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SEQUENCE LISTING

<110> Agency for Science, Technology and Research (A*STAR)

<120> DERIVATION OF LIVER ORGANOIDS FROM HUMAN PLURIPOTENT STEM CELLS VIA AN EXPANDABLE MULTIPOTENT ENDODERM SPHERIOD PROGENITOR (MESP)

<130> 1012196

<150> SG 10201507675Y
<151> 2015-09-15

<160> 99

<170> PatentIn version 3.5

<210> 1
<211> 417
<212> PRT
<213> Homo sapiens

<400> 1

Met Arg Leu Ser Lys Thr Leu Val Asp Met Asp Met Ala Asp Tyr Ser
1 5 10 15

Ala Ala Leu Asp Pro Ala Tyr Thr Thr Leu Glu Phe Glu Asn Val Gln
20 25 30

Val Leu Thr Met Gly Asn Asp Thr Ser Pro Ser Glu Gly Thr Asn Leu
35 40 45

Asn Ala Pro Asn Ser Leu Gly Val Ser Ala Leu Cys Ala Ile Cys Gly
50 55 60

Asp Arg Ala Thr Gly Lys His Tyr Gly Ala Ser Ser Cys Asp Gly Cys
65 70 75 80

Lys Gly Phe Phe Arg Arg Ser Val Arg Lys Asn His Met Tyr Ser Cys
85 90 95

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

100 105 110

Arg Tyr Cys Arg Leu Lys Lys Cys Phe Arg Ala Gly Met Lys Lys Glu
115 120 125

Ala Val Gln Asn Glu Arg Asp Arg Ile Ser Thr Arg Arg Ser Ser Tyr
130 135 140

Glu Asp Ser Ser Leu Pro Ser Ile Asn Ala Leu Leu Gln Ala Glu Val
145 150 155 160

Leu Ser Arg Gln Ile Thr Ser Pro Val Ser Gly Ile Asn Gly Asp Ile
165 170 175

Arg Ala Lys Lys Ile Ala Ser Ile Ala Asp Val Cys Glu Ser Met Lys
180 185 190

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

Cys Glu Leu Pro Leu Asp Asp Gln Val Ala Leu Leu Arg Ala His Ala
210 215 220

Gly Glu His Leu Leu Leu Gly Ala Thr Lys Arg Ser Met Val Phe Lys
225 230 235 240

Asp Val Leu Leu Leu Gly Asn Asp Tyr Ile Val Pro Arg His Cys Pro
245 250 255

Glu Leu Ala Glu Met Ser Arg Val Ser Ile Arg Ile Leu Asp Glu Leu
260 265 270

Val Leu Pro Phe Gln Glu Leu Gln Ile Asp Asp Asn Glu Tyr Ala Tyr
275 280 285

Leu Lys Ala Ile Ile Phe Phe Asp Pro Asp Ala Lys Gly Leu Ser Asp

290 295 300

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

Asp Tyr Ile Asn Asp Arg Gln Tyr Asp Ser Arg Gly Arg Phe Gly Glu
325 330 335

Leu Leu Leu Leu Leu Pro Thr Leu Gln Ser Ile Thr Trp Gln Met Ile
340 345 350

Glu Gln Ile Gln Phe Ile Lys Leu Phe Gly Met Ala Lys Ile Asp Asn
355 360 365

Leu Leu Gln Glu Met Leu Leu Gly Gly Pro Cys Gln Ala Gln Glu Gly
370 375 380

Arg Gly Trp Ser Gly Asp Ser Pro Gly Asp Arg Pro His Thr Val Ser
385 390 395 400

Ser Pro Leu Ser Ser Leu Ala Ser Pro Leu Cys Arg Phe Gly Gln Val
405 410 415

Ala

<210> 2
<211> 283
<212> PRT
<213> Homo sapiens

<400> 2

Met Asn Gly Glu Glu Gln Tyr Tyr Ala Ala Thr Gln Leu Tyr Lys Asp
1 5 10 15

Pro Cys Ala Phe Gln Arg Gly Pro Ala Pro Glu Phe Ser Ala Ser Pro
20 25 30

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Pro Ala Cys Leu Tyr Met Gly Arg Gln Pro Pro Pro Pro Pro Pro His
        35                  40                  45

Pro Phe Pro Gly Ala Leu Gly Ala Leu Glu Gln Gly Ser Pro Pro Asp
    50                  55                  60

Ile Ser Pro Tyr Glu Val Pro Pro Leu Ala Asp Asp Pro Ala Val Ala
65                  70                  75                  80

His Leu His His His Leu Pro Ala Gln Leu Ala Leu Pro His Pro Pro
                85                  90                  95

Ala Gly Pro Phe Pro Glu Gly Ala Glu Pro Gly Val Leu Glu Glu Pro
            100                 105                 110

Asn Arg Val Gln Leu Pro Phe Pro Trp Met Lys Ser Thr Lys Ala His
        115                 120                 125

Ala Trp Lys Gly Gln Trp Ala Gly Gly Ala Tyr Ala Ala Glu Pro Glu
    130                 135                 140

Glu Asn Lys Arg Thr Arg Thr Ala Tyr Thr Arg Ala Gln Leu Leu Glu
145                 150                 155                 160

Leu Glu Lys Glu Phe Leu Phe Asn Lys Tyr Ile Ser Arg Pro Arg Arg
                165                 170                 175

Val Glu Leu Ala Val Met Leu Asn Leu Thr Glu Arg His Ile Lys Ile
            180                 185                 190

Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Glu Asp Lys Lys
        195                 200                 205

Arg Gly Gly Gly Thr Ala Val Gly Gly Gly Gly Val Ala Glu Pro Glu
    210                 215                 220
```

```
Gln Asp Cys Ala Val Thr Ser Gly Glu Glu Leu Leu Ala Leu Pro Pro
225                 230                 235                 240


Pro Pro Pro Pro Gly Gly Ala Val Pro Pro Ala Ala Pro Val Ala Ala
                245                 250                 255


Arg Glu Gly Arg Leu Pro Pro Gly Leu Ser Ala Ser Pro Gln Pro Ser
            260                 265                 270


Ser Val Ala Pro Arg Arg Pro Gln Glu Pro Arg
        275                 280


<210>  3
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<212>  PRT
<213>  Homo sapiens

<400>  3

Met Tyr Val Ser Tyr Leu Leu Asp Lys Asp Val Ser Met Tyr Pro Ser
1               5                   10                  15


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


Ser Pro Pro Gln Tyr Pro Asp Tyr Gly Gly Tyr His Val Ala Ala Ala
        35                  40                  45


Ala Ala Ala Ala Ala Asn Leu Asp Ser Ala Gln Ser Pro Gly Pro Ser
    50                  55                  60


Trp Pro Ala Ala Tyr Gly Ala Pro Leu Arg Glu Asp Trp Asn Gly Tyr
65                  70                  75                  80


Ala Pro Gly Gly Ala Ala Ala Ala Ala Asn Ala Val Ala His Gly Leu
                85                  90                  95
```

```
Asn Gly Gly Ser Pro Ala Ala Ala Met Gly Tyr Ser Ser Pro Ala Asp
            100                 105                 110

Tyr His Pro His His His Pro His His His Pro His His Pro Ala Ala
        115                 120                 125

Ala Pro Ser Cys Ala Ser Gly Leu Leu Gln Thr Leu Asn Pro Gly Pro
    130                 135                 140

Pro Gly Pro Ala Ala Thr Ala Ala Ala Glu Gln Leu Ser Pro Gly Gly
145                 150                 155                 160

Gln Arg Arg Asn Leu Cys Glu Trp Met Arg Lys Pro Ala Gln Gln Ser
                165                 170                 175

Leu Gly Ser Gln Val Lys Thr Arg Thr Lys Asp Lys Tyr Arg Val Val
            180                 185                 190

Tyr Thr Asp His Gln Arg Leu Glu Leu Glu Lys Glu Phe His Tyr Ser
        195                 200                 205

Arg Tyr Ile Thr Ile Arg Arg Lys Ala Glu Leu Ala Ala Thr Leu Gly
    210                 215                 220

Leu Ser Glu Arg Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Ala Lys
225                 230                 235                 240

Glu Arg Lys Ile Asn Lys Lys Lys Leu Gln Gln Gln Gln Gln Gln Gln
                245                 250                 255

Pro Pro Gln Pro Pro Pro Pro Pro Pro Gln Pro Pro Gln Pro Gln Pro
            260                 265                 270

Gly Pro Leu Arg Ser Val Pro Glu Pro Leu Ser Pro Val Ser Ser Leu
        275                 280                 285
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Gln Ala Ser Val Ser Gly Ser Val Pro Gly Val Leu Gly Pro Thr Gly
    290                 295                 300


Gly Val Leu Asn Pro Thr Val Thr Gln
305                 310


<210>  4
<211>  509
<212>  PRT
<213>  Homo sapiens

<400>  4

Met Asn Leu Leu Asp Pro Phe Met Lys Met Thr Asp Glu Gln Glu Lys
1               5                   10                  15


Gly Leu Ser Gly Ala Pro Ser Pro Thr Met Ser Glu Asp Ser Ala Gly
            20                  25                  30


Ser Pro Cys Pro Ser Gly Ser Gly Ser Asp Thr Glu Asn Thr Arg Pro
        35                  40                  45


Gln Glu Asn Thr Phe Pro Lys Gly Glu Pro Asp Leu Lys Lys Glu Ser
    50                  55                  60


Glu Glu Asp Lys Phe Pro Val Cys Ile Arg Glu Ala Val Ser Gln Val
65                  70                  75                  80


Leu Lys Gly Tyr Asp Trp Thr Leu Val Pro Met Pro Val Arg Val Asn
                85                  90                  95


Gly Ser Ser Lys Asn Lys Pro His Val Lys Arg Pro Met Asn Ala Phe
            100                 105                 110


Met Val Trp Ala Gln Ala Ala Arg Arg Lys Leu Ala Asp Gln Tyr Pro
        115                 120                 125
```

```
His Leu His Asn Ala Glu Leu Ser Lys Thr Leu Gly Lys Leu Trp Arg
    130                 135                 140

Leu Leu Asn Glu Ser Glu Lys Arg Pro Phe Val Glu Glu Ala Glu Arg
145                 150                 155                 160

Leu Arg Val Gln His Lys Lys Asp His Pro Asp Tyr Lys Tyr Gln Pro
                165                 170                 175

Arg Arg Arg Lys Ser Val Lys Asn Gly Gln Ala Glu Ala Glu Glu Ala
            180                 185                 190

Thr Glu Gln Thr His Ile Ser Pro Asn Ala Ile Phe Lys Ala Leu Gln
        195                 200                 205

Ala Asp Ser Pro His Ser Ser Ser Gly Met Ser Glu Val His Ser Pro
    210                 215                 220

Gly Glu His Ser Gly Gln Ser Gln Gly Pro Pro Thr Pro Pro Thr Thr
225                 230                 235                 240

Pro Lys Thr Asp Val Gln Pro Gly Lys Ala Asp Leu Lys Arg Glu Gly
                245                 250                 255

Arg Pro Leu Pro Glu Gly Gly Arg Gln Pro Pro Ile Asp Phe Arg Asp
            260                 265                 270

Val Asp Ile Gly Glu Leu Ser Ser Asp Val Ile Ser Asn Ile Glu Thr
        275                 280                 285

Phe Asp Val Asn Glu Phe Asp Gln Tyr Leu Pro Pro Asn Gly His Pro
    290                 295                 300

Gly Val Pro Ala Thr His Gly Gln Val Thr Tyr Thr Gly Ser Tyr Gly
305                 310                 315                 320
```

```
Ile Ser Ser Thr Ala Ala Thr Pro Ala Ser Ala Gly His Val Trp Met
                325                 330                 335

Ser Lys Gln Gln Ala Pro Pro Pro Pro Pro Gln Gln Pro Pro Gln Ala
            340                 345                 350

Pro Pro Ala Pro Gln Ala Pro Pro Gln Pro Gln Ala Ala Pro Pro Gln
        355                 360                 365

Gln Pro Ala Ala Pro Pro Gln Gln Pro Gln Ala His Thr Leu Thr Thr
    370                 375                 380

Leu Ser Ser Glu Pro Gly Gln Ser Gln Arg Thr His Ile Lys Thr Glu
385                 390                 395                 400

Gln Leu Ser Pro Ser His Tyr Ser Glu Gln Gln Gln His Ser Pro Gln
                405                 410                 415

Gln Ile Ala Tyr Ser Pro Phe Asn Leu Pro His Tyr Ser Pro Ser Tyr
            420                 425                 430

Pro Pro Ile Thr Arg Ser Gln Tyr Asp Tyr Thr Asp His Gln Asn Ser
        435                 440                 445

Ser Ser Tyr Tyr Ser His Ala Ala Gly Gln Gly Thr Gly Leu Tyr Ser
    450                 455                 460

Thr Phe Thr Tyr Met Asn Pro Ala Gln Arg Pro Met Tyr Thr Pro Ile
465                 470                 475                 480

Ala Asp Thr Ser Gly Val Pro Ser Ile Pro Gln Thr His Ser Pro Gln
                485                 490                 495

His Trp Glu Gln Pro Val Tyr Thr Gln Leu Thr Arg Pro
            500                 505
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<210> 5
<211> 400
<212> PRT
<213> Homo sapiens

<400> 5

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Met Thr Ser Tyr Ser Tyr Arg Gln Ser Ser Ala Thr Ser Ser Phe Gly
1               5                   10                  15


Gly Leu Gly Gly Gly Ser Val Arg Phe Gly Pro Gly Val Ala Phe Arg
            20                  25                  30


Ala Pro Ser Ile His Gly Gly Ser Gly Gly Arg Gly Val Ser Val Ser
        35                  40                  45


Ser Ala Arg Phe Val Ser Ser Ser Ser Ser Gly Ala Tyr Gly Gly Gly
    50                  55                  60


Tyr Gly Gly Val Leu Thr Ala Ser Asp Gly Leu Leu Ala Gly Asn Glu
65                  70                  75                  80


Lys Leu Thr Met Gln Asn Leu Asn Asp Arg Leu Ala Ser Tyr Leu Asp
                85                  90                  95


Lys Val Arg Ala Leu Glu Ala Ala Asn Gly Glu Leu Glu Val Lys Ile
            100                 105                 110


Arg Asp Trp Tyr Gln Lys Gln Gly Pro Gly Pro Ser Arg Asp Tyr Ser
        115                 120                 125


His Tyr Tyr Thr Thr Ile Gln Asp Leu Arg Asp Lys Ile Leu Gly Ala
    130                 135                 140


Thr Ile Glu Asn Ser Arg Ile Val Leu Gln Ile Asp Asn Ala Arg Leu
145                 150                 155                 160


Ala Ala Asp Asp Phe Arg Thr Lys Phe Glu Thr Glu Gln Ala Leu Arg
```

```
                165                 170                 175

Met Ser Val Glu Ala Asp Ile Asn Gly Leu Arg Arg Val Leu Asp Glu
            180                 185                 190

Leu Thr Leu Ala Arg Thr Asp Leu Glu Met Gln Ile Glu Gly Leu Lys
        195                 200                 205

Glu Glu Leu Ala Tyr Leu Lys Lys Asn His Glu Glu Glu Ile Ser Thr
    210                 215                 220

Leu Arg Gly Gln Val Gly Gly Gln Val Ser Val Glu Val Asp Ser Ala
225                 230                 235                 240

Pro Gly Thr Asp Leu Ala Lys Ile Leu Ser Asp Met Arg Ser Gln Tyr
                245                 250                 255

