc caaccatttt gaagaaagca 1380
cagggcccat atggttggat gacgtcagct gctcaggaaa ggaaaccaga tttcttcagt 1440
gttccaggcg acagtgggga aggcatgact gcagccaccg cgaagatgtt agcattgcct 1500
gctaccctgg cggcgaggga cacaggctct ctctgggttt tcctgtcaga ctgatggatg 1560
gagaaaataa gaaagaagga cgagtggagg tttttatcaa tggccagtgg ggaacaatct 1620
gtgatgatgg atggactgat aaggatgcag ctgtgatctg tcgtcagctt ggctacaagg 1680
gtcctgccag agcaagaacc atggcttact ttggagaagg aaaaggaccc atccatgtgg 1740
ataatgtgaa gtgcacagga aatgagaggt ccttggctga ctgtatcaag caagatattg 1800
gaagacacaa ctgccgccac agtgaagatg caggagttat ttgtgattat tttggcaaga 1860
aggcctcagg taacagtaat aaagagtccc tctcatctgt ttgtggcttg agattactgc 1920
accgtcggca gaagcggatc attggtggga aaaattcttt aaggggtggt tggccttggc 1980
aggtttccct ccggctgaag tcatcccatg gagatggcag gctcctctgc ggggctacgc 2040
tcctgagtag ctgctgggtc ctcacagcag cacactgttt caagaggtat ggcaacagca 2100
ctaggagcta tgctgttagg gttggagatt atcatactct ggtaccagag gagtttgagg 2160
aagaaattgg agttcaacag attgtgattc atcgggagta tcgacccgac cgcagtgatt 2220
atgacatagc cctggttaga ttacaaggac cagaagagca atgtgccaga ttcagcagcc 2280
atgttttgcc agcctgttta ccactctgga gagagaggcc acagaaaaca gcatccaact 2340
gttacataac aggatggggt gacacaggac gagcctattc aagaacacta caacaagcag 2400
ccattccctt acttcctaaa aggttttgtg aagaacgtta taagggtcgg tttacaggga 2460
gaatgctttg tgctggaaac ctccatgaac acaaacgcgt ggacagctgc cagggagaca 2520
gcggaggacc actcatgtgt gaacggcccg gagagagctg ggtggtgtat ggggtgacct 2580
cctgggggta tggctgtgga gtcaaggatt ctcctggtgt ttataccaaa gtctcagcct 2640
ttgtaccttg gataaaaagt gtcaccaaac tgtaattctt catggaaact tcaaagcagc 2700
atttaaacaa atggaaaact ttgaaccccc actattagca ctcagcagag atgacaacaa 2760
atggcaagat ctgtttttgc tttgtgttgt ggtaaaaaat tgtgtacccc ctgctgcttt 2820
tgagaaattt gtgaacattt tcagaggcct cagtgtagtg gaagtgataa tccttaaatg 2880
aacatttttct accctaattt cactggagtg acttattcta agcctcatct atcccctacc 2940
tatttctcaa aatcattcta tgctgatttt acaaaagatc atttttacat ttgaactgag 3000
aaccccttttt aattgaatca gtggtgtctg aaatcatatt aaatacccac atttgacata 3060
aatgcggtac cctttactac actcatgagt ggcatattta tgcttaggtc ttttcaaaag 3120
acttgacaag aaatcttcat attctctgta gcctttgtca agtgaggaaa tcagtggtta 3180
aagaattcca ctataaactt ttaggcctga ataggagtag taaagcctca aggacatctg 3240
cctgtcacaa tatattctca aagtgatctg atatttggaa acaagtatcc ttgttgagta 3300
ccaagtgcta cagaaaccat aagataaaaa tactttctac ctacagcgtg c          3351
```

<210> 236
<211> 875
<212> PRT
<213> Homo sapiens

<400> 236

```
Met Thr Leu Ala Arg Phe Val Leu Ala Leu Met Leu Gly Ala Leu Pro
 1               5                  10                  15
Glu Val Val Gly Phe Asp Ser Val Leu Asn Asp Ser Leu His His Ser
            20                  25                  30
His Arg His Ser Pro Pro Ala Gly Pro His Tyr Pro Tyr Tyr Leu Pro
        35                  40                  45
Thr Gln Glu Arg Pro Pro Thr Thr Arg Pro Pro Pro Pro Leu Pro Arg
    50                  55                  60
```

```
Phe Pro Arg Pro Pro Arg Ala Leu Pro Ala Gln Arg Pro His Ala Leu
65                  70                  75                  80
Gln Ala Gly His Thr Pro Arg Pro His Pro Trp Gly Cys Pro Ala Gly
                85                  90                  95
Glu Pro Trp Val Ser Val Thr Asp Phe Gly Ala Pro Cys Leu Arg Trp
            100                 105                 110
Ala Glu Val Pro Pro Phe Leu Glu Arg Ser Pro Pro Ala Ser Trp Ala
        115                 120                 125
Gln Leu Arg Gly Gln Arg His Asn Phe Cys Arg Ser Pro Asp Gly Ala
    130                 135                 140
Gly Arg Pro Trp Cys Phe Tyr Gly Asp Ala Arg Gly Lys Val Asp Trp
145                 150                 155                 160
Gly Tyr Cys Asp Cys Arg His Gly Ser Val Arg Leu Arg Gly Gly Lys
                165                 170                 175
Asn Glu Phe Glu Gly Thr Val Glu Val Tyr Ala Ser Gly Val Trp Gly
            180                 185                 190
Thr Val Cys Ser Ser His Trp Asp Asp Ser Asp Ala Ser Val Ile Cys
        195                 200                 205
His Gln Leu Gln Leu Gly Gly Lys Gly Ile Ala Lys Gln Thr Pro Phe
    210                 215                 220
Ser Gly Leu Gly Leu Ile Pro Ile Tyr Trp Ser Asn Val Arg Cys Arg
225                 230                 235                 240
Gly Asp Glu Glu Asn Ile Leu Leu Cys Glu Lys Asp Ile Trp Gln Gly
                245                 250                 255
Gly Val Cys Pro Gln Lys Met Ala Ala Ala Val Thr Cys Ser Phe Ser
            260                 265                 270
His Gly Pro Thr Phe Pro Ile Ile Arg Leu Ala Gly Gly Ser Ser Val
        275                 280                 285
His Glu Gly Arg Val Glu Leu Tyr His Ala Gly Gln Trp Gly Thr Val
    290                 295                 300
Cys Asp Asp Gln Trp Asp Asp Ala Asp Ala Glu Val Ile Cys Arg Gln
305                 310                 315                 320
Leu Gly Leu Ser Gly Ile Ala Lys Ala Trp His Gln Ala Tyr Phe Gly
                325                 330                 335
Glu Gly Ser Gly Pro Val Met Leu Asp Glu Val Arg Cys Thr Gly Asn
            340                 345                 350
Glu Leu Ser Ile Glu Gln Cys Pro Lys Ser Ser Trp Gly Glu His Asn
        355                 360                 365
Cys Gly His Lys Glu Asp Ala Gly Val Ser Cys Thr Pro Leu Thr Asp
    370                 375                 380
Gly Val Ile Arg Leu Ala Gly Gly Lys Gly Ser His Glu Gly Arg Leu
385                 390                 395                 400
Glu Val Tyr Tyr Arg Gly Gln Trp Gly Thr Val Cys Asp Asp Gly Trp
                405                 410                 415
Thr Glu Leu Asn Thr Tyr Val Val Cys Arg Gln Leu Gly Phe Lys Tyr
            420                 425                 430
Gly Lys Gln Ala Ser Ala Asn His Phe Glu Glu Ser Thr Gly Pro Ile
        435                 440                 445
Trp Leu Asp Asp Val Ser Cys Ser Gly Lys Glu Thr Arg Phe Leu Gln
    450                 455                 460
Cys Ser Arg Arg Gln Trp Gly Arg His Asp Cys Ser His Arg Glu Asp
465                 470                 475                 480
Val Ser Ile Ala Cys Tyr Pro Gly Gly Glu Gly His Arg Leu Ser Leu
                485                 490                 495
Gly Phe Pro Val Arg Leu Met Asp Gly Glu Asn Lys Lys Glu Gly Arg
            500                 505                 510
Val Glu Val Phe Ile Asn Gly Gln Trp Gly Thr Ile Cys Asp Asp Gly
        515                 520                 525
```

```
Trp Thr Asp Lys Asp Ala Ala Val Ile Cys Arg Gln Leu Gly Tyr Lys
    530                 535                 540
Gly Pro Ala Arg Ala Arg Thr Met Ala Tyr Phe Gly Glu Gly Lys Gly
545                 550                 555                 560
Pro Ile His Val Asp Asn Val Lys Cys Thr Gly Asn Glu Arg Ser Leu
                565                 570                 575
Ala Asp Cys Ile Lys Gln Asp Ile Gly Arg His Asn Cys Arg His Ser
            580                 585                 590
Glu Asp Ala Gly Val Ile Cys Asp Tyr Phe Gly Lys Lys Ala Ser Gly
        595                 600                 605
Asn Ser Asn Lys Glu Ser Leu Ser Ser Val Cys Gly Leu Arg Leu Leu
    610                 615                 620
His Arg Arg Gln Lys Arg Ile Ile Gly Gly Lys Asn Ser Leu Arg Gly
625                 630                 635                 640
Gly Trp Pro Trp Gln Val Ser Leu Arg Leu Lys Ser Ser His Gly Asp
                645                 650                 655
Gly Arg Leu Leu Cys Gly Ala Thr Leu Leu Ser Ser Cys Trp Val Leu
            660                 665                 670
Thr Ala Ala His Cys Phe Lys Arg Tyr Gly Asn Ser Thr Arg Ser Tyr
        675                 680                 685
Ala Val Arg Val Gly Asp Tyr His Thr Leu Val Pro Glu Glu Phe Glu
    690                 695                 700
Glu Glu Ile Gly Val Gln Gln Ile Val Ile His Arg Glu Tyr Arg Pro
705                 710                 715                 720
Asp Arg Ser Asp Tyr Asp Ile Ala Leu Val Arg Leu Gln Gly Pro Glu
                725                 730                 735
Glu Gln Cys Ala Arg Phe Ser Ser His Val Leu Pro Ala Cys Leu Pro
            740                 745                 750
Leu Trp Arg Glu Arg Pro Gln Lys Thr Ala Ser Asn Cys Tyr Ile Thr
        755                 760                 765
Gly Trp Gly Asp Thr Gly Arg Ala Tyr Ser Arg Thr Leu Gln Gln Ala
    770                 775                 780
Ala Ile Pro Leu Leu Pro Lys Arg Phe Cys Glu Glu Arg Tyr Lys Gly
785                 790                 795                 800
Arg Phe Thr Gly Arg Met Leu Cys Ala Gly Asn Leu His Glu His Lys
                805                 810                 815
Arg Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Met Cys Glu
            820                 825                 830
Arg Pro Gly Glu Ser Trp Val Val Tyr Gly Val Thr Ser Trp Gly Tyr
        835                 840                 845
Gly Cys Gly Val Lys Asp Ser Pro Gly Val Tyr Thr Lys Val Ser Ala
    850                 855                 860
Phe Val Pro Trp Ile Lys Ser Val Thr Lys Leu
865                 870                 875
```

<210> 237
<211> 1165
<212> DNA
<213> Homo sapiens

<400> 237
agaaggaaca gggagcggcc aggatgctga atctgctgct gctggcgctg cccgtcctgg 60
cgagccgcgc ctacgcggcc cctgccccag gccaggccct gcagcgagtg ggcatcgttg 120
ggggtcagga ggcccccagg agcaagtggc cctggcaggt gagcctgaga gtccgcgacc 180
gatactggat gcacttctgc ggggggctcc tcatccaccc ccagtgggtg ctgaccgcag 240
cgcactgcgt gggaccggac gtcaaggatc tggccgccct cagggtgcaa ctgcgggagc 300
agcacctcta ctaccaggac cagctgctgc cggtcagcag gatcatcgtg cacccacagt 360

```
tctacaccgc ccagatcgga gcggacatcg ccctgctgga gctggaggag ccggtgaacg 420
tctccagcca cgtccacacg gtcaccctgc ccctgcctc agagaccttc ccccgggga 480
tgccgtgctg ggtcactggc tggggcgatg tggacaatga tgagcgcctc ccaccgccat 540
ttcctctgaa gcaggtgaag gtccccataa tggaaaacca catttgtgac gcaaaatacc 600
accttggcgc ctacacggga gacgacgtcc gcatcgtccg tgacgacatg ctgtgtgccg 660
ggaacacccg gagggactca tgccagggcg actccggagg gccctggtg tgcaaggtga 720
atggcacctg gctgcaggcg ggcgtggtca gctggggcga gggctgtgcc cagcccaacc 780
ggcctggcat ctacacccgt gtcacctact acttggactg gatccaccac tatgtcccca 840
aaaagccgtg agtcaggcct ggggtgtcca cctgggtcac tggagagcca gcccctcctg 900
tccaaaacac cactgcttcc tacccaggtg gcgactgccc cccacacctt ccctgccccg 960
tcctgagtgc cccttcctgt cctaagcccc ctgctctctt ctgagccccc tccccctgtcc 1020
tgaggaccct tccccatcct gagccccctt ccctgtccta agcctgacgc ctgcaccggg 1080
ccctccggcc ctccccctgcc caggcagctg gtggtgggcg ctaatcctcc tgagtgctgg 1140
acctcattaa agtgcatgga aatca                                       1165

<210> 238
<211> 275
<212> PRT
<213> Homo sapiens

<400> 238
Met Leu Asn Leu Leu Leu Leu Ala Leu Pro Val Leu Ala Ser Arg Ala
 1               5                  10                  15
Tyr Ala Ala Pro Ala Pro Gly Gln Ala Leu Gln Arg Val Gly Ile Val
            20                  25                  30
Gly Gly Gln Glu Ala Pro Arg Ser Lys Trp Pro Trp Gln Val Ser Leu
        35                  40                  45
Arg Val Arg Asp Arg Tyr Trp Met His Phe Cys Gly Gly Ser Leu Ile
    50                  55                  60
His Pro Gln Trp Val Leu Thr Ala Ala His Cys Val Gly Pro Asp Val
65                  70                  75                  80
Lys Asp Leu Ala Ala Leu Arg Val Gln Leu Arg Glu Gln His Leu Tyr
                85                  90                  95
Tyr Gln Asp Gln Leu Leu Pro Val Ser Arg Ile Ile Val His Pro Gln
            100                 105                 110
Phe Tyr Thr Ala Gln Ile Gly Ala Asp Ile Ala Leu Leu Glu Leu Glu
        115                 120                 125
Glu Pro Val Asn Val Ser Ser His Val His Thr Val Thr Leu Pro Pro
    130                 135                 140
Ala Ser Glu Thr Phe Pro Pro Gly Met Pro Cys Trp Val Thr Gly Trp
145                 150                 155                 160
Gly Asp Val Asp Asn Asp Glu Arg Leu Pro Pro Pro Phe Pro Leu Lys
                165                 170                 175
Gln Val Lys Val Pro Ile Met Glu Asn His Ile Cys Asp Ala Lys Tyr
            180                 185                 190
His Leu Gly Ala Tyr Thr Gly Asp Asp Val Arg Ile Val Arg Asp Asp
        195                 200                 205
Met Leu Cys Ala Gly Asn Thr Arg Arg Asp Ser Cys Gln Gly Asp Ser
    210                 215                 220
Gly Gly Pro Leu Val Cys Lys Val Asn Gly Thr Trp Leu Gln Ala Gly
225                 230                 235                 240
Val Val Ser Trp Gly Glu Gly Cys Ala Gln Pro Asn Arg Pro Gly Ile
                245                 250                 255
Tyr Thr Arg Val Thr Tyr Tyr Leu Asp Trp Ile His His Tyr Val Pro
            260                 265                 270
Lys Lys Pro
        275
```

<210> 239
<211> 1013
<212> DNA
<213> Homo sapiens

<400> 239
gttcccagaa gctccccagg ctctagtgca ggaggagaag gaggaggagc aggaggtgga 60
gattcccagt taaaaggctc cagaatcgtg taccaggcag agaactgaag tactggggcc 120
tcctccactg ggtccgaatc agtaggtgac cccgcccctg gattctggaa gacctcacca 180
tgggacgccc ccgacctcgt gcggccaaga cgtggatgtt cctgctcttg ctggggggag 240
cctgggcagg acactccagg gcacaggagg acaaggtgct ggggggtcat gagtgccaac 300
cccattcgca gccttggcag gcggccttgt tccagggcca gcaactactc tgtggcggtg 360
tccttgtagg tggcaactgg gtccttacag ctgcccactg taaaaaaccg aaatacacag 420
tacgcctggg agaccacagc ctacagaata aagatggccc agagcaagaa atacctgtgg 480
ttcagtccat cccacacccc tgctacaaca gcagcgatgt ggaggaccac aaccatgatc 540
tgatgcttct tcaactgcgt gaccaggcat ccctggggtc caaagtgaag cccatcagcc 600
tggcagatca ttgcacccag cctggccaga agtgcaccgt ctcaggctgg ggcactgtca 660
ccagtccccg agagaatttt cctgacactc tcaactgtgc agaagtaaaa atctttcccc 720
agaagaagtg tgaggatgct tacccggggc agatcacaga tggcatggtc tgtgcaggca 780
gcagcaaagg ggctgacacg tgccagggcg attctggagg ccccctggtg tgtgatggtg 840
cactccaggg catcacatcc tggggctcag accccctgtgg gaggtccgac aaacctggcg 900
tctataccaa catctgccgc tacctggact ggatcaagaa gatcataggc agcaagggct 960
gattctagga taagcactag atctccctta ataaactcac aactctctgg ttc 1013

<210> 240
<211> 260
<212> PRT
<213> Homo sapiens

<400> 240
Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu Leu
 1   5   10   15
Leu Leu Gly Gly Ala Trp Ala Gly His Ser Arg Ala Gln Glu Asp Lys
            20   25   30
Val Leu Gly Gly His Glu Cys Gln Pro His Ser Gln Pro Trp Gln Ala
        35   40   45
Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly Val Leu Val Gly
    50   55   60
Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys Lys Pro Lys Tyr Thr
65   70   75   80
Val Arg Leu Gly Asp His Ser Leu Gln Asn Lys Asp Gly Pro Glu Gln
                85   90   95
Glu Ile Pro Val Val Gln Ser Ile Pro His Pro Cys Tyr Asn Ser Ser
            100   105   110
Asp Val Glu Asp His Asn His Asp Leu Met Leu Leu Gln Leu Arg Asp
        115   120   125
Gln Ala Ser Leu Gly Ser Lys Val Lys Pro Ile Ser Leu Ala Asp His
    130   135   140
Cys Thr Gln Pro Gly Gln Lys Cys Thr Val Ser Gly Trp Gly Thr Val
145   150   155   160
Thr Ser Pro Arg Glu Asn Phe Pro Asp Thr Leu Asn Cys Ala Glu Val
                165   170   175
Lys Ile Phe Pro Gln Lys Lys Cys Glu Asp Ala Tyr Pro Gly Gln Ile
            180   185   190
Thr Asp Gly Met Val Cys Ala Gly Ser Ser Lys Gly Ala Asp Thr Cys
        195   200   205
Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly

```
    210                 215                 220
Ile Thr Ser Trp Gly Ser Asp Pro Cys Gly Arg Ser Asp Lys Pro Gly
225                 230                 235                 240
Val Tyr Thr Asn Ile Cys Arg Tyr Leu Asp Trp Ile Lys Lys Ile Ile
                245                 250                 255
Gly Scr Lys Gly
            260
```

<210> 241
<211> 1148
<212> DNA
<213> Homo sapiens

<400> 241
gttcccagaa gctccccagg ctctagtgca ggaggagaag gaggaggagc aggaggtgga 60
gattcccagt taaaaggctc cagaatcgtg taccaggcag agaactgaag tactggggcc 120
tcctccactg ggtccgaatc agtaggtgac cccgcccctg gattctggaa gacctcacca 180
tgggacgccc ccgacctcgt gcggccaaga cgtggatgtt cctgctcttg ctgggggggag 240
cctgggcagc gtgtggaagc ctggacctcc tcactaagtt gtatgcggag aacttgccgt 300
gtgtccattt gaacccacag tggccttccc agccctcgca ctgccccaga gggtggcgat 360
ccaaccctct ccctcctgct gcaggacact ccagggcaca ggaggacaag gtgctggggg 420
gtcatgagtg ccaaccccat tcgcagcctt ggcaggcggc cttgttccag ggccagcaac 480
tactctgtgg cggtgtcctt gtaggtggca actgggtcct tacagctgcc cactgtaaaa 540
aaccgaaata cacagtacgc ctgggagacc acagcctaca gaataaagat ggcccagagc 600
aagaaatacc tgtggttcag tccatcccac acccctgcta caacagcagc gatgtggagg 660
accacaacca tgatctgatg cttcttcaac tgcgtgacca ggcatccctg gggtccaaag 720
tgaagcccat cagcctggca gatcattgca cccagcctgg ccagaagtgc accgtctcag 780
gctggggcac tgtcaccagt ccccgagaga attttcctga cactctcaac tgtgcagaag 840
taaaaatctt tccccagaag aagtgtgagg atgcttaccc ggggcagatc acagatggca 900
tggtctgtgc aggcagcagc aaaggggctg acacgtgcca gggcgattct ggaggccccc 960
tggtgtgtga tggtgcactc cagggcatca catcctgggg ctcagacccc tgtgggaggt 1020
ccgacaaacc tggcgtctat accaacatct gccgctacct ggactggatc aagaagatca 1080
taggcagcaa gggctgattc taggataagc actagatctc ccttaataaa ctcacaactc 1140
tctggttc   1148

<210> 242
<211> 305
<212> PRT
<213> Homo sapiens

<400> 242
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Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu Leu
 1               5                  10                  15
Leu Leu Gly Gly Ala Trp Ala Ala Cys Gly Ser Leu Asp Leu Leu Thr
            20                  25                  30
Lys Leu Tyr Ala Glu Asn Leu Pro Cys Val His Leu Asn Pro Gln Trp
        35                  40                  45
Pro Ser Gln Pro Ser His Cys Pro Arg Gly Trp Arg Ser Asn Pro Leu
    50                  55                  60
Pro Pro Ala Ala Gly His Ser Arg Ala Gln Glu Asp Lys Val Leu Gly
65                  70                  75                  80
Gly His Glu Cys Gln Pro His Ser Gln Pro Trp Gln Ala Ala Leu Phe
                85                  90                  95
Gln Gly Gln Gln Leu Leu Cys Gly Gly Val Leu Val Gly Gly Asn Trp
            100                 105                 110
Val Leu Thr Ala Ala His Cys Lys Lys Pro Lys Tyr Thr Val Arg Leu
        115                 120                 125
```

```
Gly Asp His Ser Leu Gln Asn Lys Asp Gly Pro Glu Gln Glu Ile Pro
    130                 135                 140
Val Val Gln Ser Ile Pro His Pro Cys Tyr Asn Ser Ser Asp Val Glu
145                 150                 155                 160
Asp His Asn His Asp Leu Met Leu Leu Gln Leu Arg Asp Gln Ala Ser
                165                 170                 175
Leu Gly Ser Lys Val Lys Pro Ile Ser Leu Ala Asp His Cys Thr Gln
            180                 185                 190
Pro Gly Gln Lys Cys Thr Val Ser Gly Trp Gly Thr Val Thr Ser Pro
        195                 200                 205
Arg Glu Asn Phe Pro Asp Thr Leu Asn Cys Ala Glu Val Lys Ile Phe
    210                 215                 220
Pro Gln Lys Lys Cys Glu Asp Ala Tyr Pro Gly Gln Ile Thr Asp Gly
225                 230                 235                 240
Met Val Cys Ala Gly Ser Ser Lys Gly Ala Asp Thr Cys Gln Gly Asp
                245                 250                 255
Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly Ile Thr Ser
            260                 265                 270
Trp Gly Ser Asp Pro Cys Gly Arg Ser Asp Lys Pro Gly Val Tyr Thr
        275                 280                 285
Asn Ile Cys Arg Tyr Leu Asp Trp Ile Lys Lys Ile Ile Gly Ser Lys
    290                 295                 300
Gly
305
```

<210> 243
<211> 590
<212> DNA
<213> Homo sapiens

<400> 243
gttcccagaa gctccccagg ctctagtgca ggaggagaag gaggaggagc aggaggtgga 60
gattcccagt taaaaggctc cagaatcgtg taccaggcag agaactgaag tactggggcc 120
tcctccactg ggtccgaatc agtaggtgac cccgcccctg gattctggaa gacctcacca 180
tgggacgccc ccgacctcgt gcggccaaga cgtggatgtt cctgctcttg ctggggggag 240
cctgggcaga gaattttcct gacactctca actgtgcaga agtaaaaatc tttccccaga 300
agaagtgtga ggatgcttac ccggggcaga tcacagatgg catggtctgt gcaggcagca 360
gcaaaggggc tgacacgtgc cagggcgatt ctggaggccc cctggtgtgt gatggtgcac 420
tccagggcat cacatcctgg ggctcagacc cctgtgggag gtccgacaaa cctggcgtct 480
ataccaacat ctgccgctac ctggactgga tcaagaagat cataggcagc aagggctgat 540
tctaggataa gcactagatc tcccttaata aactcacaac tctctggttc 590

<210> 244
<211> 119
<212> PRT
<213> Homo sapiens

<400> 244
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Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu Leu
 1               5                  10                  15
Leu Leu Gly Gly Ala Trp Ala Glu Asn Phe Pro Asp Thr Leu Asn Cys
            20                  25                  30
Ala Glu Val Lys Ile Phe Pro Gln Lys Lys Cys Glu Asp Ala Tyr Pro
        35                  40                  45
Gly Gln Ile Thr Asp Gly Met Val Cys Ala Gly Ser Ser Lys Gly Ala
    50                  55                  60
Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala
```

```
65                  70                  75                  80
Leu Gln Gly Ile Thr Ser Trp Gly Ser Asp Pro Cys Gly Arg Ser Asp
                85                  90                  95
Lys Pro Gly Val Tyr Thr Asn Ile Cys Arg Tyr Leu Asp Trp Ile Lys
            100                 105                 110
Lys Ile Ile Gly Ser Lys Gly
        115
```

<210> 245
<211> 456
<212> DNA
<213> Homo sapiens

<400> 245
gttcccagaa gctccccagg ctctagtgca ggaggagaag gaggaggagc aggaggtgga 60
gattcccagt taaaaggctc cagaatcgtg taccaggcag agaactgaag tactggggcc 120
tcctccactg ggtccgaatc agtaggtgac ccegcccctg gattctggaa gacctcacca 180
tgggacgccc ccgacctcgt gcggccaaga cgtggatgtt cctgctcttg ctgggggggag 240
cctgggcagg gcgattctgg aggcccccctg gtgtgtgatg gtgcactcca gggcatcaca 300
tcctggggct cagacccctg tgggaggtcc gacaaacctg gcgtctatac caacatctgc 360
cgctacctgg actggatcaa gaagatcata ggcagcaagg gctgattcta ggataagcac 420
tagatctccc ttaataaact cacaactctc tggttc 456

<210> 246
<211> 32
<212> PRT
<213> Homo sapiens

<400> 246
```
Met Gly Arg Pro Arg Pro Arg Ala Ala Lys Thr Trp Met Phe Leu Leu
 1               5                  10                  15
Leu Leu Gly Gly Ala Trp Ala Gly Arg Phe Trp Arg Pro Pro Gly Val
            20                  25                  30
```

<210> 247
<211> 1580
<212> DNA
<213> Homo sapiens

<400> 247
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tcttggcacc gggacccgga gaatccccac ggaagccagt tccaaaaggg atgaaaaggg 120
ggcgtttcgg gcactgggag aagcctgtat tccagggccc ctcccagagc aggaatctgg 180
gacccaggag tgccagcctc acccacgcag atcctggcca tgagagctcc gcacctccac 240
ctctccgccg cctctggcgc ccgggctctg gcgaagctgc tgccgctgct gatggcgcaa 300
ctctgggccg cagaggcggc gctgctcccc caaaacgaca cgcgcttgga ccccgaagcc 360
tatggctccc cgtgcgcgcg cggctcgcag ccctggcagg tctcgctctt caacggcctc 420
tcgttccact gcgcgggtgt cctggtggac cagagttggg tgctgacggc cgcgcactgc 480
ggaaacaagc cactgtgggc tcgagtaggg gatgaccacc tgctgcttct tcagggagag 540
cagctccgcc ggaccactcg ctctgttgtc catcccaagt accaccaggg ctcaggcccc 600
atcctgccaa ggcgaacgga tgagcacgat ctcatgttgc tgaagctggc caggcccgta 660
gtgctggggc cccgcgtccg ggccctgcag cttccctacc gctgtgctca gcccggagac 720
cagtgccagg ttgctggctg gggcaccacg gccgcccgga gagtgaagta caacaagggc 780
ctgacctgct ccagcatcac tatcctgagc cctaaagagt gtgaggtctt ctaccctggc 840
gtggtcacca acaacatgat atgtgctgga ctggaccggg gccaggaccc ttgccagagt 900
gactctggag gcccccctggt ctgtgacgag accctccaag gcatcctctc gtggggtgtt 960

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tacccctgtg gctctgccca gcatccagct gtctacaccc agatctgcaa atacatgtcc 1020
tggatcaata aagtcatacg ctccaactga tccagatgct acgctccagc tgatccagat 1080
gttatgctcc tgctgatcca gatgcccaga ggctccatcg tccatcctct tcctccccag 1140
tcggctgaac tctccccttg tctgcactgt tcaaacctct gccgcctcc acacctctaa 1200
acatctcccc tctcacctca ttcccccacc tatccccatt ctctgcctgt actgaagctg 1260
aaatgcagga agtggtggca aaggtttatt ccagagaagc caggaagccg gtcatcaccc 1320
agcctctgag agcagttact ggggtcaccc aacctgactt cctctgccac tccctgctgt 1380
gtgactttgg gcaagccaag tgccctctct gaacctcagt ttcctcatct gcaaaatggg 1440
aacaatgacg tgcctacctc ttagacatgt tgtgaggaga ctatgatata acatgtgtat 1500
gtaaatcttc atggtgattg tcatgtaagg cttaacacag tgggtggtga gttctgacta 1560
aaggttacct gttgtcgtga                                           1580
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<210> 248
<211> 276
<212> PRT
<213> Homo sapiens

<400> 248

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

<210> 249
<211> 1443

<212> DNA
<213> Homo sapiens

<400> 249
accagcggca gaccacaggc agggcagagg cacgtctggg tcccctccct ccttcctatc 60
ggcgactccc aggatcctgg ccatgagagc tccgcacctc cacctctccg ccgcctctgg 120
cgcccgggct ctggcgaagc tgctgccgct gctgatggcg caactctggg ccgcagaggc 180
ggcgctgctc cccaaaacg acacgcgctt ggacccccgaa gcctatggct ccccgtgcgc 240
gcgcggctcg cagccctggc aggtctcgct cttcaacggc ctctcgttcc actgcgcggg 300
tgtcctggtg gaccagagtt gggtgctgac ggccgcgcac tgcggaaaca agccactgtg 360
ggctcgagta ggggatgacc acctgctgct tcttcaggga gagcagctcc gccggaccac 420
tcgctctgtt gtccatccca agtaccacca gggctcaggc cccatcctgc caaggcgaac 480
ggatgagcac gatctcatgt tgctgaagct ggccaggccc gtagtgctgg ggccccgcgt 540
ccgggccctg cagcttccct accgctgtgc tcagcccgga gaccagtgcc aggttgctgg 600
ctggggcacc acggccgccc ggagagtgaa gtacaacaag ggcctgacct gctccagcat 660
cactatcctg agccctaaag agtgtgaggt cttctaccct ggcgtggtca ccaacaacat 720
gatatgtgct ggactggacc ggggccagga cccttgccag agtgactctg gaggccccct 780
ggtctgtgac gagaccctcc aaggcatcct ctcgtggggt gtttaccccct gtggctctgc 840
ccagcatcca gctgtctaca cccagatctg caaatacatg tcctggatca ataaagtcat 900
acgctccaac tgatccagat gctacgctcc agctgatcca gatgttatgc tcctgctgat 960
ccagatgccc agaggctcca tcgtccatcc tcttcctccc cagtcggctg aactctcccc 1020
ttgtctgcac tgttcaaacc tctgccgccc tccacacctc taaacatctc ccctctcacc 1080
tcattccccc acctatcccc attctctgcc tgtactgaag ctgaaatgca ggaagtggtg 1140
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tga 1443

<210> 250
<211> 276
<212> PRT
<213> Homo sapiens

<400> 250
Met Arg Ala Pro His Leu His Leu Ser Ala Ala Ser Gly Ala Arg Ala
 1   5   10   15
Leu Ala Lys Leu Leu Pro Leu Leu Met Ala Gln Leu Trp Ala Ala Glu
            20   25   30
Ala Ala Leu Leu Pro Gln Asn Asp Thr Arg Leu Asp Pro Glu Ala Tyr
        35   40   45
Gly Ser Pro Cys Ala Arg Gly Ser Gln Pro Trp Gln Val Ser Leu Phe
    50   55   60
Asn Gly Leu Ser Phe His Cys Ala Gly Val Leu Val Asp Gln Ser Trp
65   70   75   80
Val Leu Thr Ala Ala His Cys Gly Asn Lys Pro Leu Trp Ala Arg Val
                85   90   95
Gly Asp Asp His Leu Leu Leu Leu Gln Gly Glu Gln Leu Arg Arg Thr
            100   105   110
Thr Arg Ser Val Val His Pro Lys Tyr His Gln Gly Ser Gly Pro Ile
        115   120   125
Leu Pro Arg Arg Thr Asp Glu His Asp Leu Met Leu Leu Lys Leu Ala
    130   135   140
Arg Pro Val Val Leu Gly Pro Arg Val Arg Ala Leu Gln Leu Pro Tyr
145   150   155   160
Arg Cys Ala Gln Pro Gly Asp Gln Cys Gln Val Ala Gly Trp Gly Thr
                165   170   175

```
Thr Ala Ala Arg Arg Val Lys Tyr Asn Lys Gly Leu Thr Cys Ser Ser
            180                 185                 190
Ile Thr Ile Leu Ser Pro Lys Glu Cys Glu Val Phe Tyr Pro Gly Val
        195                 200                 205
Val Thr Asn Asn Met Ile Cys Ala Gly Leu Asp Arg Gly Gln Asp Pro
    210                 215                 220
Cys Gln Ser Asp Ser Gly Gly Pro Leu Val Cys Asp Glu Thr Leu Gln
225                 230                 235                 240
Gly Ile Leu Ser Trp Gly Val Tyr Pro Cys Gly Ser Ala Gln His Pro
                245                 250                 255
Ala Val Tyr Thr Gln Ile Cys Lys Tyr Met Ser Trp Ile Asn Lys Val
            260                 265                 270
Ile Arg Ser Asn
        275
```

<210> 251
<211> 3226
<212> DNA
<213> Homo sapiens

<400> 251
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gagcgcggca ggtcatattg aacattccag atacctatca ttactcgatg ctgttgataa 120
cagcaagatg gctttgaact cagggtcacc accagctatt ggaccttact atgaaaacca 180
tggataccaa ccggaaaacc cctatcccgc acagcccact gtggtcccca ctgtctacga 240
ggtgcatccg gctcagtact acccgtcccc cgtgccccag tacgccccga gggtcctgac 300
gcaggcttcc aaccccgtcg tctgcacgca gcccaaatcc ccatccggga cagtgtgcac 360
ctcaaagact aagaaagcac tgtgcatcac cttgaccctg gggaccttcc tcgtgggagc 420
tgcgctggcc gctggcctac tctggaagtt catgggcagc aagtgctcca actctgggat 480
agagtgcgac tcctcaggta cctgcatcaa ccctctaac tggtgtgatg gcgtgtcaca 540
ctgccccggc ggggaggacg agaatcggtg tgttcgcctc tacggaccaa acttcatcct 600
tcagatgtac tcatctcaga ggaagtcctg gcaccctgtg tgccaagacg actggaacga 660
gaactacggg cgggcggcct gcagggacat gggctataag aataattttt actctagcca 720
aggaatagtg gatgacagcg gatccaccag ctttatgaaa ctgaacacaa gtgccggcaa 780
tgtcgatatc tataaaaaac tgtaccacag tgatgcctgt tcttcaaaag cagtggtttc 840
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ttggcactct ctgccattct gtgcaggctg cagtggctcc cctgcccagc ctgctctccc 1800
taaccccttg tccgcaaggg gtgatggccg gctggttgtg ggcactggcg gtcaagtgtg 1860
gaggagaggg gtggaggctg ccccattgag atcttcctgc tgagtccttt ccaggggcca 1920
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agagacatgg aaagggagac agccaggtgg cacctgcagc ggctgccctc tggggccact 2040
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tagtcacttg taaggggaac agaaacattt ttgttcttat ggggtgagaa tatagacagt 2220
gcccttggtg cgagggaagc aattgaaaag gaacttgccc tgagcactcc tggtgcaggt 2280
ctccacctgc acattgggtg gggctcctgg gagggagact cagccttcct cctcatcctc 2340
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atgctgtggg tttccaacca ggggaagggt ccctttgca ttgccaagtg ccataaccat 2820
gagcactact ctaccatggt tctgcctcct ggccaagcag gctggtttgc aagaatgaaa 2880
tgaatgattc tacagctagg acttaacctt gaaatggaaa gtcttgcaat cccatttgca 2940
ggatccgtct gtgcacatgc ctctgtagag agcagcattc ccagggacct tggaaacagt 3000
tggcactgta aggtgcttgc tccccaagac acatcctaaa aggtgttgta atggtgaaaa 3060
cgtcttcctt ctttattgcc ccttcttatt tatgtgaaca actgtttgtc ttttttttgta 3120
tctttttaa actgtaaagt tcaattgtga aaatgaatat catgcaaata aattatgcga 3180
ttttttttc aaagcaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa                  3226
```

<210> 252
<211> 492
<212> PRT
<213> Homo sapiens

<400> 252

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

```
            260                 265                 270
Leu His Val Gln Asn Val His Val Cys Gly Gly Ser Ile Ile Thr Pro
        275                 280                 285
Glu Trp Ile Val Thr Ala Ala His Cys Val Glu Lys Pro Leu Asn Asn
    290                 295                 300
Pro Trp His Trp Thr Ala Phe Ala Gly Ile Leu Arg Gln Ser Phe Met
305                 310                 315                 320
Phe Tyr Gly Ala Gly Tyr Gln Val Glu Lys Val Ile Ser His Pro Asn
                325                 330                 335
Tyr Asp Ser Lys Thr Lys Asn Asn Asp Ile Ala Leu Met Lys Leu Gln
            340                 345                 350
Lys Pro Leu Thr Phe Asn Asp Leu Val Lys Pro Val Cys Leu Pro Asn
        355                 360                 365
Pro Gly Met Met Leu Gln Pro Glu Gln Leu Cys Trp Ile Ser Gly Trp
    370                 375                 380
Gly Ala Thr Glu Glu Lys Gly Lys Thr Ser Glu Val Leu Asn Ala Ala
385                 390                 395                 400
Lys Val Leu Leu Ile Glu Thr Gln Arg Cys Asn Ser Arg Tyr Val Tyr
                405                 410                 415
Asp Asn Leu Ile Thr Pro Ala Met Ile Cys Ala Gly Phe Leu Gln Gly
            420                 425                 430
Asn Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Thr Ser
        435                 440                 445
Lys Asn Asn Ile Trp Trp Leu Ile Gly Asp Thr Ser Trp Gly Ser Gly
    450                 455                 460
Cys Ala Lys Ala Tyr Arg Pro Gly Val Tyr Gly Asn Val Met Val Phe
465                 470                 475                 480
Thr Asp Trp Ile Tyr Arg Gln Met Arg Ala Asp Gly
                485                 490
```

<210> 253
<211> 1280
<212> DNA
<213> Homo sapiens

<400> 253

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atggccacag caggaaatcc ctggggctgg ttcctggggt acctcatcct tggtgtcgca 60
ggatctctcg tctctggtag ctgcagccaa atcataaacg gcgaggactg cagcccgcac 120
tcgcagccct ggcaggcggc actggtcatg gaaaacgaat tgttctgctc gggcgtcctg 180
gtgcatccgc agtgggtgct gtcagccgca cactgtttcc agaactccta caccatcggg 240
ctgggcctgc acagtcttga ggccgaccaa gagccaggga gccagatggt ggaggccagc 300
ctctccgtac ggcacccaga gtacaacaga cccttgctcg ctaacgacct catgctcatc 360
aagttggacg aatccgtgtc cgagtctgac accatccgga gcatcagcat tgcttcgcag 420
tgccctaccg cggggaactc ttgcctcgtt tctggctggg gtctgctggc gaacggcaga 480
atgcctaccg tgctgcagtg cgtgaacgtg tcggtggtgt ctgaggaggt ctgcagtaag 540
ctctatgacc cgctgtacca ccccagcatg ttctgcgccg gcggagggca agaccagaag 600
gactcctgca acggtgactc tgggggccc ctgatctgca acgggtactt gcagggcctt 660
gtgtctttcg gaaaagcccc gtgtggccaa gttggcgtgc caggtgtcta caccaacctc 720
tgcaaattca ctgagtggat agagaaaacc gtccaggcca gttaactctg gggactggga 780
accatgaaa ttgacccca aatacatcct gcggaaggaa ttcaggaata tctgttccca 840
gccctctctc cctcaggccc aggagtccag gccccagcc cctcctccct caaaccaagg 900
gtacagatcc ccagccctc ctccctcaga cccaggagtc cagaccccc agccctctct 960
ccctcagacc caggagtcca gccctctctc cctcagaccc aggagtccag acccccagc 1020
ccctcctccc tcagacccag gggtccaggc ccccaacccc tcctccctca gactcagagg 1080
tccaagcccc caacccctcc ttccccagac ccagaggtcc aggtcccagc ccctcctccc 1140
tcagacccag cggtccaatg ccacctagac tctccctgta cacagtgccc ccttgtggca 1200
cgttgaccca accttaccag ttggtttttc atttttgtc cctttccct agatccagaa 1260
```

ataaagtcta agagaagcgc 1280

<210> 254
<211> 254
<212> PRT
<213> Homo sapiens

<400> 254
Met Ala Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile
1 5 10 15
Leu Gly Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile
20 25 30
Asn Gly Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu
35 40 45
Val Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln
50 55 60
Trp Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly
65 70 75 80
Leu Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met
85 90 95
Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu
100 105 110
Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu
115 120 125
Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala
130 135 140
Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg
145 150 155 160
Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu
165 170 175
Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys
180 185 190
Ala Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly
195 200 205
Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly
210 215 220
Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu
225 230 235 240
Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
245 250

<210> 255
<211> 1391
<212> DNA
<213> Homo sapiens

<400> 255
acacaccctg acccgcatcg ccctgggtct ctcgagcctg ctgcctgctc ccccgcccca 60
ccagccatgg tggtttctgg agcgccccca gccctgggtg ggggctgtct cggcaccttc 120
acctccctgc tgctgctggc gtcgacagcc atcctcaatg cggccaggat acctgttccc 180
ccagcctgtg ggaagcccca gcagctgaac cgggttgtgg gcggcgagga cagcactgac 240
agcgagtggc cctggatcgt gagcatccag aagaatggga cccaccactg cgcaggttct 300
ctgctcacca gccgctgggt gatcactgct gcccactgtt tcaaggacaa cctgaacaaa 360
ccatacctgt tctctgtgct gctgggggcc tggcagctgg ggaaccctgg ctctcggtcc 420
cagaaggtgg gtgttgcctg ggtggagccc caccctgtgt attcctggaa ggaaggtgcc 480
tgtgcagaca ttgccctggt gcgtctcgag cgctccatac agttctcaga gcgggtcctg 540
cccatctgcc tacctgatgc ctctatccac ctccctccaa acacccactg ctggatctca 600

```
ggctggggga gcatccaaga tggagttccc ttgccccacc ctcagaccct gcagaagctg 660
aaggttccta tcatcgactc ggaagtctgc agccatctgt actggcgggg agcaggacag 720
ggacccatca ctgaggacat gctgtgtgcc ggctacttgg agggggagcg ggatgcttgt 780
ctgggcgact ccgggggccc cctcatgtgc caggtggacg gcgcctggct gctggccggc 840
atcatcagct ggggcgaggg ctgtgccgag cgcaacaggc ccggggtcta catcagcctc 900
tctgcgcacc gctcctgggt ggagaagatc gtgcaagggg tgcagctccg cgggcgcgct 960
caggggggtg gggccctcag ggcaccgagc cagggctctg gggccgccgc gcgctcctag 1020
ggcgcagcgg gacgcggggc tcggatctga aaggcggcca gatccacatc tggatctgga 1080
tctgcggcgg cctcgggcgg tttccccgc cgtaaatagg ctcatctacc tctacctctg 1140
ggggcccgga cggctgctgc ggaaaggaaa ccccctcccc gacccgcccg acggcctcag 1200
gcccgcctc caaggcatca ggccccgccc aacggcctca tgtccccgcc cccacgactt 1260
ccggccccgc cccgggcccc agcgcttttg tgtatataaa tgttaatgat ttttataggt 1320
atttgtaacc ctgcccacat atcttattta ttcctccaat ttcaataaat tatttattct 1380
ccagtgaaaa a                                                      1391

<210> 256
<211> 317
<212> PRT
<213> Homo sapiens

<400> 256
Met Val Val Ser Gly Ala Pro Pro Ala Leu Gly Gly Gly Cys Leu Gly
 1               5                  10                  15
Thr Phe Thr Ser Leu Leu Leu Leu Ala Ser Thr Ala Ile Leu Asn Ala
            20                  25                  30
Ala Arg Ile Pro Val Pro Pro Ala Cys Gly Lys Pro Gln Gln Leu Asn
        35                  40                  45
Arg Val Val Gly Gly Glu Asp Ser Thr Asp Ser Glu Trp Pro Trp Ile
    50                  55                  60
Val Ser Ile Gln Lys Asn Gly Thr His His Cys Ala Gly Ser Leu Leu
65                  70                  75                  80
Thr Ser Arg Trp Val Ile Thr Ala Ala His Cys Phe Lys Asp Asn Leu
                85                  90                  95
Asn Lys Pro Tyr Leu Phe Ser Val Leu Leu Gly Ala Trp Gln Leu Gly
            100                 105                 110
Asn Pro Gly Ser Arg Ser Gln Lys Val Gly Val Ala Trp Val Glu Pro
        115                 120                 125
His Pro Val Tyr Ser Trp Lys Glu Gly Ala Cys Ala Asp Ile Ala Leu
    130                 135                 140
Val Arg Leu Glu Arg Ser Ile Gln Phe Ser Glu Arg Val Leu Pro Ile
145                 150                 155                 160
Cys Leu Pro Asp Ala Ser Ile His Leu Pro Pro Asn Thr His Cys Trp
                165                 170                 175
Ile Ser Gly Trp Gly Ser Ile Gln Asp Gly Val Pro Leu Pro His Pro
            180                 185                 190
Gln Thr Leu Gln Lys Leu Lys Val Pro Ile Ile Asp Ser Glu Val Cys
        195                 200                 205
Ser His Leu Tyr Trp Arg Gly Ala Gly Gln Gly Pro Ile Thr Glu Asp
    210                 215                 220
Met Leu Cys Ala Gly Tyr Leu Glu Gly Glu Arg Asp Ala Cys Leu Gly
225                 230                 235                 240
Asp Ser Gly Gly Pro Leu Met Cys Gln Val Asp Gly Ala Trp Leu Leu
                245                 250                 255
Ala Gly Ile Ile Ser Trp Gly Glu Gly Cys Ala Glu Arg Asn Arg Pro
            260                 265                 270
Gly Val Tyr Ile Ser Leu Ser Ala His Arg Ser Trp Val Glu Lys Ile
        275                 280                 285
Val Gln Gly Val Gln Leu Arg Gly Arg Ala Gln Gly Gly Gly Ala Leu
```

```
    290                 295                 300
Arg Ala Pro Ser Gln Gly Ser Gly Ala Ala Ala Arg Ser
305                 310                 315
```

<210> 257
<211> 1184
<212> DNA
<213> Homo sapiens

<400> 257
atctgccacg atgttgctgc tcagcctgac cctaagcctg gttctcctcg gctcctcctg 60
gggctgcggc attcctgcca tcaaaccggc actgagcttc agccagagga ttgtcaacgg 120
ggagaatgca gtgttgggct cctggccctg gcaggtgtcc ctgcaggaca gcagcggctt 180
ccacttctgc ggtggttctc tcatcagcca gtcctgggtg gtcactgctg cccactgcaa 240
tgtcagccct ggccgccatt ttgttgtcct gggcgagtat gaccgatcat caaacgcaga 300
gcccttgcag gttctgtccg tctctcgggc cattacacac cctagctgga actctaccac 360
catgaacaat gacgtgacgc tgctgaagct cgcctcgcca gcccagtaca caacacgcat 420
ctcgccagtt tgcctggcat cctcaaacga ggctctgact gaaggcctca cgtgtgtcac 480
caccggctgg ggtcgcctca gtggcgtggg caatgtgaca ccagcacatc tgcagcaggt 540
ggctttgccc ctggtcactg tgaatcagtg ccggcagtac tggggctcaa gtatcactga 600
ctccatgatc tgtgcaggtg gcgcaggtgc ctcctcgtgc cagggtgact ccggaggccc 660
tcttgtctgc cagaagggaa acacatgggt gcttattggt attgtctcct ggggcaccaa 720
aaactgcaat gtgcgcgcac ctgctgtgta tactcgagtt agcaagttca gcacctggat 780
caaccaggtc atagcctaca actgagctca ccacaggccc tccccagctc aacccattaa 840
agacccaggc cctgtcccat catgcattca tgtctgtctt cctggctcag gagaaagaag 900
aggctgttga gggtccgact ccctacttgg acttctggca cagaaggggc tgagtgactc 960
cttgagtagc agtggctctt cctagagtag ccatgccgag gccggggccc ccaccctcc 1020
tccagggcaa ccccttggtc ctacagcaag aagccagaac tgttggaatg aatggcagcc 1080
ctccctggag aggcagcctg tttactgaat acagaggata cgtttacaaa ctgaatacgc 1140
ataataaata actgcacatt ctccatccaa aaaaaaaaaa aaaa 1184

<210> 258
<211> 264
<212> PRT
<213> Homo sapiens

<400> 258
```
Met Leu Leu Leu Ser Leu Thr Leu Ser Leu Val Leu Leu Gly Ser Ser
 1               5                  10                  15
Trp Gly Cys Gly Ile Pro Ala Ile Lys Pro Ala Leu Ser Phe Ser Gln
            20                  25                  30
Arg Ile Val Asn Gly Glu Asn Ala Val Leu Gly Ser Trp Pro Trp Gln
        35                  40                  45
Val Ser Leu Gln Asp Ser Ser Gly Phe His Phe Cys Gly Gly Ser Leu
    50                  55                  60
Ile Ser Gln Ser Trp Val Val Thr Ala Ala His Cys Asn Val Ser Pro
65                  70                  75                  80
Gly Arg His Phe Val Val Leu Gly Glu Tyr Asp Arg Ser Ser Asn Ala
                85                  90                  95
Glu Pro Leu Gln Val Leu Ser Val Ser Arg Ala Ile Thr His Pro Ser
            100                 105                 110
Trp Asn Ser Thr Thr Met Asn Asn Asp Val Thr Leu Leu Lys Leu Ala
        115                 120                 125
Ser Pro Ala Gln Tyr Thr Thr Arg Ile Ser Pro Val Cys Leu Ala Ser
    130                 135                 140
Ser Asn Glu Ala Leu Thr Glu Gly Leu Thr Cys Val Thr Thr Gly Trp
145                 150                 155                 160
```