Glu Val Met Ala Glu Gln Asn Arg Lys Asp Ala Glu Ala Trp Phe Thr
            260                 265                 270

Ser Arg Thr Glu Glu Leu Asn Arg Glu Val Ala Gly His Thr Glu Gln
        275                 280                 285

Leu Gln Met Ser Arg Ser Glu Val Thr Asp Leu Arg Arg Thr Leu Gln
    290                 295                 300

Gly Leu Glu Ile Glu Leu Gln Ser Gln Leu Ser Met Lys Ala Ala Leu
305                 310                 315                 320

Glu Asp Thr Leu Ala Glu Thr Glu Ala Arg Phe Gly Ala Gln Leu Ala
                325                 330                 335

His Ile Gln Ala Leu Ile Ser Gly Ile Glu Ala Gln Leu Gly Asp Val
            340                 345                 350

Arg Ala Asp Ser Glu Arg Gln Asn Gln Glu Tyr Gln Arg Leu Met Asp
```

355 360 365

Ile Lys Ser Arg Leu Glu Gln Glu Ile Ala Thr Tyr Arg Ser Leu Leu
370 375 380

Glu Gly Gln Glu Asp His Tyr Asn Asn Leu Ser Ala Ser Lys Val Leu
385 390 395 400

<210> 6
<211> 609
<212> PRT
<213> Homo sapiens

<400> 6

Met Lys Trp Val Glu Ser Ile Phe Leu Ile Phe Leu Leu Asn Phe Thr
1 5 10 15

Glu Ser Arg Thr Leu His Arg Asn Glu Tyr Gly Ile Ala Ser Ile Leu
20 25 30

Asp Ser Tyr Gln Cys Thr Ala Glu Ile Ser Leu Ala Asp Leu Ala Thr
35 40 45

Ile Phe Phe Ala Gln Phe Val Gln Glu Ala Thr Tyr Lys Glu Val Ser
50 55 60

Lys Met Val Lys Asp Ala Leu Thr Ala Ile Glu Lys Pro Thr Gly Asp
65 70 75 80

Glu Gln Ser Ser Gly Cys Leu Glu Asn Gln Leu Pro Ala Phe Leu Glu
85 90 95

Glu Leu Cys His Glu Lys Glu Ile Leu Glu Lys Tyr Gly His Ser Asp
100 105 110

Cys Cys Ser Gln Ser Glu Glu Gly Arg His Asn Cys Phe Leu Ala His
115 120 125

```
Lys Lys Pro Thr Pro Ala Ser Ile Pro Leu Phe Gln Val Pro Glu Pro
    130                 135                 140

Val Thr Ser Cys Glu Ala Tyr Glu Glu Asp Arg Glu Thr Phe Met Asn
145                 150                 155                 160

Lys Phe Ile Tyr Glu Ile Ala Arg Arg His Pro Phe Leu Tyr Ala Pro
                165                 170                 175

Thr Ile Leu Leu Trp Ala Ala Arg Tyr Asp Lys Ile Ile Pro Ser Cys
            180                 185                 190

Cys Lys Ala Glu Asn Ala Val Glu Cys Phe Gln Thr Lys Ala Ala Thr
        195                 200                 205

Val Thr Lys Glu Leu Arg Glu Ser Ser Leu Leu Asn Gln His Ala Cys
    210                 215                 220

Ala Val Met Lys Asn Phe Gly Thr Arg Thr Phe Gln Ala Ile Thr Val
225                 230                 235                 240

Thr Lys Leu Ser Gln Lys Phe Thr Lys Val Asn Phe Thr Glu Ile Gln
                245                 250                 255

Lys Leu Val Leu Asp Val Ala His Val His Glu His Cys Cys Arg Gly
            260                 265                 270

Asp Val Leu Asp Cys Leu Gln Asp Gly Glu Lys Ile Met Ser Tyr Ile
        275                 280                 285

Cys Ser Gln Gln Asp Thr Leu Ser Asn Lys Ile Thr Glu Cys Cys Lys
    290                 295                 300

Leu Thr Thr Leu Glu Arg Gly Gln Cys Ile Ile His Ala Glu Asn Asp
305                 310                 315                 320
```

```
Glu Lys Pro Glu Gly Leu Ser Pro Asn Leu Asn Arg Phe Leu Gly Asp
                325                 330                 335

Arg Asp Phe Asn Gln Phe Ser Ser Gly Glu Lys Asn Ile Phe Leu Ala
            340                 345                 350

Ser Phe Val His Glu Tyr Ser Arg Arg His Pro Gln Leu Ala Val Ser
        355                 360                 365

Val Ile Leu Arg Val Ala Lys Gly Tyr Gln Glu Leu Leu Glu Lys Cys
    370                 375                 380

Phe Gln Thr Glu Asn Pro Leu Glu Cys Gln Asp Lys Gly Glu Glu Glu
385                 390                 395                 400

Leu Gln Lys Tyr Ile Gln Glu Ser Gln Ala Leu Ala Lys Arg Ser Cys
                405                 410                 415

Gly Leu Phe Gln Lys Leu Gly Glu Tyr Tyr Leu Gln Asn Ala Phe Leu
            420                 425                 430

Val Ala Tyr Thr Lys Lys Ala Pro Gln Leu Thr Ser Ser Glu Leu Met
        435                 440                 445

Ala Ile Thr Arg Lys Met Ala Ala Thr Ala Ala Thr Cys Cys Gln Leu
    450                 455                 460

Ser Glu Asp Lys Leu Leu Ala Cys Gly Glu Gly Ala Ala Asp Ile Ile
465                 470                 475                 480

Ile Gly His Leu Cys Ile Arg His Glu Met Thr Pro Val Asn Pro Gly
                485                 490                 495

Val Gly Gln Cys Cys Thr Ser Ser Tyr Ala Asn Arg Arg Pro Cys Phe
            500                 505                 510
```

```
Ser Ser Leu Val Val Asp Glu Thr Tyr Val Pro Pro Ala Phe Ser Asp
        515                 520                 525

Asp Lys Phe Ile Phe His Lys Asp Leu Cys Gln Ala Gln Gly Val Ala
    530                 535                 540

Leu Gln Thr Met Lys Gln Glu Phe Leu Ile Asn Leu Val Lys Gln Lys
545                 550                 555                 560

Pro Gln Ile Thr Glu Glu Gln Leu Glu Ala Val Ile Ala Asp Phe Ser
                565                 570                 575

Gly Leu Leu Glu Lys Cys Cys Gln Gly Gln Glu Gln Glu Val Cys Phe
            580                 585                 590

Ala Glu Glu Gly Gln Lys Leu Ile Ser Lys Thr Arg Ala Ala Leu Gly
        595                 600                 605

Val
```

<210> 7
<211> 485
<212> PRT
<213> Homo sapiens

<400> 7

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Met Asn Pro Glu Leu Thr Met Glu Ser Leu Gly Thr Leu His Gly Ala
1               5                   10                  15

Arg Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
            20                  25                  30

Gly Gly Gly Pro Gly His Glu Gln Glu Leu Leu Ala Ser Pro Ser Pro
        35                  40                  45
```

```
His His Ala Arg Arg Gly Pro Arg Gly Ser Leu Arg Gly Pro Pro Pro
    50                  55                  60

Pro Pro Thr Ala His Gln Glu Leu Gly Thr Ala Ala Ala Ala Ala Ala
65                  70                  75                  80

Ala Ala Ser Arg Ser Ala Met Val Thr Ser Met Ala Ser Ile Leu Asp
                85                  90                  95

Gly Gly Asp Tyr Arg Pro Glu Leu Ser Ile Pro Leu His His Ala Met
            100                 105                 110

Ser Met Ser Cys Asp Ser Ser Pro Pro Gly Met Gly Met Ser Asn Thr
        115                 120                 125

Tyr Thr Thr Leu Thr Pro Leu Gln Pro Leu Pro Pro Ile Ser Thr Val
    130                 135                 140

Ser Asp Lys Phe His His Pro His Pro His His His Pro His His His
145                 150                 155                 160

His His His His His Gln Arg Leu Ser Gly Asn Val Ser Gly Ser Phe
                165                 170                 175

Thr Leu Met Arg Asp Glu Arg Gly Leu Pro Ala Met Asn Asn Leu Tyr
            180                 185                 190

Ser Pro Tyr Lys Glu Met Pro Gly Met Ser Gln Ser Leu Ser Pro Leu
        195                 200                 205

Ala Ala Thr Pro Leu Gly Asn Gly Leu Gly Gly Leu His Asn Ala Gln
    210                 215                 220

Gln Ser Leu Pro Asn Tyr Gly Pro Pro Gly His Asp Lys Met Leu Ser
225                 230                 235                 240
```

```
Pro Asn Phe Asp Ala His His Thr Ala Met Leu Thr Arg Gly Glu Gln
                245                 250                 255

His Leu Ser Arg Gly Leu Gly Thr Pro Pro Ala Ala Met Met Ser His
            260                 265                 270

Leu Asn Gly Leu His His Pro Gly His Thr Gln Ser His Gly Pro Val
        275                 280                 285

Leu Ala Pro Ser Arg Glu Arg Pro Pro Ser Ser Ser Ser Gly Ser Gln
    290                 295                 300

Val Ala Thr Ser Gly Gln Leu Glu Glu Ile Asn Thr Lys Glu Val Ala
305                 310                 315                 320

Gln Arg Ile Thr Ala Glu Leu Lys Arg Tyr Ser Ile Pro Gln Ala Ile
                325                 330                 335

Phe Ala Gln Arg Val Leu Cys Arg Ser Gln Gly Thr Leu Ser Asp Leu
            340                 345                 350

Leu Arg Asn Pro Lys Pro Trp Ser Lys Leu Lys Ser Gly Arg Glu Thr
        355                 360                 365

Phe Arg Arg Met Trp Lys Trp Leu Gln Glu Pro Glu Phe Gln Arg Met
    370                 375                 380

Ser Ala Leu Arg Leu Ala Ala Cys Lys Arg Lys Glu Gln Glu Pro Asn
385                 390                 395                 400

Lys Asp Arg Asn Asn Ser Gln Lys Lys Ser Arg Leu Val Phe Thr Asp
                405                 410                 415

Leu Gln Arg Arg Thr Leu Phe Ala Ile Phe Lys Glu Asn Lys Arg Pro
            420                 425                 430
```

```
Ser Lys Glu Met Gln Ile Thr Ile Ser Gln Gln Leu Gly Leu Glu Leu
        435                 440                 445


Thr Thr Val Ser Asn Phe Phe Met Asn Ala Arg Arg Arg Ser Leu Glu
    450                 455                 460


Lys Trp Gln Asp Asp Leu Ser Thr Gly Gly Ser Ser Ser Thr Ser Ser
465                 470                 475                 480


Thr Cys Thr Lys Ala
                485


<210>  8
<211>  907
<212>  PRT
<213>  Homo sapiens

<400>  8

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


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


Gly Cys Pro Thr His Cys His Cys Glu Pro Asp Gly Arg Met Leu Leu
        35                  40                  45


Arg Val Asp Cys Ser Asp Leu Gly Leu Ser Glu Leu Pro Ser Asn Leu
    50                  55                  60


Ser Val Phe Thr Ser Tyr Leu Asp Leu Ser Met Asn Asn Ile Ser Gln
65                  70                  75                  80


Leu Leu Pro Asn Pro Leu Pro Ser Leu His Phe Leu Glu Glu Leu Arg
                85                  90                  95
```

```
Leu Ala Gly Asn Ala Leu Thr Tyr Ile Pro Lys Gly Ala Phe Thr Gly
            100                 105                 110

Leu Tyr Ser Leu Lys Val Leu Met Leu Gln Asn Asn Gln Leu Arg His
        115                 120                 125

Val Pro Thr Glu Ala Leu Gln Asn Leu Arg Ser Leu Gln Ser Leu Arg
    130                 135                 140

Leu Asp Ala Asn His Ile Ser Tyr Val Pro Pro Ser Cys Phe Ser Gly
145                 150                 155                 160

Leu His Ser Leu Arg His Leu Trp Leu Asp Asp Asn Ala Leu Thr Glu
                165                 170                 175

Ile Pro Val Gln Ala Phe Arg Ser Leu Ser Ala Leu Gln Ala Met Thr
            180                 185                 190

Leu Ala Leu Asn Lys Ile His His Ile Pro Asp Tyr Ala Phe Gly Asn
        195                 200                 205

Leu Ser Ser Trp Val Val Leu His Leu His Asn Asn Arg Ile His Ser
    210                 215                 220

Leu Gly Lys Lys Cys Phe Asp Gly Leu His Ser Leu Glu Thr Leu Asp
225                 230                 235                 240

Leu Asn Tyr Asn Asn Leu Asp Glu Phe Pro Thr Ala Ile Arg Thr Leu
                245                 250                 255

Ser Asn Leu Lys Glu Leu Gly Phe His Ser Asn Asn Ile Arg Ser Ile
            260                 265                 270

Pro Glu Lys Ala Phe Val Gly Asn Pro Ser Leu Ile Thr Ile His Phe
        275                 280                 285
```

```
Tyr Asp Asn Pro Ile Gln Phe Val Gly Arg Ser Ala Phe Gln His Leu
    290                 295                 300

Pro Glu Leu Arg Thr Leu Thr Leu Asn Gly Ala Ser Gln Ile Thr Glu
305                 310                 315                 320

Phe Pro Asp Leu Thr Gly Thr Ala Asn Leu Glu Ser Leu Thr Leu Thr
                325                 330                 335

Gly Ala Gln Ile Ser Ser Leu Pro Gln Thr Val Cys Asn Gln Leu Pro
            340                 345                 350

Asn Leu Gln Val Leu Asp Leu Ser Tyr Asn Leu Leu Glu Asp Leu Pro
        355                 360                 365

Ser Phe Ser Val Cys Gln Lys Leu Gln Lys Ile Asp Leu Arg His Asn
    370                 375                 380

Glu Ile Tyr Glu Ile Lys Val Asp Thr Phe Gln Gln Leu Leu Ser Leu
385                 390                 395                 400

Arg Ser Leu Asn Leu Ala Trp Asn Lys Ile Ala Ile Ile His Pro Asn
                405                 410                 415

Ala Phe Ser Thr Leu Pro Ser Leu Ile Lys Leu Asp Leu Ser Ser Asn
            420                 425                 430

Leu Leu Ser Ser Phe Pro Ile Thr Gly Leu His Gly Leu Thr His Leu
        435                 440                 445

Lys Leu Thr Gly Asn His Ala Leu Gln Ser Leu Ile Ser Ser Glu Asn
    450                 455                 460

Phe Pro Glu Leu Lys Val Ile Glu Met Pro Tyr Ala Tyr Gln Cys Cys
465                 470                 475                 480
```

```
Ala Phe Gly Val Cys Glu Asn Ala Tyr Lys Ile Ser Asn Gln Trp Asn
                485                 490                 495

Lys Gly Asp Asn Ser Ser Met Asp Asp Leu His Lys Lys Asp Ala Gly
            500                 505                 510

Met Phe Gln Ala Gln Asp Glu Arg Asp Leu Glu Asp Phe Leu Leu Asp
        515                 520                 525

Phe Glu Glu Asp Leu Lys Ala Leu His Ser Val Gln Cys Ser Pro Ser
    530                 535                 540

Pro Gly Pro Phe Lys Pro Cys Glu His Leu Leu Asp Gly Trp Leu Ile
545                 550                 555                 560

Arg Ile Gly Val Trp Thr Ile Ala Val Leu Ala Leu Thr Cys Asn Ala
                565                 570                 575

Leu Val Thr Ser Thr Val Phe Arg Ser Pro Leu Tyr Ile Ser Pro Ile
            580                 585                 590

Lys Leu Leu Ile Gly Val Ile Ala Ala Val Asn Met Leu Thr Gly Val
        595                 600                 605

Ser Ser Ala Val Leu Ala Gly Val Asp Ala Phe Thr Phe Gly Ser Phe
    610                 615                 620

Ala Arg His Gly Ala Trp Trp Glu Asn Gly Val Gly Cys His Val Ile
625                 630                 635                 640

Gly Phe Leu Ser Ile Phe Ala Ser Glu Ser Ser Val Phe Leu Leu Thr
                645                 650                 655

Leu Ala Ala Leu Glu Arg Gly Phe Ser Val Lys Tyr Ser Ala Lys Phe
            660                 665                 670
```

```
Glu Thr Lys Ala Pro Phe Ser Ser Leu Lys Val Ile Ile Leu Leu Cys
        675                 680                 685

Ala Leu Leu Ala Leu Thr Met Ala Ala Val Pro Leu Leu Gly Gly Ser
    690                 695                 700

Lys Tyr Gly Ala Ser Pro Leu Cys Leu Pro Leu Pro Phe Gly Glu Pro
705                 710                 715                 720

Ser Thr Met Gly Tyr Met Val Ala Leu Ile Leu Leu Asn Ser Leu Cys
                725                 730                 735

Phe Leu Met Met Thr Ile Ala Tyr Thr Lys Leu Tyr Cys Asn Leu Asp
            740                 745                 750

Lys Gly Asp Leu Glu Asn Ile Trp Asp Cys Ser Met Val Lys His Ile
        755                 760                 765

Ala Leu Leu Leu Phe Thr Asn Cys Ile Leu Asn Cys Pro Val Ala Phe
    770                 775                 780

Leu Ser Phe Ser Ser Leu Ile Asn Leu Thr Phe Ile Ser Pro Glu Val
785                 790                 795                 800

Ile Lys Phe Ile Leu Leu Val Val Val Pro Leu Pro Ala Cys Leu Asn
                805                 810                 815

Pro Leu Leu Tyr Ile Leu Phe Asn Pro His Phe Lys Glu Asp Leu Val
            820                 825                 830

Ser Leu Arg Lys Gln Thr Tyr Val Trp Thr Arg Ser Lys His Pro Ser
        835                 840                 845

Leu Met Ser Ile Asn Ser Asp Asp Val Glu Lys Gln Ser Cys Asp Ser
    850                 855                 860
```

```
Thr Gln Ala Leu Val Thr Phe Thr Ser Ser Ser Ile Thr Tyr Asp Leu
865                 870                 875                 880


Pro Pro Ser Ser Val Pro Ser Pro Ala Tyr Pro Val Thr Glu Ser Cys
                885                 890                 895


His Leu Ser Ser Val Ala Phe Val Pro Cys Leu
            900                 905


<210>  9
<211>  482
<212>  PRT
<213>  Homo sapiens

<400>  9

Met Ala Leu Arg Arg Leu Gly Ala Ala Leu Leu Leu Leu Pro Leu Leu
1               5                   10                  15


Ala Ala Val Glu Glu Thr Leu Met Asp Ser Thr Thr Ala Thr Ala Glu
            20                  25                  30


Leu Gly Trp Met Val His Pro Pro Ser Gly Trp Glu Glu Val Ser Gly
        35                  40                  45


Tyr Asp Glu Asn Met Asn Thr Ile Arg Thr Tyr Gln Val Cys Asn Val
    50                  55                  60


Phe Glu Ser Ser Gln Asn Asn Trp Leu Arg Thr Lys Phe Ile Arg Arg
65                  70                  75                  80


Arg Gly Ala His Arg Ile His Val Glu Met Lys Phe Ser Val Arg Asp
                85                  90                  95


Cys Ser Ser Ile Pro Ser Val Pro Gly Ser Cys Lys Glu Thr Phe Asn
            100                 105                 110


Leu Tyr Tyr Tyr Glu Ala Asp Phe Asp Ser Ala Thr Lys Thr Phe Pro
```

```
        115                 120                 125

Asn Trp Met Glu Asn Pro Trp Val Lys Val Asp Thr Ile Ala Ala Asp
    130                 135                 140

Glu Ser Phe Ser Gln Val Asp Leu Gly Gly Arg Val Met Lys Ile Asn
145                 150                 155                 160

Thr Glu Val Arg Ser Phe Gly Pro Val Ser Arg Ser Gly Phe Tyr Leu
                165                 170                 175

Ala Phe Gln Asp Tyr Gly Gly Cys Met Ser Leu Ile Ala Val Arg Val
            180                 185                 190

Phe Tyr Arg Lys Cys Pro Arg Ile Ile Gln Asn Gly Ala Ile Phe Gln
        195                 200                 205

Glu Thr Leu Ser Gly Ala Glu Ser Thr Ser Leu Val Ala Ala Arg Gly
    210                 215                 220

Ser Cys Ile Ala Asn Ala Glu Glu Val Asp Val Pro Ile Lys Leu Tyr
225                 230                 235                 240

Cys Asn Gly Asp Gly Glu Trp Leu Val Pro Ile Gly Arg Cys Met Cys
                245                 250                 255

Lys Ala Gly Phe Glu Ala Val Glu Asn Gly Thr Val Cys Arg Gly Cys
            260                 265                 270

Pro Ser Gly Thr Phe Lys Ala Asn Gln Gly Asp Glu Ala Cys Thr His
        275                 280                 285

Cys Pro Ile Asn Ser Arg Thr Thr Ser Glu Gly Ala Thr Asn Cys Val
    290                 295                 300

Cys Arg Asn Gly Tyr Tyr Arg Ala Asp Leu Asp Pro Leu Asp Met Pro
```

305 310 315 320

Cys Thr Thr Ile Pro Ser Ala Pro Gln Ala Val Ile Ser Ser Val Asn
325 330 335

Glu Thr Ser Leu Met Leu Glu Trp Thr Pro Pro Arg Asp Ser Gly Gly
340 345 350

Arg Glu Asp Leu Val Tyr Asn Ile Ile Cys Lys Ser Cys Gly Ser Gly
355 360 365

Arg Gly Ala Cys Thr Arg Cys Gly Asp Asn Val Gln Tyr Ala Pro Arg
370 375 380

Gln Leu Gly Leu Thr Glu Pro Arg Ile Tyr Ile Ser Asp Leu Leu Ala
385 390 395 400

His Thr Gln Tyr Thr Phe Glu Ile Gln Ala Val Asn Gly Val Thr Asp
405 410 415

Gln Ser Pro Phe Ser Pro Gln Phe Ala Ser Val Asn Ile Thr Thr Asn
420 425 430

Gln Ala Ala Pro Ser Ala Val Ser Ile Met His Gln Val Ser Arg Thr
435 440 445

Val Asp Ser Ile Thr Leu Ser Trp Ser Gln Pro Asp Gln Pro Asn Gly
450 455 460

Val Ile Leu Asp Tyr Glu Leu Gln Tyr Tyr Glu Lys Met Lys Thr Gln
465 470 475 480

Arg Ser

<210> 10

<211> 927
<212> PRT
<213> Homo sapiens

<400> 10

```
Met Pro Gly Pro Leu Gly Leu Leu Cys Phe Leu Ala Leu Gly Leu Leu
1               5                  10                  15


Gly Ser Ala Gly Pro Gly Gly Ala Ala Pro Pro Leu Cys Ala Ala Pro
            20                  25                  30


Cys Ser Cys Asp Gly Asp Arg Arg Val Asp Cys Ser Gly Lys Gly Leu
        35                  40                  45


Thr Ala Val Pro Glu Gly Leu Ser Ala Phe Thr Gln Ala Leu Gln Leu
    50                  55                  60


Ala Gly Asn Asp Leu Ser Phe Ile His Pro Lys Ala Leu Ser Gly Leu
65                  70                  75                  80


Lys Glu Leu Lys Val Leu Thr Leu Gln Asn Asn Gln Leu Lys Thr Val
                85                  90                  95


Pro Ser Glu Ala Ile Arg Gly Leu Ser Ala Leu Gln Ser Leu Arg Leu
            100                 105                 110


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


Val Gln Leu Arg His Leu Trp Leu Asp Asp Asn Ser Leu Thr Glu Val
    130                 135                 140


Pro Val His His Leu Ser Asn Leu Pro Thr Leu Gln Ala Leu Thr Leu
145                 150                 155                 160


Ala Leu Asn Lys Ile Ser Ser Ile Pro Asp Phe Ala Phe Thr Asn Leu
                165                 170                 175
```

```
Ser Ser Leu Val Val Leu His Leu His Asn Asn Lys Ile Arg Ser Leu
            180                 185                 190

Ser Gln His Cys Phe Asp Gly Leu Asp Asn Leu Glu Thr Leu Asp Leu
        195                 200                 205

Asn Tyr Asn Asn Leu Gly Glu Phe Pro Gln Ala Ile Lys Ala Leu Pro
    210                 215                 220

Ser Leu Lys Glu Leu Gly Phe His Ser Asn Ser Ile Ser Val Ile Pro
225                 230                 235                 240

Asp Gly Ala Phe Asp Gly Asn Pro Leu Leu Arg Thr Ile His Leu Tyr
                245                 250                 255

Asp Asn Pro Leu Ser Phe Val Gly Asn Ser Ala Phe His Asn Leu Ser
            260                 265                 270

Asp Leu His Ser Leu Val Ile Arg Gly Ala Ser Met Val Gln Gln Phe
        275                 280                 285

Pro Asn Leu Thr Gly Thr Val His Leu Glu Ser Leu Thr Leu Thr Gly
    290                 295                 300

Thr Lys Ile Ser Ser Ile Pro Asn Asn Leu Cys Gln Glu Gln Lys Met
305                 310                 315                 320

Leu Arg Thr Leu Asp Leu Ser Tyr Asn Asn Ile Arg Asp Leu Pro Ser
                325                 330                 335

Phe Asn Gly Cys His Ala Leu Glu Glu Ile Ser Leu Gln Arg Asn Gln
            340                 345                 350

Ile Tyr Gln Ile Lys Glu Gly Thr Phe Gln Gly Leu Ile Ser Leu Arg
        355                 360                 365
```

```
Ile Leu Asp Leu Ser Arg Asn Leu Ile His Glu Ile His Ser Arg Ala
    370                 375                 380

Phe Ala Thr Leu Gly Pro Ile Thr Asn Leu Asp Val Ser Phe Asn Glu
385                 390                 395                 400

Leu Thr Ser Phe Pro Thr Glu Gly Leu Asn Gly Leu Asn Gln Leu Lys
                405                 410                 415

Leu Val Gly Asn Phe Lys Leu Lys Glu Ala Leu Ala Ala Lys Asp Phe
            420                 425                 430

Val Asn Leu Arg Ser Leu Ser Val Pro Tyr Ala Tyr Gln Cys Cys Ala
        435                 440                 445

Phe Trp Gly Cys Asp Ser Tyr Ala Asn Leu Asn Thr Glu Asp Asn Ser
    450                 455                 460

Leu Gln Asp His Ser Val Ala Gln Glu Lys Gly Thr Ala Asp Ala Ala
465                 470                 475                 480

Asn Val Thr Ser Thr Leu Glu Asn Glu Glu His Ser Gln Ile Ile Ile
                485                 490                 495

His Cys Thr Pro Ser Thr Gly Ala Phe Lys Pro Cys Glu Tyr Leu Leu
            500                 505                 510

Gly Ser Trp Met Ile Arg Leu Thr Val Trp Phe Ile Phe Leu Val Ala
        515                 520                 525

Leu Phe Phe Asn Leu Leu Val Ile Leu Thr Thr Phe Ala Ser Cys Thr
    530                 535                 540

Ser Leu Pro Ser Ser Lys Leu Phe Ile Gly Leu Ile Ser Val Ser Asn
545                 550                 555                 560
```

```
Leu Phe Met Gly Ile Tyr Thr Gly Ile Leu Thr Phe Leu Asp Ala Val
                565                 570                 575

Ser Trp Gly Arg Phe Ala Glu Phe Gly Ile Trp Trp Glu Thr Gly Ser
            580                 585                 590

Gly Cys Lys Val Ala Gly Phe Leu Ala Val Phe Ser Ser Glu Ser Ala
        595                 600                 605

Ile Phe Leu Leu Met Leu Ala Thr Val Glu Arg Ser Leu Ser Ala Lys
    610                 615                 620

Asp Ile Met Lys Asn Gly Lys Ser Asn His Leu Lys Gln Phe Arg Val
625                 630                 635                 640

Ala Ala Leu Leu Ala Phe Leu Gly Ala Thr Val Ala Gly Cys Phe Pro
                645                 650                 655

Ile Phe His Arg Gly Glu Tyr Ser Ala Ser Pro Leu Cys Leu Pro Phe
            660                 665                 670

Pro Thr Gly Glu Thr Pro Ser Leu Gly Phe Thr Val Thr Leu Val Leu
        675                 680                 685

Leu Asn Ser Leu Ala Phe Leu Leu Met Ala Val Ile Tyr Thr Lys Leu
    690                 695                 700

Tyr Cys Asn Leu Glu Lys Glu Asp Leu Ser Glu Asn Ser Gln Ser Ser
705                 710                 715                 720

Met Ile Lys His Val Ala Trp Leu Ile Phe Thr Asn Cys Ile Phe Phe
                725                 730                 735

Cys Pro Val Ala Phe Phe Ser Phe Ala Pro Leu Ile Thr Ala Ile Ser
            740                 745                 750
```

```
Ile Ser Pro Glu Ile Met Lys Ser Val Thr Leu Ile Phe Phe Pro Leu
        755                 760                 765

Pro Ala Cys Leu Asn Pro Val Leu Tyr Val Phe Phe Asn Pro Lys Phe
    770                 775                 780

Lys Glu Asp Trp Lys Leu Leu Lys Arg Arg Val Thr Lys Lys Ser Gly
785                 790                 795                 800

Ser Val Ser Val Ser Ile Ser Ser Gln Gly Gly Cys Leu Glu Gln Asp
                805                 810                 815

Phe Tyr Tyr Asp Cys Gly Met Tyr Ser His Leu Gln Gly Asn Leu Thr
            820                 825                 830

Val Cys Asp Cys Cys Glu Ser Phe Leu Leu Thr Lys Pro Val Ser Cys
        835                 840                 845

Lys His Leu Ile Lys Ser His Ser Cys Pro Ala Leu Ala Val Ala Ser
    850                 855                 860

Cys Gln Arg Pro Glu Gly Tyr Trp Ser Asp Cys Gly Thr Gln Ser Ala
865                 870                 875                 880

His Ser Asp Tyr Ala Asp Glu Glu Asp Ser Phe Val Ser Asp Ser Ser
                885                 890                 895

Asp Gln Val Gln Ala Cys Gly Arg Ala Cys Phe Tyr Gln Ser Arg Gly
            900                 905                 910

Phe Pro Leu Val Arg Tyr Ala Tyr Asn Leu Pro Arg Val Lys Asp
        915                 920                 925
```