```
Gly Arg Leu Ser Gly Val Gly Asn Val Thr Pro Ala His Leu Gln Gln
                165                 170                 175
Val Ala Leu Pro Leu Val Thr Val Asn Gln Cys Arg Gln Tyr Trp Gly
            180                 185                 190
Ser Ser Ile Thr Asp Ser Met Ile Cys Ala Gly Gly Ala Gly Ala Ser
        195                 200                 205
Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Gln Lys Gly Asn
    210                 215                 220
Thr Trp Val Leu Ile Gly Ile Val Ser Trp Gly Thr Lys Asn Cys Asn
225                 230                 235                 240
Val Arg Ala Pro Ala Val Tyr Thr Arg Val Ser Lys Phe Ser Thr Trp
                245                 250                 255
Ile Asn Gln Val Ile Ala Tyr Asn
            260
```

<210> 259
<211> 1207
<212> DNA
<213> Homo sapiens

<400> 259
ggagtgcagg cttggaaagc aggagagctc agcctacgtc tttaatcctc ctgcccaccc 60
cttggattct gtctccactg ggactcaaga gaggaacctg gggcccgctc ctccccctc 120
caggccatga ggattctgca gttaatcctg cttgctctgg caacaggggt tgtaggggga 180
gagaccagga tcatcaaggg gttcgagtgc aagcctcact cccagccctg gcaggcagcc 240
ctgttcgaga agacgcggct actctgtggg gcgacgctca tcgcccccag atggctcctg 300
acagcagccc actgcctcaa gccccgctac atagttcacc tggggcagca caacctccag 360
aaggaggagg gctgtgagca gacccggaca gccactgagt ccttccccca ccccggcttc 420
aacaacagcc tccccaacaa agaccaccgc aatgacatca tgctggtgaa gatggcatcg 480
ccagtctcca tcacctgggc tgtgcgaccc ctcaccctct cctcacgctg tgtcactgct 540
ggcaccagct gcctcatttc cggctggggc agcacgtcca gcccccagtt acgcctgcct 600
cacaccttgc gatgcgccaa catcaccatc attgagcacc agaagtgtga gaacgcctac 660
cccggcaaca tcacagacac catggtgtgt gccagcgtgc aggaaggggg caaggactcc 720
tgccagggtg actccggggg ccctctggtc tgtaaccagt ctcttcaagg cattatctcc 780
tggggccagg atccgtgtgc gatcacccga aagcctggtg tctacacgaa agtctgcaaa 840
tatgtggact ggatccagga gacgatgaag aacaattaga ctggacccac ccaccacagc 900
ccatcaccct ccatttccac ttggtgtttg gttcctgttc actctgttaa taagaaaccc 960
taagccaaga ccctctacga acattctttg ggcctcctgg actacaggag atgctgtcac 1020
ttaataatca acctggggtt cgaaatcagt gagacctgga ttcaaattct gccttgaaat 1080
attgtgactc tgggaatgac aacacctggt ttgttctctg ttgtatcccc agccccaaag 1140
acagctcctg gccatatatc aaggtttcaa taaatatttg ctaaatgagt gaaaaaaaaa 1200
aaaaaaa   1207

<210> 260
<211> 250
<212> PRT
<213> Homo sapiens

<400> 260
```
Met Arg Ile Leu Gln Leu Ile Leu Leu Ala Leu Ala Thr Gly Leu Val
 1               5                  10                  15
Gly Gly Glu Thr Arg Ile Ile Lys Gly Phe Glu Cys Lys Pro His Ser
            20                  25                  30
Gln Pro Trp Gln Ala Ala Leu Phe Glu Lys Thr Arg Leu Leu Cys Gly
        35                  40                  45
Ala Thr Leu Ile Ala Pro Arg Trp Leu Leu Thr Ala Ala His Cys Leu
    50                  55                  60
```

```
Lys Pro Arg Tyr Ile Val His Leu Gly Gln His Asn Leu Gln Lys Glu
65                  70                  75                  80
Glu Gly Cys Glu Gln Thr Arg Thr Ala Thr Glu Ser Phe Pro His Pro
                85                  90                  95
Gly Phe Asn Asn Ser Leu Pro Asn Lys Asp His Arg Asn Asp Ile Met
            100                 105                 110
Leu Val Lys Met Ala Ser Pro Val Ser Ile Thr Trp Ala Val Arg Pro
        115                 120                 125
Leu Thr Leu Ser Ser Arg Cys Val Thr Ala Gly Thr Ser Cys Leu Ile
    130                 135                 140
Ser Gly Trp Gly Ser Thr Ser Ser Pro Gln Leu Arg Leu Pro His Thr
145                 150                 155                 160
Leu Arg Cys Ala Asn Ile Thr Ile Ile Glu His Gln Lys Cys Glu Asn
                165                 170                 175
Ala Tyr Pro Gly Asn Ile Thr Asp Thr Met Val Cys Ala Ser Val Gln
            180                 185                 190
Glu Gly Gly Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
        195                 200                 205
Cys Asn Gln Ser Leu Gln Gly Ile Ile Ser Trp Gly Gln Asp Pro Cys
    210                 215                 220
Ala Ile Thr Arg Lys Pro Gly Val Tyr Thr Lys Val Cys Lys Tyr Val
225                 230                 235                 240
Asp Trp Ile Gln Glu Thr Met Lys Asn Asn
                245                 250
```

<210> 261
<211> 1289
<212> DNA
<213> Homo sapiens

<400> 261
ctgccttgct ccacacctgg tcaggggaga gaggggagga aagccaaggg aagggaccta 60
actgaaaaca aacaagctgg gagaagcagg aatctgcgct cgggttccgc agatgcagag 120
gttgaggtgg ctgcgggact ggaagtcatc gggcagaggt ctcacagcag ccaaggaacc 180
tggggccccc tcctcccccc tccaggccat gaggattctg cagttaatcc tgcttgctct 240
ggcaacaggg cttgtagggg gagagaccag gatcatcaag gggttcgagt gcaagcctca 300
ctcccagccc tggcaggcag ccctgttcga gaagacgcgg ctactctgtg gggcgacgct 360
catcgccccc agatggctcc tgacagcagc ccactgcctc aagccccgct acatagttca 420
cctggggcag cacaacctcc agaaggagga gggctgtgag cagacccgga cagccactga 480
gtccttcccc caccccggct tcaacaacag cctccccaac aaagaccacc gcaatgacat 540
catgctggtg aagatggcat cgccagtctc catcacctgg gctgtgcgac ccctcaccct 600
ctcctcacgc tgtgtcactg ctggcaccag ctgcctcatt tccggctggg gcagcacgtc 660
cagcccccag ttacgcctgc ctcacacctt gcgatgcgcc aacatcacca tcattgagca 720
ccagaagtgt gagaacgcct acccccggcaa catcacagac accatggtgt gtgccagcgt 780
gcaggaaggg ggcaaggact cctgccaggg tgactccggg ggccctctgg tctgtaacca 840
gtctcttcaa ggcattatct cctgggggcca ggatccgtgt gcgatcaccc gaaagcctgg 900
tgtctacacg aaagtctgca aatatgtgga ctggatccag gagacgatga agaacaatta 960
gactggaccc acccaccaca gcccatcacc ctccatttcc acttggtgtt tggttcctgt 1020
tcactctgtt aataagaaac cctaagccaa gaccctctac gaacattctt tgggcctcct 1080
ggactacagg agatgctgtc acttaataat caacctgggg ttcgaaatca gtgagacctg 1140
gattcaaatt ctgccttgaa atattgtgac tctgggaatg acaacacctg gtttgttctc 1200
tgttgtatcc ccagccccaa agacagctcc tggccatata tcaaggtttc aataaatatt 1260
tgctaaatga gtgaaaaaaa aaaaaaaaa   1289

<210> 262
<211> 282
<212> PRT

<213> Homo sapiens

<400> 262

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

<210> 263
<211> 802
<212> DNA
<213> Homo sapiens

<400> 263

```
accaccatga atctacttct gatccttacc tttgttgcag ctgctgttgc tgccccctttt 60
gatgatgatg acaagatcgt tgggggctac atctgtgagg agaattctgt cccctaccag 120
gtgtccttga attctggcta ccacttctgc ggtggctccc tcatcagcga acagtgggtg 180
gtgtcagcag gtcactgcta caagtcccgc atccaggtga gactgggaga gcacaacatc 240
gaagtcctgg aggggaatga acagttcatc aatgcagcca agatcatccg ccaccccaaa 300
tacaacagcc ggactctgga caatgacatc ctgctgatca agctctcctc acctgccgtc 360
atcaattccc gcgtgtccgc catctctctg cccactgccc ctccagctgc tggcaccgag 420
tccctcatct ccggctgggg caacactctg agttctggtg ccgactaccc agacgagctg 480
cagtgcctgg atgctcctgt gctgagccag gctgagtgtg aagcctccta ccctggaaag 540
attaccaaca acatgttctg tgtgggcttc ctcgagggag gcaaggattc ctgccagggt 600
gatttctggtg gccctgtggt ctccaatgga gagctccaag gaattgtctc ctggggctat 660
```

```
ggctgtgccc agaagaacag gcctggagtc tacaccaagg tctacaacta tgtggactgg 720
attaaggaca ccatagctgc caacagctaa agcccctggt ccctctgcag tctctatacc 780
aataaagtga ccctgctctc ac                                          802

<210> 264
<211> 247
<212> PRT
<213> Homo sapiens

<400> 264
Met Asn Leu Leu Leu Ile Leu Thr Phe Val Ala Ala Ala Val Ala Ala
 1               5                  10                  15
Pro Phe Asp Asp Asp Asp Lys Ile Val Gly Gly Tyr Ile Cys Glu Glu
            20                  25                  30
Asn Ser Val Pro Tyr Gln Val Ser Leu Asn Ser Gly Tyr His Phe Cys
        35                  40                  45
Gly Gly Ser Leu Ile Ser Glu Gln Trp Val Val Ser Ala Gly His Cys
    50                  55                  60
Tyr Lys Ser Arg Ile Gln Val Arg Leu Gly Glu His Asn Ile Glu Val
65                  70                  75                  80
Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His
                85                  90                  95
Pro Lys Tyr Asn Ser Arg Thr Leu Asp Asn Asp Ile Leu Leu Ile Lys
            100                 105                 110
Leu Ser Ser Pro Ala Val Ile Asn Ser Arg Val Ser Ala Ile Ser Leu
        115                 120                 125
Pro Thr Ala Pro Pro Ala Ala Gly Thr Glu Ser Leu Ile Ser Gly Trp
    130                 135                 140
Gly Asn Thr Leu Ser Ser Gly Ala Asp Tyr Pro Asp Glu Leu Gln Cys
145                 150                 155                 160
Leu Asp Ala Pro Val Leu Ser Gln Ala Glu Cys Glu Ala Ser Tyr Pro
                165                 170                 175
Gly Lys Ile Thr Asn Asn Met Phe Cys Val Gly Phe Leu Glu Gly Gly
            180                 185                 190
Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Val Val Ser Asn Gly
        195                 200                 205
Glu Leu Gln Gly Ile Val Ser Trp Gly Tyr Gly Cys Ala Gln Lys Asn
    210                 215                 220
Arg Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Asp Trp Ile Lys
225                 230                 235                 240
Asp Thr Ile Ala Ala Asn Ser
                245


<210> 265
<211> 1475
<212> DNA
<213> Homo sapiens

<400> 265
acctgccgcc atcttgctca ccagcctcca aaatgcggct ggggctcctg agcgtggcgc 60
tgttgtttgt ggggagctct cacttatact cagaccacta ctcgccctct ggaaggcaca 120
ggctcggccc ctcgccggaa ccggcggcta gttcccagca ggctgaggcc gtccgcaaga 180
ggctccggcg gcggagggag ggaggggcgc atgcaaagga ttgtggaaca gcaccgctta 240
aggatgtgtt gcaagggtct cggattatag ggggcaccga agcacaagct ggcgcatggc 300
cgtgggtggt gagcctgcag attaaatatg gccgtgttct tgttcatgta tgtgggggaa 360
ccctagtgag agagaggtgg gtcctcacag ctgcccactg cactaaagac gctagcgatc 420
ctttaatgtg gacagctgtg attggaacta ataatataca tggacgctat cctcatacca 480
```

```
agaagataaa aattaaagca atcattattc atccaaactt cattttggaa tcttatgtaa 540
atgatattgc acttttttcac ttaaaaaaag cagtgaggta taatgactat attcagccta 600
tttgcctacc ttttgatgtt ttccaaatcc tggacggaaa cacaaagtgt tttataagtg 660
gctggggaag aacaaaagaa gaaggtaacg ctacaaatat tttacaagat gcagaagtgc 720
attatatttc tcgagagatg tgtaattctg agaggagtta tgggggaata attcctaaca 780
cttcattttg tgcaggtgat gaagatggag cttttgatac ttgcaggggt gacagtgggg 840
gaccattaat gtgctactta ccagaatata aaagattttt tgtaatggga attaccagtt 900
acggacatgg ctgtggtcga agaggttttc ctggtgtcta tattgggcca tccttctacc 960
aaaagtggct gacagagcat ttcttccatg caagcactca aggcatactt actataaata 1020
ttttacgtgg ccagatcctc atagctttat gttttgtcat cttactagca acaacataaa 1080
gaaattctga aggctttcat atctttattt tgcattgtgt ccctttctat gttctatata 1140
atgaacatca tttattcttc tagcaattaa ttgcctacat tagagatttc atgtgaacat 1200
tttatgggct ataagtattg tgacagatat acaattgtaa ttttggcact gaatcacatg 1260
tctccttgaa atatcttgat tattttataa tcataattct gtatctggaa tactcataga 1320
gtttgtacaa aatattcagt taaacatata tgtgtataaa tgccaaataa tagtttataa 1380
ttaaaatgaa agctgtcatt tggttaaatt aataaaaatt ctttcttaga ttttattcta 1440
aaaaaaaaaa aaaaaaaaga aaaaaaaaaa aaaaa                             1475
```

<210> 266
<211> 348
<212> PRT
<213> Homo sapiens

<400> 266

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

```
Met Cys Tyr Leu Pro Glu Tyr Lys Arg Phe Phe Val Met Gly Ile Thr
        275                 280                 285
Ser Tyr Gly His Gly Cys Gly Arg Arg Gly Phe Pro Gly Val Tyr Ile
    290                 295                 300
Gly Pro Ser Phe Tyr Gln Lys Trp Leu Thr Glu His Phe Phe His Ala
305                 310                 315                 320
Ser Thr Gln Gly Ile Leu Thr Ile Asn Ile Leu Arg Gly Gln Ile Leu
                325                 330                 335
Ile Ala Leu Cys Phe Val Ile Leu Leu Ala Thr Thr
            340                 345
```

<210> 267
<211> 1164
<212> DNA
<213> Homo sapiens

<400> 267
atgattgccg ttctcattgt gttgtccctg acagtggtgg cagtgaccat aggtctcctg 60
gttcacttcc tagtatttga ccaaaaaaag gagtactatc atggctcctt taaaatttta 120
gatccacaaa tcaataacaa tttcggacaa agcaacacat atcaacttaa ggacttacga 180
gagacgaccg aaaatttggt ggatgagata tttatagatt cagcctggaa gaaaaattat 240
atcaagaacc aagtagtcag actgactcca gaggaagatg gtgtgaaagt agatgtcatt 300
atggtgttcc agttccccta tactgaacaa agggcagtaa gagagaagaa aatccaaagc 360
atcttaaatc agaagataag gaatttaaga gccttgccaa taaatgcctc atcagttcaa 420
gttaatggtt gtggtaaacg agttgttcca ttaaacgtca acagaatagc atctggagtc 480
attgcaccca aggcggcctg gccttggcaa gcttcccttc agtatgataa catccatcag 540
tgtggggcca ccttgattag taacacatgg cttgtcactg cagcacactg cttccagaag 600
tataaaaatc cacatcaatg gactgttagt tttggaacaa aaatcaaccc tcccttaatg 660
aaaagaaatg tcagaagatt tattatccat gagaagtacc gctctgcagc aagagagtac 720
gacattgctg ttgtgcaggt ctcttccaga gtcacctttt cggatgacat acgccagatt 780
tgttttgccag aagcctctgc atccttccaa ccaaatttga ctgtccacat cacaggattt 840
ggagcacttt actatggtgg ggaatcccaa aatgatctcc gagaagccag agtgaaaatc 900
ataagtgatg atgtctgcaa gcaaccacag gtgtatggca atgatataaa acctggaatg 960
ttctgtgccg gatatatgga aggaatttat gatgcctgca ggggtgattc tgggggacct 1020
ttagtcacaa gggatctgaa agatacgtgg tatctcattg gaattgtaag ctggggagat 1080
aactgtggtc aaaaggacaa gcctggagtc tacacacaag tgacttatta ccgaaactgg 1140
attgcttcaa aaacaggcat ctaa 1164

<210> 268
<211> 387
<212> PRT
<213> Homo sapiens

<400> 268
```
Met Ile Ala Val Leu Ile Val Leu Ser Leu Thr Val Val Ala Val Thr
 1               5                  10                  15
Ile Gly Leu Leu Val His Phe Leu Val Phe Asp Gln Lys Lys Glu Tyr
            20                  25                  30
Tyr His Gly Ser Phe Lys Ile Leu Asp Pro Gln Ile Asn Asn Asn Phe
        35                  40                  45
Gly Gln Ser Asn Thr Tyr Gln Leu Lys Asp Leu Arg Glu Thr Thr Glu
    50                  55                  60
Asn Leu Val Asp Glu Ile Phe Ile Asp Ser Ala Trp Lys Lys Asn Tyr
65                  70                  75                  80
Ile Lys Asn Gln Val Val Arg Leu Thr Pro Glu Glu Asp Gly Val Lys
                85                  90                  95
Val Asp Val Ile Met Val Phe Gln Phe Pro Ser Thr Glu Gln Arg Ala
```

```
            100                 105                 110
Val Arg Glu Lys Lys Ile Gln Ser Ile Leu Asn Gln Lys Ile Arg Asn
        115                 120                 125
Leu Arg Ala Leu Pro Ile Asn Ala Ser Ser Val Gln Val Asn Gly Cys
    130                 135                 140
Gly Lys Arg Val Val Pro Leu Asn Val Asn Arg Ile Ala Ser Gly Val
145                 150                 155                 160
Ile Ala Pro Lys Ala Ala Trp Pro Trp Gln Ala Ser Leu Gln Tyr Asp
                165                 170                 175
Asn Ile His Gln Cys Gly Ala Thr Leu Ile Ser Asn Thr Trp Leu Val
            180                 185                 190
Thr Ala Ala His Cys Phe Gln Lys Tyr Lys Asn Pro His Gln Trp Thr
        195                 200                 205
Val Ser Phe Gly Thr Lys Ile Asn Pro Pro Leu Met Lys Arg Asn Val
    210                 215                 220
Arg Arg Phe Ile Ile His Glu Lys Tyr Arg Ser Ala Ala Arg Glu Tyr
225                 230                 235                 240
Asp Ile Ala Val Val Gln Val Ser Ser Arg Val Thr Phe Ser Asp Asp
                245                 250                 255
Ile Arg Gln Ile Cys Leu Pro Glu Ala Ser Ala Ser Phe Gln Pro Asn
            260                 265                 270
Leu Thr Val His Ile Thr Gly Phe Gly Ala Leu Tyr Tyr Gly Gly Glu
        275                 280                 285
Ser Gln Asn Asp Leu Arg Glu Ala Arg Val Lys Ile Ile Ser Asp Asp
    290                 295                 300
Val Cys Lys Gln Pro Gln Val Tyr Gly Asn Asp Ile Lys Pro Gly Met
305                 310                 315                 320
Phe Cys Ala Gly Tyr Met Glu Gly Ile Tyr Asp Ala Cys Arg Gly Asp
                325                 330                 335
Ser Gly Gly Pro Leu Val Thr Arg Asp Leu Lys Asp Thr Trp Tyr Leu
            340                 345                 350
Ile Gly Ile Val Ser Trp Gly Asp Asn Cys Gly Gln Lys Asp Lys Pro
        355                 360                 365
Gly Val Tyr Thr Gln Val Thr Tyr Tyr Arg Asn Trp Ile Ala Ser Lys
    370                 375                 380
Thr Gly Ile
385
```

<210> 269
<211> 431
<212> PRT
<213> Rattus norvegicus

<400> 269

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

```
                100                 105                 110
Lys Ala His Thr Val Gln Val Ser Lys Ala Lys Gly Lys Val Val Ile
            115                 120                 125
His Gly Val Leu Lys Phe Lys Ser Cys Tyr Lys Asn Asn Val Glu Lys
    130                 135                 140
Phe Trp Asp Ser Val Glu Thr Ile Leu Tyr Gln Lys Leu Lys Ser Gln
145                 150                 155                 160
Thr Arg Leu Leu Ile Asp Ser Ser Ser Phe Lys Phe Ser Asp Ile Ala
                165                 170                 175
Met Pro Ile Ala Glu Asp Leu Leu Asn Thr Cys Cys Gly Arg Arg Thr
            180                 185                 190
Ile Thr Pro Gly Gly His Lys Val Ala Gly Gly Gln Asp Ala Glu Glu
        195                 200                 205
Gly Glu Trp Pro Trp Gln Ala Ser Leu Gln Gln Asn Asn Val His Arg
    210                 215                 220
Cys Gly Ala Thr Leu Ile Ser Asn Ser Trp Leu Ile Thr Ala Ala His
225                 230                 235                 240
Cys Phe Val Arg Ser Ala Asn Pro Lys Asp Trp Lys Val Ser Phe Gly
                245                 250                 255
Phe Leu Leu Ser Lys Pro Gln Ala Gln Arg Ala Val Lys Ser Ile Val
            260                 265                 270
Ile His Glu Asn Tyr Ser Tyr Pro Ala His Asn Asn Asp Ile Ala Val
        275                 280                 285
Val Arg Leu Ser Ser Pro Val Leu Tyr Glu Asn Asn Ile Arg Arg Ala
    290                 295                 300
Cys Leu Pro Glu Ala Thr Gln Lys Phe Pro Pro Asn Ser Asp Val Val
305                 310                 315                 320
Val Thr Gly Trp Gly Thr Leu Lys Ser Asp Gly Asp Ser Pro Asn Ile
                325                 330                 335
Leu Gln Lys Gly Arg Val Lys Ile Ile Asp Asn Lys Thr Cys Asn Ser
            340                 345                 350
Gly Lys Ala Tyr Gly Gly Val Ile Thr Pro Gly Met Leu Cys Ala Gly
        355                 360                 365
Phe Leu Glu Gly Arg Val Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro
    370                 375                 380
Leu Val Ser Glu Asp Ser Lys Gly Ile Trp Phe Leu Ala Gly Ile Val
385                 390                 395                 400
Ser Trp Gly Asp Glu Cys Ala Leu Pro Asn Lys Pro Gly Val Tyr Thr
                405                 410                 415
Arg Val Thr His Tyr Arg Asp Trp Ile Ser Ser Lys Thr Gly Leu
            420                 425                 430
```

<210> 270
<211> 247
<212> PRT
<213> Homo sapiens

<400> 270

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

```
65                  70                  75                  80
Leu Glu Gly Asn Glu Gln Phe Ile Asn Ala Ala Lys Ile Ile Arg His
                85                  90                  95
Pro Lys Tyr Asn Arg Ile Thr Leu Asn Asn Asp Ile Met Leu Ile Lys
            100                 105                 110
Leu Ser Thr Pro Ala Val Ile Asn Ala His Val Ser Thr Ile Ser Leu
        115                 120                 125
Pro Thr Ala Pro Pro Ala Ala Gly Thr Glu Cys Leu Ile Ser Gly Trp
    130                 135                 140
Gly Asn Thr Leu Ser Ser Gly Ala Asp Tyr Pro Asp Glu Leu Gln Cys
145                 150                 155                 160
Leu Asp Ala Pro Val Leu Thr Gln Ala Lys Cys Lys Ala Ser Tyr Pro
                165                 170                 175
Leu Lys Ile Thr Ser Lys Met Phe Cys Val Gly Phe Leu Glu Gly Gly
            180                 185                 190
Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Val Val Cys Asn Gly
        195                 200                 205
Gln Leu Gln Gly Ile Val Ser Trp Gly Tyr Gly Cys Ala Gln Lys Arg
    210                 215                 220
Arg Pro Gly Val Tyr Thr Lys Val Tyr Asn Tyr Val Asp Trp Ile Lys
225                 230                 235                 240
Asp Thr Ile Ala Ala Asn Ser
                245
```

<210> 271
<211> 1099
<212> DNA
<213> Homo sapiens

<400> 271
gcacagccca gggccatgct cctgttctca gtgttgctgc tcctgtccct ggtcacggga 60
actcagctcg gtccacggac tcctctccca gaggctggag tggctatcct aggcagggct 120
aggggagccc accgccctca gccccgtcat ccccccagcc cagtcagtga atgtggtgac 180
agatctattt tcgagggaag aactcggtat tccagaatca caggggggat ggaggcggag 240
gtgggtgagt ttccgtggca ggtgagtatt caggcaagaa gtgaaccttt ctgtggcggc 300
tccatcctca acaagtggtg gattctcact gcggctcact gcttatattc cgaggagctg 360
tttccagaag aactgagtgt cgtgctgggg accaacgact taactagccc atccatggaa 420
ataaaggagg tcgccagcat cattcttcac aaagacttta agagagccaa catggacaat 480
gacattgcct tgctgctgct ggcttcgccc atcaagctcg atgacctgaa ggtgcccatc 540
tgcctcccca cgcagcccgg ccctgccaca tggcgcgaat gctgggtggc aggttggggc 600
cagaccaatg ctgctgacaa aaactctgtg aaaacggatc tgatgaaagt gccaatggtc 660
atcatggact gggaggagtg ttcaaagatg tttccaaaac ttaccaaaaa tatgctgtgt 720
gccggataca agaatgagag ctatgatgcc tgcaagggtg acagtggggg gcctctggtc 780
tgcaccccag agcctggtga gaagtggtac caggtgggca tcatcagctg gggaaagagc 840
tgtggagaga agaacacccc agggatatac acctcgttgg tgaactacaa cctctggatc 900
gagaaagtga cccagctaga gggcaggccc ttcaatgcag agaaaaggag gacttctgtc 960
aaacagaaac ctatgggctc cccagtctcg ggagtcccag agccaggcag ccccagatcc 1020
tggctcctgc tctgtcccct gtcccatgtg ttgttcagag ctattttgta ctgataataa 1080
aatagaggct attctttca 1099

<210> 272
<211> 352
<212> PRT
<213> Homo sapiens

<400> 272
Met Leu Leu Phe Ser Val Leu Leu Leu Leu Ser Leu Val Thr Gly Thr

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

<210> 273
<211> 1927
<212> DNA
<213> Homo sapiens

<400> 273
tgccagccca agtcggaact tggatcacat cagatcctct cgagctccag caggagaggc 60
ccttcctcgc ctggcagccc ctgagcggct cagcagggca ccatggcaag atcccttctc 120
ctgccccctgc agatcttact gctatcctta gccttggaaa ctgcaggaga agaagcccag 180
ggtgacaaga ttattgatgg cgccccatgt gcaagaggct cccacccatg gcaggtggcc 240
ctgctcagtg gcaatcagct ccactgcgga ggcgtcctgg tcaatgagcg ctgggtgctc 300
actgccgccc actgcaagat gaatgagtac accgtgcacc tgggcagtga tacgctgggc 360
gacaggagag ctcagaggat caaggcctcg aagtcattcc gccacccccgg ctactccaca 420

```
cagacccatg ttaatgacct catgctcgtg aagctcaata gccaggccag gctgtcatcc 480
atggtgaaga aagtcaggct gccctcccgc tgcgaacccc ctggaaccac ctgtactgtc 540
tccggctggg gcactaccac gagcccagat gtgacctttc cctctgacct catgtgcgtg 600
gatgtcaagc tcatctcccc ccaggactgc acgaaggttt acaaggactt actggaaaat 660
tccatgctgt gcgctggcat ccccgactcc aagaaaaacg cctgcaatgg tgactcaggg 720
ggaccgttgg tgtgcagagg taccctgcaa ggtctggtgt cctggggaac tttcccttgc 780
ggccaaccca atgacccagg agtctacact caagtgtgca agttcaccaa gtggataaat 840
gacaccatga aaaagcatcg ctaacgccac actgagttaa ttaactgtgt gcttccaaca 900
gaaaatgcac aggagtgagg acgccgatga cctatgaagt caaatttgac tttaccttc 960
ctcaaagata tatttaaacc aacctcatgc cctgttgata aaccaatcaa attggtaaag 1020
acctaaaacc aaaacaaata aagaaacaca aaaccctcag tgctggagaa gagtcagtga 1080
gaccagcact ctcaaacact ggaactggac gttcgtacag tctttacgga agacacttgg 1140
tcaacgtaca ccgagaccct tattcaccac ctttgaccca gtaactctaa tcttaggaag 1200
aacctactga aacaaaaaaa atccaaaatg tagaacaaga cttgaattta ccatgatatt 1260
atttatcaca gaaatgaagt gaaaccatca aacatgttcc aaaagtacca gatggcttaa 1320
ataatagtct ggcttggcac aacgatgttt tttttctttg agacagagtc tctgttgctt 1380
gggctgcaat gcagtgatgc aatcttggct cactgcaacc tccgcctcct gggttcaagt 1440
gattctcgtg cttcagcctc ccaagtacct gggactacag gtgtgcacca ccacaccagg 1500
ctaatttttt gtgtattttt actagagaca gggtttcacc atgttggcca gcgtggtctt 1560
gaacgcctga cctcagatga tccacccacc ttggcctccc aaagtgctgg gattacaggc 1620
atgagccacc acggccagcc cacaatgata ttacaaacct attaaaaatg atacttagac 1680
agaattgtca gtattattca agaacattta ggctatagga tgttaaatga caaaaggaag 1740
gacaaaaata tatatgtatg tgaccctacc cataaaaaat gaaatattca cagaatcaga 1800
tctgaaaaca catgtcccag actgcatact ggggtcgtca tgaggtgtct ccttcctct 1860
gtgtactttt ccttgaatgt gcacttttat aacatgaaaa ataaaggtgg ggaaaaaagt 1920
ctgaaga                                                          1927
```

<210> 274
<211> 253
<212> PRT
<213> Homo sapiens

<400> 274

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

```
        195                 200                 205
Leu Val Cys Arg Gly Thr Leu Gln Gly Leu Val Ser Trp Gly Thr Phe
    210                 215                 220
Pro Cys Gly Gln Pro Asn Asp Pro Gly Val Tyr Thr Gln Val Cys Lys
225                 230                 235                 240
Phe Thr Lys Trp Ile Asn Asp Thr Met Lys Lys His Arg
                245                 250
```

<210> 275
<211> 1927
<212> DNA
<213> Homo sapiens

<400> 275
ggagagggtg atgctggctc caagcctgac tctgctctcg agagctccag caggagaggc 60
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ctgcccctgc agatcttact gctatcctta gccttggaaa ctgcaggaga agaagcccag 180
ggtgacaaga ttattgatgg cgccccatgt gcaagaggct cccacccatg gcaggtggcc 240
ctgctcagtg gcaatcagct ccactgcgga ggcgtcctgg tcaatgagcg ctgggtgctc 300
actgccgccc actgcaagat gaatgagtac accgtgcacc tgggcagtga tacgctgggc 360
gacaggagag ctcagaggat caaggcctcg aagtcattcc gccaccccgg ctactccaca 420
cagacccatg ttaatgacct catgctcgtg aagctcaata gccaggccag gctgtcatcc 480
atggtgaaga aagtcaggct gccctcccgc tgcgaacccc ctggaaccac ctgtactgtc 540
tccggctggg gcactaccac gagcccagat gtgacctttc cctctgacct catgtgcgtg 600
gatgtcaagc tcatctcccc ccaggactgc acgaaggttt acaaggactt actggaaaat 660
tccatgctgt gcgctggcat ccccgactcc aagaaaaacg cctgcaatgg tgactcaggg 720
ggaccgttgg tgtgcagagg taccctgcaa ggtctggtgt cctggggaac tttcccttgc 780
ggccaaccca atgacccagg agtctacact caagtgtgca agttcaccaa gtggataaat 840
gacaccatga aaaagcatcg ctaacgccac actgagttaa ttaactgtgt gcttccaaca 900
gaaaatgcac aggagtgagg acgccgatga cctatgaagt caaatttgac tttacctttc 960
ctcaaagata tatttaaacc aacctcatgc cctgttgata aaccaatcaa attggtaaag 1020
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gaccagcact ctcaaacact ggaactggac gttcgtacag tctttacgga agacacttgg 1140
tcaacgtaca ccgagaccct tattcaccac ctttgaccca gtaactctaa tcttaggaag 1200
aacctactga aacaaaaaaa atccaaaatg tagaacaaga cttgaattta ccatgatatt 1260
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ataatagtct ggcttggcac aacgatgttt tttttctttg agacagagtc tctgttgctt 1380
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gattctcgtg cttcagcctc ccaagtacct gggactacag gtgtgcacca ccacaccagg 1500
ctaatttttt gtgtattttt actagagaca gggtttcacc atgttggcca gcgtggtctt 1560
gaacgcctga cctcagatga tccacccacc ttggcctccc aaagtgctgg gattacaggc 1620
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agaattgtca gtattattca agaacattta ggctatagga tgttaaatga caaaaggaag 1740
gacaaaaata tatatgtatg tgaccctacc cataaaaaat gaaatattca cagaatcaga 1800
tctgaaaaca catgtcccag actgcatact ggggtcgtca tgaggtgtct ccttccttct 1860
gtgtactttt ccttgaatgt gcacttttat aacatgaaaa ataaaggtgg ggaaaaaagt 1920
ctgaaga 1927

<210> 276
<211> 253
<212> PRT
<213> Homo sapiens

<400> 276
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Met Ala Arg Ser Leu Leu Leu Pro Leu Gln Ile Leu Leu Leu Ser Leu
 1               5                  10                  15
Ala Leu Glu Thr Ala Gly Glu Glu Ala Gln Gly Asp Lys Ile Ile Asp
```

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

<210> 277
<211> 2800
<212> DNA
<213> Homo sapiens

<400> 277

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tatgtttcat tgtcgtcgca ggggtagtga tcctggcagt caccatagct ctacttgttt 180
acttttagc ttttgatcaa aaatcttact tttataggag cagttttcaa ctcctaaatg 240
ttgaatataa tagtcagtta aattcaccag ctacacagga atacaggact ttgagtggaa 300
gaattgaatc tctgattact aaaacattca aagaatcaaa tttaagaaat cagttcatca 360
gagctcatgt tgccaaactg aggcaagatg gtagtggtgt gagagcggat gttgtcatga 420
aatttcaatt cactagaaat aacaatggag catcaatgaa aagcagaatt gagtctgttt 480
tacgacaaat gctgaataac tctggaaacc tggaaataaa cccttcaact gagataacat 540
cacttactga ccaggctgca gcaaattggc ttattaatga atgtggggcc ggtccagacc 600
taataacatt gtctgagcag agaatccttg gaggcactga ggctgaggag ggaagctggc 660
cgtggcaagt cagtctgcgg ctcaataatg cccaccactg tggaggcagc ctgatcaata 720
acatgtggat cctgacagca gctcactgct tcagaagcaa ctctaatcct cgtgactgga 780
ttgccacgtc tggtatttcc acaacatttc ctaaactaag aatgagagta agaaatattt 840
taattcataa caattataaa tctgcaactc atgaaaatga cattgcactt gtgagacttg 900
agaacagtgt caccttacc aaagatatcc atagtgtgtg tctcccagct gctacccaga 960
atattccacc tggctctact gcttatgtaa caggatgggg cgctcaagaa tatgctggcc 1020
acacagttcc agagctaagg caaggacagg tcagaataat aagtaatgat gtatgtaatg 1080
caccacatag ttataatgga gccatcttgt ctggaatgct gtgtgctgga gtacctcaag 1140
gtggagtgga cgcatgtcag ggtgactctg gtggcccact agtacaagaa gactcacggc 1200
ggctttggtt tattgtgggg atagtaagct ggggagatca gtgtggcctg ccggataagc 1260
```

caggagtgta tactcgagtg acagcctacc ttgactggat taggcaacaa actgggatct 1320
agtgcaacaa gtgcatccct gttgcaaagt ctgtatgcag gtgtgcctgt cttaaattcc 1380
aaagctttac atttcaactg aaaaagaaac tagaaatgtc ctaatttaac atcttgttac 1440
ataaatatgg tttaacaaac actgtttaac ctttctttat tattaaaggt tttctatttt 1500
ctccagagaa ctatatgaat gttgcatagt actgtggctg tgtaacagaa gaaacacact 1560
aaactaatta caaagttaac aatttcatta cagttgtgct aaatgcccgt agtgagaaga 1620
acaggaacct tgagcatgta tagtagagga acctgcacag gtctgatggg tcagaggggt 1680
cttctctggg tttcactgag gatgagaagt aagcaaactg tggaaacatg caaaggaaaa 1740
agtgatagaa taatattcaa gacaaaaaga acagtatgag gcaagagaaa taatatgtat 1800
ttaaaatttt tggttactca atatcttata cttagtatga gtcctaaaat taaaaatgtg 1860
aaactgttgt actatacgta taacctaacc ttaattattc tgtaagaaca tgcttccata 1920
ggaaatagtg gataattttc agctatttaa ggcaaaagct aaaatagttc actcctcaac 1980
tgagacccaa agaattatag atatttttca tgatgaccca tgaaaaatat cactcatcta 2040
cataaaggag agactatatc tattttatag agaagctaag aaatatacct acacaaactt 2100
gtcaggtgct ttacaactac atagtacttt ttaacaacaa aataataatt ttaagaatga 2160
aaaatttaat catcgggaag aacgtcccac tacagacttc ctatcactgg cagttatatt 2220
tttgagcgta aaagggtcgt caaacgctaa atctaagtaa cgaattgaaa gtttaaagag 2280
ggggaagagt tggtttgcaa aggaaaagtt taaatagctt aatatcaata gaatgatcct 2340
gaagacagaa aaaactttgt cactcttcct ctctcatttt ctttctctct ctctccccct 2400
ctcatacaca tgcctccccc accaaagaat ataatgtaaa ttaaatccac taaaatgtaa 2460
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tacagctaaa gtttgcctat gcatgatcat ctatgcgtca gagcttcctc cttctacaag 2580
ctaactccct gcatctgggc atcaggactg ctccatacat ttgctgaaaa cttcttgtat 2640
ttcctgatgt aaaattgtgc aaacacctac aataaagcca tctactttta gggaaaggga 2700
gttgaaaatg caaccaactc ttggcgaact gtacaaacaa atctttgcta tactttattt 2760
caaataaatt ctttttaaaa taaaaaaaaa aaaaaaaaaa 2800

<210> 278
<211> 418
<212> PRT
<213> Homo sapiens

<400> 278

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

```
        195                 200                 205
Ala His His Cys Gly Gly Ser Leu Ile Asn Asn Met Trp Ile Leu Thr
    210                 215                 220
Ala Ala His Cys Phe Arg Ser Asn Ser Asn Pro Arg Asp Trp Ile Ala
225                 230                 235                 240
Thr Ser Gly Ile Ser Thr Thr Phe Pro Lys Leu Arg Met Arg Val Arg
                245                 250                 255
Asn Ile Leu Ile His Asn Asn Tyr Lys Ser Ala Thr His Glu Asn Asp
            260                 265                 270
Ile Ala Leu Val Arg Leu Glu Asn Ser Val Thr Phe Thr Lys Asp Ile
        275                 280                 285
His Ser Val Cys Leu Pro Ala Ala Thr Gln Asn Ile Pro Pro Gly Ser
    290                 295                 300
Thr Ala Tyr Val Thr Gly Trp Gly Ala Gln Glu Tyr Ala Gly His Thr
305                 310                 315                 320
Val Pro Glu Leu Arg Gln Gly Gln Val Arg Ile Ile Ser Asn Asp Val
                325                 330                 335
Cys Asn Ala Pro His Ser Tyr Asn Gly Ala Ile Leu Ser Gly Met Leu
            340                 345                 350
Cys Ala Gly Val Pro Gln Gly Gly Val Asp Ala Cys Gln Gly Asp Ser
        355                 360                 365
Gly Gly Pro Leu Val Gln Glu Asp Ser Arg Arg Leu Trp Phe Ile Val
    370                 375                 380
Gly Ile Val Ser Trp Gly Asp Gln Cys Gly Leu Pro Asp Lys Pro Gly
385                 390                 395                 400
Val Tyr Thr Arg Val Thr Ala Tyr Leu Asp Trp Ile Arg Gln Gln Thr
                405                 410                 415
Gly Ile
```

<210> 279
<211> 1258
<212> DNA
<213> Homo sapiens

<400> 279

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tcaggccccg cccgccctgc cctccccctcc cgatcccgga gccatgtggc ccctggccct 60
agtgatcgcc tccctgaccct tggccttgtc aggaggtgtc tcccaggagt cttccaaggt 120
tctcaacacc aatgggacca gtgggtttct cccaggtggc tacacctgct tccccactc 180
tcagccctgg caggctgccc tactagtgca agggcggcta ctctgtgggg gagtcctggt 240
ccaccccaaa tgggtcctca ctgccgcaca ctgtctaaag gaggggctca aagtttacct 300
aggcaagcac gccctagggc gtgtggaagc tggtgagcag gtgagggaag ttgtccactc 360
tatcccccac cctgaatacc ggagaagccc cacccacctg aaccacgacc atgacatcat 420
gcttctggag ctgcagtccc cggtccagct cacaggctac atccaaaccc tgccccttc 480
ccacaacaac cgcctaaccc ctggcaccac ctgtcgggtg tctggctggg gcaccaccac 540
cagccccag gtgaattacc ccaaaactct acaatgtgcc aacatccaac ttcgctcaga 600
tgaggagtgt cgtcaagtct acccaggaaa gatcactgac aacatgttgt gtgccggcac 660
aaaagagggt ggcaaagact cctgtgaggg tgactctggg ggccccctgg tctgtaacag 720
aacactgtat ggcatcgtct cctggggaga cttcccatgt gggcaacctg accggcctgg 780
tgtctacacc cgtgtctcaa gatacgtcct gtggatccgt gaaacaatcc gaaaatatga 840
aacccagcag caaaaatggt tgaagggccc acaataaaag ttgagaaatg taccggcttc 900
catcctgtca ccatgacttc ctcacatggt ctgcttagcc cttctctgct ccttattccc 960
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catgtttcag aagcattcag gcactgccag gcttgcagtc tcccagatgt tgcatccctg 1080
aaacatctca acaacctgaa tgtcccaacc cagacaatgg cccaggtctc tcaacttcat 1140
cagtgtggct tctatgagcc cagatcacca cctgaacgtt ctgtctqtgg cacattctta 1200
aatatttcca tcagcccatc tcaacaatat atgtcctata aatggaccat ccttgaca   1258
```

<210> 280
<211> 277
<212> PRT
<213> Homo sapiens

<400> 280

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

<210> 281
<211> 1438
<212> DNA
<213> Homo sapiens

<400> 281

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catggaggag gaaggagatg gcatggctta ccataaagaa gcactggacg ccgggtgcac 60
gttccaggat ccaggtgccc aggggtcatg aagctgggac tcctctgtgc tctgctctct 120
ctgctggcag ggcatggctg ggcagacacc cgtgccatcg gggccgagga atgtcgcccc 180
aactcccagc cttggcaggc cggcctcttc caccttactc ggctcttctg tggggcgacc 240
ctcatcagtg accgctggct gctcacagct gcccactgcc gcaagccgta tctgtgggtc 300
cgccttggag agcaccacct ctggaaalgg gagggtccgg agcagctgtt ccgggttacg 360
gacttcttcc cccaccctgg cttcaacaag gacctcagcg ccaatgacca caatgatgac 420
```