<210> 11
<211> 541

<212> PRT
<213> Homo sapiens

<400> 11

```
Met Ser Ser Asn Ser Asp Thr Gly Asp Leu Gln Glu Ser Leu Lys His
1               5                  10                  15

Gly Leu Thr Pro Ile Gly Ala Gly Leu Pro Asp Arg His Gly Ser Pro
            20                  25                  30

Ile Pro Ala Arg Gly Arg Leu Val Met Leu Pro Lys Val Glu Thr Glu
        35                  40                  45

Ala Leu Gly Leu Ala Arg Ser His Gly Glu Gln Gly Gln Met Pro Glu
    50                  55                  60

Asn Met Gln Val Ser Gln Phe Lys Met Val Asn Tyr Ser Tyr Asp Glu
65                  70                  75                  80

Asp Leu Glu Glu Leu Cys Pro Val Cys Gly Asp Lys Val Ser Gly Tyr
                85                  90                  95

His Tyr Gly Leu Leu Thr Cys Glu Ser Cys Lys Gly Phe Phe Lys Arg
            100                 105                 110

Thr Val Gln Asn Asn Lys Arg Tyr Thr Cys Ile Glu Asn Gln Asn Cys
        115                 120                 125

Gln Ile Asp Lys Thr Gln Arg Lys Arg Cys Pro Tyr Cys Arg Phe Gln
    130                 135                 140

Lys Cys Leu Ser Val Gly Met Lys Leu Glu Ala Val Arg Ala Asp Arg
145                 150                 155                 160

Met Arg Gly Gly Arg Asn Lys Phe Gly Pro Met Tyr Lys Arg Asp Arg
                165                 170                 175
```

```
Ala Leu Lys Gln Gln Lys Lys Ala Leu Ile Arg Ala Asn Gly Leu Lys
            180                 185                 190

Leu Glu Ala Met Ser Gln Val Ile Gln Ala Met Pro Ser Asp Leu Thr
        195                 200                 205

Ile Ser Ser Ala Ile Gln Asn Ile His Ser Ala Ser Lys Gly Leu Pro
    210                 215                 220

Leu Asn His Ala Ala Leu Pro Pro Thr Asp Tyr Asp Arg Ser Pro Phe
225                 230                 235                 240

Val Thr Ser Pro Ile Ser Met Thr Met Pro Pro His Gly Ser Leu Gln
                245                 250                 255

Gly Tyr Gln Thr Tyr Gly His Phe Pro Ser Arg Ala Ile Lys Ser Glu
            260                 265                 270

Tyr Pro Asp Pro Tyr Thr Ser Ser Pro Glu Ser Ile Met Gly Tyr Ser
        275                 280                 285

Tyr Met Asp Ser Tyr Gln Thr Ser Ser Pro Ala Ser Ile Pro His Leu
    290                 295                 300

Ile Leu Glu Leu Leu Lys Cys Glu Pro Asp Glu Pro Gln Val Gln Ala
305                 310                 315                 320

Lys Ile Met Ala Tyr Leu Gln Gln Glu Gln Ala Asn Arg Ser Lys His
                325                 330                 335

Glu Lys Leu Ser Thr Phe Gly Leu Met Cys Lys Met Ala Asp Gln Thr
            340                 345                 350

Leu Phe Ser Ile Val Glu Trp Ala Arg Ser Ser Ile Phe Phe Arg Glu
        355                 360                 365
```

```
Leu Lys Val Asp Asp Gln Met Lys Leu Leu Gln Asn Cys Trp Ser Glu
    370                 375                 380

Leu Leu Ile Leu Asp His Ile Tyr Arg Gln Val Val His Gly Lys Glu
385                 390                 395                 400

Gly Ser Ile Phe Leu Val Thr Gly Gln Gln Val Asp Tyr Ser Ile Ile
                405                 410                 415

Ala Ser Gln Ala Gly Ala Thr Leu Asn Asn Leu Met Ser His Ala Gln
            420                 425                 430

Glu Leu Val Ala Lys Leu Arg Ser Leu Gln Phe Asp Gln Arg Glu Phe
        435                 440                 445

Val Cys Leu Lys Phe Leu Val Leu Phe Ser Leu Asp Val Lys Asn Leu
    450                 455                 460

Glu Asn Phe Gln Leu Val Glu Gly Val Gln Glu Gln Val Asn Ala Ala
465                 470                 475                 480

Leu Leu Asp Tyr Thr Met Cys Asn Tyr Pro Gln Gln Thr Glu Lys Phe
                485                 490                 495

Gly Gln Leu Leu Leu Arg Leu Pro Glu Ile Arg Ala Ile Ser Met Gln
            500                 505                 510

Ala Glu Glu Tyr Leu Tyr Tyr Lys His Leu Asn Gly Asp Val Pro Tyr
        515                 520                 525

Asn Asn Leu Leu Ile Glu Met Leu His Ala Lys Arg Ala
    530                 535                 540
```

<210> 12
<211> 646
<212> PRT

<213> Homo sapiens

<400> 12

```
Met Gly Pro Trp Ser Arg Ser Leu Ser Ala Leu Leu Leu Leu Leu Gln
1               5                  10                  15

Val Ser Ser Trp Leu Cys Gln Glu Pro Glu Pro Cys His Pro Gly Phe
            20                  25                  30

Asp Ala Glu Ser Tyr Thr Phe Thr Val Pro Arg Arg His Leu Glu Arg
        35                  40                  45

Gly Arg Val Leu Gly Arg Val Asn Phe Glu Asp Cys Thr Gly Arg Gln
    50                  55                  60

Arg Thr Ala Tyr Phe Ser Leu Asp Thr Arg Phe Lys Val Gly Thr Asp
65                  70                  75                  80

Gly Val Ile Thr Val Lys Arg Pro Leu Arg Phe His Asn Pro Gln Ile
                85                  90                  95

His Phe Leu Val Tyr Ala Trp Asp Ser Thr Tyr Arg Lys Phe Ser Thr
            100                 105                 110

Lys Val Thr Leu Asn Thr Val Gly His His His Arg Pro Pro Pro His
        115                 120                 125

Gln Ala Ser Val Ser Gly Ile Gln Ala Glu Leu Leu Thr Phe Pro Asn
    130                 135                 140

Ser Ser Pro Gly Leu Arg Arg Gln Lys Arg Asp Trp Val Ile Pro Pro
145                 150                 155                 160

Ile Ser Cys Pro Glu Asn Glu Lys Gly Pro Phe Pro Lys Asn Leu Val
                165                 170                 175
```

```
Gln Ile Lys Ser Asn Lys Asp Lys Glu Gly Lys Val Phe Tyr Ser Ile
            180                 185                 190

Thr Gly Gln Gly Ala Asp Thr Pro Pro Val Gly Val Phe Ile Ile Glu
        195                 200                 205

Arg Glu Thr Gly Trp Leu Lys Val Thr Glu Pro Leu Asp Arg Glu Arg
    210                 215                 220

Ile Ala Thr Tyr Thr Leu Phe Ser His Ala Val Ser Ser Asn Gly Asn
225                 230                 235                 240

Ala Val Glu Asp Pro Met Glu Ile Leu Ile Thr Val Thr Asp Gln Asn
                245                 250                 255

Asp Asn Lys Pro Glu Phe Thr Gln Glu Val Phe Lys Gly Ser Val Met
            260                 265                 270

Glu Gly Ala Leu Pro Gly Thr Ser Val Met Glu Val Thr Ala Thr Asp
        275                 280                 285

Ala Asp Asp Asp Val Asn Thr Tyr Asn Ala Ala Ile Ala Tyr Thr Ile
    290                 295                 300

Leu Ser Gln Asp Pro Glu Leu Pro Asp Lys Asn Met Phe Thr Ile Asn
305                 310                 315                 320

Arg Asn Thr Gly Val Ile Ser Val Val Thr Thr Gly Leu Asp Arg Glu
                325                 330                 335

Ser Phe Pro Ala Tyr Thr Leu Val Val Gln Ala Ala Asp Leu Gln Gly
            340                 345                 350

Glu Gly Leu Ser Thr Thr Ala Thr Ala Val Ile Thr Val Thr Asp Thr
        355                 360                 365
```

```
Asn Asp Asn Pro Pro Ile Phe Asn Pro Thr Thr Tyr Lys Gly Gln Val
    370                 375                 380

Pro Glu Asn Glu Ala Asn Val Val Ile Thr Thr Leu Lys Val Thr Asp
385                 390                 395                 400

Ala Asp Ala Pro Asn Thr Pro Trp Glu Ala Val Tyr Thr Ile Leu Asn
                405                 410                 415

Asp Asp Gly Gly Gln Phe Val Val Thr Thr Asn Pro Val Asn Asn Asp
            420                 425                 430

Gly Ile Leu Lys Thr Ala Lys Gly Leu Asp Phe Glu Ala Lys Gln Gln
        435                 440                 445

Tyr Ile Leu His Val Ala Val Thr Asn Val Val Pro Phe Glu Val Ser
    450                 455                 460

Leu Thr Thr Ser Thr Ala Thr Val Thr Val Asp Val Leu Asp Val Asn
465                 470                 475                 480

Glu Ala Pro Ile Phe Val Pro Pro Glu Lys Arg Val Glu Val Ser Glu
                485                 490                 495

Asp Phe Gly Val Gly Gln Glu Ile Thr Ser Tyr Thr Ala Gln Glu Pro
            500                 505                 510

Asp Thr Phe Met Glu Gln Lys Ile Thr Tyr Arg Ile Trp Arg Asp Thr
        515                 520                 525

Ala Asn Trp Leu Glu Ile Asn Pro Asp Thr Gly Ala Ile Ser Thr Arg
    530                 535                 540

Ala Glu Leu Asp Arg Glu Asp Phe Glu His Val Lys Asn Ser Thr Tyr
545                 550                 555                 560
```

```
Thr Ala Leu Ile Ile Ala Thr Asp Asn Gly Ser Pro Val Ala Thr Gly
                565                 570                 575


Thr Gly Thr Leu Leu Leu Ile Leu Ser Asp Val Asn Asp Asn Ala Pro
            580                 585                 590


Ile Pro Glu Pro Arg Thr Ile Phe Phe Cys Glu Arg Asn Pro Lys Pro
        595                 600                 605


Gln Val Ile Asn Ile Ile Asp Ala Asp Leu Pro Pro Ile Leu Ala Ser
    610                 615                 620


Gln Ser Ile Gly Ile Thr Asp Met Ser His Cys Thr Cys Pro Ala Pro
625                 630                 635                 640


Gln Leu Pro Ala Ile Phe
                645
```

<210> 13
<211> 469
<212> PRT
<213> Homo sapiens

<400> 13

```
Met Ser Ile His Phe Ser Ser Pro Val Phe Thr Ser Arg Ser Ala Ala
1               5                   10                  15


Phe Ser Gly Arg Gly Ala Gln Val Arg Leu Ser Ser Ala Arg Pro Gly
            20                  25                  30


Gly Leu Gly Ser Ser Ser Leu Tyr Gly Leu Gly Ala Ser Arg Pro Arg
        35                  40                  45


Val Ala Val Arg Ser Ala Tyr Gly Gly Pro Val Gly Ala Gly Ile Arg
    50                  55                  60


Glu Val Thr Ile Asn Gln Ser Leu Leu Ala Pro Leu Arg Leu Asp Ala
```

```
65                  70                  75                  80

Asp Pro Ser Leu Gln Arg Val Arg Gln Glu Glu Ser Glu Gln Ile Lys
                85                  90                  95

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

Glu Gln Gln Asn Lys Leu Leu Glu Thr Lys Trp Thr Leu Leu Gln Glu
        115                 120                 125

Gln Lys Ser Ala Lys Ser Ser Arg Leu Pro Asp Ile Phe Glu Ala Gln
    130                 135                 140

Ile Ala Gly Leu Arg Gly Gln Leu Glu Ala Leu Gln Val Asp Gly Gly
145                 150                 155                 160

Arg Leu Glu Ala Glu Leu Arg Ser Met Gln Asp Val Val Glu Asp Phe
                165                 170                 175

Lys Asn Lys Tyr Glu Asp Glu Ile Asn His Arg Thr Ala Ala Glu Asn
            180                 185                 190

Glu Phe Val Val Leu Lys Lys Asp Val Asp Ala Ala Tyr Met Ser Lys
        195                 200                 205

Val Glu Leu Glu Ala Lys Val Asp Ala Leu Asn Asp Glu Ile Asn Phe
    210                 215                 220

Leu Arg Thr Leu Asn Glu Thr Glu Leu Thr Glu Leu Gln Ser Gln Ile
225                 230                 235                 240

Ser Asp Thr Ser Val Val Leu Ser Met Asp Asn Ser Arg Ser Leu Asp
                245                 250                 255

Leu Asp Gly Ile Ile Ala Glu Val Lys Ala Gln Tyr Glu Glu Met Ala
```

```
            260                 265                 270

Lys Cys Ser Arg Ala Glu Ala Glu Ala Trp Tyr Gln Thr Lys Phe Glu
        275                 280                 285

Thr Leu Gln Ala Gln Ala Gly Lys His Gly Asp Asp Leu Arg Asn Thr
    290                 295                 300

Arg Asn Glu Ile Ser Glu Met Asn Arg Ala Ile Gln Arg Leu Gln Ala
305                 310                 315                 320

Glu Ile Asp Asn Ile Lys Asn Gln Arg Ala Lys Leu Glu Ala Ala Ile
                325                 330                 335

Ala Glu Ala Glu Glu Arg Gly Glu Leu Ala Leu Lys Asp Ala Arg Ala
            340                 345                 350

Lys Gln Glu Glu Leu Glu Ala Ala Leu Gln Arg Gly Lys Gln Asp Met
        355                 360                 365

Ala Arg Gln Leu Arg Glu Tyr Gln Glu Leu Met Ser Val Lys Leu Ala
    370                 375                 380

Leu Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu
385                 390                 395                 400

Ser Arg Leu Ala Gly Asp Gly Val Gly Ala Val Asn Ile Ser Val Met
                405                 410                 415

Asn Ser Thr Gly Gly Ser Ser Ser Gly Gly Gly Ile Gly Leu Thr Leu
            420                 425                 430

Gly Gly Thr Met Gly Ser Asn Ala Leu Ser Phe Ser Ser Ser Ala Gly
        435                 440                 445

Pro Gly Leu Leu Lys Ala Tyr Ser Ile Arg Thr Ala Ser Ala Ser Arg
```

450 455 460

Arg Ser Ala Arg Asp
465

<210> 14
<211> 646
<212> PRT
<213> Homo sapiens

<400> 14

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

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Ala Asp Pro Ala Trp
20 25 30

Thr Ser Ala Leu Ser Gly Asn Ser Ser Gly Pro Gly Pro Gly Ser Ser
35 40 45

Pro Ala Gly Ser Thr Lys Pro Phe Val His Ala Val Pro Pro Ser Asp
50 55 60

Pro Leu Arg Gln Ala Asn Arg Leu Pro Ile Lys Val Leu Lys Met Leu
65 70 75 80

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

Pro Ser Thr Pro Val Ser Pro Ile Glu Leu Asp Ala Lys Lys Ser Pro
100 105 110

Leu Ala Leu Leu Ala Gln Thr Cys Ser Gln Ile Gly Lys Pro Asp Pro
115 120 125

Ser Pro Ser Ser Lys Leu Ser Ser Val Ala Ser Asn Gly Gly Gly Ala
130 135 140

```
Gly Gly Ala Gly Gly Gly Ala Ala Gly Asp Lys Asp Thr Lys Ser Gly
145                 150                 155                 160

Pro Leu Lys Leu Ser Asp Ile Gly Val Glu Asp Lys Ser Ser Phe Lys
                165                 170                 175

Pro Tyr Ser Lys Pro Gly Ser Asp Lys Lys Glu Pro Gly Gly Gly Gly
            180                 185                 190

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Val Ser Ser Glu
        195                 200                 205

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

Arg Thr Gly Ser Pro Ser Ser Ser Ala Ser Ala Cys Ser Pro Gly Gly
225                 230                 235                 240

Met Leu Ser Ser Ala Gly Gly Ala Pro Glu Gly Lys Asp Asp Lys Lys
                245                 250                 255

Asp Thr Asp Val Gly Gly Gly Gly Lys Gly Thr Gly Gly Ala Ser Ala
            260                 265                 270

Glu Gly Gly Pro Thr Gly Leu Ala His Gly Arg Ile Ser Cys Gly Gly
        275                 280                 285

Gly Ile Asn Val Asp Val Asn Gln His Pro Asp Gly Gly Pro Gly Gly
    290                 295                 300

Lys Ala Leu Gly Ser Asp Cys Gly Gly Ser Ser Gly Ser Ser Ser Gly
305                 310                 315                 320

Ser Gly Pro Ser Ala Pro Thr Ser Ser Ser Val Leu Gly Ser Gly Leu
                325                 330                 335
```

```
Val Ala Pro Val Ser Pro Tyr Lys Pro Gly Gln Thr Val Phe Pro Leu
            340                 345                 350

Pro Pro Ala Gly Met Thr Tyr Pro Gly Ser Leu Ala Gly Ala Tyr Ala
        355                 360                 365

Gly Tyr Pro Pro Gln Phe Leu Pro His Gly Val Ala Leu Asp Pro Thr
    370                 375                 380

Lys Pro Gly Ser Leu Val Gly Ala Gln Leu Ala Ala Ala Ala Ala Gly
385                 390                 395                 400

Ser Leu Gly Cys Ser Lys Pro Ala Gly Ser Ser Pro Leu Ala Gly Ala
                405                 410                 415

Ser Pro Pro Ser Val Met Thr Ala Ser Leu Cys Arg Asp Pro Tyr Cys
            420                 425                 430

Leu Ser Tyr His Cys Ala Ser His Leu Ala Gly Ala Ala Ala Ala Ser
        435                 440                 445

Ala Ser Cys Ala His Asp Pro Ala Ala Ala Ala Ala Ala Leu Lys Ser
    450                 455                 460

Gly Tyr Pro Leu Val Tyr Pro Thr His Pro Leu His Gly Val His Ser
465                 470                 475                 480

Ser Leu Thr Ala Ala Ala Ala Ala Gly Ala Thr Pro Pro Ser Leu Ala
                485                 490                 495

Gly His Pro Leu Tyr Pro Tyr Gly Phe Met Leu Pro Asn Asp Pro Leu
            500                 505                 510

Pro His Ile Cys Asn Trp Val Ser Ala Asn Gly Pro Cys Asp Lys Arg
        515                 520                 525
```

```
Phe Ala Thr Ser Glu Glu Leu Leu Ser His Leu Arg Thr His Thr Ala
    530                 535                 540

Phe Pro Gly Thr Asp Lys Leu Leu Ser Gly Tyr Pro Ser Ser Ser Ser
545                 550                 555                 560

Leu Ala Ser Ala Ala Ala Ala Ala Met Ala Cys His Met His Ile Pro
                565                 570                 575

Thr Ser Gly Ala Pro Gly Ser Pro Gly Thr Leu Ala Leu Arg Ser Pro
            580                 585                 590

His His Ala Leu Gly Leu Ser Ser Arg Tyr His Pro Tyr Ser Lys Ser
        595                 600                 605

Pro Leu Pro Thr Pro Gly Ala Pro Val Pro Val Pro Ala Ala Thr Gly
    610                 615                 620

Pro Tyr Tyr Ser Pro Tyr Ala Leu Tyr Gly Gln Arg Leu Thr Thr Ala
625                 630                 635                 640

Ser Ala Leu Gly Tyr Gln
                645
```

<210> 15
<211> 267
<212> PRT
<213> Homo sapiens

<400> 15

```
Met Ala Ser Pro Ser Lys Gly Asn Asp Leu Phe Ser Pro Asp Glu Glu
1               5                   10                  15

Gly Pro Ala Val Val Ala Gly Pro Gly Pro Gly Pro Gly Gly Ala Glu
            20                  25                  30
```

```
Gly Ala Ala Glu Glu Arg Arg Val Lys Val Ser Ser Leu Pro Phe Ser
        35                  40                  45

Val Glu Ala Leu Met Ser Asp Lys Lys Pro Pro Lys Glu Ala Ser Pro
    50                  55                  60

Leu Pro Ala Glu Ser Ala Ser Ala Gly Ala Thr Leu Arg Pro Leu Leu
65                  70                  75                  80

Leu Ser Gly His Gly Ala Arg Glu Ala His Ser Pro Gly Pro Leu Val
                85                  90                  95

Lys Pro Phe Glu Thr Ala Ser Val Lys Ser Glu Asn Ser Glu Asp Gly
            100                 105                 110

Ala Ala Trp Met Gln Glu Pro Gly Arg Tyr Ser Pro Pro Pro Arg His
        115                 120                 125

Met Ser Pro Thr Thr Cys Thr Leu Arg Lys His Lys Thr Asn Arg Lys
    130                 135                 140

Pro Arg Thr Pro Phe Thr Thr Ser Gln Leu Leu Ala Leu Glu Arg Lys
145                 150                 155                 160

Phe Arg Gln Lys Gln Tyr Leu Ser Ile Ala Glu Arg Ala Glu Phe Ser
                165                 170                 175

Ser Ser Leu Asn Leu Thr Glu Thr Gln Val Lys Ile Trp Phe Gln Asn
            180                 185                 190

Arg Arg Ala Lys Ala Lys Arg Leu Gln Glu Ala Glu Leu Glu Lys Leu
        195                 200                 205

Lys Met Ala Ala Lys Pro Met Leu Pro Ser Ser Phe Ser Leu Pro Phe
    210                 215                 220
```

```
Pro Ile Ser Ser Pro Leu Gln Ala Ala Ser Ile Tyr Gly Ala Ser Tyr
225                 230                 235                 240


Pro Phe His Arg Pro Val Leu Pro Ile Pro Pro Val Gly Leu Tyr Ala
                245                 250                 255


Thr Pro Val Gly Tyr Gly Met Tyr His Leu Ser
            260                 265


<210>  16
<211>  1294
<212>  PRT
<213>  Homo sapiens

<400>  16

Met Pro Tyr Glu Val Asn Ala Gly Tyr Asp Phe Thr Asn Met Val Arg
1               5                   10                  15


Lys Lys Asn Pro Pro Leu Arg Asn Val Ala Ser Glu Gly Glu Gly Gln
            20                  25                  30


Ile Leu Glu Pro Ile Gly Thr Glu Ser Lys Val Ser Gly Lys Asn Lys
        35                  40                  45


Glu Phe Ser Ala Asp Gln Met Ser Glu Asn Thr Asp Gln Ser Asp Ala
    50                  55                  60


Ala Glu Leu Asn His Lys Glu Glu His Ser Leu His Val Gln Asp Pro
65                  70                  75                  80


Ser Ser Ser Ser Lys Lys Asp Leu Lys Ser Ala Val Leu Ser Glu Lys
                85                  90                  95


Ala Gly Phe Asn Tyr Glu Ser Pro Ser Lys Gly Gly Asn Phe Pro Ser
            100                 105                 110
```

```
Phe Pro His Asp Glu Val Thr Asp Arg Asn Met Leu Ala Phe Ser Ser
        115                 120                 125

Pro Ala Ala Gly Gly Val Cys Glu Pro Leu Lys Ser Pro Gln Arg Ala
    130                 135                 140

Glu Ala Asp Asp Pro Gln Asp Met Ala Cys Thr Pro Ser Gly Asp Ser
145                 150                 155                 160

Leu Glu Thr Lys Glu Asp Gln Lys Met Ser Pro Lys Ala Thr Glu Glu
                165                 170                 175

Thr Gly Gln Ala Gln Ser Gly Gln Ala Asn Cys Gln Gly Leu Ser Pro
            180                 185                 190

Val Ser Val Ala Ser Lys Asn Pro Gln Val Pro Ser Asp Gly Gly Val
        195                 200                 205

Arg Leu Asn Lys Ser Lys Thr Asp Leu Leu Val Asn Asp Asn Pro Asp
    210                 215                 220

Pro Ala Pro Leu Ser Pro Glu Leu Gln Asp Phe Lys Cys Asn Ile Cys
225                 230                 235                 240

Gly Tyr Gly Tyr Tyr Gly Asn Asp Pro Thr Asp Leu Ile Lys His Phe
                245                 250                 255

Arg Lys Tyr His Leu Gly Leu His Asn Arg Thr Arg Gln Asp Ala Glu
            260                 265                 270

Leu Asp Ser Lys Ile Leu Ala Leu His Asn Met Val Gln Phe Ser His
        275                 280                 285

Ser Lys Asp Phe Gln Lys Val Asn Arg Ser Val Phe Ser Gly Val Leu
    290                 295                 300
```

```
Gln Asp Ile Asn Ser Ser Arg Pro Val Leu Leu Asn Gly Thr Tyr Asp
305                 310                 315                 320

Val Gln Val Thr Ser Gly Gly Thr Phe Ile Gly Ile Gly Arg Lys Thr
                325                 330                 335

Pro Asp Cys Gln Gly Asn Thr Lys Tyr Phe Arg Cys Lys Phe Cys Asn
            340                 345                 350

Phe Thr Tyr Met Gly Asn Ser Ser Thr Glu Leu Glu Gln His Phe Leu
        355                 360                 365

Gln Thr His Pro Asn Lys Ile Lys Ala Ser Leu Pro Ser Ser Glu Val
    370                 375                 380

Ala Lys Pro Ser Glu Lys Asn Ser Asn Lys Ser Ile Pro Ala Leu Gln
385                 390                 395                 400

Ser Ser Asp Ser Gly Asp Leu Gly Lys Trp Gln Asp Lys Ile Thr Val
                405                 410                 415

Lys Ala Gly Asp Asp Thr Pro Val Gly Tyr Ser Val Pro Ile Lys Pro
            420                 425                 430

Leu Asp Ser Ser Arg Gln Asn Gly Thr Glu Ala Thr Ser Tyr Tyr Trp
        435                 440                 445

Cys Lys Phe Cys Ser Phe Ser Cys Glu Ser Ser Ser Ser Leu Lys Leu
    450                 455                 460

Leu Glu His Tyr Gly Lys Gln His Gly Ala Val Gln Ser Gly Gly Leu
465                 470                 475                 480

Asn Pro Glu Leu Asn Asp Lys Leu Ser Arg Gly Ser Val Ile Asn Gln
                485                 490                 495
```

```
Asn Asp Leu Ala Lys Ser Ser Glu Gly Glu Thr Met Thr Lys Thr Asp
            500                 505                 510

Lys Ser Ser Ser Gly Ala Lys Lys Lys Asp Phe Ser Ser Lys Gly Ala
        515                 520                 525

Glu Asp Asn Met Val Thr Ser Tyr Asn Cys Gln Phe Cys Asp Phe Arg
    530                 535                 540

Tyr Ser Lys Ser His Gly Pro Asp Val Ile Val Val Gly Pro Leu Leu
545                 550                 555                 560

Arg His Tyr Gln Gln Leu His Asn Ile His Lys Cys Thr Ile Lys His
                565                 570                 575

Cys Pro Phe Cys Pro Arg Gly Leu Cys Ser Pro Glu Lys His Leu Gly
            580                 585                 590

Glu Ile Thr Tyr Pro Phe Ala Cys Arg Lys Ser Asn Cys Ser His Cys
        595                 600                 605

Ala Leu Leu Leu Leu His Leu Ser Pro Gly Ala Ala Gly Ser Ser Arg
    610                 615                 620

Val Lys His Gln Cys His Gln Cys Ser Phe Thr Thr Pro Asp Val Asp
625                 630                 635                 640

Val Leu Leu Phe His Tyr Glu Ser Val His Glu Ser Gln Ala Ser Asp
                645                 650                 655

Val Lys Gln Glu Ala Asn His Leu Gln Gly Ser Asp Gly Gln Gln Ser
            660                 665                 670

Val Lys Glu Ser Lys Glu His Ser Cys Thr Lys Cys Asp Phe Ile Thr
        675                 680                 685
```

```
Gln Val Glu Glu Glu Ile Ser Arg His Tyr Arg Arg Ala His Ser Cys
    690                 695                 700

Tyr Lys Cys Arg Gln Cys Ser Phe Thr Ala Ala Asp Thr Gln Ser Leu
705                 710                 715                 720

Leu Glu His Phe Asn Thr Val His Cys Gln Glu Gln Asp Ile Thr Thr
                725                 730                 735

Ala Asn Gly Glu Glu Asp Gly His Ala Ile Ser Thr Ile Lys Glu Glu
            740                 745                 750

Pro Lys Ile Asp Phe Arg Val Tyr Asn Leu Leu Thr Pro Asp Ser Lys
        755                 760                 765

Met Gly Glu Pro Val Ser Glu Ser Val Val Lys Arg Glu Lys Leu Glu
    770                 775                 780

Glu Lys Asp Gly Leu Lys Glu Lys Val Trp Thr Glu Ser Ser Ser Asp
785                 790                 795                 800

Asp Leu Arg Asn Val Thr Trp Arg Gly Ala Asp Ile Leu Arg Gly Ser
                805                 810                 815

Pro Ser Tyr Thr Gln Ala Ser Leu Gly Leu Leu Thr Pro Val Ser Gly
            820                 825                 830

Thr Gln Glu Gln Thr Lys Thr Leu Arg Asp Ser Pro Asn Val Glu Ala
        835                 840                 845

Ala His Leu Ala Arg Pro Ile Tyr Gly Leu Ala Val Glu Thr Lys Gly
    850                 855                 860

Phe Leu Gln Gly Ala Pro Ala Gly Gly Glu Lys Ser Gly Ala Leu Pro
865                 870                 875                 880
```

```
Gln Gln Tyr Pro Ala Ser Gly Glu Asn Lys Ser Lys Asp Glu Ser Gln
                885                 890                 895


Ser Leu Leu Arg Arg Arg Arg Gly Ser Gly Val Phe Cys Ala Asn Cys
            900                 905                 910


Leu Thr Thr Lys Thr Ser Leu Trp Arg Lys Asn Ala Asn Gly Gly Tyr
        915                 920                 925


Val Cys Asn Ala Cys Gly Leu Tyr Gln Lys Leu His Ser Thr Pro Arg
    930                 935                 940


Pro Leu Asn Ile Ile Lys Gln Asn Asn Gly Glu Gln Ile Ile Arg Arg
945                 950                 955                 960


Arg Thr Arg Lys Arg Leu Asn Pro Glu Ala Leu Gln Ala Glu Gln Leu
                965                 970                 975


Asn Lys Gln Gln Arg Gly Ser Asn Glu Glu Gln Val Asn Gly Ser Pro
            980                 985                 990


Leu Glu Arg Arg Ser Glu Asp His  Leu Thr Glu Ser His  Gln Arg Glu
        995                 1000                1005


Ile Pro  Leu Pro Ser Leu Ser  Lys Tyr Glu Ala Gln  Gly Ser Leu
    1010                1015                1020


Thr Lys  Ser His Ser Ala Gln  Gln Pro Val Leu Val  Ser Gln Thr
    1025                1030                1035


Leu Asp  Ile His Lys Arg Met  Gln Pro Leu His Ile  Gln Ile Lys
    1040                1045                1050


Ser Pro  Gln Glu Ser Thr Gly  Asp Pro Gly Asn Ser  Ser Ser Val
    1055                1060                1065
```

```
Ser Glu  Gly Lys Gly Ser Ser  Glu Arg Gly Ser Pro  Ile Glu Lys
    1070                1075                1080

Tyr Met  Arg Pro Ala Lys His  Pro Asn Tyr Ser Pro  Pro Gly Ser
    1085                1090                1095

Pro Ile  Glu Lys Tyr Gln Tyr  Pro Leu Phe Gly Leu  Pro Phe Val
    1100                1105                1110

His Asn  Asp Phe Gln Ser Glu  Ala Asp Trp Leu Arg  Phe Trp Ser
    1115                1120                1125

Lys Tyr  Lys Leu Ser Val Pro  Gly Asn Pro His Tyr  Leu Ser His
    1130                1135                1140

Val Pro  Gly Leu Pro Asn Pro  Cys Gln Asn Tyr Val  Pro Tyr Pro
    1145                1150                1155

Thr Phe  Asn Leu Pro Pro His  Phe Ser Ala Val Gly  Ser Asp Asn
    1160                1165                1170

Asp Ile  Pro Leu Asp Leu Ala  Ile Lys His Ser Arg  Pro Gly Pro
    1175                1180                1185

Thr Ala  Asn Gly Ala Ser Lys  Glu Lys Thr Lys Ala  Pro Pro Asn
    1190                1195                1200

Val Lys  Asn Glu Gly Pro Leu  Asn Val Val Lys Thr  Glu Lys Val
    1205                1210                1215

Asp Arg  Ser Thr Gln Asp Glu  Leu Ser Thr Lys Cys  Val His Cys
    1220                1225                1230

Gly Ile  Val Phe Leu Asp Glu  Val Met Tyr Ala Leu  His Met Ser
    1235                1240                1245
```