```
atcatgctga tccgcctgcc caggcaggca cgtctgagtc ctgctgtgca gcccctcaac 480
ctcagccaga cctgtgtctc cccaggcatg cagtgtctca tctcaggctg gggggccgtg 540
tccagcccca aggcgctgtt tccagtcaca ctgcagtgtg ccaacatcag catcctggag 600
aacaaactct gtcactgggc ataccctgga cacatctcgg acagcatgct ctgtgcgggc 660
ctgtgggagg ggggccgagg ttcctgccag ggtgactctg ggggcccccc ggtttgcaat 720
ggaaccttgg caggcgtggt gtctgggggt gctgagccct gctccagacc ccggcgcccc 780
gcagtctaca ccagcgtatg ccactacctt gactggatcc aagaaatcat ggagaactga 840
gcccgcgcgc cacgggggca ccttggaaga ccaagagagg ccgaagggca cggggtaggg 900
ggttctcgta gggtcccagc ctcaatggtt cccgccctgg acctccagct gccctgactc 960
ccctctggac actaagactc cgcccctgag gctccgcccc ctcacgaggt caagcaagac 1020
acagtcgcgc ccctcggaa cggagcaggg acacgcccct cagagcccgt ctctatgacg 1080
tcaccgacag ccatcacctc cttcttggaa cagcacagcc tgtggctccg cccccaaggaa 1140
ccacttacac aaaatagctc cgcccctcgg aactttgccc agtgggactt cccctcggga 1200
ctccaccccc tgtggccccg cctccttcac cagagatctc gcccctcgtg atgtcagggg 1260
cgcagtagct ccgcccacgt ggagctcggg cggtgtagag ctcagccccc tgtggccccg 1320
tcctgggcgt gtgctgggtt tgaatcctgg cggagacctg gggggaaatt gagggagggt 1380
ctggatacct ttagagccaa tgcaacggat gatttttcag taaacgcggg aaacctca   1438
```

<210> 282
<211> 250
<212> PRT
<213> Homo sapiens

<400> 282

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

<210> 283
<211> 3212
<212> DNA
<213> Homo sapiens

<400> 283
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ttactcttcc actccaaaag gatgcccgtg gccgaggccc cccaggtggc tggcgggcag 180
ggggacggag gtgatggcga ggaagcggag ccggagggga tgttcaaggc ctgtgaggac 240
tccaagagaa aagccccggg ctacctccgc ctggtgcccc tgtttgtgct gctggccctg 300
ctcgtgctgg cttcggcggg ggtgctactc tggtatttcc tagggtacaa ggcggaggtg 360
atggtcagcc aggtgtactc aggcagtctg cgtgtactca atcgccactt ctcccaggat 420
cttacccgcc gggaatctag tgccttccgc agtgaaaccg ccaaagccca gaagatgctc 480
aaggagctca tcaccagcac ccgcctggga acttactaca actccagctc cgtctattcc 540
tttggggagg gacccctcac ctgcttcttc tggttcattc tccaaatccc cgagcaccgc 600
cggctgatgc tgagccccga ggtggtgcag gcactgctgg tggaggagct gctgtccaca 660
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<210> 284
<211> 811
<212> PRT
<213> Homo sapiens

<400> 284

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Pro Glu Gly Met Phe Lys Ala Cys Glu Asp Ser Lys Arg Lys Ala Arg
        35                  40                  45
Gly Tyr Leu Arg Leu Val Pro Leu Phe Val Leu Leu Ala Leu Leu Val
    50                  55                  60
Leu Ala Ser Ala Gly Val Leu Leu Trp Tyr Phe Leu Gly Tyr Lys Ala
65                  70                  75                  80
Glu Val Met Val Ser Gln Val Tyr Ser Gly Ser Leu Arg Val Leu Asn
                85                  90                  95
Arg His Phe Ser Gln Asp Leu Thr Arg Arg Glu Ser Ser Ala Phe Arg
            100                 105                 110
Ser Glu Thr Ala Lys Ala Gln Lys Met Leu Lys Glu Leu Ile Thr Ser
        115                 120                 125
Thr Arg Leu Gly Thr Tyr Tyr Asn Ser Ser Ser Val Tyr Ser Phe Gly
    130                 135                 140
Glu Gly Pro Leu Thr Cys Phe Phe Trp Phe Ile Leu Gln Ile Pro Glu
145                 150                 155                 160
His Arg Arg Leu Met Leu Ser Pro Glu Val Val Gln Ala Leu Leu Val
                165                 170                 175
Glu Glu Leu Leu Ser Thr Val Asn Ser Ser Ala Ala Val Pro Tyr Arg
            180                 185                 190
Ala Glu Tyr Glu Val Asp Pro Glu Gly Leu Val Ile Leu Glu Ala Ser
        195                 200                 205
Val Lys Asp Ile Ala Ala Leu Asn Ser Thr Leu Gly Cys Tyr Arg Tyr
    210                 215                 220
Ser Tyr Val Gly Gln Gly Gln Val Leu Arg Leu Lys Gly Pro Asp His
225                 230                 235                 240
Leu Ala Ser Ser Cys Leu Trp His Leu Gln Gly Pro Lys Asp Leu Met
                245                 250                 255
Leu Lys Leu Arg Leu Glu Trp Thr Leu Ala Glu Cys Arg Asp Arg Leu
            260                 265                 270
Ala Met Tyr Asp Val Ala Gly Pro Leu Glu Lys Arg Leu Ile Thr Ser
        275                 280                 285
Val Tyr Gly Cys Ser Arg Gln Glu Pro Val Val Glu Val Leu Ala Ser
    290                 295                 300
Gly Ala Ile Met Ala Val Val Trp Lys Lys Gly Leu His Ser Tyr Tyr
305                 310                 315                 320
Asp Pro Phe Val Leu Ser Val Gln Pro Val Val Phe Gln Ala Cys Glu
                325                 330                 335
Val Asn Leu Thr Leu Asp Asn Arg Leu Asp Ser Gln Gly Val Leu Ser
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Thr Pro Tyr Phe Pro Ser Tyr Tyr Ser Pro Gln Thr His Cys Ser Trp
        355                 360                 365
His Leu Thr Val Pro Ser Leu Asp Tyr Gly Leu Ala Leu Trp Phe Asp
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Ala Tyr Ala Leu Arg Arg Gln Lys Tyr Asp Leu Pro Cys Thr Gln Gly
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385                 390                 395                 400
Gln Trp Thr Ile Gln Asn Arg Arg Leu Cys Gly Leu Arg Ile Leu Gln
                405                 410                 415
Pro Tyr Ala Glu Arg Ile Pro Val Val Ala Thr Ala Gly Ile Thr Ile
            420                 425                 430
Asn Phe Thr Ser Gln Ile Ser Leu Thr Gly Pro Gly Val Arg Val His
        435                 440                 445
Tyr Gly Leu Tyr Asn Gln Ser Asp Pro Cys Pro Gly Glu Phe Leu Cys
    450                 455                 460
Ser Val Asn Gly Leu Cys Val Pro Ala Cys Asp Gly Val Lys Asp Cys
465                 470                 475                 480
Pro Asn Gly Leu Asp Glu Arg Asn Cys Val Cys Arg Ala Thr Phe Gln
                485                 490                 495
Cys Lys Glu Asp Ser Thr Cys Ile Ser Leu Pro Lys Val Cys Asp Gly
            500                 505                 510
Gln Pro Asp Cys Leu Asn Gly Ser Asp Glu Glu Gln Cys Gln Glu Gly
        515                 520                 525
Val Pro Cys Gly Thr Phe Thr Phe Gln Cys Glu Asp Arg Ser Cys Val
    530                 535                 540
Lys Lys Pro Asn Pro Gln Cys Asp Gly Arg Pro Asp Cys Arg Asp Gly
545                 550                 555                 560
Ser Asp Glu Glu His Cys Asp Cys Gly Leu Gln Gly Pro Ser Ser Arg
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Ile Val Gly Gly Ala Val Ser Ser Glu Gly Glu Trp Pro Trp Gln Ala
            580                 585                 590
Ser Leu Gln Val Arg Gly Arg His Ile Cys Gly Gly Ala Leu Ile Ala
        595                 600                 605
Asp Arg Trp Val Ile Thr Ala Ala His Cys Phe Gln Glu Asp Ser Met
    610                 615                 620
Ala Ser Thr Val Leu Trp Thr Val Phe Leu Gly Lys Val Trp Gln Asn
625                 630                 635                 640
Ser Arg Trp Pro Gly Glu Val Ser Phe Lys Val Ser Arg Leu Leu Leu
                645                 650                 655
His Pro Tyr His Glu Glu Asp Ser His Asp Tyr Asp Val Ala Leu Leu
            660                 665                 670
Gln Leu Asp His Pro Val Val Arg Ser Ala Ala Val Arg Pro Val Cys
        675                 680                 685
Leu Pro Ala Arg Ser His Phe Phe Glu Pro Gly Leu His Cys Trp Ile
    690                 695                 700
Thr Gly Trp Gly Ala Leu Arg Glu Gly Gly Pro Ile Ser Asn Ala Leu
705                 710                 715                 720
Gln Lys Val Asp Val Gln Leu Ile Pro Gln Asp Leu Cys Ser Glu Val
                725                 730                 735
Tyr Arg Tyr Gln Val Thr Pro Arg Met Leu Cys Ala Gly Tyr Arg Lys
            740                 745                 750
Gly Lys Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys
        755                 760                 765
Lys Ala Leu Ser Gly Arg Trp Phe Leu Ala Gly Leu Val Ser Trp Gly
    770                 775                 780
Leu Gly Cys Gly Arg Pro Asn Tyr Phe Gly Val Tyr Thr Arg Ile Thr
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<210> 285
<211> 3750
<212> DNA

<213> Homo sapiens

<400> 285

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<210> 286
<211> 383
<212> PRT
<213> Homo sapiens

<400> 286

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Pro Ala Tyr Arg Leu Pro Val Val Leu Pro Gln Ser Thr Leu Asn Leu
        35                  40                  45
Ala Lys Pro Asp Phe Gly Ala Glu Ala Lys Leu Glu Val Ser Ser Ser
    50                  55                  60
Cys Gly Pro Gln Cys His Lys Gly Thr Pro Leu Pro Thr Tyr Glu Glu
65                  70                  75                  80
Ala Lys Gln Tyr Leu Ser Tyr Glu Thr Leu Tyr Ala Asn Gly Ser Arg
                85                  90                  95
Thr Glu Thr Gln Val Gly Ile Tyr Ile Leu Ser Ser Ser Gly Asp Gly
            100                 105                 110
Ala Gln His Arg Asp Ser Gly Ser Ser Gly Lys Ser Arg Arg Lys Arg
        115                 120                 125
Gln Ile Tyr Gly Tyr Asp Ser Arg Phe Ser Ile Phe Gly Lys Asp Phe
    130                 135                 140
Leu Leu Asn Tyr Pro Phe Ser Thr Ser Val Lys Leu Ser Thr Gly Cys
145                 150                 155                 160
Thr Gly Thr Leu Val Ala Glu Lys His Val Leu Thr Ala Ala His Cys
                165                 170                 175
Ile His Asp Gly Lys Thr Tyr Val Lys Gly Thr Gln Lys Leu Arg Val
            180                 185                 190
Gly Phe Leu Lys Pro Lys Phe Lys Asp Gly Gly Arg Gly Ala Asn Asp
        195                 200                 205
Ser Thr Ser Ala Met Pro Glu Gln Met Lys Phe Gln Trp Ile Arg Val
    210                 215                 220
Lys Arg Thr His Val Pro Lys Gly Trp Ile Lys Gly Asn Ala Asn Asp
225                 230                 235                 240
Ile Gly Met Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Lys Pro His
                245                 250                 255
Lys Arg Lys Phe Met Lys Ile Gly Val Ser Pro Pro Ala Lys Gln Leu
            260                 265                 270
Pro Gly Gly Arg Ile His Phe Ser Gly Tyr Asp Asn Asp Arg Pro Gly
        275                 280                 285
Asn Leu Val Tyr Arg Phe Cys Asp Val Lys Asp Glu Thr Tyr Asp Leu
    290                 295                 300
Leu Tyr Gln Gln Cys Asp Ala Gln Pro Gly Ala Ser Gly Ser Gly Val
305                 310                 315                 320
Tyr Val Arg Met Trp Lys Arg Gln Gln Gln Lys Trp Glu Arg Lys Ile
                325                 330                 335
Ile Gly Ile Phe Ser Gly His Gln Trp Val Asp Met Asn Gly Ser Pro
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            340                 345                 350
Gln Asp Phe Asn Val Ala Val Arg Ile Thr Pro Leu Lys Tyr Ala Gln
        355                 360                 365
Ile Cys Tyr Trp Ile Lys Gly Asn Tyr Leu Asp Cys Arg Glu Gly
    370                 375                 380
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<210> 287
<211> 26
<212> PRT
<213> Homo sapiens

<400> 287
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Ile Ile Gly Gly Thr Glu Ser Lys Pro Asp Ser Arg Pro Tyr Met Ala
 1               5                  10                  15
Leu Leu Gln Ile Val Glu Pro Ala Val His
            20                  25
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<210> 288
<211> 2265
<212> DNA
<213> Homo sapiens

<400> 288
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<210> 289
<211> 457
<212> PRT
<213> Homo sapiens

<400> 289

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

```
Phe Ser Thr Gln Leu Cys Asn Ser Ser Cys Val Tyr Ser Gly Ala Leu
    370                 375                 380
Thr Pro Arg Met Leu Cys Ala Gly Tyr Leu Asp Gly Arg Ala Asp Ala
385                 390                 395                 400
Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Pro Asp Gly Asp Thr
                405                 410                 415
Trp Arg Leu Val Gly Val Val Ser Trp Gly Arg Ala Cys Ala Glu Pro
            420                 425                 430
Asn His Pro Gly Val Tyr Ala Lys Val Ala Glu Phe Leu Asp Trp Ile
        435                 440                 445
His Asp Thr Ala Gln Asp Ser Leu Leu
    450                 455
```

<210> 290
<211> 1243
<212> DNA
<213> Homo sapiens

<400> 290
atggctgccc ctgcttccgt catgggccca ctcgggccct ctgccctggg ccttctgctg 60
ctgctcctgg tggtggcccc tccccgggtc gcagcattgg tccacagaca gccagagaac 120
cagggaatct ccctaactgg cagcgtggcc tgtggtcggc ccagcatgga ggggaaaatc 180
ctgggcggcg tccctgcgcc cgagaggaag tggccgtggc aggtcagcgt gcactacgca 240
ggcctccacg tctgcggcgg ctccatcctc aatgagtact gggtgctgtc agctgcgcac 300
tgctttcaca gggacaagaa tatcaaaatc tatgacatgt acgtaggcct cgtaaacctc 360
agggtggccg gcaaccacac ccagtggtat gaggtgaaca gggtgatcct gcaccccaca 420
tatgagatgt accaccccat cggaggtgac gtggccctgg tgcagctgaa gaccccgcatt 480
gtgttttctg agtccgtgct ccccggtttgc cttgcaactc cagaagtgaa ccttaccagt 540
gccaattgct gggctacggg atggggacta gtctcaaaac aaggtgagac ctcagacgag 600
ctgcaggaga tgcagctccc gctgatcctg gagccctggt gccacctgct ctacggacac 660
atgtcctaca tcatgcccga catgctgtgt gctggggaca tcctgaatgc taagaccgtg 720
tgtgagggcg actccggggg cccacttgtc tgtgaattca accgcagctg gttgcagatt 780
ggaattgtga gctggggccg aggctgctcc aaccctctgt accctggagt gtatgccagt 840
gtttcctatt tctcaaaatg gatatgtgat aacatagaaa tcacgcccac tcctgctcag 900
ccagcccctg ctctctctcc agctctgggg cccactctca gcgtcctaat ggccatgctg 960
gctggctggt cagtgctgtg aggtcaggat acccactcta ggattctcat ggctgcacac 1020
cctgccccag cccagctgcc tccagacccc taagcatctc ctgtcctggc ctctctgaag 1080
cagacaaggg ccacctatcc cgggggtgga tgctgagtcc aggaggtgat gagcaagtgt 1140
acaaaagaaa aaagggaagg gggagagggg ctggtcaggg agaacccagc ttgggcagag 1200
tgcacctgag atttgataag atcattaaat atttacaaag caa 1243

<210> 291
<211> 326
<212> PRT
<213> Homo sapiens

<400> 291
```
Met Ala Ala Pro Ala Ser Val Met Gly Pro Leu Gly Pro Ser Ala Leu
 1               5                  10                  15
Gly Leu Leu Leu Leu Leu Leu Val Val Ala Pro Pro Arg Val Ala Ala
            20                  25                  30
Leu Val His Arg Gln Pro Glu Asn Gln Gly Ile Ser Leu Thr Gly Ser
        35                  40                  45
Val Ala Cys Gly Arg Pro Ser Met Glu Gly Lys Ile Leu Gly Gly Val
    50                  55                  60
Pro Ala Pro Glu Arg Lys Trp Pro Trp Gln Val Ser Val His Tyr Ala
65                  70                  75                  80
```

```
Gly Leu His Val Cys Gly Gly Ser Ile Leu Asn Glu Tyr Trp Val Leu
                85                  90                  95
Ser Ala Ala His Cys Phe His Arg Asp Lys Asn Ile Lys Ile Tyr Asp
            100                 105                 110
Met Tyr Val Gly Leu Val Asn Leu Arg Val Ala Gly Asn His Thr Gln
        115                 120                 125
Trp Tyr Glu Val Asn Arg Val Ile Leu His Pro Thr Tyr Glu Met Tyr
    130                 135                 140
His Pro Ile Gly Gly Asp Val Ala Leu Val Gln Leu Lys Thr Arg Ile
145                 150                 155                 160
Val Phe Ser Glu Ser Val Leu Pro Val Cys Leu Ala Thr Pro Glu Val
                165                 170                 175
Asn Leu Thr Ser Ala Asn Cys Trp Ala Thr Gly Trp Gly Leu Val Ser
            180                 185                 190
Lys Gln Gly Glu Thr Ser Asp Glu Leu Gln Glu Met Gln Leu Pro Leu
        195                 200                 205
Ile Leu Glu Pro Trp Cys His Leu Leu Tyr Gly His Met Ser Tyr Ile
    210                 215                 220
Met Pro Asp Met Leu Cys Ala Gly Asp Ile Leu Asn Ala Lys Thr Val
225                 230                 235                 240
Cys Glu Gly Asp Ser Gly Gly Pro Leu Val Cys Glu Phe Asn Arg Ser
                245                 250                 255
Trp Leu Gln Ile Gly Ile Val Ser Trp Gly Arg Gly Cys Ser Asn Pro
            260                 265                 270
Leu Tyr Pro Gly Val Tyr Ala Ser Val Ser Tyr Phe Ser Lys Trp Ile
        275                 280                 285
Cys Asp Asn Ile Glu Ile Thr Pro Thr Pro Ala Gln Pro Ala Pro Ala
    290                 295                 300
Leu Ser Pro Ala Leu Gly Pro Thr Leu Ser Val Leu Met Ala Met Leu
305                 310                 315                 320
Ala Gly Trp Ser Val Leu
                325
```

<210> 292
<211> 1695
<212> DNA
<213> Homo sapiens

<400> 292
atgcttataa gcaggaacaa gctgatttta ctactaggaa tagtcttttt tgaacgaggt 60
aaatctgcaa ctctttcgct ccccaaagct cccagttgtg ggcagagtct ggttaaggta 120
cagccttgga attattttaa cattttcagt cgcattcttg gaggaagcca agtggagaag 180
ggttcctatc cctggcaggt atctctgaaa caaaggcaga agcatatttg tggaggaagc 240
atcgtctcac cacagtgggt gatcacggcg gctcactgca ttgcaaacag aaacattgtg 300
tctactttga atgttactgc tggagagtat gacttaagcc agacagaccc aggagagcaa 360
actctcacta ttgaaactgt catcatacat ccacatttct ccaccaagaa accaatggac 420
tatgatattg ccctttttgaa gatggctgga gccttccaat ttggccactt tgtggggccc 480
atatgtcttc cagagctgcg ggagcaattt gaggctggtt ttatttgtac aactgcaggc 540
tggggccgct taactgaagg tggcgtcctc tcacaagtct tgcaggaagt gaatctgcct 600
attttgacct gggaagagtg tgtggcagct ctgttaacac taaagaggcc catcagtggg 660
aagacctttc tttgcacagg ttttcctgat ggagggagag acgcatgtca gggagattca 720
ggaggttcac tcatgtgccg gaataagaaa ggggcctgga ctctggctgg tgtgacttcc 780
tggggtttgg gctgtggtcg aggctggaga aacaatgtga ggaaaagtga tcaaggatcc 840
cctgggatct tcacagacat tagtaaagtg cttcccctgga tccacgaaca catccaaact 900
ggtaatcgga gaaagagctc cagagcctgg tgcagtgagc aggatgtcat agtcagcggg 960
gctgagggga agctgcactt cccagaaagc ctccacctat attatgagag caagcaacgg 1020
tgtgtctgga ccctgctggt accagaggaa atgcatgtgt tgctcagttt ttcccaccta 1080

```
gatgttgagt cttgtcacca cagttacctg tcaatgtatt ctttagaaga cagacccatt 1140
ggaaaatttt gtggagaaag cctcccttca tccattctta ttggctctaa ttctctaagg 1200
ctgaaattcg tctctgatgc cacagattat gcagctgggt ttaatcttac ctataaagct 1260
cttaaaccaa actacattcc tgattcaggt tgcagttact taactgtcct ttttgaagaa 1320
ggtctcatac agagtctaaa ctatcctgaa aactacagtg acaaggctaa ctgtgactgg 1380
atttttcaag cctccaaaca tcacctaatt aagctttcat ttcagagtct ggaaatagaa 1440
gaaagtggag actgcacttc cgactatgtg acagtgcaca gcgatgtaga aaggaagaag 1500
gaaatagctc ggctgtgtgg ctatgatgtc cccacccctg tgctgagccc ctccagcatc 1560
atgctcatca gcttccaatc agatgaaaac gggacctgca ggggctttca ggctacagtc 1620
tccttcattc ctaaagcagg taagaagata gagttaccaa ctctttggtt cccagttcta 1680
atccttgtga tgtga                                                  1695

<210> 293
<211> 564
<212> PRT
<213> Homo sapiens

<400> 293
Met Leu Ile Ser Arg Asn Lys Leu Ile Leu Leu Leu Gly Ile Val Phe
 1               5                  10                  15
Phe Glu Arg Gly Lys Ser Ala Thr Leu Ser Leu Pro Lys Ala Pro Ser
            20                  25                  30
Cys Gly Gln Ser Leu Val Lys Val Gln Pro Trp Asn Tyr Phe Asn Ile
        35                  40                  45
Phe Ser Arg Ile Leu Gly Gly Ser Gln Val Glu Lys Gly Ser Tyr Pro
    50                  55                  60
Trp Gln Val Ser Leu Lys Gln Arg Gln Lys His Ile Cys Gly Gly Ser
65                  70                  75                  80
Ile Val Ser Pro Gln Trp Val Ile Thr Ala Ala His Cys Ile Ala Asn
                85                  90                  95
Arg Asn Ile Val Ser Thr Leu Asn Val Thr Ala Gly Glu Tyr Asp Leu
            100                 105                 110
Ser Gln Thr Asp Pro Gly Glu Gln Thr Leu Thr Ile Glu Thr Val Ile
        115                 120                 125
Ile His Pro His Phe Ser Thr Lys Lys Pro Met Asp Tyr Asp Ile Ala
    130                 135                 140
Leu Leu Lys Met Ala Gly Ala Phe Gln Phe Gly His Phe Val Gly Pro
145                 150                 155                 160
Ile Cys Leu Pro Glu Leu Arg Glu Gln Phe Glu Ala Gly Phe Ile Cys
                165                 170                 175
Thr Thr Ala Gly Trp Gly Arg Leu Thr Glu Gly Gly Val Leu Ser Gln
            180                 185                 190
Val Leu Gln Glu Val Asn Leu Pro Ile Leu Thr Trp Glu Glu Cys Val
        195                 200                 205
Ala Ala Leu Leu Thr Leu Lys Arg Pro Ile Ser Gly Lys Thr Phe Leu
    210                 215                 220
Cys Thr Gly Phe Pro Asp Gly Gly Arg Asp Ala Cys Gln Gly Asp Ser
225                 230                 235                 240
Gly Gly Ser Leu Met Cys Arg Asn Lys Lys Gly Ala Trp Thr Leu Ala
                245                 250                 255
Gly Val Thr Ser Trp Gly Leu Gly Cys Gly Arg Gly Trp Arg Asn Asn
            260                 265                 270
Val Arg Lys Ser Asp Gln Gly Ser Pro Gly Ile Phe Thr Asp Ile Ser
        275                 280                 285
Lys Val Leu Pro Trp Ile His Glu His Ile Gln Thr Gly Asn Arg Arg
    290                 295                 300
Lys Ser Ser Arg Ala Trp Cys Ser Glu Gln Asp Val Ile Val Ser Gly
305                 310                 315                 320
```

```
Ala Glu Gly Lys Leu His Phe Pro Glu Ser Leu His Leu Tyr Tyr Glu
                325                 330                 335
Ser Lys Gln Arg Cys Val Trp Thr Leu Leu Val Pro Glu Glu Met His
            340                 345                 350
Val Leu Leu Ser Phe Ser His Leu Asp Val Glu Ser Cys His His Ser
        355                 360                 365
Tyr Leu Ser Met Tyr Ser Leu Glu Asp Arg Pro Ile Gly Lys Phe Cys
    370                 375                 380
Gly Glu Ser Leu Pro Ser Ser Ile Leu Ile Gly Ser Asn Ser Leu Arg
385                 390                 395                 400
Leu Lys Phe Val Ser Asp Ala Thr Asp Tyr Ala Ala Gly Phe Asn Leu
                405                 410                 415
Thr Tyr Lys Ala Leu Lys Pro Asn Tyr Ile Pro Asp Ser Gly Cys Ser
            420                 425                 430
Tyr Leu Thr Val Leu Phe Glu Glu Gly Leu Ile Gln Ser Leu Asn Tyr
        435                 440                 445
Pro Glu Asn Tyr Ser Asp Lys Ala Asn Cys Asp Trp Ile Phe Gln Ala
    450                 455                 460
Ser Lys His His Leu Ile Lys Leu Ser Phe Gln Ser Leu Glu Ile Glu
465                 470                 475                 480
Glu Ser Gly Asp Cys Thr Ser Asp Tyr Val Thr Val His Ser Asp Val
                485                 490                 495
Glu Arg Lys Lys Glu Ile Ala Arg Leu Cys Gly Tyr Asp Val Pro Thr
            500                 505                 510
Pro Val Leu Ser Pro Ser Ser Ile Met Leu Ile Ser Phe Gln Ser Asp
        515                 520                 525
Glu Asn Gly Thr Cys Arg Gly Phe Gln Ala Thr Val Ser Phe Ile Pro
    530                 535                 540
Lys Ala Gly Lys Lys Ile Glu Leu Pro Thr Leu Trp Phe Pro Val Leu
545                 550                 555                 560
Ile Leu Val Met
```

<210> 294
<211> 3420
<212> DNA
<213> Homo sapiens

<400> 294

```
atgggcctgc tggccagtgc tggtttgttg ctgttgctgg tcatcggcca ccccagaagc 60
ctaggactga agtgtggaat tcgcatggtc aacatgaaaa gtaaggaacc tgccgtggga 120
tctagattct tctctagaat tagtagttgg agaaattcaa cagtgactgg acatccatgg 180
caggtctccc taaaatcaga tgagcaccac ttctgtggag gaagcttgat tcaagaagat 240
cgggttgtta cagcagcaca ctgcctggac agcctcagtg agaagcagct gaagaatata 300
actgtgactt ctggggagta cagcctcttt cagaaggata agcaagaaca gaatattcct 360
gtctcaaaaa ttattaccca tcctgaatac aacagccgtg aatatatgag tcctgatatt 420
gcactgctgt atctaaaaca caaagtcaag tttggaaatg ctgttcagcc aatctgtctt 480
cctgacagcg atgataaagt tgaaccagga attctttgct tatccagtgg atggggcaag 540
atttccaaaa catcagaata ttcaaatgtc ctacaagaaa tggaacttcc catcatggat 600
gacagagcgt gtaatactgt gctcaagagc atgaacctcc ctcccctggg aaggaccatg 660
ctgtgtgctg gcttccctga ttggggaatg gacgcctgcc agggggactc tggaggacca 720
ctggtttgta gaagaggtgg tggaatctgg attcttgctg ggataacttc ctgggtagct 780
ggttgtgctg gaggttcagt tcccgtaaga aacaaccatg tgaaggcatc acttggcatt 840
ttctccaaag tgtctgagtt gatggatttt atcactcaaa acctgttcac aggtttggat 900
cggggccaac ccctcttcaa agtgggctca aggtatataa caaaggccct gagttctgtc 960
caagaagtga atggaagcca gagaggaaag ggtattttag acatggaaaa gcaagttgga 1020
tgtgatcatg actatgtatc tttacgatca agcagtggag tgctttttaa tcagagatct 1080
```

```
ctcatggaag acgatggaaa acaaaacaaa cgtgtctgtg gaaaaatatt gccttcacca 1140
ttgctggcag agaccagtga ggccatggtt ccatttgttt ctgatacaga agacagtggc 1200
agtggctttg agcttaccgt tactgctgta cagaagtcag aagcagggtc aggttgtggg 1260
agtctggcta tattggtaga agaagggaca aatcactctg ccaagtatcc tgatttgtat 1320
cccagtaaca caaggtgtca ttggttcatt tgtgctccag agaagcacat tataaagttg 1380
acatttgagg actttgctgt caaatttagt ccaaactgta tttatgatgc tgttgtgatt 1440
tacggtgatt ctgaagaaaa gcacaagtta gctaaacttt gtggaatgtt gaccatcact 1500
tcaatattca gttctagtaa catgacggtg atatacttta aaagtgatgg taaaaatcgt 1560
ttacaaggct tcaaggccag atttaccatt ttgccctcag agtctttaaa caaatttgaa 1620
ccaaagttac ctccccaaaa caatcctgta tctaccgtaa aagctattct gcatgatgtc 1680
tgtggcatcc ctccatttag tccccagtgg ctttccagaa gaatcgcagg aggggaagaa 1740
gcctgccccc actgttggcc atggcaggtg ggtctgaggt ttctaggcga ttaccaatgt 1800
ggaggtgcca tcatcaaccc agtgtggatt ctgaccgcag cccactgtgt gcaattgaag 1860
aataatccac tctcctggac tattattgct ggggaccatg acagaaacct gaaggaatca 1920
acagagcagg tgagaagggc caaacacata atagtgcatg aagactttaa cacactaagt 1980
tatgactctg acattgccct aatacaacta agctctcctc tggagtacaa ctcggtggtg 2040
aggccagtat gtctcccaca cagcgcagag cctctatttt cctcggagat ctgtgctgtg 2100
accggatggg gaagcatcag tgcagatggt ggcctagcaa gtcgcctaca gcagattcaa 2160
gtgcatgtgt tagaaagaga ggtctgtgaa cacacttact attctgccca tccaggaggg 2220
atcacagaga agatgatctg tgctggcttt gcagcatctg gagagaaaga tttctgccag 2280
ggagactctg gtgggccact agtatgtaga catgaaaatg gtcccctttgt cctctatggc 2340
attgtcagct ggggagctgg ctgtgtccag ccatggaagc cgggtgtatt tgccagagtg 2400
atgatcttct tggactggat ccaatcaaaa atcaatggtc ctgcttcact tcagacaaat 2460
aataaatgca aaaccttaaa acaacaattg ccaccaccca caccttcacc agacagtgca 2520
tcttggccag gttgttgctc tgaagcagag ctagaaaagc ctagaggctt ttttcccaca 2580
ccacggtatc tactggatta tagaggaaga ctggaatgtt cttgggtgct cagagtttca 2640
gcaagcagta tggcaaaatt taccattgag tatctgtcac tcctggggtc tcctgtgtgt 2700
caagactcag ttctaattat ttatgaagaa agacacagta agagaaagac ggcaggtgga 2760
ttacatggaa gaagacttta ctcaatgact ttcatgagtc ctggaccgct ggtgagggtg 2820
acattccatg cccttgtacg aggtgcattt ggtataagct atattgactt gaaagtccta 2880
ggtccaaagg acagtaaaat aaccagactt tcccaaagtt caaacagaga gcacttggtc 2940
ccttgtgagg atgttcttct gaccaagcca gaagggatca tgcagatccc aagaaattct 3000
cacagaacta ctatggggtg ccaatggaga ttagtagccc ctttaaatca catcattcag 3060
cttaatatta ttaacttccc gatgaagcca acaacttttg tctgtcatgg tcatctgcgt 3120
gtttacgaag gatttggacc aggaaaaaaa ttaatagctt cattcgctgg aactctggca 3180
atgatactga caaaagacat attaaaaaga gaaaaactga attttattaa cacatatatc 3240
atgcatatat gggaaaattc agtgtatgat aatgtaagaa gtgttggaaa aagaaaacag 3300
aagaaatttg catcaaattt aagttatagt atggaggctg agaagtccag gatccaggtg 3360
ccagcagatt tggtgcctgc taagggctca ctttctggtt cttaggcaca gcccattctc 3420
```

<210> 295
<211> 1134
<212> PRT
<213> Homo sapiens

<400> 295

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

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

```
545                 550                 555                 560
Cys Gly Ile Pro Pro Phe Ser Pro Gln Trp Leu Ser Arg Arg Ile Ala
                565                 570                 575
Gly Gly Glu Glu Ala Cys Pro His Cys Trp Pro Trp Gln Val Gly Leu
            580                 585                 590
Arg Phe Leu Gly Asp Tyr Gln Cys Gly Gly Ala Ile Ile Asn Pro Val
        595                 600                 605
Trp Ile Leu Thr Ala Ala His Cys Val Gln Leu Lys Asn Asn Pro Leu
    610                 615                 620
Ser Trp Thr Ile Ile Ala Gly Asp His Asp Arg Asn Leu Lys Glu Ser
625                 630                 635                 640
Thr Glu Gln Val Arg Arg Ala Lys His Ile Ile Val His Glu Asp Phe
                645                 650                 655
Asn Thr Leu Ser Tyr Asp Ser Asp Ile Ala Leu Ile Gln Leu Ser Ser
            660                 665                 670
Pro Leu Glu Tyr Asn Ser Val Val Arg Pro Val Cys Leu Pro His Ser
        675                 680                 685
Ala Glu Pro Leu Phe Ser Ser Glu Ile Cys Ala Val Thr Gly Trp Gly
    690                 695                 700
Ser Ile Ser Ala Asp Gly Gly Leu Ala Ser Arg Leu Gln Gln Ile Gln
705                 710                 715                 720
Val His Val Leu Glu Arg Glu Val Cys Glu His Thr Tyr Tyr Ser Ala
                725                 730                 735
His Pro Gly Gly Ile Thr Glu Lys Met Ile Cys Ala Gly Phe Ala Ala
            740                 745                 750
Ser Gly Glu Lys Asp Phe Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
        755                 760                 765
Cys Arg His Glu Asn Gly Pro Phe Val Leu Tyr Gly Ile Val Ser Trp
    770                 775                 780
Gly Ala Gly Cys Val Gln Pro Trp Lys Pro Gly Val Phe Ala Arg Val
785                 790                 795                 800
Met Ile Phe Leu Asp Trp Ile Gln Ser Lys Ile Asn Gly Pro Ala Ser
                805                 810                 815
Leu Gln Thr Asn Asn Lys Cys Lys Thr Leu Lys Gln Gln Leu Pro Pro
            820                 825                 830
Pro Thr Pro Ser Pro Asp Ser Ala Ser Trp Pro Gly Cys Cys Ser Glu
        835                 840                 845
Ala Glu Leu Glu Lys Pro Arg Gly Phe Phe Pro Thr Pro Arg Tyr Leu
    850                 855                 860
Leu Asp Tyr Arg Gly Arg Leu Glu Cys Ser Trp Val Leu Arg Val Ser
865                 870                 875                 880
Ala Ser Ser Met Ala Lys Phe Thr Ile Glu Tyr Leu Ser Leu Leu Gly
                885                 890                 895
Ser Pro Val Cys Gln Asp Ser Val Leu Ile Ile Tyr Glu Glu Arg His
            900                 905                 910
Ser Lys Arg Lys Thr Ala Gly Gly Leu His Gly Arg Arg Leu Tyr Ser
        915                 920                 925
Met Thr Phe Met Ser Pro Gly Pro Leu Val Arg Val Thr Phe His Ala
    930                 935                 940
Leu Val Arg Gly Ala Phe Gly Ile Ser Tyr Ile Asp Leu Lys Val Leu
945                 950                 955                 960
Gly Pro Lys Asp Ser Lys Ile Thr Arg Leu Ser Gln Ser Ser Asn Arg
                965                 970                 975
Glu His Leu Val Pro Cys Glu Asp Val Leu Leu Thr Lys Pro Glu Gly
            980                 985                 990
Ile Met Gln Ile Pro Arg Asn Ser His Arg Thr Thr Met Gly Cys Gln
        995                 1000                1005
Trp Arg Leu Val Ala Pro Leu Asn His Ile Ile Gln Leu Asn Ile Ile
```

```
    1010                1015                1020
Asn Phe Pro Met Lys Pro Thr Thr Phe Val Cys His Gly His Leu Arg
1025                1030                1035                1040
Val Tyr Glu Gly Phe Gly Pro Gly Lys Lys Leu Ile Ala Ser Phe Ala
                1045                1050                1055
Gly Thr Leu Ala Met Ile Leu Thr Lys Asp Ile Leu Lys Arg Glu Lys
            1060                1065                1070
Leu Asn Phe Ile Asn Thr Tyr Ile Met His Ile Trp Glu Asn Ser Val
        1075                1080                1085
Tyr Asp Asn Val Arg Ser Val Gly Lys Arg Lys Gln Lys Lys Phe Ala
    1090                1095                1100
Ser Asn Leu Ser Tyr Ser Met Glu Ala Glu Lys Ser Arg Ile Gln Val
1105                1110                1115                1120
Pro Ala Asp Leu Val Pro Ala Lys Gly Ser Leu Ser Gly Ser
                1125                1130
```

<210> 296
<211> 2810
<212> DNA
<213> Homo sapiens

<400> 296

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ggaagaacct gaagatctgg actgcgggcg ccctgagccc tcggcccgca tcgtgggggg 180
gctcaaacgc gcagccgggc acctggcctt ggcaagtgag cctgcaccat ggaggtggcc 240
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aggacgggcc cctggacggc gcgcacaccc gcgcagtggc cgccatcgtg gtgccggcca 420
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gcaccgcctg ctgggccacc ggctggggag acgtccagga ggcagatcct ctgcctctcc 600
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gcctacccca cccggaacac tacttcctgc ccgggagccg ctgccgcctg gcccgctggg 1380
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caggggccag ctccctccca cagggccacc aggtatcccg cttggtcatc agcatccggc 2040
tgccccagca cctgggactc aggcccccct tggccctcct ggagctgagc tcccgggtgg 2100
```

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agcccteccc atcagccctg cccatctgtc tccaccccgc gggtatcccc ccgggggcca 2160
gctgctgggt gttgggctgg aaagaacccc aggaccgagt ccctgtggct gctgctgtct 2220
ccatcttgac acaacgaatc tgtgactgcc tctatcaggg catcctgccc cctggaaccc 2280
tctgtgtcct gtatgcagag gggcaggaga acaggtgtga gatgacctca gcaccgcccc 2340
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ccccagaact ggccaaggcc tcgggatccc cgcatgcagt ctacttcctg ctcctgctga 2580
ctctcctgat ccagagctga ggggctaggg tcccagcacc acttcccccc tctccaccct 2640
ctacttcccg cccagtgggg ctggaatgtg gcccagccgg ctggaacctc aagggcccca 2700
cccaccgaga ttgcagcggc tctggctaat tgggcctctg tgcccgggct attttgaacc 2760
caggaatcct tgggggtggt gggaggagcg gacaataaag gtgtaaacac             2810
```

<210> 297
<211> 766
<212> PRT
<213> Homo sapiens

<400> 297

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

```
305                 310                 315                 320
Asp Leu Ala Leu Leu Gln Leu Arg Thr Pro Val Asn Leu Ser Ala Ala
                325                 330                 335
Ser Arg Pro Val Cys Leu Pro His Pro Glu His Tyr Phe Leu Pro Gly
            340                 345                 350
Ser Arg Cys Arg Leu Ala Arg Trp Gly Arg Gly Glu Pro Ala Leu Gly
        355                 360                 365
Pro Gly Ala Leu Leu Glu Ala Glu Leu Leu Gly Gly Trp Trp Cys His
    370                 375                 380
Cys Leu Tyr Gly Arg Gln Gly Ala Ala Val Pro Leu Pro Gly Asp Pro
385                 390                 395                 400
Pro His Ala Leu Cys Pro Ala Tyr Gln Glu Lys Glu Glu Val Gly Ser
                405                 410                 415
Cys Trp Asn Asp Ser Arg Trp Ser Leu Leu Cys Gln Glu Glu Gly Thr
            420                 425                 430
Trp Phe Leu Ala Gly Ile Arg Asp Phe Pro Ser Gly Cys Leu Arg Pro
        435                 440                 445
Arg Ala Phe Phe Pro Leu Gln Thr His Gly Pro Trp Ile Ser His Val
    450                 455                 460
Thr Arg Gly Ala Tyr Leu Glu Asp Gln Leu Ala Trp Asp Trp Gly Pro
465                 470                 475                 480
Asp Gly Glu Glu Thr Glu Thr Gln Thr Cys Pro Pro His Thr Glu His
                485                 490                 495
Gly Ala Cys Gly Leu Arg Leu Glu Ala Ala Pro Val Gly Val Leu Trp
            500                 505                 510
Pro Trp Leu Ala Glu Val His Val Ala Gly Asp Arg Val Cys Thr Gly
        515                 520                 525
Ile Leu Leu Ala Pro Gly Trp Val Leu Ala Ala Thr His Cys Val Leu
    530                 535                 540
Arg Pro Gly Ser Thr Thr Val Pro Tyr Ile Glu Val Tyr Leu Gly Arg
545                 550                 555                 560
Ala Gly Ala Ser Ser Leu Pro Gln Gly His Gln Val Ser Arg Leu Val
                565                 570                 575
Ile Ser Ile Arg Leu Pro Gln His Leu Gly Leu Arg Pro Pro Leu Ala
            580                 585                 590
Leu Leu Glu Leu Ser Ser Arg Val Glu Pro Ser Pro Ser Ala Leu Pro
        595                 600                 605
Ile Cys Leu His Pro Ala Gly Ile Pro Pro Gly Ala Ser Cys Trp Val
    610                 615                 620
Leu Gly Trp Lys Glu Pro Gln Asp Arg Val Pro Val Ala Ala Ala Val
625                 630                 635                 640
Ser Ile Leu Thr Gln Arg Ile Cys Asp Cys Leu Tyr Gln Gly Ile Leu
                645                 650                 655
Pro Pro Gly Thr Leu Cys Val Leu Tyr Ala Glu Gly Gln Glu Asn Arg
            660                 665                 670
Cys Glu Met Thr Ser Ala Pro Pro Leu Leu Cys Gln Met Thr Glu Gly
        675                 680                 685
Ser Trp Ile Leu Val Gly Met Ala Val Gln Gly Ser Arg Glu Leu Phe
    690                 695                 700
Ala Ala Ile Gly Pro Glu Glu Ala Trp Ile Ser Gln Thr Val Gly Glu
705                 710                 715                 720
Ala Asn Leu Leu Pro Pro Ser Gly Ser Pro His Trp Pro Thr Gly Gly
                725                 730                 735
Ser Asn Leu Cys Pro Pro Glu Leu Ala Lys Ala Ser Gly Ser Pro His
            740                 745                 750
Ala Val Tyr Phe Leu Leu Leu Leu Thr Leu Leu Ile Gln Ser
        755                 760                 765
```

<210> 298
<211> 245
<212> PRT
<213> Homo sapiens

<400> 298
Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser
1 5 10 15
Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys
20 25 30
Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys
35 40 45
Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln
50 55 60
Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly
65 70 75 80
Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile
85 90 95
Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln
100 105 110
Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly
115 120 125
Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr
130 135 140
Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr
145 150 155 160
Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val
165 170 175
Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr
180 185 190
Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln
195 200 205
Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly
210 215 220
His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu
225 230 235 240
Ile Phe Pro Ser Ala
245

<210> 299
<211> 251
<212> PRT
<213> Homo sapiens

<400> 299
Met Lys Ile Pro Trp Gly Ser Ile Pro Val Leu Met Leu Leu Leu Leu
1 5 10 15
Leu Gly Leu Ile Asp Ile Ser Gln Ala Gln Leu Ser Cys Thr Gly Pro
20 25 30
Pro Ala Ile Pro Gly Ile Pro Gly Ile Pro Gly Thr Pro Gly Pro Asp
35 40 45
Gly Gln Pro Gly Thr Pro Gly Ile Lys Gly Glu Lys Gly Leu Pro Gly
50 55 60
Leu Ala Gly Asp His Gly Glu Phe Gly Glu Lys Gly Asp Pro Gly Ile
65 70 75 80
Pro Gly Asn Pro Gly Lys Val Gly Pro Lys Gly Pro Met Gly Pro Lys

```
                85                  90                  95
Gly Gly Pro Gly Ala Pro Gly Ala Pro Gly Pro Lys Gly Glu Ser Gly
            100                 105                 110
Asp Tyr Lys Ala Thr Gln Lys Ile Ala Phe Ser Ala Thr Arg Thr Ile
        115                 120                 125
Asn Val Pro Leu Arg Arg Asp Gln Thr Ile Arg Phe Asp His Val Ile
    130                 135                 140
Thr Asn Met Asn Asn Asn Tyr Glu Pro Arg Ser Gly Lys Phe Thr Cys
145                 150                 155                 160
Lys Val Pro Gly Leu Tyr Tyr Phe Thr Tyr His Ala Ser Ser Arg Gly
                165                 170                 175
Asn Leu Cys Val Asn Leu Met Arg Gly Arg Glu Arg Ala Gln Lys Val
            180                 185                 190
Val Thr Phe Cys Asp Tyr Ala Tyr Asn Thr Phe Gln Val Thr Thr Gly
        195                 200                 205
Gly Met Val Leu Lys Leu Glu Gln Gly Glu Asn Val Phe Leu Gln Ala
    210                 215                 220
Thr Asp Lys Asn Ser Leu Leu Gly Met Glu Gly Ala Asn Ser Ile Phe
225                 230                 235                 240
Ser Gly Phe Leu Leu Phe Pro Asp Met Glu Ala
                245                 250
```

<210> 300
<211> 245
<212> PRT
<213> Homo sapiens

<400> 300

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

225 230 235 240
Leu Leu Phe Pro Asp
245

<210> 301
<211> 2526
<212> DNA
<213> Homo sapiens

<400> 301
gcacacagtg cacgaagacg ctgtcgggag agcccaggat tcaacacggg ccttgagaaa 60
tgtggctctt gtacctcctg gtgccggccc tgttctgcag ggcaggaggc tccattccca 120
tccctcagaa gttatttggg gaggtgactt ccctctgttt ccccaagcct tacccccaaca 180
actttgaaac aaccactgtg atcacagtcc ccacgggata cagggtgaag ctcgtcttcc 240
agcagtttga cctggagcct tctgaaggct gcttctatga ttatgtcaag atctctgctg 300
ataagaaaag cctggggagg ttctgtgggc aactgggttc tccactgggc aacccccccgg 360
gaaagaagga atttatgtcc caagggaaca agatgctgct gaccttccac acagacttct 420
ccaacgagga gaatgggacc atcatgttct acaagggctt cctggcctac taccaagctg 480
tggaccttga tgaatgtgct tcccggagca aattagggga ggaggatccc cagccccagt 540
gccagcacct gtgtcacaac tacgttggag gctacttctg ttcctgccgt ccaggctatg 600
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catcaggcta catctccagc ctggagtacc ctcggtccta ccccctgac ctgcgctgca 720
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atattgatga ccaccagcaa gtacactgcc cctatgacca gctacagatc tatgccaacg 840
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gagagaagat tcctcggtgc ttgccagtgt gtgggaagcc cgtgaacccc gtggaacaga 1440
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aaaaaa 2526

<210> 302
<211> 705
<212> PRT

<213> Homo sapiens

<400> 302

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

```
        435                 440                 445
Pro Val Cys Gly Lys Pro Val Asn Pro Val Glu Gln Arg Gln Arg Ile
    450                 455                 460
Ile Gly Gly Gln Lys Ala Lys Met Gly Asn Phe Pro Trp Gln Val Phe
465                 470                 475                 480
Thr Asn Ile His Gly Arg Gly Gly Gly Ala Leu Leu Gly Asp Arg Trp
                485                 490                 495
Ile Leu Thr Ala Ala His Thr Leu Tyr Pro Lys Glu His Glu Ala Gln
            500                 505                 510
Ser Asn Ala Ser Leu Asp Val Phe Leu Gly His Thr Asn Val Glu Glu
        515                 520                 525
Leu Met Lys Leu Gly Asn His Pro Ile Arg Arg Val Ser Val His Pro
    530                 535                 540
Asp Tyr Arg Gln Asp Glu Ser Tyr Asn Phe Glu Gly Asp Ile Ala Leu
545                 550                 555                 560
Leu Glu Leu Glu Asn Ser Val Thr Leu Gly Pro Asn Leu Leu Pro Ile
                565                 570                 575
Cys Leu Pro Asp Asn Asp Thr Phe Tyr Asp Leu Gly Leu Met Gly Tyr
            580                 585                 590
Val Ser Gly Phe Gly Val Met Glu Glu Lys Ile Ala His Asp Leu Arg
        595                 600                 605
Phe Val Arg Leu Pro Val Ala Asn Pro Gln Ala Cys Glu Asn Trp Leu
    610                 615                 620
Arg Gly Lys Asn Arg Met Asp Val Phe Ser Gln Asn Met Phe Cys Ala
625                 630                 635                 640
Gly His Pro Ser Leu Lys Gln Asp Ala Cys Gln Gly Asp Ser Gly Gly
                645                 650                 655
Val Phe Ala Val Arg Asp Pro Asn Thr Asp Arg Trp Val Ala Thr Gly
            660                 665                 670
Ile Val Ser Trp Gly Ile Gly Cys Ser Arg Gly Tyr Gly Phe Tyr Thr
        675                 680                 685
Lys Val Leu Asn Tyr Val Asp Trp Ile Lys Lys Glu Met Glu Glu Glu
    690                 695                 700
Asp
705
```

<210> 303
<211> 2714
<212> DNA
<213> Homo sapiens

<400> 303
aatcttatga acagaaccag gacagggagg ctggccggag gttcctgcag agggagcgtc 60
aaggccctgt gctgctgtcc ctgggggcca gaggggttgc ccagcatgcc cactggcagg 120
agagagggaa ctgacccact tgctcctacc agcttctgaa ggctccaaag tccggaggtg 180
cagaaagcca ggaccaagag acaggcagct caccagggtg gacaaatcgc cagagatgtg 240
gtgcattgtc ctgttttcac ttttggcatg ggtttatgct gagcctacca tgtatgggga 300
gatcctgtcc cctaactatc ctcaggcata tcccagtgag gtagagaaat cttgggacat 360
agaagttcct gaagggtatg ggattcacct ctacttcacc catctggaca ttgagctgtc 420
agagaactgt gcgtatgact cagtgcagat aatctcagga gacactgaag aagggaggct 480
ctgtggacag aggagcagta acaatcccca ctctccaatt gtggaagagt tccaagtccc 540
atacaacaaa ctccaggtga tctttaagtc agacttttcc aatgaagagc gttttacggg 600
gtttgctgca tactatgttg ccacagacat aaatgaatgc acagattttg tagatgtccc 660
ttgtagccac ttctgcaaca atttcattgg tggttacttc tgctcctgcc ccccggaata 720
tttcctccat gatgacatga agaattgcgg agttaattgc agtggggatg tattcactgc 780
actgattggg gagattgcaa gtcccaatta tcccaaacca tatccagaga actcaaggtg 840
tgaataccag atccggttgg agaaagggtt ccaagtggtg gtgaccttgc ggagagaaga 900

ttttgatgtg gaagcagctg actcagcggg aaactgcctt gacagtttag tttttgttgc 960
aggagatcgg caatttggtc cttactgtgg tcatggattc cctgggcctc taaatattga 1020
aaccaagagt aatgctcttg atatcatctt ccaaactgat ctaacagggc aaaaaaaggg 1080
ctggaaactt cgctatcatg gagatccaat gccctgccct aaggaagaca ctcccaattc 1140
tgtttgggag cctgcgaagg caaaatatgt ctttagagat gtggtgcaga taacctgtct 1200
ggatgggttt gaagttgtgg agggacgtgt tggtgcaaca tctttctatt cgacttgtca 1260
aagcaatgga aagtggagta attccaaact gaaatgtcaa cctgtggact gtggcattcc 1320
tgaatccatt gagaatggta aagttgaaga cccagagagc actttgtttg gttctgtcat 1380
ccgctacact tgtgaggagc catattacta catggaaaat ggaggaggtg gggagtatca 1440
ctgtgctggt aacgggagct gggtgaatga ggtgctgggc ccggagctgc cgaaatgtgt 1500
tccagtctgt ggagtcccca gagaaccctt tgaagaaaaa cagaggataa ttggaggatc 1560
cgatgcagat attaaaaact tcccctggca agtcttcttt gacaacccat gggctggtgg 1620
agcgctcatt aatgagtact gggtgctgac ggctgctcat gttgtggagg gaaacaggga 1680
gccaacaatg tatgttgggt ccacctcagt gcagacctca cggctggcaa aatccaagat 1740
gctcactcct gagcatgtgt ttattcatcc gggatggaag ctgctggaag tcccagaagg 1800
acgaaccaat tttgataatg acattgcact ggtgcggctg aaagacccag tgaaaatggg 1860
acccaccgtc tctcccatct gcctaccagg cacctcttcc gactacaacc tcatggatgg 1920
ggacctggga ctgatctcag gctggggccg aacagagaag agagatcgtg ctgttcgcct 1980
caaggcggca aggttacctg tagctccttt aagaaaatgc aaagaagtga aagtggagaa 2040
acccacagca gatgcagagg cctatgtttt cactcctaac atgatctgtg ctggaggaga 2100
gaagggcatg gatagctgta aaggggacag tggtggggcc tttgctgtac aggatcccaa 2160
tgacaagacc aaattctacg cagctggcct ggtgtcctgg gggccccagt gtgggaccta 2220
tgggctctac acacgggtaa agaactatgt tgactggata atgaagacta tgcaggaaaa 2280
tagcaccccc cgtgaggact aatccagata catcccacca gcctctccaa gggtggtgac 2340
caatgcatta ccttctgttc cttatgatat tctcattatt tcatcatgac tgaaagaaga 2400
cacgagcgaa tgatttaaat agaacttgat tgttgagacg ccttgctaga ggtagagttt 2460
gatcatagaa ttgtgctggt catacatttg tggtctgact ccttggggtc ctttcccagg 2520
agtacctatt gtagataaca ctatgggtgg ggcactcctt tcttgcacta ttccacaggg 2580
ataccttaat tctttgtttc ctctttacct gttcaaaatt ccatttactt gatcattctc 2640
agtatccact gtctatgtac aataaaggat gtttataagc aaaaaaaaaa aaaaaaaaaa 2700
aaaaaaaaaa aaaa 2714

<210> 304
<211> 688
<212> PRT
<213> Homo sapiens

<400> 304
Met Trp Cys Ile Val Leu Phe Ser Leu Leu Ala Trp Val Tyr Ala Glu
1 5 10 15
Pro Thr Met Tyr Gly Glu Ile Leu Ser Pro Asn Tyr Pro Gln Ala Tyr
20 25 30
Pro Ser Glu Val Glu Lys Ser Trp Asp Ile Glu Val Pro Glu Gly Tyr
35 40 45
Gly Ile His Leu Tyr Phe Thr His Leu Asp Ile Glu Leu Ser Glu Asn
50 55 60
Cys Ala Tyr Asp Ser Val Gln Ile Ile Ser Gly Asp Thr Glu Glu Gly
65 70 75 80
Arg Leu Cys Gly Gln Arg Ser Ser Asn Asn Pro His Ser Pro Ile Val
85 90 95
Glu Glu Phe Gln Val Pro Tyr Asn Lys Leu Gln Val Ile Phe Lys Ser
100 105 110
Asp Phe Ser Asn Glu Glu Arg Phe Thr Gly Phe Ala Ala Tyr Tyr Val
115 120 125
Ala Thr Asp Ile Asn Glu Cys Thr Asp Phe Val Asp Val Pro Cys Ser
130 135 140
His Phe Cys Asn Asn Phe Ile Gly Gly Tyr Phe Cys Ser Cys Pro Pro
145 150 155 160

```
Glu Tyr Phe Leu His Asp Asp Met Lys Asn Cys Gly Val Asn Cys Ser
                165                 170                 175
Gly Asp Val Phe Thr Ala Leu Ile Gly Glu Ile Ala Ser Pro Asn Tyr
            180                 185                 190
Pro Lys Pro Tyr Pro Glu Asn Ser Arg Cys Glu Tyr Gln Ile Arg Leu
        195                 200                 205
Glu Lys Gly Phe Gln Val Val Val Thr Leu Arg Arg Glu Asp Phe Asp
    210                 215                 220
Val Glu Ala Ala Asp Ser Ala Gly Asn Cys Leu Asp Ser Leu Val Phe
225                 230                 235                 240
Val Ala Gly Asp Arg Gln Phe Gly Pro Tyr Cys Gly His Gly Phe Pro
                245                 250                 255
Gly Pro Leu Asn Ile Glu Thr Lys Ser Asn Ala Leu Asp Ile Ile Phe
            260                 265                 270
Gln Thr Asp Leu Thr Gly Gln Lys Lys Gly Trp Lys Leu Arg Tyr His
        275                 280                 285
Gly Asp Pro Met Pro Cys Pro Lys Glu Asp Thr Pro Asn Ser Val Trp
    290                 295                 300
Glu Pro Ala Lys Ala Lys Tyr Val Phe Arg Asp Val Val Gln Ile Thr
305                 310                 315                 320
Cys Leu Asp Gly Phe Glu Val Val Glu Gly Arg Val Gly Ala Thr Ser
                325                 330                 335
Phe Tyr Ser Thr Cys Gln Ser Asn Gly Lys Trp Ser Asn Ser Lys Leu
            340                 345                 350
Lys Cys Gln Pro Val Asp Cys Gly Ile Pro Glu Ser Ile Glu Asn Gly
        355                 360                 365
Lys Val Glu Asp Pro Glu Ser Thr Leu Phe Gly Ser Val Ile Arg Tyr
    370                 375                 380
Thr Cys Glu Glu Pro Tyr Tyr Tyr Met Glu Asn Gly Gly Gly Gly Glu
385                 390                 395                 400
Tyr His Cys Ala Gly Asn Gly Ser Trp Val Asn Glu Val Leu Gly Pro
                405                 410                 415
Glu Leu Pro Lys Cys Val Pro Val Cys Gly Val Pro Arg Glu Pro Phe
            420                 425                 430
Glu Glu Lys Gln Arg Ile Ile Gly Gly Ser Asp Ala Asp Ile Lys Asn
        435                 440                 445
Phe Pro Trp Gln Val Phe Phe Asp Asn Pro Trp Ala Gly Gly Ala Leu
    450                 455                 460
Ile Asn Glu Tyr Trp Val Leu Thr Ala Ala His Val Val Glu Gly Asn
465                 470                 475                 480
Arg Glu Pro Thr Met Tyr Val Gly Ser Thr Ser Val Gln Thr Ser Arg
                485                 490                 495
Leu Ala Lys Ser Lys Met Leu Thr Pro Glu His Val Phe Ile His Pro
            500                 505                 510
Gly Trp Lys Leu Leu Glu Val Pro Glu Gly Arg Thr Asn Phe Asp Asn
        515                 520                 525
Asp Ile Ala Leu Val Arg Leu Lys Asp Pro Val Lys Met Gly Pro Thr
    530                 535                 540
Val Ser Pro Ile Cys Leu Pro Gly Thr Ser Ser Asp Tyr Asn Leu Met
545                 550                 555                 560
Asp Gly Asp Leu Gly Leu Ile Ser Gly Trp Gly Arg Thr Glu Lys Arg
                565                 570                 575
Asp Arg Ala Val Arg Leu Lys Ala Ala Arg Leu Pro Val Ala Pro Leu
            580                 585                 590
Arg Lys Cys Lys Glu Val Lys Val Glu Lys Pro Thr Ala Asp Ala Glu
        595                 600                 605
Ala Tyr Val Phe Thr Pro Asn Met Ile Cys Ala Gly Gly Glu Lys Gly
    610                 615                 620
```

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

<210> 305
<211> 252
<212> PRT
<213> Homo sapiens

<400> 305

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

<210> 306
<211> 597
<212> PRT
<213> Homo sapiens

<400> 306

```
Met His Pro Pro Lys Thr Pro Ser Gly Ala Leu His Arg Lys Arg Lys
 1               5                  10                  15
```

```
Met Ala Ala Trp Pro Phe Ser Arg Leu Trp Lys Val Ser Asp Pro Ile
            20                  25                  30
Leu Phe Gln Met Thr Leu Ile Ala Ala Leu Leu Pro Ala Val Leu Gly
        35                  40                  45
Asn Cys Gly Pro Pro Pro Thr Leu Ser Phe Ala Ala Pro Met Asp Ile
    50                  55                  60
Thr Leu Thr Glu Thr Arg Phe Lys Thr Gly Thr Thr Leu Lys Tyr Thr
65                  70                  75                  80
Cys Leu Pro Gly Tyr Val Arg Ser His Ser Thr Gln Thr Leu Thr Cys
                85                  90                  95
Asn Ser Asp Gly Glu Trp Val Tyr Asn Thr Phe Cys Ile Tyr Lys Arg
            100                 105                 110
Cys Arg His Pro Gly Glu Leu Arg Asn Gly Gln Val Glu Ile Lys Thr
        115                 120                 125
Asp Leu Ser Phe Gly Ser Gln Ile Glu Phe Ser Cys Ser Glu Gly Phe
    130                 135                 140
Phe Leu Ile Gly Ser Thr Thr Ser Arg Cys Glu Val Gln Asp Arg Gly
145                 150                 155                 160
Val Gly Trp Ser His Pro Leu Pro Gln Cys Glu Ile Val Lys Cys Lys
                165                 170                 175
Pro Pro Pro Asp Ile Arg Asn Gly Arg His Ser Gly Glu Glu Asn Phe
            180                 185                 190
Tyr Ala Tyr Gly Phe Ser Val Thr Tyr Ser Cys Asp Pro Arg Phe Ser
        195                 200                 205
Leu Leu Gly His Ala Ser Ile Ser Cys Thr Val Glu Asn Glu Thr Ile
    210                 215                 220
Gly Val Trp Arg Pro Ser Pro Pro Thr Cys Glu Lys Ile Thr Cys Arg
225                 230                 235                 240
Lys Pro Asp Val Ser His Gly Glu Met Val Ser Gly Phe Gly Pro Ile
                245                 250                 255
Tyr Asn Tyr Lys Asp Thr Ile Val Phe Lys Cys Gln Lys Gly Phe Val
            260                 265                 270
Leu Arg Gly Ser Ser Val Ile His Cys Asp Ala Asp Ser Lys Trp Asn
        275                 280                 285
Pro Ser Pro Pro Ala Cys Glu Pro Asn Ser Cys Ile Asn Leu Pro Asp
    290                 295                 300
Ile Pro His Ala Ser Trp Glu Thr Tyr Pro Arg Pro Thr Lys Glu Asp
305                 310                 315                 320
Val Tyr Val Val Gly Thr Val Leu Arg Tyr Arg Cys His Pro Gly Tyr
                325                 330                 335
Lys Pro Thr Thr Asp Glu Pro Thr Thr Val Ile Cys Gln Lys Asn Leu
            340                 345                 350
Arg Trp Thr Pro Tyr Gln Gly Cys Glu Ala Leu Cys Cys Pro Glu Pro
        355                 360                 365
Lys Leu Asn Asn Gly Glu Ile Thr Gln His Arg Lys Ser Arg Pro Ala
    370                 375                 380
Asn His Cys Val Tyr Phe Tyr Gly Asp Glu Ile Ser Phe Ser Cys His
385                 390                 395                 400
Glu Thr Ser Arg Phe Ser Ala Ile Cys Gln Gly Asp Gly Thr Trp Ser
                405                 410                 415
Pro Arg Thr Pro Ser Cys Gly Asp Ile Cys Asn Phe Pro Pro Lys Ile
            420                 425                 430
Ala His Gly His Tyr Lys Gln Ser Ser Ser Tyr Ser Phe Phe Lys Glu
        435                 440                 445
Glu Ile Ile Tyr Glu Cys Asp Lys Gly Tyr Ile Leu Val Gly Gln Ala
    450                 455                 460
Lys Leu Ser Cys Ser Tyr Ser His Trp Ser Ala Pro Ala Pro Gln Cys
465                 470                 475                 480
```

```
Lys Ala Leu Cys Arg Lys Pro Glu Leu Val Asn Gly Arg Leu Ser Val
                485                 490                 495
Asp Lys Asp Gln Tyr Val Glu Pro Glu Asn Val Thr Ile Gln Cys Asp
            500                 505                 510
Ser Gly Tyr Gly Val Val Gly Pro Gln Ser Ile Thr Cys Ser Gly Asn
        515                 520                 525
Arg Thr Trp Tyr Pro Glu Val Pro Lys Cys Glu Trp Glu Thr Pro Glu
    530                 535                 540
Gly Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met Gln Cys Leu Pro
545                 550                 555                 560
Asn Pro Glu Asp Val Lys Met Ala Leu Glu Val Tyr Lys Leu Ser Leu
                565                 570                 575
Glu Ile Glu Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser Thr
            580                 585                 590
Leu Asp Lys Glu Leu
        595
```

<210> 307
<211> 1963
<212> DNA
<213> Homo sapiens

<400> 307

```
cgaacacctc caacatgaag cttcttcatg ttttcctgtt atttctgtgc ttccacttaa 60
ggttttgcaa ggtcacttat acatctcaag aggatctggt ggagaaaaag tgcttagcaa 120
aaaaatatac tcacctctcc tgcgataaag tcttctgcca gccatggcag agatgcattg 180
agggcacctg tgtttgtaaa ctaccgtatc agtgcccaaa gaatggcact gcagtgtgtg 240
caactaacag gagaagcttc ccaacatact gtcaacaaaa gagtttggaa tgtcttcatc 300
cagggacaaa gtttttaaat aacggaacat gcacagccga aggaaagttt agtgtttcct 360
tgaagcatgg aaatacagat tcagagggaa tagttgaagt aaaacttgtg gaccaagata 420
agacaatgtt catatgcaaa agcagctgga gcatgaggga agccaacgtg gcctgccttg 480
accttgggtt tcaacaaggt gctgatactc aaagaaggtt taagttgtct gatctctcta 540
taaattccac tgaatgtcta catgtgcatt gccgaggatt agagaccagt ttggctgaat 600
gtacttttac taagagaaga actatgggtt accaggattt cgctgatgtg gtttgttata 660
cacagaaagc agattctcca atggatgact tctttcagtg tgtgaatggg aaatacattt 720
ctcagatgaa agcctgtgat ggtatcaatg attgtggaga ccaaagtgat gaactgtgtt 780
gtaaagcatg ccaaggcaaa ggcttccatt gcaaatcggg tgtttgcatt ccaagccagt 840
atcaatgcaa tggtgaggtg gactgcatta caggggaaga tgaagttggc tgtgcaggct 900
ttgcatctgt ggctcaagaa gaaacagaaa ttttgactgc tgacatggat gcagaaagaa 960
gacggataaa atcattatta cctaaactat cttgtggagt taaaaacaga atgcacattc 1020
gaaggaaacg aattgtggga ggaaagcgag cacaactggg agacctccca tggcaggtgg 1080
caattaagga tgccagtgga atcacctgtg ggggaattta tattggtggc tgttggattc 1140
tgactgctgc acattgtctc agagccagta aaactcatcg ttaccaaata tggacaacag 1200
tagtagactg gatacacccc gaccttaaac gtatagtaat tgaatacgtg gatagaatta 1260
ttttccatga aaactacaat gcaggcactt accaaaatga catcgctttg attgaaatga 1320
aaaaagacgg aaacaaaaaa gattgtgagc tgcctcgttc catccctgcc tgtgtccact 1380
ggtctcctta cctattccaa cctaatgata catgcatcgt ttctggctgg ggacgagaaa 1440
aagataacga aagagtcttt tcacttcagt ggggtgaagt taaactaata agcaactgct 1500
ctaagtttta cggaaatcgt ttctatgaaa aagaaatgga atgtgcaggt acatatgatg 1560
gttccatcga tgcctgtaaa ggggactctg gaggcccctt agtctgtatg gatgccaaca 1620
atgtgactta tgtctggggt gttgtgagtt gggggggaaaa ctgtggaaaa ccagagttcc 1680
caggttttta caccaaagtg gccaattatt ttgactggat tagctaccat gtaggaaggc 1740
cttttatttc tcagtacaat gtataaaatt gtgatctctc tcttcattct attcttttttc 1800
tctcaagagt tccatttaat ggaaataaaa cggtataatt aataattctc taggggggaa 1860
aaatgaagca aatctcattg gatattttta aaggtctcca cagagtttat gccatattgg 1920
aattttgttg tataattctc aaataaatat tttggtgaag cat                  1963
```

<210> 308
<211> 583
<212> PRT
<213> Homo sapiens

<400> 308

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

```
Phe His Glu Asn Tyr Asn Ala Gly Thr Tyr Gln Asn Asp Ile Ala Leu
                420                 425                 430
Ile Glu Met Lys Lys Asp Gly Asn Lys Lys Asp Cys Glu Leu Pro Arg
            435                 440                 445
Ser Ile Pro Ala Cys Val Pro Trp Ser Pro Tyr Leu Phe Gln Pro Asn
        450                 455                 460
Asp Thr Cys Ile Val Ser Gly Trp Gly Arg Glu Lys Asp Asn Glu Arg
465                 470                 475                 480
Val Phe Ser Leu Gln Trp Gly Glu Val Lys Leu Ile Ser Asn Cys Ser
                485                 490                 495
Lys Phe Tyr Gly Asn Arg Phe Tyr Glu Lys Glu Met Glu Cys Ala Gly
            500                 505                 510
Thr Tyr Asp Gly Ser Ile Asp Ala Cys Lys Gly Asp Ser Gly Gly Pro
        515                 520                 525
Leu Val Cys Met Asp Ala Asn Asn Val Thr Tyr Val Trp Gly Val Val
    530                 535                 540
Ser Trp Gly Glu Asn Cys Gly Lys Pro Glu Phe Pro Gly Val Tyr Thr
545                 550                 555                 560
Lys Val Ala Asn Tyr Phe Asp Trp Ile Ser Tyr His Val Gly Arg Pro
                565                 570                 575
Phe Ile Ser Gln Tyr Asn Val
            580
```

<210> 309
<211> 449
<212> PRT
<213> Homo sapiens

<400> 309

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

```
Ile Val Arg Ser Leu Met Pro Phe Ser Pro Tyr Glu Pro Leu Asn Phe
225                 230                 235                 240
His Ala Met Phe Gln Pro Phe Leu Glu Met Ile His Glu Ala Gln Gln
                245                 250                 255
Ala Met Asp Ile His Phe His Ser Pro Ala Phe Gln His Pro Pro Thr
            260                 265                 270
Glu Phe Ile Arg Glu Gly Asp Asp Asp Arg Thr Val Cys Arg Glu Ile
        275                 280                 285
Arg His Asn Ser Thr Gly Cys Leu Arg Met Lys Asp Gln Cys Asp Lys
    290                 295                 300
Cys Arg Glu Ile Leu Ser Val Asp Cys Ser Thr Asn Asn Pro Ser Gln
305                 310                 315                 320
Ala Lys Leu Arg Arg Glu Leu Asp Glu Ser Leu Gln Val Ala Glu Arg
                325                 330                 335
Leu Thr Arg Lys Tyr Asn Glu Leu Leu Lys Ser Tyr Gln Trp Lys Met
            340                 345                 350
Leu Asn Thr Ser Ser Leu Leu Glu Gln Leu Asn Glu Gln Phe Asn Trp
        355                 360                 365
Val Ser Arg Leu Ala Asn Leu Thr Gln Gly Glu Asp Gln Tyr Tyr Leu
    370                 375                 380
Arg Val Thr Thr Val Ala Ser His Thr Ser Asp Ser Asp Val Pro Ser
385                 390                 395                 400
Gly Val Thr Glu Val Val Val Lys Leu Phe Asp Ser Asp Pro Ile Thr
                405                 410                 415
Val Thr Val Pro Val Glu Val Ser Arg Lys Asn Pro Lys Phe Met Glu
            420                 425                 430
Thr Val Ala Glu Lys Ala Leu Gln Glu Tyr Arg Lys Lys His Arg Glu
        435                 440                 445
Glu
```

<210> 310
<211> 2609
<212> DNA
<213> Homo sapiens

<400> 310

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tgcctgctgt tcctgtaccc aggtctggca gactcggctc cctcctgccc tcagaacgtg 120
aatatctcgg gtggcacctt caccctcagc catggctggg ctcctgggag ccttctcacc 180
tactcctgcc cccagggcct gtacccatcc ccagcatcac ggctgtgcaa gagcagcgga 240
cagtggcaga ccccaggagc cacccggtct ctgtctaagg cggtctgcaa acctgtgcgc 300
tgtccagccc ctgtctcctt tgagaatggc atttataccc cacggctggg gtcctatccc 360
gtgggtggca atgtgagctt cgagtgtgag gatggcttca tattgcgggg ctcgcctgtg 420
cgtcagtgtc gccccaacgg catgtgggat ggagaaacag ctgtgtgtga taatggggct 480
ggccactgcc ccaacccagg catttcactg ggcgcagtgc ggacaggctt ccgctttggt 540
catggggaca aggtccgcta tcgctgctcc tcgaatcttg tgctcacggg gtcttcggag 600
cgggagtgcc agggcaacgg ggtctggagt ggaacggagc ccatctgccg ccaaccctac 660
tcttatgact tccctgagga cgtggccgct gccctgggca cttcctctc ccacatgctt 720
ggggccacca atcccaccca gaagacaaag gaaagcctgg gccgtaaaat ccaaatccag 780
cgctctggtc atctgaacct ctacctgctc ctggactgtt cgcagagtgt gtcggaaaat 840
gactttctca tcttcaagga gagcgcctcc ctcatggtgg acaggatctt cagctttgag 900
atcaatgtga gcgttgccat tatcaccttt gcctcagagc ccaaagtcct catgtctgtc 960
ctgaacgaca actcccggga tatgactgag gtgatcagca gcctggaaaa tgccaactat 1020
aaagatcatg aaaatggaac tgggactaac acctatgcag ccttaaacag tgtctatctc 1080
atgatgaaca accaaatgcg actcctcggc atggaaacga tggcctggca ggaaatccga 1140
catgccatca tccttctgac agatggaaag tccaatatgg gtggctctcc caagacagct 1200
```

```
gttgaccata tcagagagat cctgaacatc aaccagaaga ggaatgacta tctggacatc 1260
tatgccatcg gggtgggcaa gctggatgtg gactggagag aactgaatga gctagggtcc 1320
aagaaggatg gtgagaggca tgccttcatt ctgcaggaca caaaggctct gcaccaggtc 1380
tttgaacata tgctggatgt ctccaagctc acagacacca tctgcggggt ggggaacatg 1440
tcagcaaacg cctctgacca ggagaggaca ccctggcatg tcactattaa gcccaagagc 1500
caagagacct gccgggggcc cctcatctcc gaccaatggg tcctgacagc agctcattgc 1560
ttccgcgatg gcaacgacca ctccctgtgg agggtcaatg tgggagaccc caaatcccag 1620
tggggcaaag aattccttat tgagaaggcg gtgatctccc cagggtttga tgtctttgcc 1680
aaaaagaacc agggaatcct ggagttctat ggtgatgaca tagctctgct gaagctggcc 1740
cagaaagtaa agatgtccac ccatgccagg cccatctgcc ttcccctgcac gatggaggcc 1800
aatctggctc tgcggagacc tcaaggcagc acctgtaggg accatgagaa tgaactgctg 1860
aacaaacaga gtgttcctgc tcattttgtc gccttgaatg ggagcaaact gaacattaac 1920
cttaagatgg gagtggagtg gacaagctgt gccgaggttg tctcccaaga aaaaaccatg 1980
ttccccaact tgacagatgt cagggaggtg gtgacagacc agttcctatg cagtgggacc 2040
caggaggatg agagtccctg caagggagaa tctgggggag cagttttcct tgagcggaga 2100
ttcaggtttt ttcaggtggg tctggtgagc tggggtcttt acaaccccctg ccttggctct 2160
gctgacaaaa actcccgcaa aagggccccc cgtagcaagg tcccgccgcc acgagacttt 2220
cacatcaatc tcttccgcat gcagccctgg ctgaggcagc acctgggggga tgtcctgaat 2280
tttttacccc tctagccatg gccactgagc cctctgctgc cctgccagaa tctgccgccc 2340
ctccatcttc tacctctgaa tggccaccct tagaccctgt gatccatcct ctctcctagc 2400
tgagtaaatc cgggtctcta ggatgccaga ggcagcgcac acaagctggg aaatcctcag 2460
ggctcctacc agcaggactg cctcgctgcc ccacctcccg ctccttggcc tgtccccaga 2520
ttccttccct ggttgacttg actcatgctt gtttcacttt cacatggaat ttcccagtta 2580
tgaaattaat aaaaatcaat ggtttccac                                    2609
```

<210> 311
<211> 752
<212> PRT
<213> Homo sapiens

<400> 311

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

```
    210                 215                 220
Ser His Met Leu Gly Ala Thr Asn Pro Thr Gln Lys Thr Lys Glu Ser
225                 230                 235                 240
Leu Gly Arg Lys Ile Gln Ile Gln Arg Ser Gly His Leu Asn Leu Tyr
                245                 250                 255
Leu Leu Leu Asp Cys Ser Gln Ser Val Ser Glu Asn Asp Phe Leu Ile
            260                 265                 270
Phe Lys Glu Ser Ala Ser Leu Met Val Asp Arg Ile Phe Ser Phe Glu
        275                 280                 285
Ile Asn Val Ser Val Ala Ile Ile Thr Phe Ala Ser Glu Pro Lys Val
    290                 295                 300
Leu Met Ser Val Leu Asn Asp Asn Ser Arg Asp Met Thr Glu Val Ile
305                 310                 315                 320
Ser Ser Leu Glu Asn Ala Asn Tyr Lys Asp His Glu Asn Gly Thr Gly
                325                 330                 335
Thr Asn Thr Tyr Ala Ala Leu Asn Ser Val Tyr Leu Met Met Asn Asn
            340                 345                 350
Gln Met Arg Leu Leu Gly Met Glu Thr Met Ala Trp Gln Glu Ile Arg
        355                 360                 365
His Ala Ile Ile Leu Leu Thr Asp Gly Lys Ser Asn Met Gly Gly Ser
    370                 375                 380
Pro Lys Thr Ala Val Asp His Ile Arg Glu Ile Leu Asn Ile Asn Gln
385                 390                 395                 400
Lys Arg Asn Asp Tyr Leu Asp Ile Tyr Ala Ile Gly Val Gly Lys Leu
                405                 410                 415
Asp Val Asp Trp Arg Glu Leu Asn Glu Leu Gly Ser Lys Lys Asp Gly
            420                 425                 430
Glu Arg His Ala Phe Ile Leu Gln Asp Thr Lys Ala Leu His Gln Val
        435                 440                 445
Phe Glu His Met Leu Asp Val Ser Lys Leu Thr Asp Thr Ile Cys Gly
    450                 455                 460
Val Gly Asn Met Ser Ala Asn Ala Ser Asp Gln Glu Arg Thr Pro Trp
465                 470                 475                 480
His Val Thr Ile Lys Pro Lys Ser Gln Glu Thr Cys Arg Gly Ala Leu
                485                 490                 495
Ile Ser Asp Gln Trp Val Leu Thr Ala Ala His Cys Phe Arg Asp Gly
            500                 505                 510
Asn Asp His Ser Leu Trp Arg Val Asn Val Gly Asp Pro Lys Ser Gln
        515                 520                 525
Trp Gly Lys Glu Phe Leu Ile Glu Lys Ala Val Ile Ser Pro Gly Phe
    530                 535                 540
Asp Val Phe Ala Lys Lys Asn Gln Gly Ile Leu Glu Phe Tyr Gly Asp
545                 550                 555                 560
Asp Ile Ala Leu Leu Lys Leu Ala Gln Lys Val Lys Met Ser Thr His
                565                 570                 575
Ala Arg Pro Ile Cys Leu Pro Cys Thr Met Glu Ala Asn Leu Ala Leu
            580                 585                 590
Arg Arg Pro Gln Gly Ser Thr Cys Arg Asp His Glu Asn Glu Leu Leu
        595                 600                 605
Asn Lys Gln Ser Val Pro Ala His Phe Val Ala Leu Asn Gly Ser Lys
    610                 615                 620
Leu Asn Ile Asn Leu Lys Met Gly Val Glu Trp Thr Ser Cys Ala Glu
625                 630                 635                 640
Val Val Ser Gln Glu Lys Thr Met Phe Pro Asn Leu Thr Asp Val Arg
                645                 650                 655
Glu Val Val Thr Asp Gln Phe Leu Cys Ser Gly Thr Gln Glu Asp Glu
            660                 665                 670
Ser Pro Cys Lys Gly Glu Ser Gly Gly Ala Val Phe Leu Glu Arg Arg
```

```
        675                 680                 685
Phe Arg Phe Phe Gln Val Gly Leu Val Ser Trp Gly Leu Tyr Asn Pro
    690                 695                 700
Cys Leu Gly Ser Ala Asp Lys Asn Ser Arg Lys Arg Ala Pro Arg Ser
705                 710                 715                 720
Lys Val Pro Pro Pro Arg Asp Phe His Ile Asn Leu Phe Arg Met Gln
                725                 730                 735
Pro Trp Leu Arg Gln His Leu Gly Asp Val Leu Asn Phe Leu Pro Leu
            740                 745                 750
```

<210> 312
<211> 1663
<212> PRT
<213> Homo sapiens

<400> 312

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

```
                325                 330                 335
Asp Met Val Gln Ala Glu Arg Ser Gly Ile Pro Ile Val Thr Ser Pro
            340                 345                 350
Tyr Gln Ile His Phe Thr Lys Thr Pro Lys Tyr Phe Lys Pro Gly Met
        355                 360                 365
Pro Phe Asp Leu Met Val Phe Val Thr Asn Pro Asp Gly Ser Pro Ala
    370                 375                 380
Tyr Arg Val Pro Val Ala Val Gln Gly Glu Asp Thr Val Gln Ser Leu
385                 390                 395                 400
Thr Gln Gly Asp Gly Val Ala Lys Leu Ser Ile Asn Thr His Pro Ser
                405                 410                 415
Gln Lys Pro Leu Ser Ile Thr Val Arg Thr Lys Lys Gln Glu Leu Ser
            420                 425                 430
Glu Ala Glu Gln Ala Thr Arg Thr Met Gln Ala Leu Pro Tyr Ser Thr
        435                 440                 445
Val Gly Asn Ser Asn Asn Tyr Leu His Leu Ser Val Leu Arg Thr Glu
    450                 455                 460
Leu Arg Pro Gly Glu Thr Leu Asn Val Asn Phe Leu Leu Arg Met Asp
465                 470                 475                 480
Arg Ala His Glu Ala Lys Ile Arg Tyr Tyr Thr Tyr Leu Ile Met Asn
                485                 490                 495
Lys Gly Arg Leu Leu Lys Ala Gly Arg Gln Val Arg Glu Pro Gly Gln
            500                 505                 510
Asp Leu Val Val Leu Pro Leu Ser Ile Thr Thr Asp Phe Ile Pro Ser
        515                 520                 525
Phe Arg Leu Val Ala Tyr Tyr Thr Leu Ile Gly Ala Ser Gly Gln Arg
    530                 535                 540
Glu Val Val Ala Asp Ser Val Trp Val Asp Val Lys Asp Ser Cys Val
545                 550                 555                 560
Gly Ser Leu Val Val Lys Ser Gly Gln Ser Glu Asp Arg Gln Pro Val
                565                 570                 575
Pro Gly Gln Gln Met Thr Leu Lys Ile Glu Gly Asp His Gly Ala Arg
            580                 585                 590
Val Val Leu Val Ala Val Asp Lys Gly Val Phe Val Leu Asn Lys Lys
        595                 600                 605
Asn Lys Leu Thr Gln Ser Lys Ile Trp Asp Val Val Glu Lys Ala Asp
    610                 615                 620
Ile Gly Cys Thr Pro Gly Ser Gly Lys Asp Tyr Ala Gly Val Phe Ser
625                 630                 635                 640
Asp Ala Gly Leu Thr Phe Thr Ser Ser Ser Gly Gln Gln Thr Ala Gln
                645                 650                 655
Arg Ala Glu Leu Gln Cys Pro Gln Pro Ala Ala Arg Arg Arg Arg Ser
            660                 665                 670
Val Gln Leu Thr Glu Lys Arg Met Asp Lys Val Gly Lys Tyr Pro Lys
        675                 680                 685
Glu Leu Arg Lys Cys Cys Glu Asp Gly Met Arg Glu Asn Pro Met Arg
    690                 695                 700
Phe Ser Cys Gln Arg Arg Thr Arg Phe Ile Ser Leu Gly Glu Ala Cys
705                 710                 715                 720
Lys Lys Val Phe Leu Asp Cys Cys Asn Tyr Ile Thr Glu Leu Arg Arg
                725                 730                 735
Gln His Ala Arg Ala Ser His Leu Gly Leu Ala Arg Ser Asn Leu Asp
            740                 745                 750
Glu Asp Ile Ile Ala Glu Glu Asn Ile Val Ser Arg Ser Glu Phe Pro
        755                 760                 765
Glu Ser Trp Leu Trp Asn Val Glu Asp Leu Lys Glu Pro Pro Lys Asn
    770                 775                 780
Gly Ile Ser Thr Lys Leu Met Asn Ile Phe Leu Lys Asp Ser Ile Thr
```

785 790 795 800
Thr Trp Glu Ile Leu Ala Val Ser Met Ser Asp Lys Lys Gly Ile Cys
805 810 815
Val Ala Asp Pro Phe Glu Val Thr Val Met Gln Asp Phe Phe Ile Asp
820 825 830
Leu Arg Leu Pro Tyr Ser Val Val Arg Asn Glu Gln Val Glu Ile Arg
835 840 845
Ala Val Leu Tyr Asn Tyr Arg Gln Asn Gln Glu Leu Lys Val Arg Val
850 855 860
Glu Leu Leu His Asn Pro Ala Phe Cys Ser Leu Ala Thr Thr Lys Arg
865 870 875 880
Arg His Gln Gln Thr Val Thr Ile Pro Pro Lys Ser Ser Leu Ser Val
885 890 895
Pro Tyr Val Ile Val Pro Leu Lys Thr Gly Leu Gln Glu Val Glu Val
900 905 910
Lys Ala Ala Val Tyr His His Phe Ile Ser Asp Gly Val Arg Lys Ser
915 920 925
Leu Lys Val Val Pro Glu Gly Ile Arg Met Asn Lys Thr Val Ala Val
930 935 940
Arg Thr Leu Asp Pro Glu Arg Leu Gly Arg Glu Gly Val Gln Lys Glu
945 950 955 960
Asp Ile Pro Pro Ala Asp Leu Ser Asp Gln Val Pro Asp Thr Glu Ser
965 970 975
Glu Thr Arg Ile Leu Leu Gln Gly Thr Pro Val Ala Gln Met Thr Glu
980 985 990
Asp Ala Val Asp Ala Glu Arg Leu Lys His Leu Ile Val Thr Pro Ser
995 1000 1005
Gly Cys Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala
1010 1015 1020
Val His Tyr Leu Asp Glu Thr Glu Gln Trp Glu Lys Phe Gly Leu Glu
1025 1030 1035 1040
Lys Arg Gln Gly Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln
1045 1050 1055
Leu Ala Phe Arg Gln Pro Ser Ser Ala Phe Ala Ala Phe Val Lys Arg
1060 1065 1070
Ala Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu
1075 1080 1085
Ala Val Asn Leu Ile Ala Ile Asp Ser Gln Val Leu Cys Gly Ala Val
1090 1095 1100
Lys Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu
1105 1110 1115 1120
Asp Ala Pro Val Ile His Gln Glu Met Ile Gly Gly Leu Arg Asn Asn
1125 1130 1135
Asn Glu Lys Asp Met Ala Leu Thr Ala Phe Val Leu Ile Ser Leu Gln
1140 1145 1150
Glu Ala Lys Asp Ile Cys Glu Glu Gln Val Asn Ser Leu Pro Gly Ser
1155 1160 1165
Ile Thr Lys Ala Gly Asp Phe Leu Glu Ala Asn Tyr Met Asn Leu Gln
1170 1175 1180
Arg Ser Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Gln Met Gly
1185 1190 1195 1200
Arg Leu Lys Gly Pro Leu Leu Asn Lys Phe Leu Thr Thr Ala Lys Asp
1205 1210 1215
Lys Asn Arg Trp Glu Asp Pro Gly Lys Gln Leu Tyr Asn Val Glu Ala
1220 1225 1230
Thr Ser Tyr Ala Leu Leu Ala Leu Leu Gln Leu Lys Asp Phe Asp Phe
1235 1240 1245
Val Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly Gly

```
    1250                1255                1260
Gly Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln Ala Leu Ala
1265                1270                1275                1280
Gln Tyr Gln Lys Asp Ala Pro Asp His Gln Glu Leu Asn Leu Asp Val
                1285                1290                1295
Ser Leu Gln Leu Pro Ser Arg Ser Ser Lys Ile Thr His Arg Ile His
            1300                1305                1310
Trp Glu Ser Ala Ser Leu Leu Arg Ser Glu Glu Thr Lys Glu Asn Glu
        1315                1320                1325
Gly Phe Thr Val Thr Ala Glu Gly Lys Gly Gln Gly Thr Leu Ser Val
    1330                1335                1340
Val Thr Met Tyr His Ala Lys Ala Lys Asp Gln Leu Thr Cys Asn Lys
1345                1350                1355                1360
Phe Asp Leu Lys Val Thr Ile Lys Pro Ala Pro Glu Thr Glu Lys Arg
                1365                1370                1375
Pro Gln Asp Ala Lys Asn Thr Met Ile Leu Glu Ile Cys Thr Arg Tyr
            1380                1385                1390
Arg Gly Asp Gln Asp Ala Thr Met Ser Ile Leu Asp Ile Ser Met Met
        1395                1400                1405
Thr Gly Phe Ala Pro Asp Thr Asp Asp Leu Lys Gln Leu Ala Asn Gly
    1410                1415                1420
Val Asp Arg Tyr Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp
1425                1430                1435                1440
Arg Asn Thr Leu Ile Ile Tyr Leu Asp Lys Val Ser His Ser Glu Asp
                1445                1450                1455
Asp Cys Leu Ala Phe Lys Val His Gln Tyr Phe Asn Val Glu Leu Ile
            1460                1465                1470
Gln Pro Gly Ala Val Lys Val Tyr Ala Tyr Tyr Asn Leu Glu Glu Ser
        1475                1480                1485
Cys Thr Arg Phe Tyr His Pro Glu Lys Glu Asp Gly Lys Leu Asn Lys
    1490                1495                1500
Leu Cys Arg Asp Glu Leu Cys Arg Cys Ala Glu Glu Asn Cys Phe Ile
1505                1510                1515                1520
Gln Lys Ser Asp Asp Lys Val Thr Leu Glu Glu Arg Leu Asp Lys Ala
                1525                1530                1535
Cys Glu Pro Gly Val Asp Tyr Val Tyr Lys Thr Arg Leu Val Lys Val
            1540                1545                1550
Gln Leu Ser Asn Asp Phe Asp Glu Tyr Ile Met Ala Ile Glu Gln Thr
        1555                1560                1565
Ile Lys Ser Gly Ser Asp Glu Val Gln Val Gly Gln Gln Arg Thr Phe
    1570                1575                1580
Ile Ser Pro Ile Lys Cys Arg Glu Ala Leu Lys Leu Glu Glu Lys Lys
1585                1590                1595                1600
His Tyr Leu Met Trp Gly Leu Ser Ser Asp Phe Trp Gly Glu Lys Pro
                1605                1610                1615
Asn Leu Ser Tyr Ile Ile Gly Lys Asp Thr Trp Val Glu His Trp Pro
            1620                1625                1630
Glu Glu Asp Glu Cys Gln Asp Glu Glu Asn Gln Lys Gln Cys Gln Asp
        1635                1640                1645
Leu Gly Ala Phe Thr Glu Ser Met Val Val Phe Gly Cys Pro Asn
    1650                1655                1660
```