Cys His Gly Asp Ser Gly Pro Phe Gln Cys Ser Ile Cys Gln His
1250 1255 1260

Leu Cys Thr Asp Lys Tyr Asp Phe Thr Thr His Ile Gln Arg Gly
1265 1270 1275

Leu His Arg Asn Asn Ala Gln Val Glu Lys Asn Gly Lys Pro Lys
1280 1285 1290

Glu

<210> 17
<211> 193
<212> PRT
<213> Homo sapiens

<400> 17

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

Pro Val Gly Cys Ala Ala Arg Arg Arg Pro Ala Ser Pro Glu Leu Leu
20 25 30

Arg Cys Ser Arg Arg Arg Arg Pro Ala Thr Ala Glu Thr Gly Gly Gly
35 40 45

Ala Ala Ala Val Ala Arg Arg Asn Glu Arg Glu Arg Asn Arg Val Lys
50 55 60

Leu Val Asn Leu Gly Phe Gln Ala Leu Arg Gln His Val Pro His Gly
65 70 75 80

Gly Ala Ser Lys Lys Leu Ser Lys Val Glu Thr Leu Arg Ser Ala Val
85 90 95

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

100 105 110

Arg Asn Ala Leu Ala Gly Gly Leu Arg Pro Gln Ala Val Arg Pro Ser
115 120 125

Ala Pro Arg Gly Pro Pro Gly Thr Thr Pro Val Ala Ala Ser Pro Ser
130 135 140

Arg Ala Ser Ser Ser Pro Gly Arg Gly Gly Ser Ser Glu Pro Gly Ser
145 150 155 160

Pro Arg Ser Ala Tyr Ser Ser Asp Asp Ser Gly Cys Glu Gly Ala Leu
165 170 175

Ser Pro Ala Glu Arg Glu Leu Leu Asp Phe Ser Ser Trp Leu Gly Gly
180 185 190

Tyr

<210> 18
<211> 426
<212> PRT
<213> Homo sapiens

<400> 18

Met Cys Asp Arg Asn Gly Gly Arg Arg Leu Arg Gln Trp Leu Ile Glu
1 5 10 15

Gln Ile Asp Ser Ser Met Tyr Pro Gly Leu Ile Trp Glu Asn Glu Glu
20 25 30

Lys Ser Met Phe Arg Ile Pro Trp Lys His Ala Gly Lys Gln Asp Tyr
35 40 45

Asn Gln Glu Val Asp Ala Ser Ile Phe Lys Ala Trp Ala Val Phe Lys
50 55 60

```
Gly Lys Phe Lys Glu Gly Asp Lys Ala Glu Pro Ala Thr Trp Lys Thr
65                  70                  75                  80

Arg Leu Arg Cys Ala Leu Asn Lys Ser Pro Asp Phe Glu Glu Val Thr
                85                  90                  95

Asp Arg Ser Gln Leu Asp Ile Ser Glu Pro Tyr Lys Val Tyr Arg Ile
            100                 105                 110

Val Pro Glu Glu Glu Gln Lys Cys Lys Leu Gly Val Ala Thr Ala Gly
        115                 120                 125

Cys Val Asn Glu Val Thr Glu Met Glu Cys Gly Arg Ser Glu Ile Asp
    130                 135                 140

Glu Leu Ile Lys Glu Pro Ser Val Asp Asp Tyr Met Gly Met Ile Lys
145                 150                 155                 160

Arg Ser Pro Ser Pro Pro Glu Ala Cys Arg Ser Gln Leu Leu Pro Asp
                165                 170                 175

Trp Trp Ala Gln Gln Pro Ser Thr Gly Val Pro Leu Val Thr Gly Tyr
            180                 185                 190

Thr Thr Tyr Asp Ala His His Ser Ala Phe Ser Gln Met Val Ile Ser
        195                 200                 205

Phe Tyr Tyr Gly Gly Lys Leu Val Gly Gln Ala Thr Thr Thr Cys Pro
    210                 215                 220

Glu Gly Cys Arg Leu Ser Leu Ser Gln Pro Gly Leu Pro Gly Thr Lys
225                 230                 235                 240

Leu Tyr Gly Pro Glu Gly Leu Glu Leu Val Arg Phe Pro Pro Ala Asp
                245                 250                 255
```

```
Ala Ile Pro Ser Glu Arg Gln Arg Gln Val Thr Arg Lys Leu Phe Gly
            260                 265                 270

His Leu Glu Arg Gly Val Leu Leu His Ser Ser Arg Gln Gly Val Phe
        275                 280                 285

Val Lys Arg Leu Cys Gln Gly Arg Val Phe Cys Ser Gly Asn Ala Val
    290                 295                 300

Val Cys Lys Gly Arg Pro Asn Lys Leu Glu Arg Asp Glu Val Val Gln
305                 310                 315                 320

Val Phe Asp Thr Ser Gln Phe Phe Arg Glu Leu Gln Gln Phe Tyr Asn
                325                 330                 335

Ser Gln Gly Arg Leu Pro Asp Gly Arg Val Val Leu Cys Phe Gly Glu
            340                 345                 350

Glu Phe Pro Asp Met Ala Pro Leu Arg Ser Lys Leu Ile Leu Val Gln
        355                 360                 365

Ile Glu Gln Leu Tyr Val Arg Gln Leu Ala Glu Glu Ala Gly Lys Ser
    370                 375                 380

Cys Gly Ala Gly Ser Val Met Gln Ala Pro Glu Glu Pro Pro Pro Asp
385                 390                 395                 400

Gln Val Phe Arg Met Phe Pro Asp Ile Cys Ala Ser His Gln Arg Ser
                405                 410                 415

Phe Phe Arg Glu Asn Gln Gln Ile Thr Val
            420                 425
```

<210> 19
<211> 445

<212> PRT
<213> Homo sapiens

<400> 19

```
Met Asp Met Ala Asn Tyr Ser Glu Val Leu Asp Pro Thr Tyr Thr Thr
1               5                  10                  15

Leu Glu Phe Glu Thr Met Gln Ile Leu Tyr Asn Ser Ser Asp Ser Ser
            20                  25                  30

Ala Pro Glu Thr Ser Met Asn Thr Thr Asp Asn Gly Val Asn Cys Leu
        35                  40                  45

Cys Ala Ile Cys Gly Asp Arg Ala Thr Gly Lys His Tyr Gly Ala Ser
    50                  55                  60

Ser Cys Asp Gly Cys Lys Gly Phe Phe Arg Arg Ser Ile Arg Lys Ser
65                  70                  75                  80

His Val Tyr Ser Cys Arg Phe Ser Arg Gln Cys Val Val Asp Lys Asp
                85                  90                  95

Lys Arg Asn Gln Cys Arg Tyr Cys Arg Leu Arg Lys Cys Phe Arg Ala
            100                 105                 110

Gly Met Lys Lys Glu Ala Val Gln Asn Glu Arg Asp Arg Ile Ser Thr
        115                 120                 125

Arg Arg Ser Thr Phe Asp Gly Ser Asn Ile Pro Ser Ile Asn Thr Leu
    130                 135                 140

Ala Gln Ala Glu Val Arg Ser Arg Gln Ile Ser Val Ser Ser Pro Gly
145                 150                 155                 160

Ser Ser Thr Asp Ile Asn Val Lys Lys Ile Ala Ser Ile Gly Asp Val
                165                 170                 175
```

```
Cys Glu Ser Met Lys Gln Gln Leu Leu Val Leu Val Glu Trp Ala Lys
            180                 185                 190

Tyr Ile Pro Ala Phe Cys Glu Leu Pro Leu Asp Asp Gln Val Ala Leu
        195                 200                 205

Leu Arg Ala His Ala Gly Glu His Leu Leu Leu Gly Ala Thr Lys Arg
    210                 215                 220

Ser Met Met Tyr Lys Asp Ile Leu Leu Leu Gly Asn Asn Tyr Val Ile
225                 230                 235                 240

His Arg Asn Ser Cys Glu Val Glu Ile Ser Arg Val Ala Asn Arg Val
                245                 250                 255

Leu Asp Glu Leu Val Arg Pro Phe Gln Glu Ile Gln Ile Asp Asp Asn
            260                 265                 270

Glu Tyr Ala Cys Leu Lys Ala Ile Val Phe Phe Asp Pro Asp Ala Lys
        275                 280                 285

Gly Leu Ser Asp Pro Val Lys Ile Lys Asn Met Arg Phe Gln Val Gln
    290                 295                 300

Ile Gly Leu Glu Asp Tyr Ile Asn Asp Arg Gln Tyr Asp Ser Arg Gly
305                 310                 315                 320

Arg Phe Gly Glu Leu Leu Leu Leu Leu Pro Thr Leu Gln Ser Ile Thr
                325                 330                 335

Trp Gln Met Ile Glu Gln Ile Gln Phe Val Lys Leu Phe Gly Met Val
            340                 345                 350

Lys Ile Asp Asn Leu Leu Gln Glu Met Leu Leu Gly Gly Ala Ser Asn
        355                 360                 365
```

```
Asp Gly Ser His Leu His His Pro Met His Pro His Leu Ser Gln Asp
    370                 375                 380

Pro Leu Thr Gly Gln Thr Ile Leu Leu Gly Pro Met Ser Thr Leu Val
385                 390                 395                 400

His Ala Asp Gln Ile Ser Thr Pro Glu Thr Pro Leu Pro Ser Pro Pro
                405                 410                 415

Gln Gly Ser Gly Gln Glu Gln Tyr Lys Ile Ala Ala Asn Gln Ala Ser
            420                 425                 430

Val Ile Ser His Gln His Leu Ser Lys Gln Lys Gln Leu
        435                 440                 445
```

<210> 20
<211> 134
<212> PRT
<213> Homo sapiens

<400> 20

```
Met Lys Ala Phe Ser Pro Val Arg Ser Val Arg Lys Asn Ser Leu Ser
1               5                   10                  15

Asp His Ser Leu Gly Ile Ser Arg Ser Lys Thr Pro Val Asp Asp Pro
            20                  25                  30

Met Ser Leu Leu Tyr Asn Met Asn Asp Cys Tyr Ser Lys Leu Lys Glu
        35                  40                  45

Leu Val Pro Ser Ile Pro Gln Asn Lys Lys Val Ser Lys Met Glu Ile
    50                  55                  60

Leu Gln His Val Ile Asp Tyr Ile Leu Asp Leu Gln Ile Ala Leu Asp
65                  70                  75                  80
```

```
Ser His Pro Thr Ile Val Ser Leu His His Gln Arg Pro Gly Gln Asn
                85                  90                  95

Gln Ala Ser Arg Thr Pro Leu Thr Thr Leu Asn Thr Asp Ile Ser Ile
            100                 105                 110

Leu Ser Leu Gln Ala Ser Glu Phe Pro Ser Glu Leu Met Ser Asn Asp
        115                 120                 125

Ser Lys Ala Leu Cys Gly
    130
```

<210> 21
<211> 340
<212> PRT
<213> Homo sapiens

<400> 21

```
Met Asp Lys Phe Trp Trp His Ala Ala Trp Gly Leu Cys Leu Val Pro
1               5                   10                  15

Leu Ser Leu Ala Gln Ile Asp Leu Asn Ile Thr Cys Arg Phe Ala Gly
            20                  25                  30

Val Phe His Val Glu Lys Asn Gly Arg Tyr Ser Ile Ser Arg Thr Glu
        35                  40                  45

Ala Ala Asp Leu Cys Lys Ala Phe Asn Ser Thr Leu Pro Thr Met Ala
    50                  55                  60

Gln Met Glu Lys Ala Leu Ser Ile Gly Phe Glu Thr Cys Arg Tyr Gly
65                  70                  75                  80

Phe Ile Glu Gly His Val Val Ile Pro Arg Ile His Pro Asn Ser Ile
                85                  90                  95

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

```
            100                 105                 110

Gln Tyr Asp Thr Tyr Cys Phe Asn Ala Ser Ala Pro Pro Glu Glu Asp
        115                 120                 125

Cys Thr Ser Val Thr Asp Leu Pro Asn Ala Phe Asp Gly Pro Ile Thr
    130                 135                 140

Ile Thr Ile Val Asn Arg Asp Gly Thr Arg Tyr Val Gln Lys Gly Glu
145                 150                 155                 160

Tyr Arg Thr Asn Pro Glu Asp Ile Tyr Pro Ser Asn Pro Thr Asp Asp
                165                 170                 175

Asp Val Ser Ser Gly Ser Ser Ser Glu Arg Ser Ser Thr Ser Gly Gly
            180                 185                 190

Tyr Ile Phe Tyr Thr Phe Ser Thr Val His Pro Ile Pro Asp Glu Asp
        195                 200                 205

Ser Pro Trp Ile Thr Asp Ser Thr Asp Arg Ile Pro Ala Thr Arg His
    210                 215                 220

Ser His Gly Ser Gln Glu Gly Gly Ala Asn Thr Thr Ser Gly Pro Ile
225                 230                 235                 240

Arg Thr Pro Gln Ile Pro Glu Trp Leu Ile Ile Leu Ala Ser Leu Leu
                245                 250                 255

Ala Leu Ala Leu Ile Leu Ala Val Cys Ile Ala Val Asn Ser Arg Arg
            260                 265                 270

Arg Cys Gly Gln Lys Lys Lys Leu Val Ile Asn Ser Gly Asn Gly Ala
        275                 280                 285

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

290 295 300

Gln Glu Met Val His Leu Val Asn Lys Glu Ser Ser Glu Thr Pro Asp
305 310 315 320

Gln Phe Met Thr Ala Asp Glu Thr Arg Asn Leu Gln Asn Val Asp Met
325 330 335

Lys Ile Gly Val
340

<210> 22
<211> 314
<212> PRT
<213> Homo sapiens

<400> 22

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

Thr Ala Thr Phe Ala Ala Ala Gln Glu Glu Cys Val Cys Glu Asn Tyr
20 25 30

Lys Leu Ala Val Asn Cys Phe Val Asn Asn Asn Arg Gln Cys Gln Cys
35 40 45

Thr Ser Val Gly Ala Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ala
50 55 60

Lys Cys Leu Val Met Lys Ala Glu Met Asn Gly Ser Lys Leu Gly Arg
65 70 75 80

Arg Ala Lys Pro Glu Gly Ala Leu Gln Asn Asn Asp Gly Leu Tyr Asp
85 90 95

Pro Asp Cys Asp Glu Ser Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly
100 105 110

```
Thr Ser Thr Cys Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp
        115                 120                 125

Lys Asp Thr Glu Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile
    130                 135                 140

Ile Ile Glu Leu Lys His Lys Ala Arg Glu Lys Pro Tyr Asp Ser Lys
145                 150                 155                 160

Ser Leu Arg Thr Ala Leu Gln Lys Glu Ile Thr Thr Arg Tyr Gln Leu
                165                 170                 175

Asp Pro Lys Phe Ile Thr Ser Ile Leu Tyr Glu Asn Asn Val Ile Thr
            180                 185                 190

Ile Asp Leu Val Gln Asn Ser Ser Gln Lys Thr Gln Asn Asp Val Asp
        195                 200                 205

Ile Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser
    210                 215                 220

Leu Phe His Ser Lys Lys Met Asp Leu Thr Val Asn Gly Glu Gln Leu
225                 230                 235                 240

Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala
                245                 250                 255

Pro Glu Phe Ser Met Gln Gly Leu Lys Ala Gly Val Ile Ala Val Ile
            260                 265                 270

Val Val Val Val Ile Ala Val Val Ala Gly Ile Val Val Leu Val Ile
        275                 280                 285

Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu
    290                 295                 300
```

```
Met Gly Glu Met His Arg Glu Leu Asn Ala
305                 310


<210>  23
<211>  1408
<212>  PRT
<213>  Homo sapiens

<400>  23

Met Lys Ala Pro Ala Val Leu Ala Pro Gly Ile Leu Val Leu Leu Phe
1               5                   10                  15


Thr Leu Val Gln Arg Ser Asn Gly Glu Cys Lys Glu Ala Leu Ala Lys
            20                  25                  30


Ser Glu Met Asn Val Asn Met Lys Tyr Gln Leu Pro Asn Phe Thr Ala
        35                  40                  45


Glu Thr Pro Ile Gln Asn Val Ile Leu His Glu His His Ile Phe Leu
    50                  55                  60


Gly Ala Thr Asn Tyr Ile Tyr Val Leu Asn Glu Glu Asp Leu Gln Lys
65                  70                  75                  80


Val Ala Glu Tyr Lys Thr Gly Pro Val Leu Glu His Pro Asp Cys Phe
                85                  90                  95


Pro Cys Gln Asp Cys Ser Ser Lys Ala Asn Leu Ser Gly Gly Val Trp
            100                 105                 110


Lys Asp Asn Ile Asn Met Ala Leu Val Val Asp Thr Tyr Tyr Asp Asp
        115                 120                 125


Gln Leu Ile Ser Cys Gly Ser Val Asn Arg Gly Thr Cys Gln Arg His
    130                 135                 140
```

```
Val Phe Pro His Asn His Thr Ala Asp Ile Gln Ser Glu Val His Cys
145                 150                 155                 160

Ile Phe Ser Pro Gln Ile Glu Glu Pro Ser Gln Cys Pro Asp Cys Val
                165                 170                 175

Val Ser Ala Leu Gly Ala Lys Val Leu Ser Ser Val Lys Asp Arg Phe
            180                 185                 190

Ile Asn Phe Phe Val Gly Asn Thr Ile Asn Ser Ser Tyr Phe Pro Asp
        195                 200                 205

His Pro Leu His Ser Ile Ser Val Arg Arg Leu Lys Glu Thr Lys Asp
    210                 215                 220

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

Phe Arg Asp Ser Tyr Pro Ile Lys Tyr Val His Ala Phe Glu Ser Asn
                245                 250                 255

Asn Phe Ile Tyr Phe Leu Thr Val Gln Arg Glu Thr Leu Asp Ala Gln
            260                 265                 270

Thr Phe His Thr Arg Ile Ile Arg Phe Cys Ser Ile Asn Ser Gly Leu
        275                 280                 285

His Ser Tyr Met Glu Met Pro Leu Glu Cys Ile Leu Thr Glu Lys Arg
    290                 295                 300

Lys Lys Arg Ser Thr Lys Lys Glu Val Phe Asn Ile Leu Gln Ala Ala
305                 310                 315                 320

Tyr Val Ser Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser
                325                 330                 335
```

```
Leu Asn Asp Asp Ile Leu Phe Gly Val Phe Ala Gln Ser Lys Pro Asp
            340                 345                 350

Ser Ala Glu Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys
        355                 360                 365

Tyr Val Asn Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg
    370                 375                 380

Cys Leu Gln His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg
385                 390                 395                 400

Thr Leu Leu Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr
                405                 410                 415

Arg Thr Glu Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly
            420                 425                 430

Gln Phe Ser Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly
        435                 440                 445

Asp Leu Thr Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln
    450                 455                 460

Val Val Val Ser Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu
465                 470                 475                 480

Leu Asp Ser His Pro Val Ser Pro Glu Val Ile Val Glu His Thr Leu
                485                 490                 495

Asn Gln Asn Gly Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys
            500                 505                 510

Ile Pro Leu Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln
        515                 520                 525
```

```
Cys Leu Ser Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys
    530                 535                 540

Cys Val Arg Ser Glu Glu Cys Leu Ser Gly Thr Trp Thr Gln Gln Ile
545                 550                 555                 560

Cys Leu Pro Ala Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu
                565                 570                 575

Gly Gly Thr Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg
            580                 585                 590

Asn Asn Lys Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu
        595                 600                 605

Ser Cys Thr Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys
    610                 615                 620

Thr Val Gly Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile
625                 630                 635                 640

Ser Asn Gly His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp
                645                 650                 655

Pro Val Ile Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly
            660                 665                 670

Thr Leu Leu Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg
        675                 680                 685

His Ile Ser Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn
    690                 695                 700

Ser Ile Leu Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe
705                 710                 715                 720
```

```
Ala Val Lys Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe
               725                 730                 735

Ser Tyr Arg Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser
            740                 745                 750

Phe Ile Ser Thr Trp Trp Lys Glu Pro Leu Asn Ile Val Ser Phe Leu
        755                 760                 765

Phe Cys Phe Ala Ser Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn
    770                 775                 780

Leu Asn Ser Val Ser Val Pro Arg Met Val Ile Asn Val His Glu Ala
785                 790                 795                 800

Gly Arg Asn Phe Thr Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile
                805                 810                 815

Ile Cys Cys Thr Thr Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro
            820                 825                 830

Leu Lys Thr Lys Ala Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr
        835                 840                 845

Phe Asp Leu Ile Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys
    850                 855                 860

Pro Val Met Ile Ser Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly
865                 870                 875                 880

Asn Asp Ile Asp Pro Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly
                885                 890                 895

Asn Lys Ser Cys Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys
            900                 905                 910
```

```
Thr Val Pro Asn Asp Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu
        915                 920                 925

Trp Lys Gln Ala Ile Ser Ser Thr Val Leu Gly Lys Val Ile Val Gln
    930                 935                 940

Pro Asp Gln Asn Phe Thr Gly Leu Ile Ala Gly Val Val Ser Ile Ser
945                 950                 955                 960

Thr Ala Leu Leu Leu Leu Leu Gly Phe Phe Leu Trp Leu Lys Lys Arg
                965                 970                 975

Lys Gln Ile Lys Asp Leu Gly Ser Glu Leu Val Arg Tyr Asp Ala Arg
            980                 985                 990

Val His Thr Pro His Leu Asp Arg  Leu Val Ser Ala Arg  Ser Val Ser
        995                 1000                1005

Pro Thr  Thr Glu Met Val Ser  Asn Glu Ser Val Asp  Tyr Arg Ala
    1010                1015                1020

Thr Phe  Pro Glu Asp Gln Phe  Pro Asn Ser Ser Gln  Asn Gly Ser
    1025                1030                1035

Cys Arg  Gln Val Gln Tyr Pro  Leu Thr Asp Met Ser  Pro Ile Leu
    1040                1045                1050

Thr Ser  Gly Asp Ser Asp Ile  Ser Ser Pro Leu Leu  Gln Asn Thr
    1055                1060                1065

Val His  Ile Asp Leu Ser Ala  Leu Asn Pro Glu Leu  Val Gln Ala
    1070                1075                1080

Val Gln  His Val Val Ile Gly  Pro Ser Ser Leu Ile  Val His Phe
    1085                1090                1095
```

```
Asn Glu  Val Ile Gly Arg Gly  His Phe Gly Cys Val  Tyr His Gly
    1100                1105                1110

Thr Leu  Leu Asp Asn Asp Gly  Lys Lys Ile His Cys  Ala Val Lys
    1115                1120                1125

Ser Leu  Asn Arg Ile Thr Asp  Ile Gly Glu Val Ser  Gln Phe Leu
    1130                1135                1140

Thr Glu  Gly Ile Ile Met Lys  Asp Phe Ser His Pro  Asn Val Leu
    1145                1150                1155

Ser Leu  Leu Gly Ile Cys Leu  Arg Ser Glu Gly Ser  Pro Leu Val
    1160                1165                1170

Val Leu  Pro Tyr Met Lys His  Gly Asp Leu Arg Asn  Phe Ile Arg
    1175                1180                1185

Asn Glu  Thr His Asn Pro Thr  Val Lys Asp Leu Ile  Gly Phe Gly
    1190                1195                1200

Leu Gln  Val Ala Lys Ala Met  Lys Tyr Leu Ala Ser  Lys Lys Phe
    1205                1210                1215

Val His  Arg Asp Leu Ala Ala  Arg Asn Cys Met Leu  Asp Glu Lys
    1220                1225                1230

Phe Thr  Val Lys Val Ala Asp  Phe Gly Leu Ala Arg  Asp Met Tyr
    1235                1240                1245

Asp Lys  Glu Tyr Tyr Ser Val  His Asn Lys Thr Gly  Ala Lys Leu
    1250                1255                1260

Pro Val  Lys Trp Met Ala Leu  Glu Ser Leu Gln Thr  Gln Lys Phe
    1265                1270                1275
```

```
Thr Thr  Lys Ser Asp Val Trp  Ser Phe Gly Val Val  Leu Trp Glu
    1280                1285                1290


Leu Met  Thr Arg Gly Ala Pro  Pro Tyr Pro Asp Val  Asn Thr Phe
    1295                1300                1305


Asp Ile  Thr Val Tyr Leu Leu  Gln Gly Arg Arg Leu  Leu Gln Pro
    1310                1315                1320


Glu Tyr  Cys Pro Asp Pro Leu  Tyr Glu Val Met Leu  Lys Cys Trp
    1325                1330                1335


His Pro  Lys Ala Glu Met Arg  Pro Ser Phe Ser Glu  Leu Val Ser
    1340                1345                1350


Arg Ile  Ser Ala Ile Phe Ser  Thr Phe Ile Gly Glu  His Tyr Val
    1355                1360                1365


His Val  Asn Ala Thr Tyr Val  Asn Val Lys Cys Val  Ala Pro Tyr
    1370                1375                1380


Pro Ser  Leu Leu Ser Ser Glu  Asp Asn Ala Asp Asp  Glu Val Asp
    1385                1390                1395


Thr Arg  Pro Ala Ser Phe Trp  Glu Thr Ser
    1400                1405
```

<210> 24
<211> 411
<212> PRT
<213> Homo sapiens

<400> 24

```
Met Ser Pro Ala Arg Leu Arg Pro Arg Leu His Phe Cys Leu Val Leu
1               5                  10                  15
```

```
Leu Leu Leu Leu Val Val Pro Ala Ala Trp Gly Cys Gly Pro Gly Arg
            20                  25                  30

Val Val Gly Ser Arg Arg Arg Pro Pro Arg Lys Leu Val Pro Leu Ala
        35                  40                  45

Tyr Lys Gln Phe Ser Pro Asn Val Pro Glu Lys Thr Leu Gly Ala Ser
    50                  55                  60

Gly Arg Tyr Glu Gly Lys Ile Ala Arg Ser Ser Glu Arg Phe Lys Glu
65                  70                  75                  80

Leu Thr Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn
                85                  90                  95

Thr Gly Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Arg Leu Asn
            100                 105                 110

Ser Leu Ala Ile Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg
        115                 120                 125

Val Thr Glu Gly Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu
    130                 135                 140

His Tyr Glu Gly Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg
145                 150                 155                 160

Asn Lys Tyr Gly Leu Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp
                165                 170                 175

Trp Val Tyr Tyr Glu Ser Lys Ala His Val His Cys Ser Val Lys Ser
            180                 185                 190

Glu His Ser Ala Ala Ala Lys Thr Gly Gly Cys Phe Pro Ala Gly Ala
        195                 200                 205
```

```
Gln Val Arg Leu Glu Ser Gly Ala Arg Val Ala Leu Ser Ala Val Arg
    210                 215                 220

Pro Gly Asp Arg Val Leu Ala Met Gly Glu Asp Gly Ser Pro Thr Phe
225                 230                 235                 240

Ser Asp Val Leu Ile Phe Leu Asp Arg Glu Pro His Arg Leu Arg Ala
                245                 250                 255

Phe Gln Val Ile Glu Thr Gln Asp Pro Pro Arg Arg Leu Ala Leu Thr
            260                 265                 270

Pro Ala His Leu Leu Phe Thr Ala Asp Asn His Thr Glu Pro Ala Ala
        275                 280                 285

Arg Phe Arg Ala Thr Phe Ala Ser His Val Gln Pro Gly Gln Tyr Val
    290                 295                 300

Leu Val Ala Gly Val Pro Gly Leu Gln Pro Ala Arg Val Ala Ala Val
305                 310                 315                 320

Ser Thr His Val Ala Leu Gly Ala Tyr Ala Pro Leu Thr Lys His Gly
                325                 330                 335

Thr Leu Val Val Glu Asp Val Val Ala Ser Cys Phe Ala Ala Val Ala
            340                 345                 350

Asp His His Leu Ala Gln Leu Ala Phe Trp Pro Leu Arg Leu Phe His
        355                 360                 365

Ser Leu Ala Trp Gly Ser Trp Thr Pro Gly Glu Gly Val His Trp Tyr
    370                 375                 380

Pro Gln Leu Leu Tyr Arg Leu Gly Arg Leu Leu Leu Glu Glu Gly Ser
385                 390                 395                 400
```

```
Phe His Pro Leu Gly Met Ser Gly Ala Gly Ser
                405                 410
```

<210> 25
<211> 220
<212> PRT
<213> Homo sapiens

<400> 25

```
Met Ser Met Gly Leu Glu Ile Thr Gly Thr Ala Leu Ala Val Leu Gly
1               5                   10                  15


Trp Leu Gly Thr Ile Val Cys Cys Ala Leu Pro Met Trp Arg Val Ser
            20                  25                  30


Ala Phe Ile Gly Ser Asn Ile Ile Thr Ser Gln Asn Ile Trp Glu Gly
        35                  40                  45


Leu Trp Met Asn Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys Lys
    50                  55                  60


Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala Arg
65                  70                  75                  80


Ala Leu Ile Val Val Ala Ile Leu Leu Ala Ala Phe Gly Leu Leu Val
                85                  90                  95


Ala Leu Val Gly Ala Gln Cys Thr Asn Cys Val Gln Asp Asp Thr Ala
            100                 105                 110


Lys Ala Lys Ile Thr Ile Val Ala Gly Val Leu Phe Leu Leu Ala Ala
        115                 120                 125


Leu Leu Thr Leu Val Pro Val Ser Trp Ser Ala Asn Thr Ile Ile Arg
    130                 135                 140


Asp Phe Tyr Asn Pro Val Val Pro Glu Ala Gln Lys Arg Glu Met Gly
```