<210> 313
<211> 1744
<212> PRT
<213> Homo sapiens

<400> 313

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

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

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        915                 920                 925
Lys Val Leu Gln Ile Glu Lys Glu Gly Ala Ile His Arg Glu Glu Leu
    930                 935                 940
Val Tyr Glu Leu Asn Pro Leu Asp His Arg Gly Arg Thr Leu Glu Ile
945                 950                 955                 960
Pro Gly Asn Ser Asp Pro Asn Met Ile Pro Asp Gly Asp Phe Asn Ser
                965                 970                 975
Tyr Val Arg Val Thr Ala Ser Asp Pro Leu Asp Thr Leu Gly Ser Glu
            980                 985                 990
Gly Ala Leu Ser Pro Gly Gly Val Ala Ser Leu Leu Arg Leu Pro Arg
        995                 1000                1005
Gly Cys Gly Glu Gln Thr Met Ile Tyr Leu Ala Pro Thr Leu Ala Ala
    1010                1015                1020
Ser Arg Tyr Leu Asp Lys Thr Glu Gln Trp Ser Thr Leu Pro Pro Glu
1025                1030                1035                1040
Thr Lys Asp His Ala Val Asp Leu Ile Gln Lys Gly Tyr Met Arg Ile
                1045                1050                1055
Gln Gln Phe Arg Lys Ala Asp Gly Ser Tyr Ala Ala Trp Leu Ser Arg
            1060                1065                1070
Asp Ser Ser Thr Trp Leu Thr Ala Phe Val Leu Lys Val Leu Ser Leu
        1075                1080                1085
Ala Gln Glu Gln Val Gly Gly Ser Pro Glu Lys Leu Gln Glu Thr Ser
    1090                1095                1100
Asn Trp Leu Leu Ser Gln Gln Gln Ala Asp Gly Ser Phe Gln Asp Pro
1105                1110                1115                1120
Cys Pro Val Leu Asp Arg Ser Met Gln Gly Gly Leu Val Gly Asn Asp
                1125                1130                1135
Glu Thr Val Ala Leu Thr Ala Phe Val Thr Ile Ala Leu His His Gly
            1140                1145                1150
Leu Ala Val Phe Gln Asp Glu Gly Ala Glu Pro Leu Lys Gln Arg Val
        1155                1160                1165
Glu Ala Ser Ile Ser Lys Ala Asn Ser Phe Leu Gly Glu Lys Ala Ser
    1170                1175                1180
Ala Gly Leu Leu Gly Ala His Ala Ala Ala Ile Thr Ala Tyr Ala Leu
1185                1190                1195                1200
Ser Leu Thr Lys Ala Pro Val Asp Leu Leu Gly Val Ala His Asn Asn
                1205                1210                1215
Leu Met Ala Met Ala Gln Glu Thr Gly Asp Asn Leu Tyr Trp Gly Ser
            1220                1225                1230
Val Thr Gly Ser Gln Ser Asn Ala Val Ser Pro Thr Pro Ala Pro Arg
        1235                1240                1245
Asn Pro Ser Asp Pro Met Pro Gln Ala Pro Ala Leu Trp Ile Glu Thr
    1250                1255                1260
Thr Ala Tyr Ala Leu Leu His Leu Leu Leu His Glu Gly Lys Ala Glu
1265                1270                1275                1280
Met Ala Asp Gln Ala Ser Ala Trp Leu Thr Arg Gln Gly Ser Phe Gln
                1285                1290                1295
Gly Gly Phe Arg Ser Thr Gln Asp Thr Val Ile Ala Leu Asp Ala Leu
            1300                1305                1310
Ser Ala Tyr Trp Ile Ala Ser His Thr Thr Glu Glu Arg Gly Leu Asn
        1315                1320                1325
Val Thr Leu Ser Ser Thr Gly Arg Asn Gly Phe Lys Ser His Ala Leu
    1330                1335                1340
Gln Leu Asn Asn Arg Gln Ile Arg Gly Leu Glu Glu Glu Leu Gln Phe
1345                1350                1355                1360
Ser Leu Gly Ser Lys Ile Asn Val Lys Val Gly Gly Asn Ser Lys Gly
                1365                1370                1375
Thr Leu Lys Val Leu Arg Thr Tyr Asn Val Leu Asp Met Lys Asn Thr
```

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            1380                1385                1390
Thr Cys Gln Asp Leu Gln Ile Glu Val Thr Val Lys Gly His Val Glu
        1395                1400                1405
Tyr Thr Met Glu Ala Asn Glu Asp Tyr Glu Asp Tyr Glu Tyr Asp Glu
    1410                1415                1420
Leu Pro Ala Lys Asp Asp Pro Asp Ala Pro Leu Gln Pro Val Thr Pro
1425                1430                1435                1440
Leu Gln Leu Phe Glu Gly Arg Arg Asn Arg Arg Arg Arg Glu Ala Pro
                1445                1450                1455
Lys Val Val Glu Glu Gln Glu Ser Arg Val His Tyr Thr Val Cys Ile
            1460                1465                1470
Trp Arg Asn Gly Lys Val Gly Leu Ser Gly Met Ala Ile Ala Asp Val
        1475                1480                1485
Thr Leu Leu Ser Gly Phe His Ala Leu Arg Ala Asp Leu Glu Lys Leu
    1490                1495                1500
Thr Ser Leu Ser Asp Arg Tyr Val Ser His Phe Glu Thr Glu Gly Pro
1505                1510                1515                1520
His Val Leu Leu Tyr Phe Asp Ser Val Pro Thr Ser Arg Glu Cys Val
                1525                1530                1535
Gly Phe Glu Ala Val Gln Glu Val Pro Val Gly Leu Val Gln Pro Ala
            1540                1545                1550
Ser Ala Thr Leu Tyr Asp Tyr Tyr Asn Pro Glu Arg Arg Cys Ser Val
        1555                1560                1565
Phe Tyr Gly Ala Pro Ser Lys Ser Arg Leu Leu Ala Thr Leu Cys Ser
    1570                1575                1580
Ala Glu Val Cys Gln Cys Ala Glu Gly Lys Cys Pro Arg Gln Arg Arg
1585                1590                1595                1600
Ala Leu Glu Arg Gly Leu Gln Asp Glu Asp Gly Tyr Arg Met Lys Phe
                1605                1610                1615
Ala Cys Tyr Tyr Pro Arg Val Glu Tyr Gly Phe Gln Val Lys Val Leu
            1620                1625                1630
Arg Glu Asp Ser Arg Ala Ala Phe Arg Leu Phe Glu Thr Lys Ile Thr
        1635                1640                1645
Gln Val Leu His Phe Thr Lys Asp Val Lys Ala Ala Ala Asn Gln Met
    1650                1655                1660
Arg Asn Phe Leu Val Arg Ala Ser Cys Arg Leu Arg Leu Glu Pro Gly
1665                1670                1675                1680
Lys Glu Tyr Leu Ile Met Gly Leu Asp Gly Ala Thr Tyr Asp Leu Glu
                1685                1690                1695
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu Glu Met
            1700                1705                1710
Pro Ser Glu Arg Leu Cys Arg Ser Thr Arg Gln Arg Ala Ala Cys Ala
        1715                1720                1725
Gln Leu Asn Asp Phe Leu Gln Glu Tyr Gly Thr Gln Gly Cys Gln Val
    1730                1735                1740


<210> 314
<211> 1676
<212> PRT
<213> Homo sapiens

<400> 314
Met Gly Leu Leu Gly Ile Leu Cys Phe Leu Ile Phe Leu Gly Lys Thr
 1               5                  10                  15
Trp Gly Gln Glu Gln Thr Tyr Val Ile Ser Ala Pro Lys Ile Phe Arg
            20                  25                  30
Val Gly Ala Ser Glu Asn Ile Val Ile Gln Val Tyr Gly Tyr Thr Glu
```

```
          35                  40                  45
Ala Phe Asp Ala Thr Ile Ser Ile Lys Ser Tyr Pro Asp Lys Lys Phe
     50                  55                  60
Ser Tyr Ser Ser Gly His Val His Leu Ser Ser Glu Asn Lys Phe Gln
65                  70                  75                  80
Asn Ser Ala Ile Leu Thr Ile Gln Pro Lys Gln Leu Pro Gly Gly Gln
                85                  90                  95
Asn Pro Val Ser Tyr Val Tyr Leu Glu Val Val Ser Lys His Phe Ser
           100                 105                 110
Lys Ser Lys Arg Met Pro Ile Thr Tyr Asp Asn Gly Phe Leu Phe Ile
       115                 120                 125
His Thr Asp Lys Pro Val Tyr Thr Pro Asp Gln Ser Val Lys Val Arg
   130                 135                 140
Val Tyr Ser Leu Asn Asp Asp Leu Lys Pro Ala Lys Arg Glu Thr Val
145                 150                 155                 160
Leu Thr Phe Ile Asp Pro Glu Gly Ser Glu Val Asp Met Val Glu Glu
               165                 170                 175
Ile Asp His Ile Gly Ile Ile Ser Phe Pro Asp Phe Lys Ile Pro Ser
           180                 185                 190
Asn Pro Arg Tyr Gly Met Trp Thr Ile Lys Ala Lys Tyr Lys Glu Asp
       195                 200                 205
Phe Ser Thr Thr Gly Thr Ala Tyr Phe Glu Val Lys Glu Tyr Val Leu
   210                 215                 220
Pro His Phe Ser Val Ser Ile Glu Pro Glu Tyr Asn Phe Ile Gly Tyr
225                 230                 235                 240
Lys Asn Phe Lys Asn Phe Glu Ile Thr Ile Lys Ala Arg Tyr Phe Tyr
               245                 250                 255
Asn Lys Val Val Thr Glu Ala Asp Val Tyr Ile Thr Phe Gly Ile Arg
           260                 265                 270
Glu Asp Leu Lys Asp Asp Gln Lys Glu Met Met Gln Thr Ala Met Gln
       275                 280                 285
Asn Thr Met Leu Ile Asn Gly Ile Ala Gln Val Thr Phe Asp Ser Glu
   290                 295                 300
Thr Ala Val Lys Glu Leu Ser Tyr Tyr Ser Leu Glu Asp Leu Asn Asn
305                 310                 315                 320
Lys Tyr Leu Tyr Ile Ala Val Thr Val Ile Glu Ser Thr Gly Gly Phe
               325                 330                 335
Ser Glu Glu Ala Glu Ile Pro Gly Ile Lys Tyr Val Leu Ser Pro Tyr
           340                 345                 350
Lys Leu Asn Leu Val Ala Thr Pro Leu Phe Leu Lys Pro Gly Ile Pro
       355                 360                 365
Tyr Pro Ile Lys Val Gln Val Lys Asp Ser Leu Asp Gln Leu Val Gly
   370                 375                 380
Gly Val Pro Val Ile Leu Asn Ala Gln Thr Ile Asp Val Asn Gln Glu
385                 390                 395                 400
Thr Ser Asp Leu Asp Pro Ser Lys Ser Val Thr Arg Val Asp Asp Gly
               405                 410                 415
Val Ala Ser Phe Val Leu Asn Leu Pro Ser Gly Val Thr Val Leu Glu
           420                 425                 430
Phe Asn Val Lys Thr Asp Ala Pro Asp Leu Pro Glu Glu Asn Gln Ala
       435                 440                 445
Arg Glu Gly Tyr Arg Ala Ile Ala Tyr Ser Ser Leu Ser Gln Ser Tyr
   450                 455                 460
Leu Tyr Ile Asp Trp Thr Asp Asn His Lys Ala Leu Leu Val Gly Glu
465                 470                 475                 480
His Leu Asn Ile Ile Val Thr Pro Lys Ser Pro Tyr Ile Asp Lys Ile
               485                 490                 495
Thr His Tyr Asn Tyr Leu Ile Leu Ser Lys Gly Lys Ile Ile His Phe
```

```
                500                 505                 510
Gly Thr Arg Glu Lys Phe Ser Asp Ala Ser Tyr Gln Ser Ile Asn Ile
            515                 520                 525
Pro Val Thr Gln Asn Met Val Pro Ser Ser Arg Leu Leu Val Tyr Tyr
        530                 535                 540
Ile Val Thr Gly Glu Gln Thr Ala Glu Leu Val Ser Asp Ser Val Trp
545                 550                 555                 560
Leu Asn Ile Glu Glu Lys Cys Gly Asn Gln Leu Gln Val His Leu Ser
                565                 570                 575
Pro Asp Ala Asp Ala Tyr Ser Pro Gly Gln Thr Val Ser Leu Asn Met
            580                 585                 590
Ala Thr Gly Met Asp Ser Trp Val Ala Leu Ala Ala Val Asp Ser Ala
        595                 600                 605
Val Tyr Gly Val Gln Arg Gly Ala Lys Lys Pro Leu Glu Arg Val Phe
    610                 615                 620
Gln Phe Leu Glu Lys Ser Asp Leu Gly Cys Gly Ala Gly Gly Gly Leu
625                 630                 635                 640
Asn Asn Ala Asn Val Phe His Leu Ala Gly Leu Thr Phe Leu Thr Asn
                645                 650                 655
Ala Asn Ala Asp Asp Ser Gln Glu Asn Asp Glu Pro Cys Lys Glu Ile
            660                 665                 670
Leu Arg Pro Arg Arg Thr Leu Gln Lys Lys Ile Glu Glu Ile Ala Ala
        675                 680                 685
Lys Tyr Lys His Ser Val Val Lys Lys Cys Cys Tyr Asp Gly Ala Cys
    690                 695                 700
Val Asn Asn Asp Glu Thr Cys Glu Gln Arg Ala Ala Arg Ile Ser Leu
705                 710                 715                 720
Gly Pro Arg Cys Ile Lys Ala Phe Thr Glu Cys Cys Val Val Ala Ser
                725                 730                 735
Gln Leu Arg Ala Asn Ile Ser His Lys Asp Met Gln Leu Gly Arg Leu
            740                 745                 750
His Met Lys Thr Leu Leu Pro Val Ser Lys Pro Glu Ile Arg Ser Tyr
        755                 760                 765
Phe Pro Glu Ser Trp Leu Trp Glu Val His Leu Val Pro Arg Arg Lys
    770                 775                 780
Gln Leu Gln Phe Ala Leu Pro Asp Ser Leu Thr Thr Trp Glu Ile Gln
785                 790                 795                 800
Gly Ile Gly Ile Ser Asn Thr Gly Ile Cys Val Ala Asp Thr Val Lys
                805                 810                 815
Ala Lys Val Phe Lys Asp Val Phe Leu Glu Met Asn Ile Pro Tyr Ser
            820                 825                 830
Val Val Arg Gly Glu Gln Ile Gln Leu Lys Gly Thr Val Tyr Asn Tyr
        835                 840                 845
Arg Thr Ser Gly Met Gln Phe Cys Val Lys Met Ser Ala Val Glu Gly
    850                 855                 860
Ile Cys Thr Ser Glu Ser Pro Val Ile Asp His Gln Gly Thr Lys Ser
865                 870                 875                 880
Ser Lys Cys Val Arg Gln Lys Val Glu Gly Ser Ser Ser His Leu Val
                885                 890                 895
Thr Phe Thr Val Leu Pro Leu Glu Ile Gly Leu His Asn Ile Asn Phe
            900                 905                 910
Ser Leu Glu Thr Trp Phe Gly Lys Glu Ile Leu Val Lys Thr Leu Arg
        915                 920                 925
Val Val Pro Glu Gly Val Lys Arg Glu Ser Tyr Ser Gly Val Thr Leu
    930                 935                 940
Asp Pro Arg Gly Ile Tyr Gly Thr Ile Ser Arg Arg Lys Glu Phe Pro
945                 950                 955                 960
Tyr Arg Ile Pro Leu Asp Leu Val Pro Lys Thr Glu Ile Lys Arg Ile
```

```
                965                 970                 975
Leu Ser Val Lys Gly Leu Leu Val Gly Glu Ile Leu Ser Ala Val Leu
            980                 985                 990
Ser Gln Glu Gly Ile Asn Ile Leu Thr His Leu Pro Lys Gly Ser Ala
        995                1000                1005
Glu Ala Glu Leu Met Ser Val Val Pro Val Phe Tyr Val Phe His Tyr
    1010                1015                1020
Leu Glu Thr Gly Asn His Trp Asn Ile Phe His Ser Asp Pro Leu Ile
1025                1030                1035                1040
Glu Lys Gln Lys Leu Lys Lys Lys Leu Lys Glu Gly Met Leu Ser Ile
                1045                1050                1055
Met Ser Tyr Arg Asn Ala Asp Tyr Ser Tyr Ser Val Trp Lys Gly Gly
            1060                1065                1070
Ser Ala Ser Thr Trp Leu Thr Ala Phe Ala Leu Arg Val Leu Gly Gln
        1075                1080                1085
Val Asn Lys Tyr Val Glu Gln Asn Gln Asn Ser Ile Cys Asn Ser Leu
    1090                1095                1100
Leu Trp Leu Val Glu Asn Tyr Gln Leu Asp Asn Gly Ser Phe Lys Glu
1105                1110                1115                1120
Asn Ser Gln Tyr Gln Pro Ile Lys Leu Gln Gly Thr Leu Pro Val Glu
                1125                1130                1135
Ala Arg Glu Asn Ser Leu Tyr Leu Thr Ala Phe Thr Val Ile Gly Ile
            1140                1145                1150
Arg Lys Ala Phe Asp Ile Cys Pro Leu Val Lys Ile Asp Thr Ala Leu
        1155                1160                1165
Ile Lys Ala Asp Asn Phe Leu Leu Glu Asn Thr Leu Pro Ala Gln Ser
    1170                1175                1180
Thr Phe Thr Leu Ala Ile Ser Ala Tyr Ala Leu Ser Leu Gly Asp Lys
1185                1190                1195                1200
Thr His Pro Gln Phe Arg Ser Ile Val Ser Ala Leu Lys Arg Glu Ala
                1205                1210                1215
Leu Val Lys Gly Asn Pro Pro Ile Tyr Arg Phe Trp Lys Asp Asn Leu
            1220                1225                1230
Gln His Lys Asp Ser Ser Val Pro Asn Thr Gly Thr Ala Arg Met Val
        1235                1240                1245
Glu Thr Thr Ala Tyr Ala Leu Leu Thr Ser Leu Asn Leu Lys Asp Ile
    1250                1255                1260
Asn Tyr Val Asn Pro Val Ile Lys Trp Leu Ser Glu Glu Gln Arg Tyr
1265                1270                1275                1280
Gly Gly Gly Phe Tyr Ser Thr Gln Asp Thr Ile Asn Ala Ile Glu Gly
                1285                1290                1295
Leu Thr Glu Tyr Ser Leu Leu Val Lys Gln Leu Arg Leu Ser Met Asp
            1300                1305                1310
Ile Asp Val Ser Tyr Lys His Lys Gly Ala Leu His Asn Tyr Lys Met
        1315                1320                1325
Thr Asp Lys Asn Phe Leu Gly Arg Pro Val Glu Val Leu Leu Asn Asp
    1330                1335                1340
Asp Leu Ile Val Ser Thr Gly Phe Gly Ser Gly Leu Ala Thr Val His
1345                1350                1355                1360
Val Thr Thr Val Val His Lys Thr Ser Thr Ser Glu Glu Val Cys Ser
                1365                1370                1375
Phe Tyr Leu Lys Ile Asp Thr Gln Asp Ile Glu Ala Ser His Tyr Arg
            1380                1385                1390
Gly Tyr Gly Asn Ser Asp Tyr Lys Arg Ile Val Ala Cys Ala Ser Tyr
        1395                1400                1405
Lys Pro Ser Arg Glu Glu Ser Ser Ser Gly Ser Ser His Ala Val Met
    1410                1415                1420
Asp Ile Ser Leu Pro Thr Gly Ile Ser Ala Asn Glu Glu Asp Leu Lys
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1425                1430                1435                1440
Ala Leu Val Glu Gly Val Asp Gln Leu Phe Thr Asp Tyr Gln Ile Lys
                1445                1450                1455
Asp Gly His Val Ile Leu Gln Leu Asn Ser Ile Pro Ser Ser Asp Phe
            1460                1465                1470
Leu Cys Val Arg Phe Arg Ile Phe Glu Leu Phe Glu Val Gly Phe Leu
        1475                1480                1485
Ser Pro Ala Thr Phe Thr Val Tyr Glu Tyr His Arg Pro Asp Lys Gln
    1490                1495                1500
Cys Thr Met Phe Tyr Ser Thr Ser Asn Ile Lys Ile Gln Lys Val Cys
1505                1510                1515                1520
Glu Gly Ala Ala Cys Lys Cys Val Glu Ala Asp Cys Gly Gln Met Gln
                1525                1530                1535
Glu Glu Leu Asp Leu Thr Ile Ser Ala Glu Thr Arg Lys Gln Thr Ala
            1540                1545                1550
Cys Lys Pro Glu Ile Ala Tyr Ala Tyr Lys Val Ser Ile Thr Ser Ile
        1555                1560                1565
Thr Val Glu Asn Val Phe Val Lys Tyr Lys Ala Thr Leu Leu Asp Ile
    1570                1575                1580
Tyr Lys Thr Gly Glu Ala Val Ala Glu Lys Asp Ser Glu Ile Thr Phe
1585                1590                1595                1600
Ile Lys Lys Val Thr Cys Thr Asn Ala Glu Leu Val Lys Gly Arg Gln
                1605                1610                1615
Tyr Leu Ile Met Gly Lys Glu Ala Leu Gln Ile Lys Tyr Asn Phe Ser
            1620                1625                1630
Phe Arg Tyr Ile Tyr Pro Leu Asp Ser Leu Thr Trp Ile Glu Tyr Trp
        1635                1640                1645
Pro Arg Asp Thr Thr Cys Ser Ser Cys Gln Ala Phe Leu Ala Asn Leu
    1650                1655                1660
Asp Glu Phe Ala Glu Asp Ile Phe Leu Asn Gly Cys
1665                1670                1675


<210> 315
<211> 934
<212> PRT
<213> Homo sapiens

<400> 315
Met Ala Arg Arg Ser Val Leu Tyr Phe Ile Leu Leu Asn Ala Leu Ile
 1               5                  10                  15
Asn Lys Gly Gln Ala Cys Phe Cys Asp His Tyr Ala Trp Thr Gln Trp
            20                  25                  30
Thr Ser Cys Ser Lys Thr Cys Asn Ser Gly Thr Gln Ser Arg His Arg
        35                  40                  45
Gln Ile Val Val Asp Lys Tyr Tyr Gln Glu Asn Phe Cys Glu Gln Ile
    50                  55                  60
Cys Ser Lys Gln Glu Thr Arg Glu Cys Asn Trp Gln Arg Cys Pro Ile
65                  70                  75                  80
Asn Cys Leu Leu Gly Asp Phe Gly Pro Trp Ser Asp Cys Asp Pro Cys
                85                  90                  95
Ile Glu Lys Gln Ser Lys Val Arg Ser Val Leu Arg Pro Ser Gln Phe
            100                 105                 110
Gly Gly Gln Pro Cys Thr Glu Pro Leu Val Ala Phe Gln Pro Cys Ile
        115                 120                 125
Pro Ser Lys Leu Cys Lys Ile Glu Glu Ala Asp Cys Lys Asn Lys Phe
    130                 135                 140
Arg Cys Asp Ser Gly Arg Cys Ile Ala Arg Lys Leu Glu Cys Asn Gly
```

```
145                 150                 155                 160
Glu Asn Asp Cys Gly Asp Asn Ser Asp Glu Arg Asp Cys Gly Arg Thr
                165                 170                 175
Lys Ala Val Cys Thr Arg Lys Tyr Asn Pro Ile Pro Ser Val Gln Leu
            180                 185                 190
Met Gly Asn Gly Phe His Phe Leu Ala Gly Glu Pro Arg Gly Glu Val
        195                 200                 205
Leu Asp Asn Ser Phe Thr Gly Gly Ile Cys Lys Thr Val Lys Ser Ser
    210                 215                 220
Arg Thr Ser Asn Pro Tyr Arg Val Pro Ala Asn Leu Glu Asn Val Gly
225                 230                 235                 240
Phe Glu Val Gln Thr Ala Glu Asp Asp Leu Lys Thr Asp Phe Tyr Lys
                245                 250                 255
Asp Leu Thr Ser Leu Gly His Asn Glu Asn Gln Gln Gly Ser Phe Ser
            260                 265                 270
Ser Gln Gly Gly Ser Ser Phe Ser Val Pro Ile Phe Tyr Ser Ser Lys
        275                 280                 285
Arg Ser Glu Asn Ile Asn His Asn Ser Ala Phe Lys Gln Ala Ile Gln
    290                 295                 300
Ala Ser His Lys Lys Asp Ser Ser Phe Ile Arg Ile His Lys Val Met
305                 310                 315                 320
Lys Val Leu Asn Phe Thr Thr Lys Ala Lys Asp Leu His Leu Ser Asp
                325                 330                 335
Val Phe Leu Lys Ala Leu Asn His Leu Pro Leu Glu Tyr Asn Ser Ala
            340                 345                 350
Leu Tyr Ser Arg Ile Phe Asp Asp Phe Gly Thr His Tyr Phe Thr Ser
        355                 360                 365
Gly Ser Leu Gly Gly Val Tyr Asp Leu Leu Tyr Gln Phe Ser Ser Glu
    370                 375                 380
Glu Leu Lys Asn Ser Gly Leu Thr Glu Glu Glu Ala Lys His Cys Val
385                 390                 395                 400
Arg Ile Glu Thr Lys Lys Arg Val Leu Phe Ala Lys Lys Thr Lys Val
                405                 410                 415
Glu His Arg Cys Thr Thr Asn Lys Leu Ser Glu Lys His Glu Gly Ser
            420                 425                 430
Phe Ile Gln Gly Ala Glu Lys Ser Ile Ser Leu Ile Arg Gly Gly Arg
        435                 440                 445
Ser Glu Tyr Gly Ala Ala Leu Ala Trp Glu Lys Gly Ser Ser Gly Leu
    450                 455                 460
Glu Glu Lys Thr Phe Ser Glu Trp Leu Glu Ser Val Lys Glu Asn Pro
465                 470                 475                 480
Ala Val Ile Asp Phe Glu Leu Ala Pro Ile Val Asp Leu Val Arg Asn
                485                 490                 495
Ile Pro Cys Ala Val Thr Lys Arg Asn Asn Leu Arg Lys Ala Leu Gln
            500                 505                 510
Glu Tyr Ala Ala Lys Phe Asp Pro Cys Gln Cys Ala Pro Cys Pro Asn
        515                 520                 525
Asn Gly Arg Pro Thr Leu Ser Gly Thr Glu Cys Leu Cys Val Cys Gln
    530                 535                 540
Ser Gly Thr Tyr Gly Glu Asn Cys Glu Lys Gln Ser Pro Asp Tyr Lys
545                 550                 555                 560
Ser Asn Ala Val Asp Gly Gln Trp Gly Cys Trp Ser Ser Trp Ser Thr
                565                 570                 575
Cys Asp Ala Thr Tyr Lys Arg Ser Arg Thr Arg Glu Cys Asn Asn Pro
            580                 585                 590
Ala Pro Gln Arg Gly Gly Lys Arg Cys Glu Gly Glu Lys Arg Gln Glu
        595                 600                 605
Glu Asp Cys Thr Phe Ser Ile Met Glu Asn Asn Gly Gln Pro Cys Ile
```

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

<210> 316
<211> 843
<212> PRT
<213> Homo sapiens

<400> 316

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

```
65                  70                  75                  80
Thr Glu Glu Gly Cys Gly Glu Arg Phe Arg Cys Phe Ser Gly Gln Cys
                85                  90                  95
Ile Ser Lys Ser Leu Val Cys Asn Gly Asp Ser Asp Cys Asp Glu Asp
            100                 105                 110
Ser Ala Asp Glu Asp Arg Cys Glu Asp Ser Glu Arg Arg Pro Ser Cys
        115                 120                 125
Asp Ile Asp Lys Pro Pro Pro Asn Ile Glu Leu Thr Gly Asn Gly Tyr
    130                 135                 140
Asn Glu Leu Thr Gly Gln Phe Arg Asn Arg Val Ile Asn Thr Lys Ser
145                 150                 155                 160
Phe Gly Gly Gln Cys Arg Lys Val Phe Ser Gly Asp Gly Lys Asp Phe
                165                 170                 175
Tyr Arg Leu Ser Gly Asn Val Leu Ser Tyr Thr Phe Gln Val Lys Ile
            180                 185                 190
Asn Asn Asp Phe Asn Tyr Glu Phe Tyr Asn Ser Thr Trp Ser Tyr Val
        195                 200                 205
Lys His Thr Ser Thr Glu His Thr Ser Ser Ser Arg Lys Arg Ser Phe
    210                 215                 220
Phe Arg Ser Ser Ser Ser Ser Ser Ser Arg Ser Tyr Thr Ser His Thr Asn
225                 230                 235                 240
Glu Ile His Lys Gly Lys Ser Tyr Gln Leu Leu Val Val Glu Asn Thr
                245                 250                 255
Val Glu Val Ala Gln Phe Ile Asn Asn Asn Pro Glu Phe Leu Gln Leu
            260                 265                 270
Ala Glu Pro Phe Trp Lys Glu Leu Ser His Leu Pro Ser Leu Tyr Asp
        275                 280                 285
Tyr Ser Ala Tyr Arg Arg Leu Ile Asp Gln Tyr Gly Thr His Tyr Leu
    290                 295                 300
Gln Ser Gly Ser Leu Gly Gly Glu Tyr Arg Val Leu Phe Tyr Val Asp
305                 310                 315                 320
Ser Glu Lys Leu Lys Gln Asn Asp Phe Asn Ser Val Glu Glu Lys Lys
                325                 330                 335
Cys Lys Ser Ser Gly Trp His Phe Val Val Lys Phe Ser Ser His Gly
            340                 345                 350
Cys Lys Glu Leu Glu Asn Ala Leu Lys Ala Ala Ser Gly Thr Gln Asn
        355                 360                 365
Asn Val Leu Arg Gly Glu Pro Phe Ile Arg Gly Gly Gly Ala Gly Phe
    370                 375                 380
Ile Ser Gly Leu Ser Tyr Leu Glu Leu Asp Asn Pro Ala Gly Asn Lys
385                 390                 395                 400
Arg Arg Tyr Ser Ala Trp Ala Glu Ser Val Thr Asn Leu Pro Gln Val
                405                 410                 415
Ile Lys Gln Lys Leu Thr Pro Leu Tyr Glu Leu Val Lys Glu Val Pro
            420                 425                 430
Cys Ala Ser Val Lys Lys Leu Tyr Leu Lys Trp Ala Leu Glu Glu Tyr
        435                 440                 445
Leu Asp Glu Phe Asp Pro Cys His Cys Arg Pro Cys Gln Asn Gly Gly
    450                 455                 460
Leu Ala Thr Val Glu Gly Thr His Cys Leu Cys His Cys Lys Pro Tyr
465                 470                 475                 480
Thr Phe Gly Ala Ala Cys Glu Gln Gly Val Leu Val Gly Asn Gln Ala
                485                 490                 495
Gly Gly Val Asp Gly Gly Trp Ser Cys Trp Ser Ser Trp Ser Pro Cys
            500                 505                 510
Val Gln Gly Lys Lys Thr Arg Ser Arg Glu Cys Asn Asn Pro Pro Pro
        515                 520                 525
Ser Gly Gly Gly Arg Ser Cys Val Gly Glu Thr Thr Glu Ser Thr Gln
```

```
    530                 535                 540
Cys Glu Asp Glu Glu Leu Glu His Leu Arg Leu Leu Glu Pro His Cys
545                 550                 555                 560
Phe Pro Leu Ser Leu Val Pro Thr Glu Phe Cys Pro Ser Pro Pro Ala
                565                 570                 575
Leu Lys Asp Gly Phe Val Gln Asp Glu Gly Thr Met Phe Pro Val Gly
            580                 585                 590
Lys Asn Val Val Tyr Thr Cys Asn Glu Gly Tyr Ser Leu Ile Gly Asn
        595                 600                 605
Pro Val Ala Arg Cys Gly Glu Asp Leu Arg Trp Leu Val Gly Glu Met
    610                 615                 620
His Cys Gln Lys Ile Ala Cys Val Leu Pro Val Leu Met Asp Gly Ile
625                 630                 635                 640
Gln Ser His Pro Gln Lys Pro Phe Tyr Thr Val Gly Glu Lys Val Thr
                645                 650                 655
Val Ser Cys Ser Gly Gly Met Ser Leu Glu Gly Pro Ser Ala Phe Leu
            660                 665                 670
Cys Gly Ser Ser Leu Lys Trp Ser Pro Glu Met Lys Asn Ala Arg Cys
        675                 680                 685
Val Gln Lys Glu Asn Pro Leu Thr Gln Ala Val Pro Lys Cys Gln Arg
    690                 695                 700
Trp Glu Lys Leu Gln Asn Ser Arg Cys Val Cys Lys Met Pro Tyr Glu
705                 710                 715                 720
Cys Gly Pro Ser Leu Asp Val Cys Ala Gln Asp Glu Arg Ser Lys Arg
                725                 730                 735
Ile Leu Pro Leu Thr Val Cys Lys Met His Val Leu His Cys Gln Gly
            740                 745                 750
Arg Asn Tyr Thr Leu Thr Gly Arg Asp Ser Cys Thr Leu Pro Ala Ser
        755                 760                 765
Ala Glu Lys Ala Cys Gly Ala Cys Pro Leu Trp Gly Lys Cys Asp Ala
    770                 775                 780
Glu Ser Ser Lys Cys Val Cys Arg Glu Ala Ser Glu Cys Glu Glu Glu
785                 790                 795                 800
Gly Phe Ser Ile Cys Val Glu Val Asn Gly Lys Glu Gln Thr Met Ser
                805                 810                 815
Glu Cys Glu Ala Gly Ala Leu Arg Cys Arg Gly Gln Ser Ile Ser Val
            820                 825                 830
Thr Ser Ile Arg Pro Cys Ala Ala Glu Thr Gln
        835                 840
```

<210> 317
<211> 584
<212> PRT
<213> Homo sapiens

<400> 317

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

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

```
545                 550                 555                 560
Glu Cys Asp Asn Pro Ala Pro Gln Asn Gly Gly Ala Ser Cys Pro Gly
                565                 570                 575
Arg Lys Val Gln Thr Gln Ala Cys
            580
```

<210> 318
<211> 591
<212> PRT
<213> Homo sapiens

<400> 318

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

```
        355                 360                 365
Asp Tyr Thr Leu Asn Asn Val His Ala Cys Ala Lys Asn Asp Phe Lys
    370                 375                 380
Ile Gly Gly Ala Ile Glu Glu Val Tyr Val Ser Leu Gly Val Ser Val
385                 390                 395                 400
Gly Lys Cys Arg Gly Ile Leu Asn Glu Ile Lys Asp Arg Asn Lys Arg
                405                 410                 415
Asp Thr Met Val Glu Asp Leu Val Val Leu Val Arg Gly Gly Ala Ser
            420                 425                 430
Glu His Ile Thr Thr Leu Ala Tyr Gln Glu Leu Pro Thr Ala Asp Leu
        435                 440                 445
Met Gln Glu Trp Gly Asp Ala Val Gln Tyr Asn Pro Ala Ile Ile Lys
    450                 455                 460
Val Lys Val Glu Pro Leu Tyr Glu Leu Val Thr Ala Thr Asp Phe Ala
465                 470                 475                 480
Tyr Ser Ser Thr Val Arg Gln Asn Met Lys Gln Ala Leu Glu Glu Phe
                485                 490                 495
Gln Lys Glu Val Ser Ser Cys His Cys Ala Pro Cys Gln Gly Asn Gly
            500                 505                 510
Val Pro Val Leu Lys Gly Ser Arg Cys Asp Cys Ile Cys Pro Val Gly
        515                 520                 525
Ser Gln Gly Leu Ala Cys Glu Val Ser Tyr Arg Lys Asn Thr Pro Ile
    530                 535                 540
Asp Gly Lys Trp Asn Cys Trp Ser Asn Trp Ser Ser Cys Ser Gly Arg
545                 550                 555                 560
Arg Lys Thr Arg Gln Arg Gln Cys Asn Asn Pro Pro Pro Gln Asn Gly
                565                 570                 575
Gly Ser Pro Cys Ser Gly Pro Ala Ser Glu Thr Leu Asp Cys Ser
            580                 585                 590
```

<210> 319
<211> 202
<212> PRT
<213> Homo sapiens

<400> 319

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

```
                165                 170                 175
Asp Gln Ile Phe Tyr Phe Pro Lys Tyr Gly Phe Cys Glu Ala Ala Asp
            180                 185                 190
Gln Phe His Val Leu Asp Glu Val Arg Arg
        195                 200
```

<210> 320
<211> 559
<212> PRT
<213> Homo sapiens

<400> 320

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

```
        355                 360                 365
Arg Lys Gly Val Glu Leu Lys Asp Ile Lys Arg Cys Leu Gly Tyr His
    370                 375                 380
Leu Asp Val Ser Leu Ala Phe Ser Glu Ile Ser Val Gly Ala Glu Phe
385                 390                 395                 400
Asn Lys Asp Asp Cys Val Lys Arg Gly Glu Gly Arg Ala Val Asn Ile
                405                 410                 415
Thr Ser Glu Asn Leu Ile Asp Asp Val Val Ser Leu Ile Arg Gly Gly
            420                 425                 430
Thr Arg Lys Tyr Ala Phe Glu Leu Lys Glu Lys Leu Leu Arg Gly Thr
        435                 440                 445
Val Ile Asp Val Thr Asp Phe Val Asn Trp Ala Ser Ser Ile Asn Asp
    450                 455                 460
Ala Pro Val Leu Ile Ser Gln Lys Leu Ser Pro Ile Tyr Asn Leu Val
465                 470                 475                 480
Pro Val Lys Met Lys Asn Ala His Leu Lys Lys Gln Asn Leu Glu Arg
                485                 490                 495
Ala Ile Glu Asp Tyr Ile Asn Glu Phe Ser Val Arg Lys Cys His Thr
            500                 505                 510
Cys Gln Asn Gly Gly Thr Val Ile Leu Met Asp Gly Lys Cys Leu Cys
        515                 520                 525
Ala Cys Pro Phe Lys Phe Glu Gly Ile Ala Cys Glu Ile Ser Lys Gln
    530                 535                 540
Lys Ile Ser Glu Gly Leu Pro Ala Leu Glu Phe Pro Asn Glu Lys
545                 550                 555
```

<210> 321
<211> 2039
<212> PRT
<213> Homo sapiens

<400> 321

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

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

```
                660                 665                 670
Gly Ile Trp Ser Gly Pro Ala Pro Gln Cys Ile Ile Pro Asn Lys Cys
        675                 680                 685
Thr Pro Pro Asn Val Glu Asn Gly Ile Leu Val Ser Asp Asn Arg Ser
    690                 695                 700
Leu Phe Ser Leu Asn Glu Val Val Glu Phe Arg Cys Gln Pro Gly Phe
705                 710                 715                 720
Val Met Lys Gly Pro Arg Arg Val Lys Cys Gln Ala Leu Asn Lys Trp
                725                 730                 735
Glu Pro Glu Leu Pro Ser Cys Ser Arg Val Cys Gln Pro Pro Pro Asp
            740                 745                 750
Val Leu His Ala Glu Arg Thr Gln Arg Asp Lys Asp Asn Phe Ser Pro
        755                 760                 765
Gly Gln Glu Val Phe Tyr Ser Cys Glu Pro Gly Tyr Asp Leu Arg Gly
    770                 775                 780
Ala Ala Ser Met Arg Cys Thr Pro Gln Gly Asp Trp Ser Pro Ala Ala
785                 790                 795                 800
Pro Thr Cys Glu Val Lys Ser Cys Asp Asp Phe Met Gly Gln Leu Leu
                805                 810                 815
Asn Gly Arg Val Leu Phe Pro Val Asn Leu Gln Leu Gly Ala Lys Val
            820                 825                 830
Asp Phe Val Cys Asp Glu Gly Phe Gln Leu Lys Gly Ser Ser Ala Ser
        835                 840                 845
Tyr Cys Val Leu Ala Gly Met Glu Ser Leu Trp Asn Ser Ser Val Pro
    850                 855                 860
Val Cys Glu Gln Ile Phe Cys Pro Ser Pro Pro Val Ile Pro Asn Gly
865                 870                 875                 880
Arg His Thr Gly Lys Pro Leu Glu Val Phe Pro Phe Gly Lys Ala Val
                885                 890                 895
Asn Tyr Thr Cys Asp Pro His Pro Asp Arg Gly Thr Ser Phe Asp Leu
            900                 905                 910
Ile Gly Glu Ser Thr Ile Arg Cys Thr Ser Asp Pro Gln Gly Asn Gly
        915                 920                 925
Val Trp Ser Ser Pro Ala Pro Arg Cys Gly Ile Leu Gly His Cys Gln
    930                 935                 940
Ala Pro Asp His Phe Leu Phe Ala Lys Leu Lys Thr Gln Thr Asn Ala
945                 950                 955                 960
Ser Asp Phe Pro Ile Gly Thr Ser Leu Lys Tyr Glu Cys Arg Pro Glu
                965                 970                 975
Tyr Tyr Gly Arg Pro Phe Ser Ile Thr Cys Leu Asp Asn Leu Val Trp
            980                 985                 990
Ser Ser Pro Lys Asp Val Cys Lys Arg Lys Ser Cys Lys Thr Pro Pro
        995                 1000                1005
Asp Pro Val Asn Gly Met Val His Val Ile Thr Asp Ile Gln Val Gly
    1010                1015                1020
Ser Arg Ile Asn Tyr Ser Cys Thr Thr Gly His Arg Leu Ile Gly His
1025                1030                1035                1040
Ser Ser Ala Glu Cys Ile Leu Ser Gly Asn Thr Ala His Trp Ser Thr
                1045                1050                1055
Lys Pro Pro Ile Cys Gln Arg Ile Pro Cys Gly Leu Pro Pro Thr Ile
            1060                1065                1070
Ala Asn Gly Asp Phe Ile Ser Thr Asn Arg Glu Asn Phe His Tyr Gly
        1075                1080                1085
Ser Val Val Thr Tyr Arg Cys Asn Leu Gly Ser Arg Gly Arg Lys Val
    1090                1095                1100
Phe Glu Leu Val Gly Glu Pro Ser Ile Tyr Cys Thr Ser Asn Asp Asp
1105                1110                1115                1120
Gln Val Gly Ile Trp Ser Gly Pro Ala Pro Gln Cys Ile Ile Pro Asn
```

```
                1125                1130                1135
Lys Cys Thr Pro Pro Asn Val Glu Asn Gly Ile Leu Val Ser Asp Asn
            1140                1145                1150
Arg Ser Leu Phe Ser Leu Asn Glu Val Val Glu Phe Arg Cys Gln Pro
        1155                1160                1165
Gly Phe Val Met Lys Gly Pro Arg Arg Val Lys Cys Gln Ala Leu Asn
    1170                1175                1180
Lys Trp Glu Pro Glu Leu Pro Ser Cys Ser Arg Val Cys Gln Pro Pro
1185                1190                1195                1200
Pro Glu Ile Leu His Gly Glu His Thr Pro Ser His Gln Asp Asn Phe
                1205                1210                1215
Ser Pro Gly Gln Glu Val Phe Tyr Ser Cys Glu Pro Gly Tyr Asp Leu
            1220                1225                1230
Arg Gly Ala Ala Ser Leu His Cys Thr Pro Gln Gly Asp Trp Ser Pro
        1235                1240                1245
Glu Ala Pro Arg Cys Ala Val Lys Ser Cys Asp Asp Phe Leu Gly Gln
    1250                1255                1260
Leu Pro His Gly Arg Val Leu Phe Pro Leu Asn Leu Gln Leu Gly Ala
1265                1270                1275                1280
Lys Val Ser Phe Val Cys Asp Glu Gly Phe Arg Leu Lys Gly Ser Ser
                1285                1290                1295
Val Ser His Cys Val Leu Val Gly Met Arg Ser Leu Trp Asn Asn Ser
            1300                1305                1310
Val Pro Val Cys Glu His Ile Phe Cys Pro Asn Pro Pro Ala Ile Leu
        1315                1320                1325
Asn Gly Arg His Thr Gly Thr Pro Ser Gly Asp Ile Pro Tyr Gly Lys
    1330                1335                1340
Glu Ile Ser Tyr Thr Cys Asp Pro His Pro Asp Arg Gly Met Thr Phe
1345                1350                1355                1360
Asn Leu Ile Gly Glu Ser Thr Ile Arg Cys Thr Ser Asp Pro His Gly
                1365                1370                1375
Asn Gly Val Trp Ser Ser Pro Ala Pro Arg Cys Glu Leu Ser Val Arg
            1380                1385                1390
Ala Gly His Cys Lys Thr Pro Glu Gln Phe Pro Phe Ala Ser Pro Thr
        1395                1400                1405
Ile Pro Ile Asn Asp Phe Glu Phe Pro Val Gly Thr Ser Leu Asn Tyr
    1410                1415                1420
Glu Cys Arg Pro Gly Tyr Phe Gly Lys Met Phe Ser Ile Ser Cys Leu
1425                1430                1435                1440
Glu Asn Leu Val Trp Ser Ser Val Glu Asp Asn Cys Arg Arg Lys Ser
                1445                1450                1455
Cys Gly Pro Pro Pro Glu Pro Phe Asn Gly Met Val His Ile Asn Thr
            1460                1465                1470
Asp Thr Gln Phe Gly Ser Thr Val Asn Tyr Ser Cys Asn Glu Gly Phe
        1475                1480                1485
Arg Leu Ile Gly Ser Pro Ser Thr Thr Cys Leu Val Ser Gly Asn Asn
    1490                1495                1500
Val Thr Trp Asp Lys Lys Ala Pro Ile Cys Glu Ile Ile Ser Cys Glu
1505                1510                1515                1520
Pro Pro Pro Thr Ile Ser Asn Gly Asp Phe Tyr Ser Asn Asn Arg Thr
                1525                1530                1535
Ser Phe His Asn Gly Thr Val Val Thr Tyr Gln Cys His Thr Gly Pro
            1540                1545                1550
Asp Gly Glu Gln Leu Phe Glu Leu Val Gly Glu Arg Ser Ile Tyr Cys
        1555                1560                1565
Thr Ser Lys Asp Asp Gln Val Gly Val Trp Ser Ser Pro Pro Pro Arg
    1570                1575                1580
Cys Ile Ser Thr Asn Lys Cys Thr Ala Pro Glu Val Glu Asn Ala Ile
```

1585 1590 1595 1600
Arg Val Pro Gly Asn Arg Ser Phe Phe Ser Leu Thr Glu Ile Ile Arg
1605 1610 1615
Phe Arg Cys Gln Pro Gly Phe Val Met Val Gly Ser His Thr Val Gln
1620 1625 1630
Cys Gln Thr Asn Gly Arg Trp Gly Pro Lys Leu Pro His Cys Ser Arg
1635 1640 1645
Val Cys Gln Pro Pro Pro Glu Ile Leu His Gly Glu His Thr Leu Ser
1650 1655 1660
His Gln Asp Asn Phe Ser Pro Gly Gln Glu Val Phe Tyr Ser Cys Glu
1665 1670 1675 1680
Pro Ser Tyr Asp Leu Arg Gly Ala Ala Ser Leu His Cys Thr Pro Gln
1685 1690 1695
Gly Asp Trp Ser Pro Glu Ala Pro Arg Cys Thr Val Lys Ser Cys Asp
1700 1705 1710
Asp Phe Leu Gly Gln Leu Pro His Gly Arg Val Leu Leu Pro Leu Asn
1715 1720 1725
Leu Gln Leu Gly Ala Lys Val Ser Phe Val Cys Asp Glu Gly Phe Arg
1730 1735 1740
Leu Lys Gly Arg Ser Ala Ser His Cys Val Leu Ala Gly Met Lys Ala
1745 1750 1755 1760
Leu Trp Asn Ser Ser Val Pro Val Cys Glu Gln Ile Phe Cys Pro Asn
1765 1770 1775
Pro Pro Ala Ile Leu Asn Gly Arg His Thr Gly Thr Pro Phe Gly Asp
1780 1785 1790
Ile Pro Tyr Gly Lys Glu Ile Ser Tyr Ala Cys Asp Thr His Pro Asp
1795 1800 1805
Arg Gly Met Thr Phe Asn Leu Ile Gly Glu Ser Ser Ile Arg Cys Thr
1810 1815 1820
Ser Asp Pro Gln Gly Asn Gly Val Trp Ser Ser Pro Ala Pro Arg Cys
1825 1830 1835 1840
Glu Leu Ser Val Pro Ala Ala Cys Pro His Pro Pro Lys Ile Gln Asn
1845 1850 1855
Gly His Tyr Ile Gly Gly His Val Ser Leu Tyr Leu Pro Gly Met Thr
1860 1865 1870
Ile Ser Tyr Thr Cys Asp Pro Gly Tyr Leu Leu Val Gly Lys Gly Phe
1875 1880 1885
Ile Phe Cys Thr Asp Gln Gly Ile Trp Ser Gln Leu Asp His Tyr Cys
1890 1895 1900
Lys Glu Val Asn Cys Ser Phe Pro Leu Phe Met Asn Gly Ile Ser Lys
1905 1910 1915 1920
Glu Leu Glu Met Lys Lys Val Tyr His Tyr Gly Asp Tyr Val Thr Leu
1925 1930 1935
Lys Cys Glu Asp Gly Tyr Thr Leu Glu Gly Ser Pro Trp Ser Gln Cys
1940 1945 1950
Gln Ala Asp Asp Arg Trp Asp Pro Pro Leu Ala Lys Cys Thr Ser Arg
1955 1960 1965
Ala His Asp Ala Leu Ile Val Gly Thr Leu Ser Gly Thr Ile Phe Phe
1970 1975 1980
Ile Leu Leu Ile Ile Phe Leu Ser Trp Ile Ile Leu Lys His Arg Lys
1985 1990 1995 2000
Gly Asn Asn Ala His Glu Asn Pro Lys Glu Val Ala Ile His Leu His
2005 2010 2015
Ser Gln Gly Gly Ser Ser Val His Pro Arg Thr Leu Gln Thr Asn Glu
2020 2025 2030
Glu Asn Ser Arg Val Leu Pro
2035

<210> 322
<211> 1033
<212> PRT
<213> Homo sapiens

<400> 322

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

```
                405                 410                 415
Leu Asn Gly Gln Lys Glu Asp Arg His Met Val Arg Phe Asp Pro Gly
            420                 425                 430
Thr Ser Ile Lys Tyr Ser Cys Asn Pro Gly Tyr Val Leu Val Gly Glu
        435                 440                 445
Glu Ser Ile Gln Cys Thr Ser Glu Gly Val Trp Thr Pro Pro Val Pro
    450                 455                 460
Gln Cys Lys Val Ala Ala Cys Glu Ala Thr Gly Arg Gln Leu Leu Thr
465                 470                 475                 480
Lys Pro Gln His Gln Phe Val Arg Pro Asp Val Asn Ser Ser Cys Gly
                485                 490                 495
Glu Gly Tyr Lys Leu Ser Gly Ser Val Tyr Gln Glu Cys Gln Gly Thr
            500                 505                 510
Ile Pro Trp Phe Met Glu Ile Arg Leu Cys Lys Glu Ile Thr Cys Pro
        515                 520                 525
Pro Pro Pro Val Ile Tyr Asn Gly Ala His Thr Gly Ser Ser Leu Glu
    530                 535                 540
Asp Phe Pro Tyr Gly Thr Thr Val Thr Tyr Thr Cys Asn Pro Gly Pro
545                 550                 555                 560
Glu Arg Gly Val Glu Phe Ser Leu Ile Gly Glu Ser Thr Ile Arg Cys
                565                 570                 575
Thr Ser Asn Asp Gln Glu Arg Gly Thr Trp Ser Gly Pro Ala Pro Leu
            580                 585                 590
Cys Lys Leu Ser Leu Leu Ala Val Gln Cys Ser His Val His Ile Ala
        595                 600                 605
Asn Gly Tyr Lys Ile Ser Gly Lys Glu Ala Pro Tyr Phe Tyr Asn Asp
    610                 615                 620
Thr Val Thr Phe Lys Cys Tyr Ser Gly Phe Thr Leu Lys Gly Ser Ser
625                 630                 635                 640
Gln Ile Arg Cys Lys Ala Asp Asn Thr Trp Asp Pro Glu Ile Pro Val
                645                 650                 655
Cys Glu Lys Glu Thr Cys Gln His Val Arg Gln Ser Leu Gln Glu Leu
            660                 665                 670
Pro Ala Gly Ser Arg Val Glu Leu Val Asn Thr Ser Cys Gln Asp Gly
        675                 680                 685
Tyr Gln Leu Thr Gly His Ala Tyr Gln Met Cys Gln Asp Ala Glu Asn
    690                 695                 700
Gly Ile Trp Phe Lys Lys Ile Pro Leu Cys Lys Val Ile His Cys His
705                 710                 715                 720
Pro Pro Pro Val Ile Val Asn Gly Lys His Thr Gly Met Met Ala Glu
                725                 730                 735
Asn Phe Leu Tyr Gly Asn Glu Val Ser Tyr Glu Cys Asp Gln Gly Phe
            740                 745                 750
Tyr Leu Leu Gly Glu Lys Lys Leu Gln Cys Arg Ser Asp Ser Lys Gly
        755                 760                 765
His Gly Ser Trp Ser Gly Pro Ser Pro Gln Cys Leu Arg Ser Pro Pro
    770                 775                 780
Val Thr Arg Cys Pro Asn Pro Glu Val Lys His Gly Tyr Lys Leu Asn
785                 790                 795                 800
Lys Thr His Ser Ala Tyr Ser His Asn Asp Ile Val Tyr Val Asp Cys
                805                 810                 815
Asn Pro Gly Phe Ile Met Asn Gly Ser Arg Val Ile Arg Cys His Thr
            820                 825                 830
Asp Asn Thr Trp Val Pro Gly Val Pro Thr Cys Ile Lys Lys Ala Phe
        835                 840                 845
Ile Gly Cys Pro Pro Pro Pro Lys Thr Pro Asn Gly Asn His Thr Gly
    850                 855                 860
Gly Asn Ile Ala Arg Phe Ser Pro Gly Met Ser Ile Leu Tyr Ser Cys
```

```
865                 870                 875                 880
Asp Gln Gly Tyr Leu Leu Val Gly Glu Ala Leu Leu Leu Cys Thr His
                885                 890                 895
Glu Gly Thr Trp Ser Gln Pro Ala Pro His Cys Lys Glu Val Asn Cys
            900                 905                 910
Ser Ser Pro Ala Asp Met Asp Gly Ile Gln Lys Gly Leu Glu Pro Arg
        915                 920                 925
Lys Met Tyr Gln Tyr Gly Ala Val Val Thr Leu Glu Cys Glu Asp Gly
    930                 935                 940
Tyr Met Leu Glu Gly Ser Pro Gln Ser Gln Cys Gln Ser Asp His Gln
945                 950                 955                 960
Trp Asn Pro Pro Leu Ala Val Cys Arg Ser Arg Ser Leu Ala Pro Val
                965                 970                 975
Leu Cys Gly Ile Ala Ala Gly Leu Ile Leu Leu Thr Phe Leu Ile Val
            980                 985                 990
Ile Thr Leu Tyr Val Ile Ser Lys His Arg Glu Arg Asn Tyr Tyr Thr
        995                 1000                1005
Asp Thr Ser Gln Lys Glu Ala Phe His Leu Glu Ala Arg Glu Val Tyr
    1010                1015                1020
Ser Val Asp Pro Tyr Asn Pro Ala Ser
1025                1030
```

<210> 323
<211> 381
<212> PRT
<213> Homo sapiens

<400> 323

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

```
225                 230                 235                 240
Asp His Tyr Gly Tyr Arg Gln Ser Val Thr Tyr Ala Cys Asn Lys Gly
                245                 250                 255
Phe Thr Met Ile Gly Glu His Ser Ile Tyr Cys Thr Val Asn Asn Asp
            260                 265                 270
Glu Gly Glu Trp Ser Gly Pro Pro Pro Glu Cys Arg Gly Lys Ser Leu
        275                 280                 285
Thr Ser Lys Val Pro Pro Thr Val Gln Lys Pro Thr Thr Val Asn Val
    290                 295                 300
Pro Thr Thr Glu Val Ser Pro Thr Ser Gln Lys Thr Thr Thr Lys Thr
305                 310                 315                 320
Thr Thr Pro Asn Ala Gln Ala Thr Arg Ser Thr Pro Val Ser Arg Thr
                325                 330                 335
Thr Lys His Phe His Glu Thr Thr Pro Asn Lys Gly Ser Gly Thr Thr
            340                 345                 350
Ser Gly Thr Thr Arg Leu Leu Ser Gly His Thr Cys Phe Thr Leu Thr
        355                 360                 365
Gly Leu Leu Gly Thr Leu Val Thr Met Gly Leu Leu Thr
    370                 375                 380
```

<210> 324
<211> 500
<212> PRT
<213> Homo sapiens

<400> 324

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

```
                245                 250                 255
Ala Asn Leu Glu Leu Ile Asn Thr Trp Val Ala Lys Asn Thr Asn Asn
            260                 265                 270
Lys Ile Ser Arg Leu Leu Asp Ser Leu Pro Ser Asp Thr Arg Leu Val
        275                 280                 285
Leu Leu Asn Ala Ile Tyr Leu Ser Ala Lys Trp Lys Thr Thr Phe Asp
    290                 295                 300
Pro Lys Lys Thr Arg Met Glu Pro Phe His Phe Lys Asn Ser Val Ile
305                 310                 315                 320
Lys Val Pro Met Met Asn Ser Lys Lys Tyr Pro Val Ala His Phe Ile
                325                 330                 335
Asp Gln Thr Leu Lys Ala Lys Val Gly Gln Leu Gln Leu Ser His Asn
            340                 345                 350
Leu Ser Leu Val Ile Leu Val Pro Gln Asn Leu Lys His Arg Leu Glu
        355                 360                 365
Asp Met Glu Gln Ala Leu Ser Pro Ser Val Phe Lys Ala Ile Met Glu
    370                 375                 380
Lys Leu Glu Met Ser Lys Phe Gln Pro Thr Leu Leu Thr Leu Pro Arg
385                 390                 395                 400
Ile Lys Val Thr Thr Ser Gln Asp Met Leu Ser Ile Met Glu Lys Leu
                405                 410                 415
Glu Phe Phe Asp Phe Ser Tyr Asp Leu Asn Leu Cys Gly Leu Thr Glu
            420                 425                 430
Asp Pro Asp Leu Gln Val Ser Ala Met Gln His Gln Thr Val Leu Glu
        435                 440                 445
Leu Thr Glu Thr Gly Val Glu Ala Ala Ala Ala Ser Ala Ile Ser Val
    450                 455                 460
Ala Arg Thr Leu Leu Val Phe Glu Val Gln Gln Pro Phe Leu Phe Val
465                 470                 475                 480
Leu Trp Asp Gln Gln His Lys Phe Pro Val Phe Met Gly Arg Val Tyr
                485                 490                 495
Asp Pro Arg Ala
            500
```

<210> 325
<211> 4353
<212> DNA
<213> Homo sapiens

<400> 325
gaagtcagcc acacaggata aaggagggaa gggaaggagc agatcttttc ggtaggaaga 60
cagattttgt tgtcaggttc ctgggagtgc aagagcaagt caaaggagag agagaggaga 120
gaggaaaagc cagagggaga gaggggggaga ggggatctgt tgcaggcagg ggaaggcgtg 180
acctgaatgg agaatgccag ccaattccag agacacacag ggacctcaga acaaagataa 240
ggcatcacgg acaccacacc gggcacgagc tcacaggcaa gtcaagctgg gaggaccaag 300
gccgggcagc cgggagcacc caaggcagga aaatgaggtg gctgcttctc tattatgctc 360
tgtgcttctc cctgtcaaag gcttcagccc acaccgtgga gctaaacaat atgtttggcc 420
agatccagtc gcctggttat ccagactcct atcccagtga ttcagaggtg acttggaata 480
tcactgtccc agatgggttt cggatcaagc tttacttcat gcacttcaac ttggaatcct 540
cctacctttg tgaatatgac tatgtgaagg tagaaactga ggaccaggtg ctggcaacct 600
tctgtggcag ggagaccaca gacacagagc agactcccgg ccaggaggtg gtcctctccc 660
ctggctcctt catgtccatc actttccggt cagatttctc caatgaggag cgtttcacag 720
gctttgatgc ccactacatg gctgtggatg tggacgagtg caaggagagg gaggacgagg 780
agctgtcctg tgaccactac tgccacaact acattggcgg ctactactgc tcctgccgct 840
tcggctacat cctccacaca gacaacagga cctgccgagt ggagtgcagt gacaacctct 900
tcactcaaag gactggggtg atcaccagcc ctgacttccc aaacccttac cccaagagct 960
ctgaatgcct gtataccatc gagctggagg agggtttcat ggtcaacctg cagtttgagg 1020
```
```

acatatttga cattgaggac catcctgagg tgccctgccc ctatgactac atcaagatca 1080
aagttggtcc aaaagttttg gggcctttct gtggagagaa agccccagaa cccatcagca 1140
cccagagcca cagtgtcctg atcctgttcc atagtgacaa ctcgggagag aaccgggggct 1200
ggaggctctc atacagggct gcaggaaatg agtgcccaga gctacagcct cctgtccatg 1260
ggaaaatcga gccctcccaa gccaagtatt tcttcaaaga ccaagtgctc gtcagctgtg 1320
acacaggcta caaagtgctg aaggataatg tggagatgga cacattccag attgagtgtc 1380
tgaaggatgg gacgtggagt aacaagattc ccacctgtaa aattgtagac tgtagagccc 1440
caggagagct ggaacacggg ctgatcacct tctctacaag gaacaacctc accacataca 1500
agtctgagat caaatactcc tgtcaggagc cctattacaa gatgctcaac aataacacag 1560
gtatatatac ctgttctgcc caaggagtct ggatgaataa agtattgggg agaagcctac 1620
ccacctgcct tccagtgtgt gggctcccca agttctcccg gaagctgatg gccaggatct 1680
tcaatggacg cccagcccag aaaggcacca ctccctggat tgccatgctg tcacacctga 1740
atgggcagcc cttctgcgga ggctcccttc taggctccag ctggatcgtg accgccgcac 1800
actgcctcca ccagtcactc gatccggaag atccgaccct acgtgattca gacttgctca 1860
gcccttctga cttcaaaatc atcctgggca agcattggag gctccggtca gatgaaaatg 1920
aacagcatct cggcgtcaaa cacaccactc tccaccccca gtatgatccc aacacattcg 1980
agaatgacgt ggctctggtg gagctgttgg agagcccagt gctgaatgcc ttcgtgatgc 2040
ccatctgtct gcctgaggga ccccagcagg aaggagccat ggtcatcgtc agcggctggg 2100
ggaagcagtt cttgcaaagg ttcccagaga ccctgatgga gattgaaatc ccgattgttg 2160
accacagcac ctgccagaag gcttatgccc cgctgaagaa gaaagtgacc agggacatga 2220
tctgtgctgg ggagaaggaa gggggaaagg acgcctgtgc gggtgactct ggaggcccca 2280
tggtgaccct gaatagagaa agaggccagt ggtacctggt gggcactgtg tcctggggtg 2340
atgactgtgg gaagaaggac cgctacggag tatactctta catccaccac aacaaggact 2400
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gctgtgggca gtcagtagca gaggacgatc ctccgatgaa agcagccatt tctcctttcc 2520
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ccaggctcta tcacttacta gtttgcagtg ctgggcaggt gacttcatct cttcgaactt 2700
cagtttcttc ataagatgga aatgctatac cttacctacc tcgtaaaagt ctgatgagga 2760
aaagattaac taatagatgc atagcactta acagagtgca tagcatacac tgttttcaat 2820
aaatgcacct tagcagaagg tcgatgtgtc taccaggcag acgaagctct cttacaaacc 2880
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caccctcatc cctaaaaaag taaaacagac aaggttctga gtcctgtggt atgtccccta 3060
gcaaatgtaa ctaggaacat gcactagatg acagattgcg ggagggcctg agagaagcag 3120
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gtagtttgta ccccaggccc ctatactctt ccttcctatg tccacagctg accccaagca 3600
gccgttcccc gactcctcac ccctgagcct caccctgaac tccctcatct tgcaaggcca 3660
taagtgtttt ccaagcaaaa tgcctctccc atcctctctc aggaagcttc tagagacttt 3720
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ctggttctat aaacaagtca ttctacctct ttgtgccctg ctgtttattc tgtaagggga 4020
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tatcttccca tttcaagcac tgcctgggca cacccaaca tcccaggctg tggtggctcc 4200
tgtgggaact acctagatga agagagtatc atttatacct tctaggagct cctattggga 4260
gacatgaaac atatgtaatt gactaccatg taatagaaca aaccctgcca agtgctgctt 4320
tggaaagtca tggaggtaaa agaaagacca ttc 4353

<210> 326

<211> 699
<212> PRT
<213> Homo sapiens

<400> 326

```
Met Arg Trp Leu Leu Leu Tyr Tyr Ala Leu Cys Phe Ser Leu Ser Lys
 1               5                  10                  15
Ala Ser Ala His Thr Val Glu Leu Asn Asn Met Phe Gly Gln Ile Gln
            20                  25                  30
Ser Pro Gly Tyr Pro Asp Ser Tyr Pro Ser Asp Ser Glu Val Thr Trp
        35                  40                  45
Asn Ile Thr Val Pro Asp Gly Phe Arg Ile Lys Leu Tyr Phe Met His
    50                  55                  60
Phe Asn Leu Glu Ser Ser Tyr Leu Cys Glu Tyr Asp Tyr Val Lys Val
65                  70                  75                  80
Glu Thr Glu Asp Gln Val Leu Ala Thr Phe Cys Gly Arg Glu Thr Thr
                85                  90                  95
Asp Thr Glu Gln Thr Pro Gly Gln Glu Val Val Leu Ser Pro Gly Ser
            100                 105                 110
Phe Met Ser Ile Thr Phe Arg Ser Asp Phe Ser Asn Glu Glu Arg Phe
        115                 120                 125
Thr Gly Phe Asp Ala His Tyr Met Ala Val Asp Val Asp Glu Cys Lys
    130                 135                 140
Glu Arg Glu Asp Glu Glu Leu Ser Cys Asp His Tyr Cys His Asn Tyr
145                 150                 155                 160
Ile Gly Gly Tyr Tyr Cys Ser Cys Arg Phe Gly Tyr Ile Leu His Thr
                165                 170                 175
Asp Asn Arg Thr Cys Arg Val Glu Cys Ser Asp Asn Leu Phe Thr Gln
            180                 185                 190
Arg Thr Gly Val Ile Thr Ser Pro Asp Phe Pro Asn Pro Tyr Pro Lys
        195                 200                 205
Ser Ser Glu Cys Leu Tyr Thr Ile Glu Leu Glu Glu Gly Phe Met Val
    210                 215                 220
Asn Leu Gln Phe Glu Asp Ile Phe Asp Ile Gln Asp His Pro Glu Val
225                 230                 235                 240
Pro Cys Pro Tyr Asp Tyr Ile Lys Ile Lys Val Gly Pro Lys Val Leu
                245                 250                 255
Gly Pro Phe Cys Gly Glu Lys Ala Pro Glu Pro Ile Ser Thr Gln Ser
            260                 265                 270
His Ser Val Leu Ile Leu Phe His Ser Asp Asn Ser Ala Glu Asn Arg
        275                 280                 285
Gly Trp Arg Leu Ser Tyr Arg Ala Ala Gly Asn Glu Cys Pro Glu Leu
    290                 295                 300
Gln Pro Pro Val His Gly Lys Ile Glu Pro Ser Gln Ala Lys Tyr Phe
305                 310                 315                 320
Phe Lys Asp Gln Val Leu Val Ser Cys Asp Thr Gly Tyr Lys Val Leu
                325                 330                 335
Lys Asp Asn Val Glu Met Asp Thr Phe Gln Ile Glu Cys Leu Lys Asp
            340                 345                 350
Gly Thr Trp Ser Asn Lys Ile Pro Thr Cys Lys Ile Val Asp Cys Arg
        355                 360                 365
Ala Pro Gly Glu Leu Glu His Gly Leu Ile Thr Phe Ser Thr Arg Asn
    370                 375                 380
Asn Leu Thr Thr Tyr Lys Ser Glu Ile Lys Tyr Ser Cys Gln Glu Pro
385                 390                 395                 400
Tyr Tyr Lys Met Leu Asn Asn Asn Thr Gly Ile Tyr Thr Cys Ser Ala
                405                 410                 415
Gln Gly Val Trp Met Asn Lys Val Leu Gly Arg Ser Leu Pro Thr Cys
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```
            420                 425                 430
Leu Pro Val Cys Gly Leu Pro Lys Phe Ser Arg Lys Leu Met Ala Arg
        435                 440                 445
Ile Phe Asn Gly Arg Pro Ala Gln Lys Gly Thr Thr Pro Trp Ile Ala
    450                 455                 460
Met Leu Ser His Leu Asn Gly Gln Pro Phe Cys Gly Gly Ser Leu Leu
465                 470                 475                 480
Gly Ser Ser Trp Ile Val Thr Ala Ala His Cys Leu His Gln Ser Leu
                485                 490                 495
Asp Pro Lys Asp Pro Thr Leu Arg Asp Ser Asp Leu Leu Ser Pro Ser
            500                 505                 510
Asp Phe Lys Ile Ile Leu Gly Lys His Trp Arg Leu Arg Ser Asp Glu
        515                 520                 525
Asn Glu Gln His Leu Gly Val Lys His Thr Thr Leu His Pro Gln Tyr
    530                 535                 540
Asp Pro Asn Thr Phe Glu Asn Asp Val Ala Leu Val Glu Leu Leu Glu
545                 550                 555                 560
Ser Pro Val Leu Asn Ala Phe Val Met Pro Ile Cys Leu Pro Glu Gly
                565                 570                 575
Pro Gln Gln Glu Gly Ala Met Val Ile Val Ser Gly Trp Gly Lys Gln
            580                 585                 590
Phe Leu Gln Arg Phe Pro Glu Thr Leu Met Glu Ile Glu Ile Pro Ile
        595                 600                 605
Val Asp His Ser Thr Cys Gln Lys Ala Tyr Ala Pro Leu Lys Lys Lys
    610                 615                 620
Val Thr Arg Asp Met Ile Cys Ala Gly Glu Lys Glu Gly Gly Lys Asp
625                 630                 635                 640
Ala Cys Ala Gly Asp Ser Gly Gly Pro Met Val Thr Leu Asn Arg Glu
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Arg Gly Gln Trp Tyr Leu Val Gly Thr Val Ser Trp Gly Asp Asp Cys
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<210> 327
<211> 4137
<212> DNA
<213> Homo sapiens

<400> 327

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<210> 328
<211> 728
<212> PRT

<213> Homo sapiens

<400> 328

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            20                  25                  30
Ser Pro Gly Tyr Pro Asp Ser Tyr Pro Ser Asp Ser Glu Val Thr Trp
        35                  40                  45
Asn Ile Thr Val Pro Asp Gly Phe Arg Ile Lys Leu Tyr Phe Met His
    50                  55                  60
Phe Asn Leu Glu Ser Ser Tyr Leu Cys Glu Tyr Asp Tyr Val Lys Val
65                  70                  75                  80
Glu Thr Glu Asp Gln Val Leu Ala Thr Phe Cys Gly Arg Glu Thr Thr
                85                  90                  95
Asp Thr Glu Gln Thr Pro Gly Gln Glu Val Val Leu Ser Pro Gly Ser
            100                 105                 110
Phe Met Ser Ile Thr Phe Arg Ser Asp Phe Ser Asn Glu Glu Arg Phe
        115                 120                 125
Thr Gly Phe Asp Ala His Tyr Met Ala Val Asp Val Asp Glu Cys Lys
    130                 135                 140
Glu Arg Glu Asp Glu Glu Leu Ser Cys Asp His Tyr Cys His Asn Tyr
145                 150                 155                 160
Ile Gly Gly Tyr Tyr Cys Ser Cys Arg Phe Gly Tyr Ile Leu His Thr
                165                 170                 175
Asp Asn Arg Thr Cys Arg Val Glu Cys Ser Asp Asn Leu Phe Thr Gln
            180                 185                 190
Arg Thr Gly Val Ile Thr Ser Pro Asp Phe Pro Asn Pro Tyr Pro Lys
        195                 200                 205
Ser Ser Glu Cys Leu Tyr Thr Ile Glu Leu Glu Glu Gly Phe Met Val
    210                 215                 220
Asn Leu Gln Phe Glu Asp Ile Phe Asp Ile Glu Asp His Pro Glu Val
225                 230                 235                 240
Pro Cys Pro Tyr Asp Tyr Ile Lys Ile Lys Val Gly Pro Lys Val Leu
                245                 250                 255
Gly Pro Phe Cys Gly Glu Lys Ala Pro Glu Pro Ile Ser Thr Gln Ser
            260                 265                 270
His Ser Val Leu Ile Leu Phe His Ser Asp Asn Ser Gly Glu Asn Arg
        275                 280                 285
Gly Trp Arg Leu Ser Tyr Arg Ala Ala Gly Asn Glu Cys Pro Glu Leu
    290                 295                 300
Gln Pro Pro Val His Gly Lys Ile Glu Pro Ser Gln Ala Lys Tyr Phe
305                 310                 315                 320
Phe Lys Asp Gln Val Leu Val Ser Cys Asp Thr Gly Tyr Lys Val Leu
                325                 330                 335
Lys Asp Asn Val Glu Met Asp Thr Phe Gln Ile Glu Cys Leu Lys Asp
            340                 345                 350
Gly Thr Trp Ser Asn Lys Ile Pro Thr Cys Lys Ile Val Asp Cys Arg
        355                 360                 365
Ala Pro Gly Glu Leu Glu His Gly Leu Ile Thr Phe Ser Thr Arg Asn
    370                 375                 380
Asn Leu Thr Thr Tyr Lys Ser Glu Ile Lys Tyr Ser Cys Gln Glu Pro
385                 390                 395                 400
Tyr Tyr Lys Met Leu Asn Asn Asn Thr Gly Ile Tyr Thr Cys Ser Ala
                405                 410                 415
Gln Gly Val Trp Met Asn Lys Val Leu Gly Arg Ser Leu Pro Thr Cys
            420                 425                 430
Leu Pro Glu Cys Gly Gln Pro Ser Arg Ser Leu Pro Ser Leu Val Lys
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        435                 440                 445
Arg Ile Ile Gly Gly Arg Asn Ala Glu Pro Gly Leu Phe Pro Trp Gln
    450                 455                 460
Ala Leu Ile Val Val Glu Asp Thr Ser Arg Val Pro Asn Asp Lys Trp
465                 470                 475                 480
Phe Gly Ser Gly Ala Leu Leu Ser Ala Ser Trp Ile Leu Thr Ala Ala
                485                 490                 495
His Val Leu Arg Ser Gln Arg Arg Asp Thr Thr Val Ile Pro Val Ser
            500                 505                 510
Lys Glu His Val Thr Val Tyr Leu Gly Leu His Asp Val Arg Asp Lys
        515                 520                 525
Ser Gly Ala Val Asn Ser Ser Ala Ala Arg Val Val Leu His Pro Asp
    530                 535                 540
Phe Asn Ile Gln Asn Tyr Asn His Asp Ile Ala Leu Val Gln Leu Gln
545                 550                 555                 560
Glu Pro Val Pro Leu Gly Pro His Val Met Pro Val Cys Leu Pro Arg
                565                 570                 575
Leu Glu Pro Glu Gly Pro Ala Pro His Met Leu Gly Leu Val Ala Gly
            580                 585                 590
Trp Gly Ile Ser Asn Pro Asn Val Thr Val Asp Glu Ile Ile Ser Ser
        595                 600                 605
Gly Thr Arg Thr Leu Ser Asp Val Leu Gln Tyr Val Lys Leu Pro Val
    610                 615                 620
Val Pro His Ala Glu Cys Lys Thr Ser Tyr Glu Ser Arg Ser Gly Asn
625                 630                 635                 640
Tyr Ser Val Thr Glu Asn Met Phe Cys Ala Gly Tyr Tyr Glu Gly Gly
                645                 650                 655
Lys Asp Thr Cys Leu Gly Asp Ser Gly Gly Ala Phe Val Ile Phe Asp
            660                 665                 670
Asp Leu Ser Gln Arg Trp Val Val Gln Gly Leu Val Ser Trp Gly Gly
        675                 680                 685
Pro Glu Glu Cys Gly Ser Lys Gln Val Tyr Gly Val Tyr Thr Lys Val
    690                 695                 700
Ser Asn Tyr Val Asp Trp Val Trp Glu Gln Met Gly Leu Pro Gln Ser
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Val Val Glu Pro Gln Val Glu Arg
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<210> 329
<211> 2072
<212> DNA
<213> Homo sapiens

<400> 329

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<210> 330
<211> 380
<212> PRT
<213> Homo sapiens

<400> 330

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Ser Pro Gly Tyr Pro Asp Ser Tyr Pro Ser Asp Ser Glu Val Thr Trp
        35                  40                  45
Asn Ile Thr Val Pro Asp Gly Phe Arg Ile Lys Leu Tyr Phe Met His
    50                  55                  60
Phe Asn Leu Glu Ser Ser Tyr Leu Cys Glu Tyr Asp Tyr Val Lys Val
65                  70                  75                  80
Glu Thr Glu Asp Gln Val Leu Ala Thr Phe Cys Gly Arg Glu Thr Thr
                85                  90                  95
Asp Thr Glu Gln Thr Pro Gly Gln Glu Val Val Leu Ser Pro Gly Ser
            100                 105                 110
Phe Met Ser Ile Thr Phe Arg Ser Asp Phe Ser Asn Glu Glu Arg Phe
        115                 120                 125
Thr Gly Phe Asp Ala His Tyr Met Ala Val Asp Val Asp Glu Cys Lys
    130                 135                 140
Glu Arg Glu Asp Glu Glu Leu Ser Cys Asp His Tyr Cys His Asn Tyr
145                 150                 155                 160
Ile Gly Gly Tyr Tyr Cys Ser Cys Arg Phe Gly Tyr Ile Leu His Thr
                165                 170                 175
Asp Asn Arg Thr Cys Arg Val Glu Cys Ser Asp Asn Leu Phe Thr Gln
            180                 185                 190
Arg Thr Gly Val Ile Thr Ser Pro Asp Phe Pro Asn Pro Tyr Pro Lys
        195                 200                 205
Ser Ser Glu Cys Leu Tyr Thr Ile Glu Leu Glu Glu Gly Phe Met Val
    210                 215                 220
Asn Leu Gln Phe Glu Asp Ile Phe Asp Ile Glu Asp His Pro Glu Val
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225                 230                 235                 240
Pro Cys Pro Tyr Asp Tyr Ile Lys Ile Lys Val Gly Pro Lys Val Leu
                245                 250                 255
Gly Pro Phe Cys Gly Glu Lys Ala Pro Glu Pro Ile Ser Thr Gln Ser
            260                 265                 270
His Ser Val Leu Ile Leu Phe His Ser Asp Asn Ser Gly Glu Asn Arg
        275                 280                 285
Gly Trp Arg Leu Ser Tyr Arg Ala Ala Gly Asn Glu Cys Pro Glu Leu
    290                 295                 300
Gln Pro Pro Val His Gly Lys Ile Glu Pro Ser Gln Ala Lys Tyr Phe
305                 310                 315                 320
Phe Lys Asp Gln Val Leu Val Ser Cys Asp Thr Gly Tyr Lys Val Leu
                325                 330                 335
Lys Asp Asn Val Glu Met Asp Thr Phe Gln Ile Glu Cys Leu Lys Asp
            340                 345                 350
Gly Thr Trp Ser Asn Lys Ile Pro Thr Cys Lys Lys Asn Glu Ile Asp
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<210> 331
<211> 2460
<212> DNA
<213> Homo sapiens

<400> 331

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<210> 332
<211> 686
<212> PRT
<213> Homo sapiens

<400> 332

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

```
Lys Asp Ser Phe Ser Ile Phe Cys Glu Thr Gly Tyr Glu Leu Leu Gln
                325                 330                 335
Gly His Leu Pro Leu Lys Ser Phe Thr Ala Val Cys Gln Lys Asp Gly
            340                 345                 350
Ser Trp Asp Arg Pro Met Pro Ala Cys Ser Ile Val Asp Cys Gly Pro
        355                 360                 365
Pro Asp Asp Leu Pro Ser Gly Arg Val Glu Tyr Ile Thr Gly Pro Gly
    370                 375                 380
Val Thr Thr Tyr Lys Ala Val Ile Gln Tyr Ser Cys Glu Glu Thr Phe
385                 390                 395                 400
Tyr Thr Met Lys Val Asn Asp Gly Lys Tyr Val Cys Glu Ala Asp Gly
                405                 410                 415
Phe Trp Thr Ser Ser Lys Gly Glu Lys Ser Leu Pro Val Cys Glu Pro
            420                 425                 430
Val Cys Gly Leu Ser Ala Arg Thr Thr Gly Gly Arg Ile Tyr Gly Gly
        435                 440                 445
Gln Lys Ala Lys Pro Gly Asp Phe Pro Trp Gln Val Leu Ile Leu Gly
    450                 455                 460
Gly Thr Thr Ala Ala Gly Ala Leu Leu Tyr Asp Asn Trp Val Leu Thr
465                 470                 475                 480
Ala Ala His Ala Val Tyr Glu Gln Lys His Asp Ala Ser Ala Leu Asp
                485                 490                 495
Ile Arg Met Gly Thr Leu Lys Arg Leu Ser Pro His Tyr Thr Gln Ala
            500                 505                 510
Trp Ser Glu Ala Val Phe Ile His Glu Gly Tyr Thr His Asp Ala Gly
        515                 520                 525
Phe Asp Asn Asp Ile Ala Leu Ile Lys Leu Asn Asn Lys Val Val Ile
    530                 535                 540
Asn Ser Asn Ile Thr Pro Ile Cys Leu Pro Arg Lys Glu Ala Glu Ser
545                 550                 555                 560
Phe Met Arg Thr Asp Asp Ile Gly Thr Ala Ser Gly Trp Gly Leu Thr
                565                 570                 575
Gln Arg Gly Phe Leu Ala Arg Asn Leu Met Tyr Val Asp Ile Pro Ile
            580                 585                 590
Val Asp His Gln Lys Cys Thr Ala Ala Tyr Glu Lys Pro Pro Tyr Pro
        595                 600                 605
Arg Gly Ser Val Thr Ala Asn Met Leu Cys Ala Gly Leu Glu Ser Gly
    610                 615                 620
Gly Lys Asp Ser Cys Arg Gly Asp Ser Gly Gly Ala Leu Val Phe Leu
625                 630                 635                 640
Asp Ser Glu Thr Glu Arg Trp Phe Val Gly Gly Ile Val Ser Trp Gly
                645                 650                 655
Ser Met Asn Cys Gly Glu Ala Gly Gln Tyr Gly Val Tyr Thr Lys Val
            660                 665                 670
Ile Asn Tyr Ile Pro Trp Ile Glu Asn Ile Ile Ser Asp Phe
        675                 680                 685
```

<210> 333
<211> 738
<212> DNA
<213> Homo sapiens

<400> 333
ggccagctgg acgggcacac catgaggctg ctgaccctcc tgggccttct gtgtggctcg 60
gtggccaccc ccttgggccc gaagtggcct gaacctgtgt tcgggcgcct ggcatccccc 120
ggctttccag gggagtatgc caatgaccag gagcgggcgc tggaccctgac tgcacccccc 180
ggctaccgcc tgcgcctcta cttcacccac ttcgacctgg agctctccca cctctgcgag 240

```
tacgacttcg tcaagctgag ctcgggggcc aaggtgctgg ccacgctgtg cgggcaggag 300
agcacagaca cggagcgggc ccctggcaag gacactttct actcgctggg ctccagcctg 360
gacattacct tccgctccga ctactccaac gagaagccgt tcacggggtt cgaggccttc 420
tatgcagccg aggacattga cgagtgccag gtggccccgg gagaggcgcc cacctgcgac 480
caccactgcc acaaccacct gggcggtttc tactgctcct gccgcgcagg ctacgtcctg 540
cacgtaaca agcgcacctg ctcagagcag agcctctagc ctccccctgga gctccggcct 600
gcccagcagg tcagaagcca gagccagcct gctggcctca gctccgggtt gggctgagat 660
ggctgtgccc caactcccat tcacccacca tggacccaat aataaacctg gccccacccc 720
aaaaaaaaaa aaaaaaaa                                              738

<210> 334
<211> 185
<212> PRT
<213> Homo sapiens

<400> 334
Met Arg Leu Leu Thr Leu Leu Gly Leu Leu Cys Gly Ser Val Ala Thr
 1               5                  10                  15
Pro Leu Gly Pro Lys Trp Pro Glu Pro Val Phe Gly Arg Leu Ala Ser
            20                  25                  30
Pro Gly Phe Pro Gly Glu Tyr Ala Asn Asp Gln Glu Arg Arg Trp Thr
        35                  40                  45
Leu Thr Ala Pro Pro Gly Tyr Arg Leu Arg Leu Tyr Phe Thr His Phe
    50                  55                  60
Asp Leu Glu Leu Ser His Leu Cys Glu Tyr Asp Phe Val Lys Leu Ser
65                  70                  75                  80
Ser Gly Ala Lys Val Leu Ala Thr Leu Cys Gly Gln Glu Ser Thr Asp
                85                  90                  95
Thr Glu Arg Ala Pro Gly Lys Asp Thr Phe Tyr Ser Leu Gly Ser Ser
            100                 105                 110
Leu Asp Ile Thr Phe Arg Ser Asp Tyr Ser Asn Glu Lys Pro Phe Thr
        115                 120                 125
Gly Phe Glu Ala Phe Tyr Ala Ala Glu Asp Ile Asp Glu Cys Gln Val
    130                 135                 140
Ala Pro Gly Glu Ala Pro Thr Cys Asp His His Cys His Asn His Leu
145                 150                 155                 160
Gly Gly Phe Tyr Cys Ser Cys Arg Ala Gly Tyr Val Leu His Arg Asn
                165                 170                 175
Lys Arg Thr Cys Ser Glu Gln Ser Leu
            180                 185


<210> 335
<211> 248
<212> PRT
<213> Homo sapiens

<400> 335
Met Ser Leu Phe Pro Ser Leu Pro Leu Leu Leu Leu Ser Met Val Ala
 1               5                  10                  15
Ala Ser Tyr Ser Glu Thr Val Thr Cys Glu Asp Ala Gln Lys Thr Cys
            20                  25                  30
Pro Ala Val Ile Ala Cys Ser Ser Pro Gly Ile Asn Gly Phe Pro Gly
        35                  40                  45
Lys Asp Gly Arg Asp Gly Thr Lys Gly Glu Lys Gly Glu Pro Gly Gln
    50                  55                  60
Gly Leu Arg Gly Leu Gln Gly Pro Pro Gly Lys Leu Gly Pro Pro Gly
65                  70                  75                  80
```

```
Asn Pro Gly Pro Ser Gly Ser Pro Gly Pro Lys Gly Gln Lys Gly Asp
                85                  90                  95
Pro Gly Lys Ser Pro Asp Gly Asp Ser Ser Leu Ala Ala Ser Glu Arg
            100                 105                 110
Lys Ala Leu Gln Thr Glu Met Ala Arg Ile Lys Lys Trp Leu Thr Phe
        115                 120                 125
Ser Leu Gly Lys Gln Val Gly Asn Lys Phe Phe Leu Thr Asn Gly Glu
    130                 135                 140
Ile Met Thr Phe Glu Lys Val Lys Ala Leu Cys Val Lys Phe Gln Ala
145                 150                 155                 160
Ser Val Ala Thr Pro Arg Asn Ala Ala Glu Asn Gly Ala Ile Gln Asn
                165                 170                 175
Leu Ile Lys Glu Glu Ala Phe Leu Gly Ile Thr Asp Glu Lys Thr Glu
            180                 185                 190
Gly Gln Phe Val Asp Leu Thr Gly Asn Arg Leu Thr Tyr Thr Asn Trp
        195                 200                 205
Asn Glu Gly Glu Pro Asn Asn Ala Gly Ser Asp Glu Asp Cys Val Leu
    210                 215                 220
Leu Leu Lys Asn Gly Gln Trp Asn Asp Val Pro Cys Ser Thr Ser His
225                 230                 235                 240
Leu Ala Val Cys Glu Phe Pro Ile
                245
```

<210> 336
<211> 392
<212> PRT
<213> Homo sapiens

<400> 336

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

```
Val Val Lys Cys Arg Phe Pro Val Val Glu Asn Gly Lys Gln Ile Ser
225                 230                 235                 240
Gly Phe Gly Lys Lys Phe Tyr Tyr Lys Ala Thr Val Met Phe Glu Cys
                245                 250                 255
Asp Lys Gly Phe Tyr Leu Asp Gly Ser Asp Thr Ile Val Cys Asp Ser
            260                 265                 270
Asn Ser Thr Trp Asp Pro Pro Val Pro Lys Cys Leu Lys Val Leu Pro
        275                 280                 285
Pro Ser Ser Thr Lys Pro Pro Ala Leu Ser His Ser Val Ser Thr Ser
    290                 295                 300
Ser Thr Thr Lys Ser Pro Ala Ser Ser Ala Ser Gly Pro Arg Pro Thr
305                 310                 315                 320
Tyr Lys Pro Pro Val Ser Asn Tyr Pro Gly Tyr Pro Lys Pro Glu Glu
                325                 330                 335
Gly Ile Leu Asp Ser Leu Asp Val Trp Val Ile Ala Val Ile Val Ile
            340                 345                 350
Ala Ile Val Val Gly Val Ala Val Ile Cys Val Val Pro Tyr Arg Tyr
        355                 360                 365
Leu Gln Arg Arg Lys Lys Lys Gly Thr Tyr Leu Thr Asp Glu Thr His
    370                 375                 380
Arg Glu Val Lys Phe Thr Ser Leu
385                 390
```

<210> 337
<211> 2574
<212> DNA
<213> Homo sapiens

<400> 337

```
ttggatgttc cgggaaagtg atgtgggtag gacaggcggg gcgagccgca ggtgccagaa 60
cacagattgt ataaaaggct gggggctggt ggggagcagg ggaagggaat gtgaccaggt 120
ctaggtctgg agtttcagct tggacactga gccaagcaga caagcaaagc aagccaggac 180
acaccatcct gccccaggcc cagcttctct cctgccttcc aacgccatgg ggagcaatct 240
cagcccccaa ctctgcctga tgccctttat cttgggcctc ttgtctggag gtgtgaccac 300
cactccatgg tctttggccc ggccccaggg atcctgctct ctggaggggg tagagatcaa 360
aggcggctcc ttccgacttc tccaagaggg ccaggcactg gagtacgtgt gtccttctgg 420
cttctacccg taccctgtgc agacacgtac ctgcagatct acggggtcct ggagcaccct 480
gaagactcaa gaccaaaaga ctgtcaggaa ggcagagtgc agagcaatcc actgtccaag 540
accacacgac ttcgagaacg gggaatactg gccccggtct ccctactaca atgtgagtga 600
tgagatctct ttccactgct atgacggtta cactctccgg ggctctgcca atcgcacctg 660
ccaagtgaat ggccgatgga gtgggcagac agcgatctgt gacaacggag cggggtactg 720
ctccaacccg ggcatcccca ttggcacaag gaaggtgggc agccagtacc gccttgaaga 780
cagcgtcacc taccactgca gccgggggct taccctgcgt ggctcccagc ggcgaacgtg 840
tcaggaaggt ggctcttgga gcgggacgga gccttcctgc caagactcct tcatgtacga 900
cacccctcaa gaggtggccg aagctttcct gtcttccctg acagagacca tagaaggagt 960
cgatgctgag gatgggcacg gcccagggga acaacagaag cggaagatcg tcctggaccc 1020
ttcaggctcc atgaacatct acctggtgct agatggatca gacagcattg gggccagcaa 1080
cttcacagga gccaaaaagt gtctagtcaa cttaattgag aaggtggcaa gttatggtgt 1140
gaagccaaga tatggtctag tgacatatgc cacatacccc aaaatttggg tcaaagtgtc 1200
tgaagcagac agcagtaatg cagactgggt cacgaagcag ctcaatgaaa tcaattatga 1260
agaccacaag ttgaagtcag ggactaacac caagaaggcc ctccaggcag tgtacagcat 1320
gatgagctgg ccagatgacg tccctcctga aggctggaac cgcacccgcc atgtcatcat 1380
cctcatgact gatggattgc acaacatggg cggggaccca attactgtca ttgatgagat 1440
ccgggacttg ctatacattg gcaaggatcg caaaaaccca agggaggatt atctggatgt 1500
ctatgtgttt ggggtcgggc ctttggtgaa ccaagtgaac atcaatgctt tggctccaa 1560
gaaagacaat gagcaacatg tgttcaaagt caaggatatg gaaaacctgg aagatgtttt 1620
ctaccaaatg atcgatgaaa gccagtctct gagtctctgt ggcatggttt gggaacacag 1680
```

```
gaagggtacc gattaccaca agcaaccatg gcaggccaag atctcagtca ttcgcccttc 1740
aaagggacac gagagctgta tgggggctgt ggtgtctgag tactttgtgc tgacagcagc 1800
acattgtttc actgtggatg acaaggaaca ctcaatcaag gtcagcgtag gaggggagaa 1860
gcgggacctg gagatagaag tagtcctatt tcaccccaac tacaacatta atgggaaaaa 1920
agaagcagga attcctgaat tttatgacta tgacgttgcc ctgatcaagc tcaagaataa 1980
gctgaaatat ggccagacta tcaggcccat ttgtctcccc tgcaccgagg gaacaactcg 2040
agctttgagg cttcctccaa ctaccacttg ccagcaacaa aaggaagagc tgctccctgc 2100
acaggatatc aaagctctgt ttgtgtctga ggaggagaaa aagctgactc ggaaggaggt 2160
ctacatcaag aatggggata agaaaggcag ctgtgagaga gatgctcaat atgccccagg 2220
ctatgacaaa gtcaaggaca tctcagaggt ggtcaccccc cggttccttt gtactggagg 2280
agtgagtccc tatgctgacc ccaatacttg cagaggtgat tctggcggcc ccttgatagt 2340
tcacaagaga agtcgtttca ttcaagttgg tgtaatcagc tggggagtag tggatgtctg 2400
caaaaaccag aagcggcaaa agcaggtacc tgctcacgcc cgagactttc acatcaacct 2460
ctttcaagtg ctgccctggc tgaaggagaa actccaagat gaggatttgg gttttctata 2520
aggggtttcc tgctggacag gggcgtggga ttgaattaaa acagctgcga caac       2574
```

<210> 338
<211> 764
<212> PRT
<213> Homo sapiens

<400> 338

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

```
Ala Lys Lys Cys Leu Val Asn Leu Ile Glu Lys Val Ala Ser Tyr Gly
    290                 295                 300
Val Lys Pro Arg Tyr Gly Leu Val Thr Tyr Ala Thr Tyr Pro Lys Ile
305                 310                 315                 320
Trp Val Lys Val Ser Glu Ala Asp Ser Ser Asn Ala Asp Trp Val Thr
                325                 330                 335
Lys Gln Leu Asn Glu Ile Asn Tyr Glu Asp His Lys Leu Lys Ser Gly
            340                 345                 350
Thr Asn Thr Lys Lys Ala Leu Gln Ala Val Tyr Ser Met Met Ser Trp
        355                 360                 365
Pro Asp Asp Val Pro Pro Glu Gly Trp Asn Arg Thr Arg His Val Ile
    370                 375                 380
Ile Leu Met Thr Asp Gly Leu His Asn Met Gly Gly Asp Pro Ile Thr
385                 390                 395                 400
Val Ile Asp Glu Ile Arg Asp Leu Leu Tyr Ile Gly Lys Asp Arg Lys
                405                 410                 415
Asn Pro Arg Glu Asp Tyr Leu Asp Val Tyr Val Phe Gly Val Gly Pro
            420                 425                 430
Leu Val Asn Gln Val Asn Ile Asn Ala Leu Ala Ser Lys Lys Asp Asn
        435                 440                 445
Glu Gln His Val Phe Lys Val Lys Asp Met Glu Asn Leu Glu Asp Val
    450                 455                 460
Phe Tyr Gln Met Ile Asp Glu Ser Gln Ser Leu Ser Leu Cys Gly Met
465                 470                 475                 480
Val Trp Glu His Arg Lys Gly Thr Asp Tyr His Lys Gln Pro Trp Gln
                485                 490                 495
Ala Lys Ile Ser Val Ile Arg Pro Ser Lys Gly His Glu Ser Cys Met
            500                 505                 510
Gly Ala Val Val Ser Glu Tyr Phe Val Leu Thr Ala Ala His Cys Phe
        515                 520                 525
Thr Val Asp Asp Lys Glu His Ser Ile Lys Val Ser Val Gly Gly Glu
    530                 535                 540
Lys Arg Asp Leu Glu Ile Glu Val Val Leu Phe His Pro Asn Tyr Asn
545                 550                 555                 560
Ile Asn Gly Lys Lys Glu Ala Gly Ile Pro Glu Phe Tyr Asp Tyr Asp
                565                 570                 575
Val Ala Leu Ile Lys Leu Lys Asn Lys Leu Lys Tyr Gly Gln Thr Ile
            580                 585                 590
Arg Pro Ile Cys Leu Pro Cys Thr Glu Gly Thr Thr Arg Ala Leu Arg
        595                 600                 605
Leu Pro Pro Thr Thr Thr Cys Gln Gln Gln Lys Glu Glu Leu Leu Pro
    610                 615                 620
Ala Gln Asp Ile Lys Ala Leu Phe Val Ser Glu Glu Glu Lys Lys Leu
625                 630                 635                 640
Thr Arg Lys Glu Val Tyr Ile Lys Asn Gly Asp Lys Lys Gly Ser Cys
                645                 650                 655
Glu Arg Asp Ala Gln Tyr Ala Pro Gly Tyr Asp Lys Val Lys Asp Ile
            660                 665                 670
Ser Glu Val Val Thr Pro Arg Phe Leu Cys Thr Gly Gly Val Ser Pro
        675                 680                 685
Tyr Ala Asp Pro Asn Thr Cys Arg Gly Asp Ser Gly Gly Pro Leu Ile
    690                 695                 700
Val His Lys Arg Ser Arg Phe Ile Gln Val Gly Val Ile Ser Trp Gly
705                 710                 715                 720
Val Val Asp Val Cys Lys Asn Gln Lys Arg Gln Lys Gln Val Pro Ala
                725                 730                 735
His Ala Arg Asp Phe His Ile Asn Leu Phe Gln Val Leu Pro Trp Leu
            740                 745                 750
```

```
Lys Glu Lys Leu Gln Asp Glu Asp Leu Gly Phe Leu
        755                 760
```

<210> 339
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 339
gtgtctcagc cacagcggct tcaccatgca cagctgggag cgcctggcag ttctggtcct 60
cctaggagcg gccgcctgcg cggcgccgcc ccgtggtcgg atcctgggcg gcagagaggc 120
cgaggcgcac gcgcggcccc acatggcgtc ggtgcagctg aacggcgcgc acctgtgcgg 180
cggcgtcctg gtggcggagc agtgggtgct gagcgcggcg cactgcctgg aggacgcggc 240
cgacgggaag gtgcaggttc tcctgggcgc gcactccctg tcgcagccgg agccctccaa 300
gcgcctgtac gacgtgctcc gcgcagtgcc ccaccccgac agccagcccg acaccatcga 360
ccacgacctc ctgctgctac agctgtcgga gaaggccaca ctgggccctg ctgtgcgccc 420
cctgccctgg cagcgcgtgg accgcgacgt ggcaccggga actctctgcg acgtggccgg 480
ctggggcata gtcaaccacg cgggccgccg cccggacagc ctgcagcacg tgctcttgcc 540
agtgctggac cgcgccacct gcaaccggcg cacgcaccac gacggcgcca tcaccgagcg 600
cttgatgtgc gcggagagca atcgccggga cagctgcaag ggtgactccg ggggcccgct 660
ggtgtgcggg ggcgtgctcg agggcgtggt cacctcgggc tcgcgcgttt gcggcaaccg 720
caagaagccc gggatctaca cccgcgtggc gagctatgcg gcctggatcg acagcgtcct 780
ggcctagggt gccggggcct gaaggtcagg gtcacccaag caacaaagtc ccgagcaatg 840
aagtcatcca ctcctgcatc tggttggtct ttattgagca cctactatat gcagaagggg 900
aggccgaggt gggaggatca ttggatctca ggagttcgag atcagcatgg gccacgtagc 960
gcgactccat ctctacaaat aaataaaaaa ttagctgggc aattggcggg catggaggtg 1020
ggtgcttgta gttccagcta ctcaggaggc tgaggtggga ggatgacttg aacgcaggag 1080
gctgaggctg cagtgagttg tgattgcacc actgccctcc agcctgggca acagagtgaa 1140
accttgtctc tctctacaaa aaaaaaaaaa aaa 1173

<210> 340
<211> 253
<212> PRT
<213> Homo sapiens

<400> 340

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

```
                165                 170                 175
Ala Thr Cys Asn Arg Arg Thr His His Asp Gly Ala Ile Thr Glu Arg
            180                 185                 190
Leu Met Cys Ala Glu Ser Asn Arg Arg Asp Ser Cys Lys Gly Asp Ser
        195                 200                 205
Gly Gly Pro Leu Val Cys Gly Gly Val Leu Glu Gly Val Val Thr Ser
    210                 215                 220
Gly Ser Arg Val Cys Gly Asn Arg Lys Lys Pro Gly Ile Tyr Thr Arg
225                 230                 235                 240
Val Ala Ser Tyr Ala Ala Trp Ile Asp Ser Val Leu Ala
                245                 250
```

<210> 341
<211> 4004
<212> DNA
<213> Homo sapiens

<400> 341

```
cottttgcag caagttcttt cctgcactaa tcacaattct tggaagagga gaactggacg 60
ttgtgaacag agttagctgg taaatgtcct cttaaaagat ccaaaaaatg agacttctag 120
caaagattat ttgccttatg ttatgggcta tttgtgtagc agaagattgc aatgaacttc 180
ctccaagaag aaatacagaa attctgacag gttcctggtc tgaccaaaca tatccagaag 240
gcacccaggc tatctataaa tgccgccctg gatatagatc tcttggaaat gtaataatgg 300
tatgcaggaa gggagaatgg gttgctctta atccattaag gaaaatgtcag aaaaggccct 360
gtggacatcc tggagatact ccttttggta cttttaccct tacaggagga aatgtgtttg 420
aatatggtgt aaaagctgtg tatacatgta atgaggggta tcaattgcta ggtgagatta 480
attaccgtga atgtgacaca gatggatgga ccaatgatat tcctatatgt gaagttgtga 540
agtgtttacc agtgacagca ccagagaatg gaaaaattgt cagtagtgca atggaaccag 600
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<210> 342
<211> 1231
<212> PRT
<213> Homo sapiens

<400> 342

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Leu Thr Gly Ser Trp Ser Asp Gln Thr Tyr Pro Glu Gly Thr Gln Ala
        35                  40                  45
Ile Tyr Lys Cys Arg Pro Gly Tyr Arg Ser Leu Gly Asn Val Ile Met
    50                  55                  60
Val Cys Arg Lys Gly Glu Trp Val Ala Leu Asn Pro Leu Arg Lys Cys
65                  70                  75                  80
Gln Lys Arg Pro Cys Gly His Pro Gly Asp Thr Pro Phe Gly Thr Phe
                85                  90                  95
Thr Leu Thr Gly Gly Asn Val Phe Glu Tyr Gly Val Lys Ala Val Tyr
            100                 105                 110
Thr Cys Asn Glu Gly Tyr Gln Leu Leu Gly Glu Ile Asn Tyr Arg Glu
        115                 120                 125
Cys Asp Thr Asp Gly Trp Thr Asn Asp Ile Pro Ile Cys Glu Val Val
    130                 135                 140
Lys Cys Leu Pro Val Thr Ala Pro Glu Asn Gly Lys Ile Val Ser Ser
145                 150                 155                 160
Ala Met Glu Pro Asp Arg Glu Tyr His Phe Gly Gln Ala Val Arg Phe
                165                 170                 175
Val Cys Asn Ser Gly Tyr Lys Ile Glu Gly Asp Glu Glu Met His Cys
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            180                 185                 190
Ser Asp Asp Gly Phe Trp Ser Lys Glu Lys Pro Lys Cys Val Glu Ile
        195                 200                 205
Ser Cys Lys Ser Pro Asp Val Ile Asn Gly Ser Pro Ile Ser Gln Lys
    210                 215                 220
Ile Ile Tyr Lys Glu Asn Glu Arg Phe Gln Tyr Lys Cys Asn Met Gly
225                 230                 235                 240
Tyr Glu Tyr Ser Glu Arg Gly Asp Ala Val Cys Thr Glu Ser Gly Trp
                245                 250                 255
Arg Pro Leu Pro Ser Cys Glu Glu Lys Ser Cys Asp Asn Pro Tyr Ile
            260                 265                 270
Pro Asn Gly Asp Tyr Ser Pro Leu Arg Ile Lys His Arg Thr Gly Asp
        275                 280                 285
Glu Ile Thr Tyr Gln Cys Arg Asn Gly Phe Tyr Pro Ala Thr Arg Gly
    290                 295                 300
Asn Thr Ala Lys Cys Thr Ser Thr Gly Trp Ile Pro Ala Pro Arg Cys
305                 310                 315                 320
Thr Leu Lys Pro Cys Asp Tyr Pro Asp Ile Lys His Gly Gly Leu Tyr
                325                 330                 335
His Glu Asn Met Arg Arg Pro Tyr Phe Pro Val Ala Val Gly Lys Tyr
            340                 345                 350
Tyr Ser Tyr Tyr Cys Asp Glu His Phe Glu Thr Pro Ser Gly Ser Tyr
        355                 360                 365
Trp Asp His Ile His Cys Thr Gln Asp Gly Trp Ser Pro Ala Val Pro
    370                 375                 380
Cys Leu Arg Lys Cys Tyr Phe Pro Tyr Leu Glu Asn Gly Tyr Asn Gln
385                 390                 395                 400
Asn His Gly Arg Lys Phe Val Gln Gly Lys Ser Ile Asp Val Ala Cys
                405                 410                 415
His Pro Gly Tyr Ala Leu Pro Lys Ala Gln Thr Thr Val Thr Cys Met
            420                 425                 430
Glu Asn Gly Trp Ser Pro Thr Pro Arg Cys Ile Arg Val Lys Thr Cys
        435                 440                 445
Ser Lys Ser Ser Ile Asp Ile Glu Asn Gly Phe Ile Ser Glu Ser Gln
    450                 455                 460
Tyr Thr Tyr Ala Leu Lys Glu Lys Ala Lys Tyr Gln Cys Lys Leu Gly
465                 470                 475                 480
Tyr Val Thr Ala Asp Gly Glu Thr Ser Gly Ser Ile Arg Cys Gly Lys
                485                 490                 495
Asp Gly Trp Ser Ala Gln Pro Thr Cys Ile Lys Ser Cys Asp Ile Pro
            500                 505                 510
Val Phe Met Asn Ala Arg Thr Lys Asn Asp Phe Thr Trp Phe Lys Leu
        515                 520                 525
Asn Asp Thr Leu Asp Tyr Glu Cys His Asp Gly Tyr Glu Ser Asn Thr
    530                 535                 540
Gly Ser Thr Thr Gly Ser Ile Val Cys Gly Tyr Asn Gly Trp Ser Asp
545                 550                 555                 560
Leu Pro Ile Cys Tyr Glu Arg Glu Cys Glu Leu Pro Lys Ile Asp Val
                565                 570                 575
His Leu Val Pro Asp Arg Lys Lys Asp Gln Tyr Lys Val Gly Glu Val
            580                 585                 590
Leu Lys Phe Ser Cys Lys Pro Gly Phe Thr Ile Val Gly Pro Asn Ser
        595                 600                 605
Val Gln Cys Tyr His Phe Gly Leu Ser Pro Asp Leu Pro Ile Cys Lys
    610                 615                 620
Glu Gln Val Gln Ser Cys Gly Pro Pro Pro Glu Leu Leu Asn Gly Asn
625                 630                 635                 640
Val Lys Glu Lys Thr Lys Glu Glu Tyr Gly His Ser Glu Val Val Glu
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                    645                 650                 655
Tyr Tyr Cys Asn Pro Arg Phe Leu Met Lys Gly Pro Asn Lys Ile Gln
                660                 665                 670
Cys Val Asp Gly Glu Trp Thr Thr Leu Pro Val Cys Ile Val Glu Glu
            675                 680                 685
Ser Thr Cys Gly Asp Ile Pro Glu Leu Glu His Gly Trp Ala Gln Leu
        690                 695                 700
Ser Ser Pro Pro Tyr Tyr Tyr Gly Asp Ser Val Glu Phe Asn Cys Ser
705                 710                 715                 720
Glu Ser Phe Thr Met Ile Gly His Arg Ser Ile Thr Cys Ile His Gly
                725                 730                 735
Val Trp Thr Gln Leu Pro Gln Cys Val Ala Ile Asp Lys Leu Lys Lys
            740                 745                 750
Cys Lys Ser Ser Asn Leu Ile Ile Leu Glu Glu His Leu Lys Asn Lys
        755                 760                 765
Lys Glu Phe Asp His Asn Ser Asn Ile Arg Tyr Arg Cys Arg Gly Lys
    770                 775                 780
Glu Gly Trp Ile His Thr Val Cys Ile Asn Gly Arg Trp Asp Pro Glu
785                 790                 795                 800
Val Asn Cys Ser Met Ala Gln Ile Gln Leu Cys Pro Pro Pro Pro Gln
                805                 810                 815
Ile Pro Asn Ser His Asn Met Thr Thr Thr Leu Asn Tyr Arg Asp Gly
            820                 825                 830
Glu Lys Val Ser Val Leu Cys Gln Glu Asn Tyr Leu Ile Gln Glu Gly
        835                 840                 845
Glu Glu Ile Thr Cys Lys Asp Gly Arg Trp Gln Ser Ile Pro Leu Cys
    850                 855                 860
Val Glu Lys Ile Pro Cys Ser Gln Pro Pro Gln Ile Glu His Gly Thr
865                 870                 875                 880
Ile Asn Ser Ser Arg Ser Ser Gln Glu Ser Tyr Ala His Gly Thr Lys
                885                 890                 895
Leu Ser Tyr Thr Cys Glu Gly Gly Phe Arg Ile Ser Glu Glu Asn Glu
            900                 905                 910
Thr Thr Cys Tyr Met Gly Lys Trp Ser Ser Pro Pro Gln Cys Glu Gly
        915                 920                 925
Leu Pro Cys Lys Ser Pro Pro Glu Ile Ser His Gly Val Val Ala His
    930                 935                 940
Met Ser Asp Ser Tyr Gln Tyr Gly Glu Glu Val Thr Tyr Lys Cys Phe
945                 950                 955                 960
Glu Gly Phe Gly Ile Asp Gly Pro Ala Ile Ala Lys Cys Leu Gly Glu
                965                 970                 975
Lys Trp Ser His Pro Pro Ser Cys Ile Lys Thr Asp Cys Leu Ser Leu
            980                 985                 990
Pro Ser Phe Glu Asn Ala Ile Pro Met Gly Glu Lys Lys Asp Val Tyr
        995                 1000                1005
Lys Ala Gly Glu Gln Val Thr Tyr Thr Cys Ala Thr Tyr Tyr Lys Met
    1010                1015                1020
Asp Gly Ala Ser Asn Val Thr Cys Ile Asn Ser Arg Trp Thr Gly Arg
1025                1030                1035                1040
Pro Thr Cys Arg Asp Thr Ser Cys Val Asn Pro Pro Thr Val Gln Asn
                1045                1050                1055
Ala Tyr Ile Val Ser Arg Gln Met Ser Lys Tyr Pro Ser Gly Glu Arg
            1060                1065                1070
Val Arg Tyr Gln Cys Arg Ser Pro Tyr Glu Met Phe Gly Asp Glu Glu
        1075                1080                1085
Val Met Cys Leu Asn Gly Asn Trp Thr Glu Pro Pro Gln Cys Lys Asp
    1090                1095                1100
Ser Thr Gly Lys Cys Gly Pro Pro Pro Pro Ile Asp Asn Gly Asp Ile
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1105                1110                1115                1120
Thr Ser Phe Pro Leu Ser Val Tyr Ala Pro Ala Ser Ser Val Glu Tyr
                1125                1130                1135
Gln Cys Gln Asn Leu Tyr Gln Leu Glu Gly Asn Lys Arg Ile Thr Cys
            1140                1145                1150
Arg Asn Gly Gln Trp Ser Glu Pro Pro Lys Cys Leu His Pro Cys Val
        1155                1160                1165
Ile Ser Arg Glu Ile Met Glu Asn Tyr Asn Ile Ala Leu Arg Trp Thr
    1170                1175                1180
Ala Lys Gln Lys Leu Tyr Ser Arg Thr Gly Glu Ser Val Glu Phe Val
1185                1190                1195                1200
Cys Lys Arg Gly Tyr Arg Leu Ser Ser Arg Ser His Thr Leu Arg Thr
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Thr Cys Trp Asp Gly Lys Leu Glu Tyr Pro Thr Cys Ala Lys Arg
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<210> 343
<211> 1701
<212> DNA
<213> Homo sapiens

<400> 343

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acccaaggtc acacggctag gaagttgctg cacgctccta tgctccattt cctctgggag 180
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<210> 344
<211> 469
<212> PRT
<213> Homo sapiens

<400> 344

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            20                  25                  30
Phe Thr Gln Tyr Glu Glu Ser Ser Gly Lys Cys Lys Gly Leu Leu Gly
        35                  40                  45
Gly Gly Val Ser Val Glu Asp Cys Cys Leu Asn Thr Ala Phe Ala Tyr
    50                  55                  60
Gln Lys Arg Ser Gly Gly Leu Cys Gln Pro Cys Arg Ser Pro Arg Trp
65                  70                  75                  80
Ser Leu Trp Ser Thr Trp Ala Pro Cys Ser Val Thr Cys Ser Glu Gly
                85                  90                  95
Ser Gln Leu Arg Tyr Arg Arg Cys Val Gly Trp Asn Gly Gln Cys Ser
            100                 105                 110
Gly Lys Val Ala Pro Gly Thr Leu Glu Trp Gln Leu Gln Ala Cys Glu
        115                 120                 125
Asp Gln Gln Cys Cys Pro Glu Met Gly Gly Trp Ser Gly Trp Gly Pro
    130                 135                 140
Trp Glu Pro Cys Ser Val Thr Cys Ser Lys Gly Thr Arg Thr Arg Arg
145                 150                 155                 160
Arg Ala Cys Asn His Pro Ala Pro Lys Cys Gly Gly His Cys Pro Gly
                165                 170                 175
Gln Ala Gln Glu Ser Glu Ala Cys Asp Thr Gln Gln Val Cys Pro Thr
            180                 185                 190
His Gly Ala Trp Ala Thr Trp Gly Pro Trp Thr Pro Cys Ser Ala Ser
        195                 200                 205
Cys His Gly Gly Pro His Glu Pro Lys Glu Thr Arg Ser Arg Lys Cys
    210                 215                 220
Ser Ala Pro Glu Pro Ser Gln Lys Pro Pro Gly Lys Pro Cys Pro Gly
225                 230                 235                 240
Leu Ala Tyr Glu Gln Arg Arg Cys Thr Gly Leu Pro Pro Cys Pro Val
                245                 250                 255
Ala Gly Gly Trp Gly Pro Trp Gly Pro Val Ser Pro Cys Pro Val Thr
            260                 265                 270
Cys Gly Leu Gly Gln Thr Met Glu Gln Arg Thr Cys Asn His Pro Val
        275                 280                 285
Pro Gln His Gly Gly Pro Phe Cys Ala Gly Asp Ala Thr Arg Thr His
    290                 295                 300
Ile Cys Asn Thr Ala Val Pro Cys Pro Val Asp Gly Glu Trp Asp Ser
305                 310                 315                 320
Trp Gly Glu Trp Ser Pro Cys Ile Arg Arg Asn Met Lys Ser Ile Ser
                325                 330                 335
Cys Gln Glu Ile Pro Gly Gln Gln Ser Arg Gly Arg Thr Cys Arg Gly
            340                 345                 350
Arg Lys Phe Asp Gly His Arg Cys Ala Gly Gln Gln Gln Asp Ile Arg
        355                 360                 365
His Cys Tyr Ser Ile Gln His Cys Pro Leu Lys Gly Ser Trp Ser Glu
    370                 375                 380
Trp Ser Thr Trp Gly Leu Cys Met Pro Pro Cys Gly Pro Asn Pro Thr
385                 390                 395                 400
Arg Ala Arg Gln Arg Leu Cys Thr Pro Leu Leu Pro Lys Tyr Pro Pro
                405                 410                 415
Thr Val Ser Met Val Glu Gly Gln Gly Glu Lys Asn Val Thr Phe Trp
            420                 425                 430
Gly Arg Pro Leu Pro Arg Cys Glu Glu Leu Gln Gly Gln Lys Leu Val
        435                 440                 445
Val Glu Glu Lys Arg Pro Cys Leu His Val Pro Ala Cys Lys Asp Pro
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Glu Glu Glu Glu Leu
465

<210> 345
<211> 3462
<212> DNA
<213> Artificial Sequence

<220>
<223> Vector: pQE32

<400> 345
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agctccttcg gtcctccgat cgttgtcaga agtaagttgg ccgcagtgtt atcactcatg 2880
gttatggcag cactgcataa ttctcttact gtcatgccat ccgtaagatg cttttctgtg 2940
actggtgagt actcaaccaa gtcattctga gaatagtgta tgcggcgacc gagttgctct 3000
tgcccggcgt caatacgggа taataccgcg ccacatagca gaactttaaa agtgctcatc 3060
attggaaaac gttcttcggg gcgaaaactc tcaaggatct taccgctgtt gagatccagt 3120
tcgatgtaac ccactcgtgc acccaactga tcttcagcat cttttacttt caccagcgtt 3180
tctgggtgag caaaaacagg aaggcaaaat gccgcaaaaa agggaataag ggcgacacgg 3240
aaatgttgaa tactcatact cttcctttt caatattatt gaagcattta tcagggttat 3300
tgtctcatga gcggatacat atttgaatgt atttagaaaa ataaacaaat aggggttccg 3360
cgcacatttc cccgaaaagt gccacctgac gtctaagaaa ccattattat catgacatta 3420
acctataaaa ataggcgtat cacgaggccc tttcgtcttc ac 3462

<210> 346
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Dforward

<400> 346
caccccttct tcaatgacga caccttcgac tatgacatcg 40

<210> 347
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Dreverse

<400> 347
cgatgtcata gtcgaaggtg tcgtcattga agaaggggtg 40

<210> 348
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Eforward

<400> 348
ccaccccttc ttcaatgacg agaccttcga ctatgacatc gc 42

<210> 349
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Ereverse

<400> 349
gcgatgtcat agtcgaaggt ctcgtcattg aagaaggggt gg 42

<210> 350
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Aforward

<400> 350
caccccttct tcaatgacgc caccttcgac tatgacatc 39

<210> 351
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Areverse

<400> 351
gatgtcatag tcgaaggtgg cgtcattgaa gaaggggtg 39

<210> 352
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Wforward

<400> 352
caccccttct tcaatgactg gaccttcgac tatgacatc 39

<210> 353
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: F97Wreverse

<400> 353
gatgtcatag tcgaaggtcc agtcattgaa gaaggggtg 39

<210> 354
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Nforward

<400> 354
ggacacaccc agaacggagg cactggc 27

<210> 355
<211> 27

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Nreverse

<400> 355
gccagtgcct ccgttctggg tgtgtcc 27

<210> 356
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Dforward

<400> 356
ggacacaccc aggacggagg cactggc 27

<210> 357
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Dreverse

<400> 357
gccagtgcct ccgtcctggg tgtgtcc 27

<210> 358
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Eforward

<400> 358
gggacacacc caggagggag gcactggcg 29

<210> 359
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Ereverse

<400> 359
cgccagtgcc tccctcctgg gtgtgtccc 29

<210> 360
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Aforward

<400> 360
gggacacacc caggccggag gcactggcg 29

<210> 361
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Areverse

<400> 361
cgccagtgcc tccggcctgg gtgtgtccc 29

<210> 362
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Wforward

<400> 362
gggacacacc cagtggggag gcactggcg 29

<210> 363
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Wreverse

<400> 363
cgccagtgcc tccccactgg gtgtgtccc 29

<210> 364
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Rforward

<400> 364
ggggacacac ccagagggga ggcactggcg c 31

<210> 365
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Y146Rreverse

<400> 365
gcgccagtgc ctcccctctg ggtgtgtccc c 31

<210> 366
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Q192Rforward

<400> 366
tggactcctg ccggggtgat tccgg 25

<210> 367
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: Q192Rreverse

<400> 367
ccggaatcac cccggcagga gtcca 25

<210> 368
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: K224Aforward

<400> 368
cgctcagagg aacgcgccag gcgtgtaca 29

<210> 369
<211> 29
<212> DNA
<213> Homo sapiens

<220>
<223> Primer: K224Areverse

<400> 369
tgtacacgcc tggcgcgttc ctctgagcg 29

<210> 370
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: K224Fforward

<400> 370
gctgcgctca gaggaacttc ccaggcgtgt acacaag 37

<210> 371
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer: K224Freverse

<400> 371
cttgtgtaca cgcctgggaa gttcctctga gcgcagc 37

<210> 372
<211> 1575
<212> DNA
<213> Homo sapiens

<400> 372
agaaccgcga cctccgcaac cttgagcggc atccgtggag tgcgcctgca gctacgaccg 60
cagcaggaaa gcgccgccgg ccaggcccag ctgtggccgg acagggactg gaagagagga 120
cgcggtcgag taggtgtgca ccagccctgg caacgagagc gtctaccccg aactctgctg 180
gccttgaggt ggggaagccg gggagggcag ttgaggaccc cgcggaggcg cgtgactggt 240
tgagcgggca ggccagcctc cgagccgggt ggacacaggt tttaaaacat gaatcctaca 300
ctcatccttg ctgccttttg cctgggaatt gcctcagcta ctctaacatt tgatcacagt 360
ttagaggcac agtggaccaa gtggaaggcg atgcacaaca gattatacgg catgaatgaa 420
gaaggatgga ggagagcagt gtgggagaag aacatgaaga tgattgaact gcacaatcag 480
gaatacaggg aagggaaaca cagcttcaca atggccatga acgcctttgg agacatgacc 540
agtgaagaat tcaggcaggt gatgaatggc tttcaaaacc gtaagcccag gaaggggaaa 600
gtgttccagg aacctctgtt ttatgaggcc cccagatctg tggattggag agagaaaggc 660
tacgtgactc ctgtgaagaa tcagggtcag tgtggttctt gttgggcttt tagtgctact 720
ggtgctcttg aaggacagat gttccggaaa actgggaggc ttatctcact gagtgagcag 780
aatctggtag actgctctgg gcctcaaggc aatgaaggct gcaatggtgg cctaatggat 840
tatgctttcc agtatgttca ggataatgga ggcctggact ctgaggaatc ctatccatat 900
gaggcaacag aagaatcctg taagtacaat cccaagtatt ctgttgctaa tgacaccggc 960
tttgtggaca tccctaagca ggagaaggcc ctgatgaagg cagttgcaac tgtggggccc 1020
atttctgttg ctattgatgc aggtcatgag tccttcctgt tctataaaga aggcatttat 1080
tttgagccag actgtagcag tgaagacatg gatcatggtg tgctggtggt tggctacgga 1140
tttgaaagca cagaatcaga taacaataaa tattggctgg tgaagaacag ctggggtgaa 1200
gaatggggca tgggtggcta cgtaaagatg gccaaagacc ggagaaacca ttgtggaatt 1260
gcctcagcag ccagctaccc cactgtgtga gctggtggac ggtgatgagg aaggacttga 1320
ctggggatgg cgcatgcatg ggaggaattc atcttcagtc taccagcccc cgctgtgtcg 1380
gatacacact cgaatcattg aagatccgag tgtgatttga attctgtgat attttcacac 1440
tggtaaatgt tacctctatt ttaattactg ctataaatag gtttatatta ttgattcact 1500
tactgacttt gcattttcgt ttttaaaagg atgtataaat ttttacctgt ttaaataaaa 1560
tttaatttca aatgt 1575

<210> 373
<211> 333
<212> PRT
<213> Homo sapiens

<400> 373
Met Asn Pro Thr Leu Ile Leu Ala Ala Phe Cys Leu Gly Ile Ala Ser
 1   5   10   15
Ala Thr Leu Thr Phe Asp His Ser Leu Glu Ala Gln Trp Thr Lys Trp
            20   25   30
Lys Ala Met His Asn Arg Leu Tyr Gly Met Asn Glu Glu Gly Trp Arg
        35   40   45
Arg Ala Val Trp Glu Lys Asn Met Lys Met Ile Glu Leu His Asn Gln

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

<210> 374
<211> 1342
<212> DNA
<213> Homo sapiens

<400> 374

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cggctgtaat ctcagaggct tgtttgctga gggtgcctgc gcacgtgcga cggctgctgg 60
ttttgaaaca tgaatctttc gctcgtcctg gctgcctttt gcttgggaat agcctccgct 120
gttccaaaat ttgaccaaaa tttggataca aagtggtacc agtggaaggc aacacacaga 180
agattatatg gcgcgaatga agaaggatgg aggagagcag tgtgggaaaa gaatatgaaa 240
atgattgaac tgcacaatgg ggaatacagc caagggaaac atggcttcac aatggccatg 300
aatgcttttc ctgacatgac caatgaagaa ttcaggcaga tgatgggttg ctttcgaaac 360
cagaaattca ggaaggggaa agtgttccgt gagcctctgt ttcttgatct tcccaaatct 420
gtggattgga gaaagaaagg ctacgtgacg ccagtgaaga atcagaaaca gtgtggttct 480
tgttgggctt ttagtgcgac tggtgctctt gaaggacaga tgttccggaa aactgggaaa 540
cttgtctcac tgagcgagca gaatctggtg gactgttcgc gtcctcaagg caatcagggc 600
tgcaatggtg gcttcatggc tagggccttc cagtatgtca aggagaacgg aggcctggac 660
tctgaggaat cctatccata tgtagcagtg gatgaaatct gtaagtacag acctgagaat 720
tctgttgcta atgacactgg cttcacagtg gtcgcacctg gaaaggagaa ggccctgatg 780
aaagcagtcg caactgtggg gcccatctcc gttgctatgg atgcaggcca ttcgtccttc 840
cagttctaca aatcaggcat ttatttttgaa ccagactgca gcagcaaaaa cctggatcat 900
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```
ggtgttctgg tggttggcta cggctttgaa ggagcaaatt cgaataacag caagtattgg 960
ctcgtcaaaa acagctgggg tccagaatgg ggctcgaatg gctatgtaaa aatagccaaa 1020
gacaagaaca accactgtgg aatcgccaca gcagccagct accccaatgt gtgagctgat 1080
ggatggtgag gaggaaggac ttaaggacag catgtctggg gaaattttat cttgaaactg 1140
accaaacgct tattgtgtaa gataaaccag ttgaatcatt gaggatccaa gttgagattt 1200
taattctgtg acatttttac aagggtaaaa tgttaccact actttaatta ttgttataca 1260
cagctttatg atatcaaaga ctcattgctt aattctaaga cttttgaatt ttcatttttt 1320
aaaaagatgt acaaaacagt tt                                          1342
```

<210> 375
<211> 334
<212> PRT
<213> Homo sapiens

<400> 375

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

<210> 376
<211> 1661
<212> DNA
<213> Homo sapiens

<400> 376
attcggcacg agccgcaatc ccgatggaat aaatctagca cccctgatgg tgtgcccaca 60
ctttgctgcc gaaacgaagc cagacaacag atttccatca gcaggatgtg ggggctcaag 120
gttctgctgc tacctgtggt gagctttgct ctgtaccctg aggagatact ggacacccac 180
tgggagctat ggaagaagac ccacaggaag caatataaca acaaggtgga tgaaatctct 240
cggcgtttaa tttgggaaaa aaacctgaag tatatttcca tccataacct tgaggcttct 300
cttggtgtcc atacatatga actggctatg aaccacctgg gggacatgac cagtgaagag 360
gtggttcaga agatgactgg actcaaagta cccctgtctc attcccgcag taatgacacc 420
ctttatatcc cagaatggga aggtagagcc ccagactctg tcgactatcg aaagaaagga 480
tatgttactc ctgtcaaaaa tcagggtcag tgtggttcct gttgggcttt tagctctgtg 540
ggtgccctgg agggccaact caagaagaaa actggcaaac tcttaaatct gagtccccag 600
aacctagtgg attgtgtgtc tgagaatgat ggctgtggag ggggctacat gaccaatgcc 660
ttccaatatg tgcagaagaa ccggggtatt gactctgaag atgcctaccc atatgtggga 720
caggaagaga gttgtatgta caacccaaca ggcaaggcag ctaaatgcag agggtacaga 780
gagatccccg aggggaatga gaaagccctg aagagggcag tggcccgagt gggacctgtc 840
tctgtggcca ttgatgcaag cctgacctcc ttccagtttt acagcaaagg tgtgtattat 900
gatgaaagct gcaatagcga taatctgaac catgcggttt tggcagtggg atatggaatc 960
cagaagggaa acaagcactg gataattaaa aacagctggg gagaaaactg gggaaacaaa 1020
ggatatatcc tcatggctcg aaataagaac aacgcctgtg gcattgccaa cctggccagc 1080
ttccccaaga tgtgactcca gccagccaaa tccatcctgc tcttccattt cttccacgat 1140
ggtgcagtgt aacgatgcac tttggaaggg agttggtgtg ctatttttga agcagatgtg 1200
gtgatactga gattgtctgt tcagtttccc catttgtttg tgcttcaaat gatccttcct 1260
actttggttc tctcctccca tgacctttct cactgtggcc atcaggactt tccctgacag 1320
ctgtgtactc ttaggctaag agatgtgact acagcctgcc cctgactgtg ttgtcccagg 1380
gctgatgctg tacaggtaca ggctggagat tttcacatag gttagattct cattcacggg 1440
actagttagc tttaagcacc ctagaggact agggtaatct gacttctcac ttcctaagtt 1500
cccttcaata tcctcaaggt agaaatgtct atgttttcta ctccaattca taaatctatt 1560
cataagtctt tggtacaagt ttacatgata aaaagaaatg tgatttgtct tcccttcttt 1620
gcacttttga aataaagtat ttatctcctg tctacagttt a 1661

<210> 377
<211> 329
<212> PRT
<213> Homo sapiens

<400> 377
Met Trp Gly Leu Lys Val Leu Leu Leu Pro Val Val Ser Phe Ala Leu
 1   5   10   15
Tyr Pro Glu Glu Ile Leu Asp Thr His Trp Glu Leu Trp Lys Lys Thr
            20   25   30
His Arg Lys Gln Tyr Asn Asn Lys Val Asp Glu Ile Ser Arg Arg Leu
        35   40   45
Ile Trp Glu Lys Asn Leu Lys Tyr Ile Ser Ile His Asn Leu Glu Ala
    50   55   60
Ser Leu Gly Val His Thr Tyr Glu Leu Ala Met Asn His Leu Gly Asp
65   70   75   80
Met Thr Ser Glu Glu Val Val Gln Lys Met Thr Gly Leu Lys Val Pro
                85   90   95
Leu Ser His Ser Arg Ser Asn Asp Thr Leu Tyr Ile Pro Glu Trp Glu
            100   105   110
Gly Arg Ala Pro Asp Ser Val Asp Tyr Arg Lys Lys Gly Tyr Val Thr
        115   120   125

```
Pro Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ser
    130                 135                 140
Val Gly Ala Leu Glu Gly Gln Leu Lys Lys Lys Thr Gly Lys Leu Leu
145                 150                 155                 160
Asn Leu Ser Pro Gln Asn Leu Val Asp Cys Val Ser Glu Asn Asp Gly
                165                 170                 175
Cys Gly Gly Gly Tyr Met Thr Asn Ala Phe Gln Tyr Val Gln Lys Asn
            180                 185                 190
Arg Gly Ile Asp Ser Glu Asp Ala Tyr Pro Tyr Val Gly Gln Glu Glu
        195                 200                 205
Ser Cys Met Tyr Asn Pro Thr Gly Lys Ala Ala Lys Cys Arg Gly Tyr
    210                 215                 220
Arg Glu Ile Pro Glu Gly Asn Glu Lys Ala Leu Lys Arg Ala Val Ala
225                 230                 235                 240
Arg Val Gly Pro Val Ser Val Ala Ile Asp Ala Ser Leu Thr Ser Phe
                245                 250                 255
Gln Phe Tyr Ser Lys Gly Val Tyr Tyr Asp Glu Ser Cys Asn Ser Asp
            260                 265                 270
Asn Leu Asn His Ala Val Leu Ala Val Gly Tyr Gly Ile Gln Lys Gly
        275                 280                 285
Asn Lys His Trp Ile Ile Lys Asn Ser Trp Gly Glu Asn Trp Gly Asn
    290                 295                 300
Lys Gly Tyr Ile Leu Met Ala Arg Asn Lys Asn Asn Ala Cys Gly Ile
305                 310                 315                 320
Ala Asn Leu Ala Ser Phe Pro Lys Met
                325
```

<210> 378
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 378
ctaaagatga aacggctggt ttgtgtgctc ttggtgtgct cctctgcagt ggcacagttg 60
cataaagatc ctaccctgga tcaccactgg catctctgga agaaaacctа tggcaaacaa 120
tacaaggaaa agaatgaaga agcagtacga cgtctcatct gggaaaagaa tctaaagttt 180
gtgatgcttc acaacctgga gcattcaatg ggaatgcact catacgatct gggcatgaac 240
cacctgggag acatgaccag tgaagaagtg atgtctttga cgagttccct gagagttccc 300
agccagtggc agagaaatat cacatataag tcaaacccta atcggatatt gcctgattct 360
gtggactgga gagagaaagg gtgtgttact gaagtgaaat atcaaggttc ttgtggtgct 420
tgctgggctt tcagtgctgt gggggcccтg gaagcacagc tgaagctgaa aacaggaaag 480
ctggtgactc tcagtgccca gaacctggtg gattgctcaa ctgaaaaata tggaaacaaa 540
ggctgcaatg gtggcttcat gacaacggct ttccagtaca tcattgataa caagggcatc 600
gactcagacg cttcctatcc ctacaaagcc atggatcaga aatgtcaata tgactcaaaa 660
tatcgtgctg ccacatgttc aaagtacact gaacttcctt atgggagaga agatgtcctg 720
aaagaagctg tggccaataa aggcccagtg tctgttggtg tagatgcgcg tcatccttct 780
ttcttcctct acagaagtgg tgtctactat gaaccatcct gtactcagaa tgtgaatcat 840
ggtgtacttg tggttggcta tggtgatctt aatgggaaag aatactggct tgtgaaaaac 900
agctggggcc acaactttgg tgaagaagga tatattcgga tggcaagaaa taaaggaaat 960
cattgtggga ttgctagctt tccctcttac ccagaaatct agaggatctc tccttttttat 1020
aacaaatcaa gaaatatgaa gcactttctc ttaacttaat ttttcctgct gtatccagaa 1080
gaaataattg tgtcatgatt aatgtgtatt tactgtacta atagaaaata tagtttgagg 1140
ccgggcactg tctggctcac gcctgtaatc ccagtacttg ggaggccaag gaggcatatc 1200
aacttgaggc caggagttaa agagcagcct ggctaactgt gaaaccctct ctact 1255

<210> 379
<211> 331

<212> PRT
<213> Homo sapiens

<400> 379

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

<210> 380
<211> 1517
<212> DNA
<213> Homo sapiens

<400> 380

```
gaattccggg tctgttgggt ccgggccgcc ggcttcgccc tcgccatggc gccctggctg 60
cagctcctgt cgctgctggg gctgctcccg ggcgcagtgg ccgccccccgc ccagccccga 120
gccgccagct ttcaggcctg ggggccgccg tccccggagc tgctggccgcc cacccgctic 180
gcgctggaga tgttcaaccg cggccgggct gcgggggacgc gggccgtgct gggccttgtg 240
```

```
cgcggccgcg tccgccgggc gggtcagggg tcgctgtact ccctggaggc caccctggag 300
gagccaccct gcaacgaccc catggtgtgc cggctccccg tgtccaagaa aaccctgctc 360
tgcagcttcc aagtcctgga tgagctcgga agacacgtgc tgctgcggaa ggactgtggc 420
ccagtggaca ccaaggttcc aggtgctggg gagcccaagt cagccttcac tcagggctca 480
gccatgattt cttctctgtc ccaaaaccat ccagacaaca gaaacgagac tttcagctca 540
gtcatttccc tgttgaatga ggatcccctg tcccaggact tgcctgtgaa gatggcttca 600
atcttcaaga actttgtcat tacctataac cggacatatg agtcaaagga agaagcccgg 660
tggcgcctgt ccgtctttgt caataacatg gtgcgagcac agaagatcca ggccctggac 720
cgtgggacag ctcagtatgg agtcaccaag ttcagtgatc tcacagagga ggagttccgc 780
actatctacc tgaatactct cctgaggaaa gagcctggca acaagatgaa gcaagccaag 840
tctgtgggtg acctcgcccc acctgaatgg gactggagga gtaaggggcc tgtcacaaaa 900
gtcaaagacc agggcatgtg tggctcctgc tgggccttct cagtcacagg caatgtggag 960
ggccagtggt ttctcaacca ggggacccctg ctctccctct ctgaacagga gctcttggac 1020
tgtgacaaga tggacaaggc ctgcatgggc ggcttgccct ccaatgccta ctcggccata 1080
aagaatttgg gagggctgga gacagaggat gactacagct accagggtca catgcagtcc 1140
tgcaacttct cagcagagaa ggccaaggtc tacatcaatg actccgtgga gctgagccag 1200
aacgagcaga agctggcagc ctggctggcc aagagaggcc caatctccgt ggccatcaat 1260
gcctttggca tgcagtttta ccgccacggg atctcccgcc ctctccggcc cctctgcagc 1320
ccttggctca ttgaccatgc ggtgttgctt gtgggctacg gcaaccgctc tgacgttccc 1380
ttttgggcca tcaagaacag ctggggcact gactggggtg agaagggtta ctactacttg 1440
catcgtgggt ccggggcctg tggcgtgaac accatggcca gctcggcggt ggtggactga 1500
agaggggccc cgaattc                                                 1517

<210> 381
<211> 484
<212> PRT
<213> Homo sapiens

<400> 381
Met Ala Pro Trp Leu Gln Leu Leu Ser Leu Leu Gly Leu Leu Pro Gly
 1               5                  10                  15
Ala Val Ala Ala Pro Ala Gln Pro Arg Ala Ala Ser Phe Gln Ala Trp
            20                  25                  30
Gly Pro Pro Ser Pro Glu Leu Leu Ala Pro Thr Arg Phe Ala Leu Glu
        35                  40                  45
Met Phe Asn Arg Gly Arg Ala Ala Gly Thr Arg Ala Val Leu Gly Leu
    50                  55                  60
Val Arg Gly Arg Val Arg Arg Ala Gly Gln Gly Ser Leu Tyr Ser Leu
65                  70                  75                  80
Glu Ala Thr Leu Glu Glu Pro Pro Cys Asn Asp Pro Met Val Cys Arg
                85                  90                  95
Leu Pro Val Ser Lys Lys Thr Leu Leu Cys Ser Phe Gln Val Leu Asp
            100                 105                 110
Glu Leu Gly Arg His Val Leu Leu Arg Lys Asp Cys Gly Pro Val Asp
        115                 120                 125
Thr Lys Val Pro Gly Ala Gly Glu Pro Lys Ser Ala Phe Thr Gln Gly
    130                 135                 140
Ser Ala Met Ile Ser Ser Leu Ser Gln Asn His Pro Asp Asn Arg Asn
145                 150                 155                 160
Glu Thr Phe Ser Ser Val Ile Ser Leu Leu Asn Glu Asp Pro Leu Ser
                165                 170                 175
Gln Asp Leu Pro Val Lys Met Ala Ser Ile Phe Lys Asn Phe Val Ile
            180                 185                 190
Thr Tyr Asn Arg Thr Tyr Glu Ser Lys Glu Glu Ala Arg Trp Arg Leu
        195                 200                 205
Ser Val Phe Val Asn Asn Met Val Arg Ala Gln Lys Ile Gln Ala Leu
    210                 215                 220
Asp Arg Gly Thr Ala Gln Tyr Gly Val Thr Lys Phe Ser Asp Leu Thr
```

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

<210> 382
<211> 2002
<212> DNA
<213> Homo sapiens

<400> 382

```
aattccgcgg caaccgctcc ggcaacgcca accgctccgc tgcgcgcagg ctgggctgca 60
ggctctcggc tgcagcgctg ggctggtgtg cagtggtgcg accacggctc acggcagcct 120
cagccaccca gatgtaagcg atctggttcc cacctcagcc ttccgagtag tggatctagg 180
atctggcttc caacatgtgg cagctctggg cctccctctg ctgcctgctg gtgttggcca 240
atgccccgag caggccctct ttccatcccg tgtcggatga gctggtcaac tatgtcaaca 300
aacggaatac cacgtggcag gccgggcaca acttctacaa cgtggacatg agctacttga 360
agaggctatg tggtaccttc ctgggtgggc ccaagccacc ccagagagtt atgtttaccg 420
aggacctgaa gctgcctgca agcttcgatg cacgggaaca atggccacag tgtcccacca 480
tcaaagagat cagagaccag ggctcctgtg gctcctgctg ggccttcggg gctgtggaag 540
ccatctctga ccgcatctgc atccacacca atgcgcacgt cagcgtggag gtgtcggcgg 600
aggacctgct cacctgctgt ggcagcatgt gtggggacgg ctgtaatggt ggctatcctg 660
ctgaagcttg gaacttctgg acaaagaaaag gcctggtttc tggtggcctc tatgaatccc 720
atgtagggtg cagaccgtac tccatccctc cctgtgagca ccacgtcaac ggctcccggc 780
ccccatgcac gggggaggga gataccccca agtgtagcaa gatctgtgag cctggctaca 840
gcccgaccta caaacaggac aagcactacg gatacaattc ctacagcgtc tccaatagcg 900
agaaggacat catggccgag atctacaaaa acggccccgt ggagggagct ttctctgtgt 960
attcggactt cctgctctac aagtcaggag tgtaccaaca cgtcaccgga gagatgatgg 1020
```

```
gtggccatgc catccgcatc ctgggctggg gagtggagaa tggcacaccc tactggctgg 1080
ttgccaactc ctggaacact gactggggtg acaatggctt ctttaaaata ctcagaggac 1140
aggatcactg cggaatcgaa tcagaagtgg tggctggaat tccacgcacc gatcagtact 1200
gggaaaagat ctaatctgcc gtgggcctgt cgtgccagtc ctgggggcga gatcggggta 1260
gaaagtcatt ttattcttta agttcacgta agatacaagt ttcaggcagg gtctgaagga 1320
ctggattggc caaagtcctc caaggagacc aagtcctggc tacatcccag cctgtggtta 1380
cagtgcagac aggccatgtg agccaccgct gccagcacag agcgtccttc cccctgtaga 1440
ctagtgccgt gggagtacct gctgcccagc tgctgtggcc ccctccgtga tccatccatc 1500
tccagggagc aagacagaga cgcaggatgg aaagcggagt tcctaacagg atgaaagttc 1560
ccccatcagt tcccccagta cctccaagca agtagctttc cacatttgtc acagaaatca 1620
gaggagagat ggtgttggga gcccctttgga gaacgccagt ctccaggtcc ccctgcatct 1680
atcgagtttg caatgtcaca acctctctga tcttgtgctc agcatgattc tttaatagaa 1740
gttttatttt tcgtgcactc tgctaatcat gtgggtgagc cagtggaaca gcgggagcct 1800
gtgctggttt gcagattgcc tcctaatgac gcggctcaaa aggaaaccaa gtggtcagga 1860
gttgtttctg acccactgat ctctactacc acaaggaaaa tagtttagga gaaaccagct 1920
tttactgttt ttgaaaaatt acagcttcac cctgtcaagt taacaaggaa tgcctgtgcc 1980
aataaaaggt ttctccaact tg                                          2002
```

<210> 383
<211> 339
<212> PRT
<213> Homo sapiens

<400> 383

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

```
Glu Met Met Gly Gly His Ala Ile Arg Ile Leu Gly Trp Gly Val Glu
        275                 280                 285
Asn Gly Thr Pro Tyr Trp Leu Val Ala Asn Ser Trp Asn Thr Asp Trp
    290                 295                 300
Gly Asp Asn Gly Phe Phe Lys Ile Leu Arg Gly Gln Asp His Cys Gly
305                 310                 315                 320
Ile Glu Ser Glu Val Val Ala Gly Ile Pro Arg Thr Asp Gln Tyr Trp
                325                 330                 335
Glu Lys Ile
```

<210> 384
<211> 1292
<212> DNA
<213> Carica papaya

<400> 384
atccattccc acttaagaag taaaaagata tagctagtgt cacaatggct atgatacctt 60
caatttcaaa gttgcttttt gttgcaatat gtctttttgt ttatatgggt ttgtcatttg 120
gtgatttttc tattgtgggt tattctcaaa atgacttgac atccactgaa agacttattc 180
agctatttga atcgtggatg ttgaagcaca ataagattta taagaatatt gatgaaaaaa 240
tctacagatt tgaaattttt aaagataatc ttaaatatat tgatgagaca aataagaaaa 300
ataacagtta ttggcttgga ttaaatgtgt ttgctgatat gagcaatgat gaattcaaag 360
aaaagtatac tggttctatt gctggaaatt atacaacaac cgaactatca tacgaagaag 420
tgcttaatga tggtgatgta aatatcccgg agtatgtcga ttggagacaa aaaggagctg 480
tcactcctgt aaaaaatcag ggttcttgtg gtagttgttg ggcattctca gctgttgtaa 540
ctatagaggg aataattaag attagaactg ggaacttaaa tgaatactca gagcaagaac 600
tgcttgactg cgacagacgt agctacgggt gcaatggagg ttacccttgg agtgcacttc 660
aattagtggc tcaatatggt attcactaca gaaatactta cccatatgag ggagtgcaac 720
gttattgtcg ctcaagggag aaaggtcctt atgcagccaa aaccgatggg gttcgacaag 780
tgcaaccata taatgaaggg gctctcttat attcaattgc aaaccaacct gtgagcgttg 840
tccttgaagc tgctggaaaa gatttccaat tatatagagg gggaatattt gtggggccat 900
gcggaaacaa agtagatcat gcagtcgcag cagttgggta tggaccaaat tacatactca 960
taaagaattc atggggtaca ggatggggtg aaaatggata tataagaatc aaaagaggca 1020
ctggaaactc ctatggagta tgtggacttt atacaagctc attctatcct gttaaaaact 1080
gatgagatca cggctttcat aaaatccctt atatatatat atatatatag aacttgtata 1140
ctcatcgtgt gttgaaataa taaatgagag gattaataat ttgtgtaatc ctatatatca 1200
cagtttgttg tgacaaactt ttgcatcgct tgttatatta tttgtaataa tgtttgtttt 1260
gattgaataa acttttacat atacttttat gc 1292

<210> 385
<211> 345
<212> PRT
<213> Carica papaya

<400> 385
```
Met Ala Met Ile Pro Ser Ile Ser Lys Leu Leu Phe Val Ala Ile Cys
 1               5                  10                  15
Leu Phe Val Tyr Met Gly Leu Ser Phe Gly Asp Phe Ser Ile Val Gly
            20                  25                  30
Tyr Ser Gln Asn Asp Leu Thr Ser Thr Glu Arg Leu Ile Gln Leu Phe
        35                  40                  45
Glu Ser Trp Met Leu Lys His Asn Lys Ile Tyr Lys Asn Ile Asp Glu
    50                  55                  60
Lys Ile Tyr Arg Phe Glu Ile Phe Lys Asp Asn Leu Lys Tyr Ile Asp
65                  70                  75                  80
Glu Thr Asn Lys Lys Asn Asn Ser Tyr Trp Leu Gly Leu Asn Val Phe
```

```
                85                  90                  95
Ala Asp Met Ser Asn Asp Glu Phe Lys Glu Lys Tyr Thr Gly Ser Ile
            100                 105                 110
Ala Gly Asn Tyr Thr Thr Thr Glu Leu Ser Tyr Glu Glu Val Leu Asn
        115                 120                 125
Asp Gly Asp Val Asn Ile Pro Glu Tyr Val Asp Trp Arg Gln Lys Gly
    130                 135                 140
Ala Val Thr Pro Val Lys Asn Gln Gly Ser Cys Gly Ser Cys Trp Ala
145                 150                 155                 160
Phe Ser Ala Val Val Thr Ile Glu Gly Ile Ile Lys Ile Arg Thr Gly
                165                 170                 175
Asn Leu Asn Glu Tyr Ser Glu Gln Glu Leu Leu Asp Cys Asp Arg Arg
            180                 185                 190
Ser Tyr Gly Cys Asn Gly Gly Tyr Pro Trp Ser Ala Leu Gln Leu Val
        195                 200                 205
Ala Gln Tyr Gly Ile His Tyr Arg Asn Thr Tyr Pro Tyr Glu Gly Val
    210                 215                 220
Gln Arg Tyr Cys Arg Ser Arg Glu Lys Gly Pro Tyr Ala Ala Lys Thr
225                 230                 235                 240
Asp Gly Val Arg Gln Val Gln Pro Tyr Asn Glu Gly Ala Leu Leu Tyr
                245                 250                 255
Ser Ile Ala Asn Gln Pro Val Ser Val Val Leu Glu Ala Ala Gly Lys
            260                 265                 270
Asp Phe Gln Leu Tyr Arg Gly Gly Ile Phe Val Gly Pro Cys Gly Asn
        275                 280                 285
Lys Val Asp His Ala Val Ala Ala Val Gly Tyr Gly Pro Asn Tyr Ile
    290                 295                 300
Leu Ile Lys Asn Ser Trp Gly Thr Gly Trp Gly Glu Asn Gly Tyr Ile
305                 310                 315                 320
Arg Ile Lys Arg Gly Thr Gly Asn Ser Tyr Gly Val Cys Gly Leu Tyr
                325                 330                 335
Thr Ser Ser Phe Tyr Pro Val Lys Asn
            340                 345
```

<210> 386
<211> 1845
<212> DNA
<213> Trypanosoma cruzi

<400> 386
atgtctggct gggcgcgtgc gctgttgctc gcggccgtcc tggtcgtcat ggcgtgcctc 60
gtccccgcgg cgacggcgag cctgcatgcg gaggagacgc tgacgtcgca attcgcagaa 120
ttcaagcaga agcatggcag ggtgtacgag agcgccgcgg aggaggcgtt ccgcctgagc 180
gtgttcaggg agaacctgtt tcttgcgagg ctgcacgccg cggcaaaccc acacgcgacc 240
ttcggcgtca cgcccttctc ggacctcacg cgcgaggaat tccggtcccg ctaccacaac 300
ggcgcggcgc actttgcggc ggcgcaggag cgcgcgagag tgccggtgaa ggtggaggta 360
gttggcgcgc ccgcggcagt ggattggcgt gcgagaggcg ccgtgacagc cgtcaaggac 420
cagggccaat gcggttcgtg ctgggccttc tccgccattg gcaacgttga gtgccagtgg 480
tttcttgccg gccacccgct gacgaacctg tcggagcaga tgctcgtgtc gtgcgacaaa 540
acggactctg gctgcagtgg tggcctgatg aacaacgcct ttgagtggat tgtgcaggag 600
aataacggcg ccgtgtacac ggaggacagc tacccttatg cgtcgggcga ggggatatcg 660
ccgccgtgca cgacgtcagg ccacacggtg ggtgccacga ttaccggtca cgttgaatta 720
cctcaggacg aggcccaaat agccgcatgg cttgcagtca atggcccggt tgccgttgcc 780
gtcgacgcca gcagctggat gacctacacg ggcggcgtta tgacgagctg cgtctccgag 840
cagctggatc acggcgttct tctcgtcggc tacaatgaca gcgccgcagt gccgtactgg 900
atcatcaaga actcgtggac cacgcagtgg ggcgaggaag gctacatccg cattgcaaag 960
ggctcgaacc agtgccttgt caaggaggag gcgagctccg cggtggtcgg tggtcccgga 1020
```
```

```
cccactcccg agccaaccac cacgacaacc acaagtgccc caggaccgtc cccatcgtac 1080
tttgtgcaga tgtcctgcac tgacgctgcg tgcattgtcg ggtgcgagaa cgtgacgtta 1140
ccgaccggtc agtgtctcct gaccaccagc ggcgtctctg ccattgtcac gtgcggtgct 1200
gagactctca cagaagaagt cttccttacg agtacgcact gcagcggccc atcggtgagg 1260
tcctctgttc ctctcaacaa atgcaaccgg cttttaagag gctccgttga gttcttctgc 1320
ggctccagct ccagtggccg actggccgac gtggacaggc agcgtcgcca tcagccatac 1380
cacagccgtc atcgccgcct ctgagggcac tctttgtttc tgatgctgcc ttttctctca 1440
ttttactttt ttattattat tgagcgagcg tcggtgctgc ggcacactgg gcaaataagt 1500
cccagtggag tggattgttt attgatttgc tccatgtatg tgttttcttt tttgtgcaca 1560
actgcaaata tgtgtccgcg atcgacgtct cagccacgcg tgtgtttttt ctattatatg 1620
cttctgttga gcgcccgagc attccccact gtggctgaac ccaccgccgt ccccgactgt 1680
cacccgacca tgcggggcgg ggtggcgtgg caacgctcct ttgccgcggc gtgcacatac 1740
acgcgcgcat gcttcttctc tccacgtcaa cgccgacacc accacagtct gaaggtgacg 1800
ctgttgaagg cacacaagga aggaaacaca cccacacaag cagta                 1845

<210> 387
<211> 467
<212> PRT
<213> Trypanosoma cruzi

<400> 387
Met Ser Gly Trp Ala Arg Ala Leu Leu Leu Ala Ala Val Leu Val Val
 1               5                  10                  15
Met Ala Cys Leu Val Pro Ala Ala Thr Ala Ser Leu His Ala Glu Glu
            20                  25                  30
Thr Leu Thr Ser Gln Phe Ala Glu Phe Lys Gln Lys His Gly Arg Val
        35                  40                  45
Tyr Glu Ser Ala Ala Glu Glu Ala Phe Arg Leu Ser Val Phe Arg Glu
    50                  55                  60
Asn Leu Phe Leu Ala Arg Leu His Ala Ala Ala Asn Pro His Ala Thr
65                  70                  75                  80
Phe Gly Val Thr Pro Phe Ser Asp Leu Thr Arg Glu Glu Phe Arg Ser
                85                  90                  95
Arg Tyr His Asn Gly Ala Ala His Phe Ala Ala Ala Gln Glu Arg Ala
            100                 105                 110
Arg Val Pro Val Lys Val Glu Val Val Gly Ala Pro Ala Ala Val Asp
        115                 120                 125
Trp Arg Ala Arg Gly Ala Val Thr Ala Val Lys Asp Gln Gly Gln Cys
    130                 135                 140
Gly Ser Cys Trp Ala Phe Ser Ala Ile Gly Asn Val Glu Cys Gln Trp
145                 150                 155                 160
Phe Leu Ala Gly His Pro Leu Thr Asn Leu Ser Glu Gln Met Leu Val
                165                 170                 175
Ser Cys Asp Lys Thr Asp Ser Gly Cys Ser Gly Gly Leu Met Asn Asn
            180                 185                 190
Ala Phe Glu Trp Ile Val Gln Glu Asn Asn Gly Ala Val Tyr Thr Glu
        195                 200                 205
Asp Ser Tyr Pro Tyr Ala Ser Gly Glu Gly Ile Ser Pro Pro Cys Thr
    210                 215                 220
Thr Ser Gly His Thr Val Gly Ala Thr Ile Thr Gly His Val Glu Leu
225                 230                 235                 240
Pro Gln Asp Glu Ala Gln Ile Ala Ala Trp Leu Ala Val Asn Gly Pro
                245                 250                 255
Val Ala Val Ala Val Asp Ala Ser Ser Trp Met Thr Tyr Thr Gly Gly
            260                 265                 270
Val Met Thr Ser Cys Val Ser Glu Gln Leu Asp His Gly Val Leu Leu
        275                 280                 285
Val Gly Tyr Asn Asp Ser Ala Ala Val Pro Tyr Trp Ile Ile Lys Asn
```

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

<210> 388
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 388
Leu Pro Ser Arg
 1

<210> 389
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 389
Ser Leu Leu Arg
 1

<210> 390
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 390
His Arg Gly Arg
1

<210> 391
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 391
Gly Ala Thr Arg
1

<210> 392
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 392
Ser Leu Gly Arg
1

<210> 393
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 393
Val Phe Ala Lys
1

<210> 394
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 394
Arg Glu Phe Lys
1

<210> 395
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 395
Gly Leu Ala Arg
1

<210> 396
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 396
Arg Leu Gly Arg
1

<210> 397
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 397
Ala Glu Gly Lys
1

<210> 398
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 398
Gln His Ala Arg
1

<210> 399
<211> 4
<212> PRT
<213> Artificial Sequence

<220>

<223> Protease cleavage site

<400> 399
Leu Gly Leu Ala
1

<210> 400
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 400
Leu Ser Val Val
1

<210> 401
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 401
Arg Gln Ala Arg
1

<210> 402
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 402
Pro Arg Phe Lys
1

<210> 403
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Protease cleavage site

<400> 403
Lys Gln Gly Arg
1

<210> 404
<211> 855
<212> PRT
<213> Homo sapiens

<400> 404
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 405
<211> 855
<212> PRT
<213> Homo sapiens

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
            435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
        450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Val Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 406
<211> 855
<212> PRT
<213> Homo sapiens

<400> 406

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Asp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 407
<211> 855
<212> PRT
<213> Homo sapiens

<400> 407
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Glu Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 408
<211> 855
<212> PRT
<213> Homo sapiens

<400> 408
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Ala Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 409
<211> 855
<212> PRT
<213> Homo sapiens

<400> 409

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 410
<211> 855
<212> PRT
<213> Homo sapiens

<400> 410

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asn Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 411
<211> 855
<212> PRT
<213> Homo sapiens

<400> 411
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 412
<211> 855
<212> PRT
<213> Homo sapiens

<400> 412

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 413
<211> 855
<212> PRT
<213> Homo sapiens

<400> 413
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                   405                                410                   415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
               420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
           435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
       450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                   485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
               500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
           515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
       530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                   565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
               580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
           595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
       610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                   645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
               660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
           675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
       690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                   725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
               740                 745                 750
Thr Gln Ala Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
           755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
       770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                   805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
               820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
           835                 840                 845
Ile Lys Glu Asn Thr Gly Val
       850                 855
```

<210> 414
<211> 855
<212> PRT
<213> Homo sapiens

<400> 414

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
            435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
        450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Trp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 415
<211> 855
<212> PRT
<213> Homo sapiens

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

```
                   405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
               420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
           435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
       450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                   485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
               500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
           515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
       530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                   565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
               580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
           595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
       610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                   645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
               660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
           675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
       690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                   725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
               740                 745                 750
Thr Gln Arg Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
           755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
       770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                   805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
               820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
           835                 840                 845
Ile Lys Glu Asn Thr Gly Val
       850                 855
```

<210> 416
<211> 855
<212> PRT
<213> Homo sapiens

<400> 416

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Arg Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Arg Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 417
<211> 855
<212> PRT
<213> Homo sapiens

<400> 417

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Arg Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Arg Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Ala Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 418
<211> 855
<212> PRT
<213> Homo sapiens

<400> 418

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Trp Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Arg Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Arg Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 419
<211> 855
<212> PRT
<213> Homo sapiens

<400> 419

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro His Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 420
<211> 855
<212> PRT
<213> Homo sapiens

<400> 420

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Gln Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 421
<211> 855
<212> PRT
<213> Homo sapiens

<400> 421

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asn Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 422
<211> 855
<212> PRT
<213> Homo sapiens

<400> 422
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                   405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly His Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 423
<211> 855
<212> PRT
<213> Homo sapiens

<400> 423

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Ala Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 424
<211> 855
<212> PRT
<213> Homo sapiens

<400> 424

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Val Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 425
<211> 855
<212> PRT
<213> Homo sapiens

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Phe Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 426
<211> 855
<212> PRT
<213> Homo sapiens

<400> 426
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Ser Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 427
<211> 855
<212> PRT
<213> Homo sapiens

<400> 427

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
            435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
        450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Thr Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 428
<211> 855
<212> PRT
<213> Homo sapiens

<400> 428

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Leu Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 429
<211> 855
<212> PRT
<213> Homo sapiens

<400> 429

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Ile Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 430
<211> 855
<212> PRT
<213> Homo sapiens

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
            435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
        450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Phe Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 431
<211> 855
<212> PRT
<213> Homo sapiens

<400> 431
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Phe Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 432
<211> 855
<212> PRT
<213> Homo sapiens

<400> 432

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Ala Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 433
<211> 855
<212> PRT
<213> Homo sapiens

<400> 433

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Val Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 434
<211> 855
<212> PRT
<213> Homo sapiens

<400> 434
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Ser Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 435
<211> 855
<212> PRT
<213> Homo sapiens

<400> 435

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Gly Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 436
<211> 855
<212> PRT
<213> Homo sapiens

<400> 436

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Phe Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 437
<211> 855
<212> PRT
<213> Homo sapiens

<400> 437

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Tyr Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 438
<211> 855
<212> PRT
<213> Homo sapiens

<400> 438

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Ala Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 439
<211> 855
<212> PRT
<213> Homo sapiens

<400> 439

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Val Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 440
<211> 855
<212> PRT
<213> Homo sapiens

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Phe Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 441
<211> 855
<212> PRT
<213> Homo sapiens

<400> 441

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Arg Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 442
<211> 855
<212> PRT
<213> Homo sapiens

<400> 442

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Lys Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 443
<211> 855
<212> PRT
<213> Homo sapiens

<400> 443

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
            435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
        450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Ala Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 444
<211> 855
<212> PRT
<213> Homo sapiens

<400> 444
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Val Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 445
<211> 855
<212> PRT
<213> Homo sapiens

<400> 445

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Glu Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 446
<211> 855
<212> PRT
<213> Homo sapiens

<400> 446

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

```
                    405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Trp Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 447
<211> 855
<212> PRT
<213> Homo sapiens

<400> 447

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Tyr Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 448
<211> 855
<212> PRT
<213> Homo Sapiens

<220>
<221> VARIANT
<222> 381
<223> Ser

<220>
<221> VARIANT
<222> 674
<223> Val

<400> 448

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

```
                    325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
                340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
            355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
```

```
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 449
<211> 855
<212> PRT
<213> Mus musculus

<400> 449
Met Gly Ser Asn Arg Gly Arg Lys Ala Gly Gly Gly Ser Gln Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg Leu Glu Asn Met Asn Gly Phe
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Ala Asn Asn Ala Lys Lys Val Glu
        35                  40                  45
Lys Arg Gly Pro Arg Arg Trp Val Val Leu Val Ala Val Leu Phe Ser
    50                  55                  60
Phe Leu Leu Leu Ser Leu Met Ala Gly Leu Leu Val Trp His Phe His
65                  70                  75                  80
Tyr Arg Asn Val Arg Val Gln Lys Val Phe Asn Gly His Leu Arg Ile
                85                  90                  95
Thr Asn Glu Ile Phe Leu Asp Ala Tyr Glu Asn Ser Thr Ser Thr Glu
            100                 105                 110
Phe Ile Ser Leu Ala Ser Gln Val Lys Glu Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Asn Glu Val Pro Val Leu Gly Pro Tyr His Lys Lys Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Pro His Leu Ala Glu Glu Val Asp Arg Ala Met Ala Val Glu
                165                 170                 175
Arg Val Val Thr Leu Pro Pro Arg Ala Arg Ala Leu Lys Ser Phe Val
            180                 185                 190
Leu Thr Ser Val Val Ala Phe Pro Ile Asp Pro Arg Met Leu Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Ala Leu His Ala His Gly Ala Ala
    210                 215                 220
Val Thr Arg Phe Thr Thr Pro Gly Phe Pro Asn Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Val Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Val Ala Pro Cys Asp Glu His Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asp Ser Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Val Val Arg Leu Cys Gly Thr Phe Ser Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe Leu Ser Ser Gln Asn Val Phe Leu Val Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Asp Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Lys
```

```
                    325                 330                 335
Met Ser Ser Cys Gly Gly Phe Leu Ser Asp Thr Gln Gly Thr Phe Ser
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asn Cys Thr Trp
        355                 360                 365
Asn Ile Lys Val Pro Asn Asn Arg Asn Val Lys Val Arg Phe Lys Leu
    370                 375                 380
Phe Tyr Leu Val Asp Pro Asn Val Pro Val Gly Ser Cys Thr Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Ser Ser Asn Ser Ser Lys Ile Thr Val His Phe His Ser Asp
            420                 425                 430
His Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Asn Asp Pro Cys Pro Gly Met Phe Met Cys Lys Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Pro Asp Tyr
465                 470                 475                 480
Ser Asp Glu Arg Tyr Cys Arg Cys Asn Ala Thr His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Gln Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Gly Ser Asp Glu Glu Gly Cys Ser Cys Pro Ala Gly
        515                 520                 525
Ser Phe Lys Cys Ser Asn Gly Lys Cys Leu Pro Gln Ser Gln Lys Cys
    530                 535                 540
Asn Gly Lys Asp Asn Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Asp
545                 550                 555                 560
Ser Val Asn Val Val Ser Cys Thr Lys Tyr Thr Tyr Arg Cys Gln Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Thr Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asn Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Lys Gln Ala Arg Val Val Gly Gly Thr Asn Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Leu
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asp Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Phe Gln Asp Asp Lys Asn Phe Lys Tyr Ser Asp Tyr Thr Met Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu Leu Asp Gln Ser Lys Arg Ser Ala Ser Gly
        675                 680                 685
Val Gln Glu Leu Lys Leu Lys Arg Ile Ile Thr His Pro Ser Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Ser
705                 710                 715                 720
Val Glu Tyr Ser Thr Val Val Arg Pro Ile Cys Leu Pro Asp Ala Thr
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Lys Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asp Leu Met Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
```

```
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Ala Glu Lys Asp Gly
                805                 810                 815
Arg Met Phe Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Val Val Arg Asp Trp
        835                 840                 845
Ile Lys Glu His Thr Gly Val
    850                 855
```

<210> 450
<211> 855
<212> PRT
<213> Rattus norvegicus

<400> 450

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

```
                    325                                 330                                 335
Met Ser Ser Cys Gly Gly Leu Leu Ser Glu Ala Gln Gly Thr Phe Ser
                340                                 345                                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asn Cys Thr Trp
            355                                 360                                 365
Asn Ile Lys Val Pro Asn Asn Arg Asn Val Lys Val Arg Phe Lys Leu
        370                                 375                                 380
Phe Tyr Leu Val Asp Pro Asn Ile Pro Val Gly Ser Cys Thr Lys Asp
385                                 390                                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Phe Cys Gly Glu Arg Ser Gln Phe
                405                                 410                                 415
Val Val Ser Ser Asn Ser Ser Lys Ile Thr Val His Phe His Ser Asp
            420                                 425                                 430
His Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                                 440                                 445
Ser Asn Asp Pro Cys Pro Gly Met Phe Met Cys Lys Thr Gly Arg Cys
    450                                 455                                 460
Ile Arg Lys Asp Leu Arg Cys Asp Gly Trp Ala Asp Cys Pro Asp Tyr
465                                 470                                 475                 480
Ser Asp Glu Arg His Cys Arg Cys Asn Ala Thr His Gln Phe Met Cys
                485                                 490                                 495
Lys Asn Gln Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                                 505                                 510
Asp Cys Gly Asp Gly Ser Asp Glu Glu Gly Cys Ser Cys Pro Ala Gly
        515                                 520                                 525
Ser Phe Lys Cys Ser Asn Gly Lys Cys Leu Pro Gln Ser Gln Gln Cys
    530                                 535                                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Asp
545                                 550                                 555                 560
Asn Val Asn Ala Val Ser Cys Thr Lys Tyr Thr Tyr Arg Cys Gln Asn
                565                                 570                                 575
Gly Leu Cys Leu Asn Lys Gly Asn Pro Glu Cys Asp Gly Lys Lys Asp
            580                                 585                                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asn Cys Asp Cys Gly Leu Arg Ser
        595                                 600                                 605
Phe Thr Lys Gln Ala Arg Val Val Gly Gly Thr Asn Ala Asp Glu Gly
    610                                 615                                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Leu
625                                 630                                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asp Trp Leu Val Ser Ala Ala His
                645                                 650                                 655
Cys Phe Gln Asp Glu Thr Ile Phe Lys Tyr Ser Asp His Thr Met Trp
            660                                 665                                 670
Thr Ala Phe Leu Gly Leu Leu Asp Gln Ser Lys Arg Ser Ala Ser Gly
        675                                 680                                 685
Val Gln Glu His Lys Leu Lys Arg Ile Ile Thr His Pro Ser Phe Asn
    690                                 695                                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                                 710                                 715                 720
Ala Glu Tyr Ser Thr Val Val Arg Pro Ile Cys Leu Pro Asp Asn Thr
                725                                 730                                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                                 745                                 750
Thr Lys Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                                 760                                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Glu Leu Leu Pro Gln Gln Ile
    770                                 775                                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
```

```
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Lys Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Glu Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Ile Pro Glu Val Arg Asp Trp
        835                 840                 845
Ile Lys Glu Gln Thr Gly Val
    850                 855
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<210> 451
<211> 723
<212> DNA
<213> Homo sapiens

<400> 451
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcacatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta   723

<210> 452
<211> 723
<212> DNA
<213> Homo sapiens

<400> 452
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccggggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggac aaggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta   723

<210> 453
<211> 723
<212> DNA
<213> Homo sapiens

<400> 453
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggaa acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 454
<211> 723
<212> DNA
<213> Homo sapiens

<400> 454
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gacttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggac acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 455
<211> 723
<212> DNA
<213> Homo sapiens

<400> 455
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
ttcctgggct tgcacgacca gagccagcgc agcgcccctg gggtgcagga gcgcaggctc 240
aagcgcatca tctcccaccc cttcttcaat gccttcacct tcgactatga catcgcgctg 300
ctggagctgg agaaaccggc agagtacagc tccatggtgc ggcccatctg cctgccggac 360
gcctcccatg tcttccctgc cggcaaggcc atctgggtca cgggctgggg acacacccag 420
tatggaggca ctggcgcgct gatcctgcaa aagggtgaga tccgcgtcat caaccagacc 480
acctgcgaga acctcctgcc gcagcagatc acgccgcgca tgatgtgcgt gggcttcctc 540
agcggcggcg tggactcctg ccagggtgat tccgggggac ccctgtccag cgtggaggcg 600
gatgggcgga tcttccaggc cggtgtggtg agctggggag acggctgcgc tcagaggaac 660
aagccaggcg tgtacacaag gctccctctg tttcgggact ggatcaaaga gaacactggg 720
gta 723

<210> 456
<211> 723
<212> DNA
<213> Homo sapiens

<400> 456
gttgttgggg gcacggatgc ggatgagggc gagtggccct ggcaggtaag cctgcatgct 60
ctgggccagg gccacatctg cggtgcttcc ctcatctctc ccaactggct ggtctctgcc 120
gcacactgct acatcgatga cagaggattc aggtactcag accccacgca gtggacggcc 180
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Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Leu Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
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Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
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Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
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Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
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Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
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Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
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Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
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Thr Cys Glu Asn Leu Leu Pro Tyr Gln Ile Thr Pro Arg Met Met Cys
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Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
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Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
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Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
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Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
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Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Glu Met Cys
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Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
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Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Lys Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val


<210> 528
<211> 241
<212> PRT
<213> Homo sapiens

<400> 528
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
```

65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Tyr Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 529
<211> 855
<212> PRT
<213> Homo sapiens

<400> 529
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala

```
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
```

```
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Leu Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 530
<211> 855
<212> PRT
<213> Homo sapiens

<400> 530

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

```
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                   245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
               260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
           275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
       290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                   325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
               340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
           355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
       370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                   405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
               420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
           435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
       450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                   485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
               500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
           515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
       530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                   565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
               580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
           595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
       610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                   645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
               660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
           675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
       690                 695                 700
```

```
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Tyr Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855

<210> 531
<211> 855
<212> PRT
<213> Homo sapiens

<400> 531
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
```

```
                   245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
               260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
           275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
       290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                   325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
               340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
           355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
       370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                   405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
               420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
           435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
       450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                   485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
               500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
           515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
       530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                   565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
               580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
           595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
       610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                   645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
               660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
           675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
       690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
```

```
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Glu Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 532
<211> 855
<212> PRT
<213> Homo sapiens

<400> 532

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

```
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
                260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
            275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
        290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
```

```
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Lys Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 533
<211> 855
<212> PRT
<213> Homo sapiens

<400> 533

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

```
                260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
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<211> 99
<212> PRT
<213> Unknown

<220>
<223> HIV-1 PR

<400> 544

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Leu Glu Glu Met Ser Leu Pro Gly Arg Trp Lys Pro Lys Met Ile Gly
        35                  40                  45
Gly Ile Gly Gly Phe Ile Lys Val Arg Gln Tyr Asp Gln Ile Leu Ile
    50                  55                  60
Glu Ile Cys Gly His Lys Ala Ile Gly Thr Val Leu Val Gly Pro Thr
65                  70                  75                  80
Pro Val Asn Ile Ile Gly Arg Asn Leu Leu Thr Gln Ile Gly Cys Thr
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<210> 545
<211> 124
<212> PRT
<213> Unknown

<220>
<223> Rous sarcoma virus retropepsin

<400> 545

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Thr Ala Leu Leu Asp Ser Gly Ala Asp Ile Thr Ile Ile Ser Glu Glu
        35                  40                  45
Asp Trp Pro Thr Asp Trp Pro Val Met Glu Ala Ala Asn Pro Gln Ile
    50                  55                  60
His Gly Ile Gly Gly Gly Ile Pro Met Arg Lys Ser Arg Asp Met Ile
65                  70                  75                  80
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Glu Leu Gly Val Ile Asn Arg Asp Gly Ser Leu Glu Arg Pro Leu Leu
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Cys Leu Gln Gly Leu Gly Leu Arg Leu Thr Asn Leu
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<210> 546
<211> 1801
<212> DNA
<213> Homo sapiens

<400> 546

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<211> 477
<212> PRT
<213> Homo sapiens

<400> 547

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            20                  25                  30
Leu Val Gln Lys Tyr Leu Glu Asn Tyr Tyr Asp Leu Lys Lys Asp Val
        35                  40                  45
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Arg Glu Met Gln Lys Phe Leu Gly Leu Glu Val Thr Gly Lys Leu Asp
65                  70                  75                  80
Ser Asp Thr Leu Glu Val Met Arg Lys Pro Arg Cys Gly Val Pro Asp
                85                  90                  95
Val Gly His Phe Arg Thr Phe Pro Gly Ile Pro Lys Trp Arg Lys Thr
            100                 105                 110
His Leu Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Lys Asp
        115                 120                 125
Ala Val Asp Ser Ala Val Glu Lys Ala Leu Lys Val Trp Glu Glu Val
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Thr Pro Leu Thr Phe Ser Arg Leu Tyr Glu Gly Glu Ala Asp Ile Met
145                 150                 155                 160
Ile Ser Phe Ala Val Arg Glu His Gly Asp Phe Tyr Pro Phe Asp Gly
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Pro Gly Asn Val Leu Ala His Ala Tyr Ala Pro Gly Pro Gly Ile Asn
            180                 185                 190
Gly Asp Ala His Phe Asp Asp Asp Glu Gln Trp Thr Lys Asp Thr Thr
        195                 200                 205
Gly Thr Asn Leu Phe Leu Val Ala Ala His Glu Ile Gly His Ser Leu
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Gly Leu Phe His Ser Ala Asn Thr Glu Ala Leu Met Tyr Pro Leu Tyr
225                 230                 235                 240
His Ser Leu Thr Asp Leu Thr Arg Phe Arg Leu Ser Gln Asp Asp Ile
                245                 250                 255
Asn Gly Ile Gln Ser Leu Tyr Gly Pro Pro Pro Asp Ser Pro Glu Thr
            260                 265                 270
Pro Leu Val Pro Thr Glu Pro Val Pro Pro Glu Pro Gly Thr Pro Ala
        275                 280                 285
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    290                 295                 300
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305                 310                 315                 320
Lys Leu Glu Pro Glu Leu His Leu Ile Ser Ser Phe Trp Pro Ser Leu
                325                 330                 335
Pro Ser Gly Val Asp Ala Ala Tyr Glu Val Thr Ser Lys Asp Leu Val
            340                 345                 350
Phe Ile Phe Lys Gly Asn Gln Phe Trp Ala Ile Arg Gly Asn Glu Val
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Arg Ala Gly Tyr Pro Arg Gly Ile His Thr Leu Gly Phe Pro Pro Thr
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Val Arg Lys Ile Asp Ala Ala Ile Ser Asp Lys Glu Lys Asn Lys Thr
385                 390                 395                 400
Tyr Phe Phe Val Glu Asp Lys Tyr Trp Arg Phe Asp Glu Lys Arg Asn
                405                 410                 415
Ser Met Glu Pro Gly Phe Pro Lys Gln Ile Ala Glu Asp Phe Pro Gly
            420                 425                 430
Ile Asp Ser Lys Ile Asp Ala Val Phe Glu Glu Phe Gly Phe Phe Tyr
        435                 440                 445
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<211> 4111

<212> DNA
<213> Homo sapiens

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<210> 549
<211> 819
<212> PRT
<213> Homo sapiens

<400> 549

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Gly Phe Gln Gln Thr Ser His Leu Ser Ser Tyr Glu Ile Ile Thr Pro
        35                  40                  45
Trp Arg Leu Thr Arg Glu Arg Arg Glu Ala Pro Arg Pro Tyr Ser Lys
    50                  55                  60
Gln Val Ser Tyr Val Ile Gln Ala Glu Gly Lys Glu His Ile Ile His
65                  70                  75                  80
Leu Glu Arg Asn Lys Asp Leu Leu Pro Glu Asp Phe Val Val Tyr Thr
                85                  90                  95
Tyr Asn Lys Glu Gly Thr Leu Ile Thr Asp His Pro Asn Ile Gln Asn
            100                 105                 110
His Cys His Tyr Arg Gly Tyr Val Glu Gly Val His Asn Ser Ser Ile
        115                 120                 125
Ala Leu Ser Asp Cys Phe Gly Leu Arg Gly Leu Leu His Leu Glu Asn
    130                 135                 140
Ala Ser Tyr Gly Ile Glu Pro Leu Gln Asn Ser Ser His Phe Glu His
145                 150                 155                 160
Ile Ile Tyr Arg Met Asp Asp Val Tyr Lys Glu Pro Leu Lys Cys Gly
                165                 170                 175
Val Ser Asn Lys Asp Ile Glu Lys Glu Thr Ala Lys Asp Glu Glu Glu
            180                 185                 190
Glu Pro Pro Ser Met Thr Gln Leu Leu Arg Arg Arg Arg Ala Val Leu
        195                 200                 205
Pro Gln Thr Arg Tyr Val Glu Leu Phe Ile Val Val Asp Lys Glu Arg
    210                 215                 220
Tyr Asp Met Met Gly Arg Asn Gln Thr Ala Val Arg Glu Glu Met Ile
225                 230                 235                 240
Leu Leu Ala Asn Tyr Leu Asp Ser Met Tyr Ile Met Leu Asn Ile Arg
                245                 250                 255
Ile Val Leu Val Gly Leu Glu Ile Trp Thr Asn Gly Asn Leu Ile Asn
            260                 265                 270
Ile Val Gly Gly Ala Gly Asp Val Leu Gly Asn Phe Val Gln Trp Arg
        275                 280                 285
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Glu Lys Phe Leu Ile Thr Arg Arg Arg His Asp Ser Ala Gln Leu Val
    290                 295                 300
Leu Lys Lys Gly Phe Gly Gly Thr Ala Gly Met Ala Phe Val Gly Thr
305                 310                 315                 320
Val Cys Ser Arg Ser His Ala Gly Gly Ile Asn Val Phe Gly Gln Ile
                325                 330                 335
Thr Val Glu Thr Phe Ala Ser Ile Val Ala His Glu Leu Gly His Asn
            340                 345                 350
Leu Gly Met Asn His Asp Asp Gly Arg Asp Cys Ser Cys Gly Ala Lys
        355                 360                 365
Ser Cys Ile Met Asn Ser Gly Ala Ser Gly Ser Arg Asn Phe Ser Ser
    370                 375                 380
Cys Ser Ala Glu Asp Phe Glu Lys Leu Thr Leu Asn Lys Gly Gly Asn
385                 390                 395                 400
Cys Leu Leu Asn Ile Pro Lys Pro Asp Glu Ala Tyr Ser Ala Pro Ser
                405                 410                 415
Cys Gly Asn Lys Leu Val Asp Ala Gly Glu Glu Cys Asp Cys Gly Thr
            420                 425                 430
Pro Lys Glu Cys Glu Leu Asp Pro Cys Cys Glu Gly Ser Thr Cys Lys
        435                 440                 445
Leu Lys Ser Phe Ala Glu Cys Ala Tyr Gly Asp Cys Cys Lys Asp Cys
    450                 455                 460
Arg Phe Leu Pro Gly Gly Thr Leu Cys Arg Gly Lys Thr Ser Glu Cys
465                 470                 475                 480
Asp Val Pro Glu Tyr Cys Asn Gly Ser Ser Gln Phe Cys Gln Pro Asp
                485                 490                 495
Val Phe Ile Gln Asn Gly Tyr Pro Cys Gln Asn Asn Lys Ala Tyr Cys
            500                 505                 510
Tyr Asn Gly Met Cys Gln Tyr Tyr Asp Ala Gln Cys Gln Val Ile Phe
        515                 520                 525
Gly Ser Lys Ala Lys Ala Ala Pro Lys Asp Cys Phe Ile Glu Val Asn
    530                 535                 540
Ser Lys Gly Asp Arg Phe Gly Asn Cys Gly Phe Ser Gly Asn Glu Tyr
545                 550                 555                 560
Lys Lys Cys Ala Thr Gly Asn Ala Leu Cys Gly Lys Leu Gln Cys Glu
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Asn Val Gln Glu Ile Pro Val Phe Gly Ile Val Pro Ala Ile Ile Gln
            580                 585                 590
Thr Pro Ser Arg Gly Thr Lys Cys Trp Gly Val Asp Phe Gln Leu Gly
        595                 600                 605
Ser Asp Val Pro Asp Pro Gly Met Val Asn Glu Gly Thr Lys Cys Gly
    610                 615                 620
Ala Gly Lys Ile Cys Arg Asn Phe Gln Cys Val Asp Ala Ser Val Leu
625                 630                 635                 640
Asn Tyr Asp Cys Asp Val Gln Lys Lys Cys His Gly His Gly Val Cys
                645                 650                 655
Asn Ser Asn Lys Asn Cys His Cys Glu Asn Gly Trp Ala Pro Pro Asn
            660                 665                 670
Cys Glu Thr Lys Gly Tyr Gly Gly Ser Val Asp Ser Gly Pro Thr Tyr
        675                 680                 685
Asn Glu Met Asn Thr Ala Leu Arg Asp Gly Leu Leu Val Phe Phe Phe
    690                 695                 700
Leu Ile Val Pro Leu Ile Val Cys Ala Ile Phe Ile Phe Ile Lys Arg
705                 710                 715                 720
Asp Gln Leu Trp Arg Ser Tyr Phe Arg Lys Lys Arg Ser Gln Thr Tyr
                725                 730                 735
Glu Ser Asp Gly Lys Asn Gln Ala Asn Pro Ser Arg Gln Pro Gly Ser
            740                 745                 750
```

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Val Pro Arg His Val Ser Pro Val Thr Pro Pro Arg Glu Val Pro Ile
        755                 760                 765
Tyr Ala Asn Arg Phe Ala Val Pro Thr Tyr Ala Ala Lys Gln Pro Gln
    770                 775                 780
Gln Phe Pro Ser Arg Pro Pro Pro Pro Gln Pro Lys Val Ser Ser Gln
785                 790                 795                 800
Gly Asn Leu Ile Pro Ala Arg Pro Ala Pro Ala Pro Pro Leu Tyr Ser
                805                 810                 815
Ser Leu Thr
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<210> 550
<211> 3927
<212> DNA
<213> Homo sapiens

<400> 550

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<210> 551
<211> 748
<212> PRT
<213> Homo sapiens

<400> 551

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

```
        195                 200                 205
Leu Arg Lys Lys Arg Thr Thr Ser Ala Glu Lys Asn Thr Cys Gln Leu
    210                 215                 220
Tyr Ile Gln Thr Asp His Leu Phe Phe Lys Tyr Tyr Gly Thr Arg Glu
225                 230                 235                 240
Ala Val Ile Ala Gln Ile Ser Ser His Val Lys Ala Ile Asp Thr Ile
                245                 250                 255
Tyr Gln Thr Thr Asp Phe Ser Gly Ile Arg Asn Ile Ser Phe Met Val
            260                 265                 270
Lys Arg Ile Arg Ile Asn Thr Thr Ala Asp Glu Lys Asp Pro Thr Asn
        275                 280                 285
Pro Phe Arg Phe Pro Asn Ile Gly Val Glu Lys Phe Leu Glu Leu Asn
    290                 295                 300
Ser Glu Gln Asn His Asp Asp Tyr Cys Leu Ala Tyr Val Phe Thr Asp
305                 310                 315                 320
Arg Asp Phe Asp Asp Gly Val Leu Gly Leu Ala Trp Val Gly Ala Pro
                325                 330                 335
Ser Gly Ser Ser Gly Gly Ile Cys Glu Lys Ser Lys Leu Tyr Ser Asp
            340                 345                 350
Gly Lys Lys Lys Ser Leu Asn Thr Gly Ile Ile Thr Val Gln Asn Tyr
        355                 360                 365
Gly Ser His Val Pro Pro Lys Val Ser His Ile Thr Phe Ala His Glu
    370                 375                 380
Val Gly His Asn Phe Gly Ser Pro His Asp Ser Gly Thr Glu Cys Thr
385                 390                 395                 400
Pro Gly Glu Ser Lys Asn Leu Gly Gln Lys Glu Asn Gly Asn Tyr Ile
                405                 410                 415
Met Tyr Ala Arg Ala Thr Ser Gly Asp Lys Leu Asn Asn Asn Lys Phe
            420                 425                 430
Ser Leu Cys Ser Ile Arg Asn Ile Ser Gln Val Leu Glu Lys Lys Arg
        435                 440                 445
Asn Asn Cys Phe Val Glu Ser Gly Gln Pro Ile Cys Gly Asn Gly Met
    450                 455                 460
Val Glu Gln Gly Glu Glu Cys Asp Cys Gly Tyr Ser Asp Gln Cys Lys
465                 470                 475                 480
Asp Glu Cys Cys Phe Asp Ala Asn Gln Pro Glu Gly Arg Lys Cys Lys
                485                 490                 495
Leu Lys Pro Gly Lys Gln Cys Ser Pro Ser Gln Gly Pro Cys Cys Thr
            500                 505                 510
Ala Gln Cys Ala Phe Lys Ser Lys Ser Glu Lys Cys Arg Asp Asp Ser
        515                 520                 525
Asp Cys Ala Arg Glu Gly Ile Cys Asn Gly Phe Thr Ala Leu Cys Pro
    530                 535                 540
Ala Ser Asp Pro Lys Pro Asn Phe Thr Asp Cys Asn Arg His Thr Gln
545                 550                 555                 560
Val Cys Ile Asn Gly Gln Cys Ala Gly Ser Ile Cys Glu Lys Tyr Gly
                565                 570                 575
Leu Glu Glu Cys Thr Cys Ala Ser Ser Asp Gly Lys Asp Asp Lys Glu
            580                 585                 590
Leu Cys His Val Cys Cys Met Lys Lys Met Asp Pro Ser Thr Cys Ala
        595                 600                 605
Ser Thr Gly Ser Val Gln Trp Ser Arg His Phe Ser Gly Arg Thr Ile
    610                 615                 620
Thr Leu Gln Pro Gly Ser Pro Cys Asn Asp Phe Arg Gly Tyr Cys Asp
625                 630                 635                 640
Val Phe Met Arg Cys Arg Leu Val Asp Ala Asp Gly Pro Leu Ala Arg
                645                 650                 655
Leu Lys Lys Ala Ile Phe Ser Pro Glu Leu Tyr Glu Asn Ile Ala Glu
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            660                 665                 670
Trp Ile Val Ala His Trp Trp Ala Val Leu Leu Met Gly Ile Ala Leu
        675                 680                 685
Ile Met Leu Met Ala Gly Phe Ile Lys Ile Cys Ser Val His Thr Pro
    690                 695                 700
Ser Ser Asn Pro Lys Leu Pro Pro Pro Lys Pro Leu Pro Gly Thr Leu
705                 710                 715                 720
Lys Arg Arg Arg Pro Pro Gln Pro Ile Gln Gln Pro Gln Arg Gln Arg
                725                 730                 735
Pro Arg Glu Ser Tyr Gln Met Gly His Met Arg Arg
            740                 745
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<210> 552
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0252

<400> 552

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Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
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<210> 553

<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0486

<400> 553
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
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20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 554
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0351

<400> 554
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu

```
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 555
<211> 242
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0422

<400> 555

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

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

<210> 556
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0489

<400> 556

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

<210> 557
<211> 241
<212> PRT

<213> Artificial Sequence

<220>
<223> CB0464

<400> 557
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Glu Phe Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 558
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0490

<400> 558
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu

```
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 559
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0487

<400> 559

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

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

<210> 560
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0268

<400> 560

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

<210> 561
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0251

<400> 561
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 562
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0377

<400> 562
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr

```
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 563
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0244

<400> 563

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

```
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 564
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0488

<400> 564

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

<210> 565
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0373

<400> 565
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 566
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0232

<400> 566
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met

```
                100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
            115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 567
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0082

```
<400> 567
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Trp
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
```

```
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 568
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0274

<400> 568

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

<210> 569
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0080

<400> 569

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

<210> 570
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0367

<400> 570

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

```
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 571
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0383

<400> 571

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

Val

<210> 572
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0357

<400> 572
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 573
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0387

<400> 573
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15

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

<210> 574
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0238

<400> 574
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr

```
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 575
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0458

<400> 575

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

<210> 576
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0235

<400> 576
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Ala Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 577
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0381

<400> 577
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30

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

<210> 578
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0388

```
<400> 578
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1                  5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
```

```
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Tyr Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 579
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0257

<400> 579

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

<210> 580
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0385

<400> 580
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Phe Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 581
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0021

<400> 581
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45

```
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Glu Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 582
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0020

<400> 582

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

```
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 583
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0245

<400> 583

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

<210> 584
<211> 241

<212> PRT
<213> Artificial Sequence

<220>
<223> CB0451

<400> 584
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Leu Arg Asn Ser Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 585
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0332

<400> 585
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Glu Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60

```
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 586
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0403

<400> 586

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

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

<210> 587
<211> 242
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0353

```
<400> 587
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly Val Thr Gln Tyr Asp Gly Gly
    130                 135                 140
Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln
145                 150                 155                 160
Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met
                165                 170                 175
Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser
            180                 185                 190
Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala
        195                 200                 205
Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly
    210                 215                 220
Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr
225                 230                 235                 240
Gly Val
```

<210> 588
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0213

<400> 588
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 589
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0214

<400> 589
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80

```
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Ala Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 590
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0255

<400> 590

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

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

<210> 591
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0423

<400> 591

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

<210> 592
<211> 241
<212> PRT
<213> Artificial Sequence

<220>

<223> CB0016

<400> 592
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Phe Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 593
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0017

<400> 593
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95

```
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Asn Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 594
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0413

<400> 594

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

```
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 595
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0412

<400> 595

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

<210> 596
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0450

<400> 596
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 597
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0409

<400> 597
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ala Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110

```
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 598
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0350

<400> 598

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

225 230 235 240
Val

<210> 599
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0331

<400> 599
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Asp Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 600
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0349

<400> 600
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val

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

<210> 601
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0212

<400> 601

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

```
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asn Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 602
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0421

<400> 602

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

<210> 603
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0218

<400> 603
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Phe Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 604
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0219

<400> 604
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15

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

<210> 605
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0216

```
<400> 605
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
```

```
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Val Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 606
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0252 FL

<400> 606

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

```
                    245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
                260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
            275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
        290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
```

705 710 715 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
725 730 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
740 745 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
755 760 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
770 775 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785 790 795 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
805 810 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
820 825 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
835 840 845
Ile Lys Glu Asn Thr Gly Val
850 855

<210> 607
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0486 FL

<400> 607
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220

```
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
```

```
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 608
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0351 FL

```
<400> 608
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
```

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

```
                660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 609
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0422 FL

<400> 609

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

```
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
                180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
            195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
```

```
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 610
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0489 FL

<400> 610

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

```
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
```

```
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 611
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0464 FL

```
<400> 611
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
```

```
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
```

```
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Glu Phe Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 612
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0490 FL

<400> 612

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

```
                100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
```

```
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 613
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0487 FL

<400> 613

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

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

```
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 614
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0268 FL

<400> 614

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

```
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
```

```
         515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Asp
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 615
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0251 FL

<400> 615

```
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
```

```
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
```

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

<210> 616
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0377 FL

<400> 616

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Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
```

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

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

<210> 617
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0244 FL

<400> 617

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

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

<210> 618
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0488 FL

<400> 618

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

```
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 619

<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0373 FL

<400> 619

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

```
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 620
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0232 FL

<400> 620
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe

```
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
```

```
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 621
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0082 FL

<400> 621
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
```

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

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


<210> 622
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0274 FL

<400> 622
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
```

```
                 325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Glu Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
```

```
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 623
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0080 FL

<400> 623

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

```
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Asp Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
```

```
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 624
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0367 FL

<400> 624
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
```

```
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
```

```
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 625
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0383 FL

<400> 625
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
```

```
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
```

```
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Leu Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 626
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0357 FL

<400> 626

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

225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
405 410 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
420 425 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
435 440 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
450 455 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465 470 475 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
485 490 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
500 505 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
515 520 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
530 535 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545 550 555 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
565 570 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
580 585 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
595 600 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
610 615 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625 630 635 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
645 650 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
660 665 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
675 680 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn

```
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 627
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0387 FL

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<400> 627
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                  5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
```

```
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
```

```
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Trp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 628
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0238 FL

<400> 628

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

```
                180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
```

```
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 629
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0458 FL

```
<400> 629
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                   5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
```

```
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
```

```
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Glu
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 630
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0235 FL

```
<400> 630
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                   5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
```

```
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
```

```
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Ala Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 631
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0381 FL

<400> 631

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

```
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
```

```
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
                580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln His Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 632
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0388 FL

```
<400> 632
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
```

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

```
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Tyr Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 633
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0257 FL

<400> 633

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

```
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
```

```
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Tyr Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 634
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0385 FL

<400> 634

```
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
```

```
         35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
```

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


<210> 635
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0021 FL

<400> 635
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
```

```
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
                20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
            35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
```

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

<210> 636
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0020 FL

<400> 636

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

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

<210> 637
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0245 FL

<400> 637

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

```
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
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<210> 638
<211> 855

<212> PRT
<213> Artificial Sequence

<220>
<223> CB0451 FL

<400> 638

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

```
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Leu
            820                 825                 830
Arg Asn Ser Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 639
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0332 FL

<400> 639

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

```
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Glu
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
```

```
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 640
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0403 FL

<400> 640
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
```

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

```
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 641
<211> 856
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0353 FL

<400> 641

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

```
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly Val
            740                 745                 750
Thr Gln Tyr Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu
        755                 760                 765
Ile Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln
    770                 775                 780
Ile Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp
785                 790                 795                 800
```

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

<210> 642
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0213 FL

<400> 642

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

```
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
```

```
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 643
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0214 FL

<400> 643

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

```
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
```

```
Thr Gln Ala Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 644
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0255 FL

<400> 644

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

```
                260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
```

```
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Thr Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 645
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0423 FL

<400> 645
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
```

```
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
```

```
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 646
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0016 FL

<400> 646

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

```
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
```

```
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Phe Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 647
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0017 FL

<400> 647

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

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

```
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Asn Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 648
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0413 FL

<400> 648

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

```
                   165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Phe
```

625 630 635 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
645 650 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
660 665 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
675 680 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
690 695 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705 710 715 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
725 730 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
740 745 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
755 760 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
770 775 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785 790 795 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
805 810 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
820 825 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
835 840 845
Ile Lys Glu Asn Thr Gly Val
850 855

<210> 649
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0412 FL

<400> 649
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140

```
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
```

```
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Leu
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 650
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0450 FL

```
<400> 650
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
```

```
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
```

```
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 651
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0409 FL

```
<400> 651
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1                5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
```

```
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
                100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
            115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
```

```
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ala
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 652
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0350 FL

<400> 652

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

```
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
```

```
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Glu
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 653
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0331 FL

<400> 653

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

```
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
```

```
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Asp
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 654
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0349 FL

<400> 654

```
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
```

```
                20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
            35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
        50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
```

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

<210> 655
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0212 FL

<400> 655

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

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

<210> 656
<211> 855
<212> PRT
<213> Artificial Sequence

<220>

<223> CB0421 FL

<400> 656

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

```
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 657
<211> 855
<212> PRT

<213> Artificial Sequence

<220>
<223> CB0218 FL

<400> 657

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

```
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
                420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Phe Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 658
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0219 FL

<400> 658

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

```
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Ala Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
```

850 855

<210> 659
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0216 FL

<400> 659

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

```
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Val Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
```

```
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 660
<211> 313
<212> PRT
<213> Homo sapien

<220>
<223> L- Ficolin

<400> 660
Met Glu Leu Asp Arg Ala Val Gly Val Leu Gly Ala Ala Thr Leu Leu
 1               5                  10                  15
Leu Ser Phe Leu Gly Met Ala Trp Ala Leu Gln Ala Ala Asp Thr Cys
            20                  25                  30
Pro Glu Val Lys Met Val Gly Leu Glu Gly Ser Asp Lys Leu Thr Ile
        35                  40                  45
Leu Arg Gly Cys Pro Gly Leu Pro Gly Ala Pro Gly Asp Lys Gly Glu
    50                  55                  60
Ala Gly Thr Asn Gly Lys Arg Gly Glu Arg Gly Pro Pro Gly Pro Pro
65                  70                  75                  80
Gly Lys Ala Gly Pro Pro Gly Pro Asn Gly Ala Pro Gly Glu Pro Gln
                85                  90                  95
Pro Cys Leu Thr Gly Pro Arg Thr Cys Lys Asp Leu Leu Asp Arg Gly
            100                 105                 110
His Phe Leu Ser Gly Trp His Thr Ile Tyr Leu Pro Asp Cys Arg Pro
        115                 120                 125
Leu Thr Val Leu Cys Asp Met Asp Thr Asp Gly Gly Gly Trp Thr Val
    130                 135                 140
Phe Gln Arg Arg Val Asp Gly Ser Val Asp Phe Tyr Arg Asp Trp Ala
145                 150                 155                 160
Thr Tyr Lys Gln Gly Phe Gly Ser Arg Leu Gly Glu Phe Trp Leu Gly
                165                 170                 175
Asn Asp Asn Ile His Ala Leu Thr Ala Gln Gly Thr Ser Glu Leu Arg
            180                 185                 190
Val Asp Leu Val Asp Phe Glu Asp Asn Tyr Gln Phe Ala Lys Tyr Arg
        195                 200                 205
Ser Phe Lys Val Ala Asp Glu Ala Glu Lys Tyr Asn Leu Val Leu Gly
    210                 215                 220
Ala Phe Val Glu Gly Ser Ala Gly Asp Ser Leu Thr Phe His Asn Asn
225                 230                 235                 240
Gln Ser Phe Ser Thr Lys Asp Gln Asp Asn Asp Leu Asn Thr Gly Asn
                245                 250                 255
Cys Ala Val Met Phe Gln Gly Ala Trp Trp Tyr Lys Asn Cys His Val
            260                 265                 270
Ser Asn Leu Asn Gly Arg Tyr Leu Arg Gly Thr His Gly Ser Phe Ala
        275                 280                 285
Asn Gly Ile Asn Trp Lys Ser Gly Lys Gly Tyr Asn Tyr Ser Tyr Lys
    290                 295                 300
Val Ser Glu Met Lys Val Arg Pro Ala
305                 310


<210> 661
```

<211> 326
<212> PRT
<213> Homo sapien

<220>
<223> M-Ficolin

<400> 661
Met Glu Leu Ser Gly Ala Thr Met Ala Arg Gly Leu Ala Val Leu Leu
 1   5   10   15
Val Leu Phe Leu His Ile Lys Asn Leu Pro Ala Gln Ala Ala Asp Thr
            20   25   30
Cys Pro Glu Val Lys Val Val Gly Leu Glu Gly Ser Asp Lys Leu Thr
        35   40   45
Ile Leu Arg Gly Cys Pro Gly Leu Pro Gly Ala Pro Gly Pro Lys Gly
    50   55   60
Glu Ala Gly Val Ile Gly Glu Arg Gly Glu Arg Gly Leu Pro Gly Ala
65   70   75   80
Pro Gly Lys Ala Gly Pro Val Gly Pro Lys Gly Asp Arg Gly Glu Lys
                85   90   95
Gly Met Arg Gly Glu Lys Gly Asp Ala Gly Gln Ser Gln Ser Cys Ala
            100   105   110
Thr Gly Pro Arg Asn Cys Lys Asp Leu Leu Asp Arg Gly Tyr Phe Leu
        115   120   125
Ser Gly Trp His Thr Ile Tyr Leu Pro Asp Cys Arg Pro Leu Thr Val
    130   135   140
Leu Cys Asp Met Asp Thr Asp Gly Gly Gly Trp Thr Val Phe Gln Arg
145   150   155   160
Arg Met Asp Gly Ser Val Asp Phe Tyr Arg Asp Trp Ala Ala Tyr Lys
                165   170   175
Gln Gly Phe Gly Ser Gln Leu Gly Glu Phe Trp Leu Gly Asn Asp Asn
            180   185   190
Ile His Ala Leu Thr Ala Gln Gly Ser Ser Glu Leu Arg Val Asp Leu
        195   200   205
Val Asp Phe Glu Gly Asn His Gln Phe Ala Lys Tyr Lys Ser Phe Lys
    210   215   220
Val Ala Asp Glu Ala Glu Lys Tyr Lys Leu Val Leu Gly Ala Phe Val
225   230   235   240
Gly Gly Ser Ala Gly Asn Ser Leu Thr Gly His Asn Asn Asn Phe Phe
                245   250   255
Ser Thr Lys Asp Gln Asp Asn Asp Val Ser Ser Ser Asn Cys Ala Glu
            260   265   270
Lys Phe Gln Gly Ala Trp Trp Tyr Ala Asp Cys His Ala Ser Asn Leu
        275   280   285
Asn Gly Leu Tyr Leu Met Gly Pro His Glu Ser Tyr Ala Asn Gly Ile
    290   295   300
Asn Trp Ser Ala Ala Lys Gly Tyr Lys Tyr Ser Tyr Lys Val Ser Glu
305   310   315   320
Met Lys Val Arg Pro Ala
                325

<210> 662
<211> 299
<212> PRT
<213> Homo sapien

<220>

<223> H-ficolin (Hakata antigen)

<400> 662

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

<210> 663
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0476 FL

<400> 663

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

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

<210> 664
<211> 855
<212> PRT
<213> Artificial Sequence

<220>

<223> CB0477 FL

<400> 664

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

```
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Arg Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 665
<211> 855
<212> PRT

<213> Artificial Sequence

<220>
<223> CB0478 FL

<400> 665

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

```
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 666
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0480 FL

<400> 666
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp

```
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
```

850 855

<210> 667
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0481 FL

<400> 667

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

```
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
```

```
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 668
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0482 FL

<400> 668
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
```

```
                340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
```

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

<210> 669
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0483 FL

```
<400> 669
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
```

```
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
```

```
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 670
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0484 FL

<400> 670

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

```
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
```

```
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 671
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0485 FL

```
<400> 671
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
```

```
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
```

```
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Glu Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Leu Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 672
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0476 protease domain

<400> 672
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 673
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0477 protease domain

<400> 673
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 674
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0478 protease domain

<400> 674
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile

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

<210> 675
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0480 protease domain

<400> 675

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

```
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 676
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0481 protease domain

<400> 676

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

<210> 677
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0482 protease domain

<400> 677
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35   40   45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50   55   60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65   70   75   80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85   90   95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100   105   110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115   120   125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130   135   140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145   150   155   160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165   170   175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180   185   190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195   200   205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Arg Pro Gly Val
    210   215   220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225   230   235   240
Val

<210> 678
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0483 protease domain

<400> 678
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1   5   10   15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20   25   30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg

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

<210> 679
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0484 protease domain

```
<400> 679
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
```

```
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 680
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> CB0485 protease domain

```
<400> 680
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Glu Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Leu Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 681
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/K224N FL

<400> 681
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp

```
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
```

850 855

<210> 682
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175D/K224N FL

<400> 682

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

```
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
```

```
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 683
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/K224N  FL

<400> 683
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
```

```
                340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
```

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

<210> 684
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/G151L/K224N FL

<400> 684

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

```
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile
    770                 775                 780
```

```
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 685
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175R/K224N FL

<400> 685

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

```
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
```

```
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 686
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175K/K224N FL

<400> 686

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

```
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
```

```
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 687
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175H/K224N FL

<400> 687

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

```
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
```

705 710 715 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
725 730 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
740 745 750
Thr Gln Asp Gly Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile
755 760 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln His Ile
770 775 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785 790 795 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
805 810 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
820 825 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
835 840 845
Ile Lys Glu Asn Thr Gly Val
850 855

<210> 688
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175K/K224F FL

<400> 688
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220

```
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
```

```
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 689
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175R/K224F FL

<400> 689

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

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

```
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 690
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175H/K224F FL

<400> 690

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

Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
405 410 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
420 425 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
435 440 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
450 455 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465 470 475 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
485 490 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
500 505 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
515 520 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
530 535 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545 550 555 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
565 570 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
580 585 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
595 600 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
610 615 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625 630 635 640

Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
645 650 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
660 665 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
675 680 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
690 695 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705 710 715 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
725 730 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
740 745 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
755 760 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln His Ile
770 775 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785 790 795 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
805 810 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
820 825 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
835 840 845
Ile Lys Glu Asn Thr Gly Val
850 855

<210> 691
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175Y/K224F FL

<400> 691
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
100 105 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
115 120 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
130 135 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser

145 150 155 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
165 170 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
180 185 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
195 200 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
210 215 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225 230 235 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
245 250 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
260 265 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
275 280 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
290 295 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305 310 315 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
325 330 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
340 345 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
355 360 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
370 375 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385 390 395 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
405 410 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
420 425 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
435 440 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
450 455 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465 470 475 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
485 490 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
500 505 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
515 520 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
530 535 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545 550 555 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
565 570 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
580 585 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
595 600 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly

```
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Tyr Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Phe Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 692
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175K/K224N FL

<400> 692

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

```
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
```

Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
595 600 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
610 615 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625 630 635 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
645 650 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
660 665 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
675 680 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
690 695 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705 710 715 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
725 730 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
740 745 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
755 760 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile
770 775 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785 790 795 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
805 810 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
820 825 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
835 840 845
Ile Lys Glu Asn Thr Gly Val
850 855

<210> 693
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175R/K224N FL

<400> 693
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
1 5 10 15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
20 25 30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
35 40 45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
50 55 60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65 70 75 80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
85 90 95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu

```
                100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
            115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
        515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
```

```
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 694
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175H/K224N FL

<400> 694

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

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

```
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln His Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855


<210> 695
<211> 855
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175Y/K224N  FL

<400> 695
Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
 1               5                  10                  15
Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
            20                  25                  30
Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
        35                  40                  45
Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
```

```
    50                  55                  60
Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
65                  70                  75                  80
Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
                85                  90                  95
Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
            100                 105                 110
Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
        115                 120                 125
Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
    130                 135                 140
Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
145                 150                 155                 160
Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
                165                 170                 175
Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
            180                 185                 190
Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
        195                 200                 205
Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
    210                 215                 220
Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
225                 230                 235                 240
His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
                245                 250                 255
Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
            260                 265                 270
Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
        275                 280                 285
Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
    290                 295                 300
Phe His Ser Ser Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr
305                 310                 315                 320
Glu Arg Arg His Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg
                325                 330                 335
Met Ser Ser Cys Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn
            340                 345                 350
Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp
        355                 360                 365
Asn Ile Glu Val Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe
    370                 375                 380
Phe Tyr Leu Leu Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp
385                 390                 395                 400
Tyr Val Glu Ile Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe
                405                 410                 415
Val Val Thr Ser Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp
            420                 425                 430
Gln Ser Tyr Thr Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp
        435                 440                 445
Ser Ser Asp Pro Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys
    450                 455                 460
Ile Arg Lys Glu Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His
465                 470                 475                 480
Ser Asp Glu Leu Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys
                485                 490                 495
Lys Asn Lys Phe Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Val Asn
            500                 505                 510
Asp Cys Gly Asp Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln
```

```
         515                 520                 525
Thr Phe Arg Cys Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys
    530                 535                 540
Asn Gly Lys Asp Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro
545                 550                 555                 560
Lys Val Asn Val Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn
                565                 570                 575
Gly Leu Cys Leu Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp
            580                 585                 590
Cys Ser Asp Gly Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser
        595                 600                 605
Phe Thr Arg Gln Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly
    610                 615                 620
Glu Trp Pro Trp Gln Val Ser Leu His Ala Leu Gly Gln Gly His Thr
625                 630                 635                 640
Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His
                645                 650                 655
Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp
            660                 665                 670
Thr Ala Phe Leu Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly
        675                 680                 685
Val Gln Glu Arg Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn
    690                 695                 700
Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro
705                 710                 715                 720
Ala Glu Tyr Ser Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser
                725                 730                 735
His Val Phe Pro Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His
            740                 745                 750
Thr Gln Asp Gly Gly Thr Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile
        755                 760                 765
Arg Val Ile Asn Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Tyr Ile
    770                 775                 780
Thr Pro Arg Met Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser
785                 790                 795                 800
Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly
                805                 810                 815
Arg Ile Phe Gln Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln
            820                 825                 830
Arg Asn Asn Pro Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp
        835                 840                 845
Ile Lys Glu Asn Thr Gly Val
    850                 855
```

<210> 696
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/K224N protease domain

<400> 696

```
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
            20                  25                  30
```

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

<210> 697
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175D/K224N protease domain

<400> 697
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr

145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Asp Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 698
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/K224N protease domain

<400> 698
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 699
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/G151L/K224N protease domain

<400> 699
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 700
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175R/K224N protease domain

<400> 700
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45

```
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 701
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175K/K224N protease domain

```
<400> 701
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
 1               5                  10                  15
Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile
            20                  25                  30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
        35                  40                  45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
    50                  55                  60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile Thr Pro Arg Met Met Cys
```

```
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 702
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Y146D/Q175H/K224N protease domain

<400> 702

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

<210> 703
<211> 241

<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175K/K224F protease domain

<400> 703
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 704
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175R/K224F protease domain

<400> 704
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60

```
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65                  70                  75                  80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 705
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175H/K224F protease domain

<400> 705

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

```
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Phe Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
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<210> 706
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175Y/K224F protease domain

<400> 706

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

<210> 707
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175K/K224N protease domain

<400> 707
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
85 90 95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
100 105 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
115 120 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
130 135 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145 150 155 160
Thr Cys Glu Asn Leu Leu Pro Gln Lys Ile Thr Pro Arg Met Met Cys
165 170 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
180 185 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
195 200 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
210 215 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225 230 235 240
Val

<210> 708
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175R/K224N protease domain

<400> 708
Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val
1 5 10 15
Ser Leu His Ala Leu Gly Gln Gly His Thr Cys Gly Ala Ser Leu Ile
20 25 30
Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg
35 40 45
Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu
50 55 60
His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu
65 70 75 80

```
Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr
                85                  90                  95
Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met
            100                 105                 110
Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly
        115                 120                 125
Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Asp Gly Gly Thr
    130                 135                 140
Leu Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr
145                 150                 155                 160
Thr Cys Glu Asn Leu Leu Pro Gln Arg Ile Thr Pro Arg Met Met Cys
                165                 170                 175
Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly
            180                 185                 190
Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly
        195                 200                 205
Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Asn Pro Gly Val
    210                 215                 220
Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly
225                 230                 235                 240
Val
```

<210> 709
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175H/K224N protease domain

<400> 709

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

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

<210> 710
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> I41T/Y146D/G151L/Q175Y/K224N protease domain

<400> 710

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

□