145 150 155 160

Ala Gly Leu Tyr Val Gly Trp Ala Ala Ala Ala Leu Gln Leu Leu Gly
165 170 175

Gly Ala Leu Leu Cys Cys Ser Cys Pro Pro Arg Glu Lys Lys Tyr Thr
180 185 190

Ala Thr Lys Val Val Tyr Ser Ala Pro Arg Ser Thr Gly Pro Gly Ala
195 200 205

Ser Leu Gly Thr Gly Tyr Asp Arg Lys Asp Tyr Val
210 215 220

<210> 26
<211> 317
<212> PRT
<213> Homo sapiens

<400> 26

Met Tyr Asn Met Met Glu Thr Glu Leu Lys Pro Pro Gly Pro Gln Gln
1 5 10 15

Thr Ser Gly Gly Gly Gly Gly Asn Ser Thr Ala Ala Ala Ala Gly Gly
20 25 30

Asn Gln Lys Asn Ser Pro Asp Arg Val Lys Arg Pro Met Asn Ala Phe
35 40 45

Met Val Trp Ser Arg Gly Gln Arg Arg Lys Met Ala Gln Glu Asn Pro
50 55 60

Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys
65 70 75 80

Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg
85 90 95

```
Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro
            100                 105                 110

Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr Leu Pro
        115                 120                 125

Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly Val Gly
    130                 135                 140

Val Gly Ala Gly Leu Gly Ala Gly Val Asn Gln Arg Met Asp Ser Tyr
145                 150                 155                 160

Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met Gln Asp
                165                 170                 175

Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly Ala Ala
            180                 185                 190

Gln Met Gln Pro Met His Arg Tyr Asp Val Ser Ala Leu Gln Tyr Asn
        195                 200                 205

Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr Tyr Ser
    210                 215                 220

Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly Ser Met
225                 230                 235                 240

Gly Ser Val Val Lys Ser Glu Ala Ser Ser Ser Pro Pro Val Val Thr
                245                 250                 255

Ser Ser Ser His Ser Arg Ala Pro Cys Gln Ala Gly Asp Leu Arg Asp
            260                 265                 270

Met Ile Ser Met Tyr Leu Pro Gly Ala Glu Val Pro Glu Pro Ala Ala
        275                 280                 285
```

```
Pro Ser Arg Leu His Met Ser Gln His Tyr Gln Ser Gly Pro Val Pro
    290                 295                 300

Gly Thr Ala Ile Asn Gly Thr Leu Pro Leu Ser His Met
305                 310                 315
```

<210> 27
<211> 267
<212> PRT
<213> Homo sapiens

<400> 27

```
Met His Leu Leu Leu Phe Gln Leu Leu Val Leu Leu Pro Leu Gly Lys
1               5                   10                  15

Thr Thr Arg His Gln Asp Gly Arg Gln Asn Gln Ser Ser Leu Ser Pro
            20                  25                  30

Val Leu Leu Pro Arg Asn Gln Arg Glu Leu Pro Thr Gly Asn His Glu
        35                  40                  45

Glu Ala Glu Glu Lys Pro Asp Leu Phe Val Ala Val Pro His Leu Val
    50                  55                  60

Gly Thr Ser Pro Ala Gly Glu Gly Gln Arg Gln Arg Glu Lys Met Leu
65                  70                  75                  80

Ser Arg Phe Gly Arg Phe Trp Lys Lys Pro Glu Arg Glu Met His Pro
                85                  90                  95

Ser Arg Asp Ser Asp Ser Glu Pro Phe Pro Pro Gly Thr Gln Ser Leu
            100                 105                 110

Ile Gln Pro Ile Asp Gly Met Lys Met Glu Lys Ser Pro Leu Arg Glu
        115                 120                 125
```

```
Glu Ala Lys Lys Phe Trp His His Phe Met Phe Arg Lys Thr Pro Ala
    130                 135                 140

Ser Gln Gly Val Ile Leu Pro Ile Lys Ser His Glu Val His Trp Glu
145                 150                 155                 160

Thr Cys Arg Thr Val Pro Phe Ser Gln Thr Ile Thr His Glu Gly Cys
                165                 170                 175

Glu Lys Val Val Val Gln Asn Asn Leu Cys Phe Gly Lys Cys Gly Ser
            180                 185                 190

Val His Phe Pro Gly Ala Ala Gln His Ser His Thr Ser Cys Ser His
        195                 200                 205

Cys Leu Pro Ala Lys Phe Thr Thr Met His Leu Pro Leu Asn Cys Thr
    210                 215                 220

Glu Leu Ser Ser Val Ile Lys Val Val Met Leu Val Glu Glu Cys Gln
225                 230                 235                 240

Cys Lys Val Lys Thr Glu His Glu Asp Gly His Ile Leu His Ala Gly
                245                 250                 255

Ser Gln Asp Ser Phe Ile Pro Gly Val Ser Ala
            260                 265
```

<210> 28
<211> 443
<212> PRT
<213> Homo sapiens

<400> 28

```
Met Tyr Gln Ser Leu Ala Met Ala Ala Asn His Gly Pro Pro Pro Gly
1               5                   10                  15
```

```
Ala Tyr Glu Ala Gly Gly Pro Gly Ala Phe Met His Gly Ala Gly Ala
            20                  25                  30

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

Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser Gly
    50                  55                  60

Gly Ala Ser Gly Gly Ser Ser Gly Gly Ala Ala Ser Gly Ala Gly Pro
65                  70                  75                  80

Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Asp Gly
                85                  90                  95

Ala Ala Tyr Thr Pro Pro Pro Val Ser Pro Arg Phe Ser Phe Pro Gly
            100                 105                 110

Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg Glu
        115                 120                 125

Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu Ala
    130                 135                 140

Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser Ser
145                 150                 155                 160

Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala Ala
                165                 170                 175

Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser Leu
            180                 185                 190

Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Val Asp Met
        195                 200                 205
```

```
Phe Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met
    210                 215                 220

Ser Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn
225                 230                 235                 240

Ala Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile
                245                 250                 255

Lys Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys
            260                 265                 270

Ala Asn Cys Gln Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu
        275                 280                 285

Gly Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly
    290                 295                 300

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

Arg Lys Pro Lys Asn Leu Asn Lys Ser Lys Thr Pro Ala Ala Pro Ser
                325                 330                 335

Gly Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser
            340                 345                 350

Asn Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu
        355                 360                 365

Pro Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr
    370                 375                 380

Phe Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val
385                 390                 395                 400
```

```
Leu Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser
                405                 410                 415


Gln Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val
            420                 425                 430


Leu Ala Asp Ser His Gly Asp Ile Ile Thr Ala
        435                 440


<210>  29
<211>  443
<212>  PRT
<213>  Homo sapiens

<400>  29

Met Tyr Gln Ser Leu Ala Met Ala Ala Asn His Gly Pro Pro Pro Gly
1               5                   10                  15


Ala Tyr Glu Ala Gly Gly Pro Gly Ala Phe Met His Gly Ala Gly Ala
            20                  25                  30


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


Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser Gly
    50                  55                  60


Gly Ala Ser Gly Gly Ser Ser Gly Gly Ala Ala Ser Gly Ala Gly Pro
65                  70                  75                  80


Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Asp Gly
                85                  90                  95


Ala Ala Tyr Thr Pro Pro Pro Val Ser Pro Arg Phe Ser Phe Pro Gly
            100                 105                 110


Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg Glu
```

```
        115                 120                 125

Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu Ala
    130                 135                 140

Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser Ser
145                 150                 155                 160

Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala Ala
                165                 170                 175

Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser Leu
            180                 185                 190

Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Val Asp Met
        195                 200                 205

Phe Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met
    210                 215                 220

Ser Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn
225                 230                 235                 240

Ala Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile
                245                 250                 255

Lys Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys
            260                 265                 270

Ala Asn Cys Gln Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu
        275                 280                 285

Gly Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly
    290                 295                 300

Val Pro Arg Pro Leu Ala Met Arg Lys Glu Gly Ile Gln Thr Arg Lys
```

305 310 315 320

Arg Lys Pro Lys Asn Leu Asn Lys Ser Lys Thr Pro Ala Ala Pro Ser
325 330 335

Gly Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser
340 345 350

Asn Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu
355 360 365

Pro Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr
370 375 380

Phe Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val
385 390 395 400

Leu Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser
405 410 415

Gln Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val
420 425 430

Leu Ala Asp Ser His Gly Asp Ile Ile Thr Ala
435 440

<210> 30
<211> 463
<212> PRT
<213> Homo sapiens

<400> 30

Met His Ser Ala Ser Ser Met Leu Gly Ala Val Lys Met Glu Gly His
1 5 10 15

Glu Pro Ser Asp Trp Ser Ser Tyr Tyr Ala Glu Pro Glu Gly Tyr Ser
20 25 30

```
Ser Val Ser Asn Met Asn Ala Gly Leu Gly Met Asn Gly Met Asn Thr
        35                  40                  45

Tyr Met Ser Met Ser Ala Ala Ala Met Gly Ser Gly Ser Gly Asn Met
    50                  55                  60

Ser Ala Gly Ser Met Asn Met Ser Ser Tyr Val Gly Ala Gly Met Ser
65                  70                  75                  80

Pro Ser Leu Ala Gly Met Ser Pro Gly Ala Gly Ala Met Ala Gly Met
                85                  90                  95

Gly Gly Ser Ala Gly Ala Ala Gly Val Ala Gly Met Gly Pro His Leu
            100                 105                 110

Ser Pro Ser Leu Ser Pro Leu Gly Gly Gln Ala Ala Gly Ala Met Gly
        115                 120                 125

Gly Leu Ala Pro Tyr Ala Asn Met Asn Ser Met Ser Pro Met Tyr Gly
    130                 135                 140

Gln Ala Gly Leu Ser Arg Ala Arg Asp Pro Lys Thr Tyr Arg Arg Ser
145                 150                 155                 160

Tyr Thr His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met
                165                 170                 175

Ala Ile Gln Gln Ser Pro Asn Lys Met Leu Thr Leu Ser Glu Ile Tyr
            180                 185                 190

Gln Trp Ile Met Asp Leu Phe Pro Phe Tyr Arg Gln Asn Gln Gln Arg
        195                 200                 205

Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Leu
    210                 215                 220
```

```
Lys Val Pro Arg Ser Pro Asp Lys Pro Gly Lys Gly Ser Phe Trp Thr
225                 230                 235                 240

Leu His Pro Asp Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg
                245                 250                 255

Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln Leu Ala Leu Lys Glu Ala
            260                 265                 270

Ala Gly Ala Ala Gly Ser Gly Lys Lys Ala Ala Ala Gly Ala Gln Ala
        275                 280                 285

Ser Gln Ala Gln Leu Gly Glu Ala Ala Gly Pro Ala Ser Glu Thr Pro
    290                 295                 300

Ala Gly Thr Glu Ser Pro His Ser Ser Ala Ser Pro Cys Gln Glu His
305                 310                 315                 320

Lys Arg Gly Gly Leu Gly Glu Leu Lys Gly Thr Pro Ala Ala Ala Leu
                325                 330                 335

Ser Pro Pro Glu Pro Ala Pro Ser Pro Gly Gln Gln Gln Gln Ala Ala
            340                 345                 350

Ala His Leu Leu Gly Pro Pro His His Pro Gly Leu Pro Pro Glu Ala
        355                 360                 365

His Leu Lys Pro Glu His His Tyr Ala Phe Asn His Pro Phe Ser Ile
    370                 375                 380

Asn Asn Leu Met Ser Ser Glu Gln Gln His His His Ser His His His
385                 390                 395                 400

His Gln Pro His Lys Met Asp Leu Lys Ala Tyr Glu Gln Val Met His
                405                 410                 415
```

```
Tyr Pro Gly Tyr Gly Ser Pro Met Pro Gly Ser Leu Ala Met Gly Pro
            420                 425                 430


Val Thr Asn Lys Thr Gly Leu Asp Ala Ser Pro Leu Ala Ala Asp Thr
        435                 440                 445


Ser Tyr Tyr Gln Gly Val Tyr Ser Arg Pro Ile Met Asn Ser Ser
    450                 455                 460


<210>  31
<211>  356
<212>  PRT
<213>  Homo sapiens

<400>  31

Met Ser Ile Pro Leu Pro Leu Leu Gln Ile Tyr Thr Ser Asp Asn Tyr
1               5                   10                  15


Thr Glu Glu Met Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys
            20                  25                  30


Phe Arg Glu Glu Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile
        35                  40                  45


Tyr Ser Ile Ile Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile
    50                  55                  60


Leu Val Met Gly Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr
65                  70                  75                  80


Arg Leu His Leu Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro
                85                  90                  95


Phe Trp Ala Val Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu
            100                 105                 110
```

```
Cys Lys Ala Val His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val
        115                 120                 125


Leu Ile Leu Ala Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His
    130                 135                 140


Ala Thr Asn Ser Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val
145                 150                 155                 160


Tyr Val Gly Val Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe
                165                 170                 175


Ile Phe Ala Asn Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg
            180                 185                 190


Phe Tyr Pro Asn Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile
        195                 200                 205


Met Val Gly Leu Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys
    210                 215                 220


Ile Ile Ile Ser Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys
225                 230                 235                 240


Ala Leu Lys Thr Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp
                245                 250                 255


Leu Pro Tyr Tyr Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu
            260                 265                 270


Ile Ile Lys Gln Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile
        275                 280                 285


Ser Ile Thr Glu Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile
    290                 295                 300
```

```
Leu Tyr Ala Phe Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala
305                 310                 315                 320


Leu Thr Ser Val Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly
                325                 330                 335


Lys Arg Gly Gly His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser
            340                 345                 350


Phe His Ser Ser
        355


<210>  32
<211>  419
<212>  PRT
<213>  Homo sapiens

<400>  32

Met Ser Phe Ile Pro Val Ala Glu Asp Ser Asp Phe Pro Ile His Asn
1               5                   10                  15


Leu Pro Tyr Gly Val Phe Ser Thr Arg Gly Asp Pro Arg Pro Arg Ile
            20                  25                  30


Gly Val Ala Ile Gly Asp Gln Ile Leu Asp Leu Ser Ile Ile Lys His
        35                  40                  45


Leu Phe Thr Gly Pro Val Leu Ser Lys His Gln Asp Val Phe Asn Gln
    50                  55                  60


Pro Thr Leu Asn Ser Phe Met Gly Leu Gly Gln Ala Ala Trp Lys Glu
65                  70                  75                  80


Ala Arg Val Phe Leu Gln Asn Leu Leu Ser Val Ser Gln Ala Arg Leu
                85                  90                  95
```

```
Arg Asp Asp Thr Glu Leu Arg Lys Cys Ala Phe Ile Ser Gln Ala Ser
            100                 105                 110

Ala Thr Met His Leu Pro Ala Thr Ile Gly Asp Tyr Thr Asp Phe Tyr
        115                 120                 125

Ser Ser Arg Gln His Ala Thr Asn Val Gly Ile Met Phe Arg Asp Lys
    130                 135                 140

Glu Asn Ala Leu Met Pro Asn Trp Leu His Leu Pro Val Gly Tyr His
145                 150                 155                 160

Gly Arg Ala Ser Ser Val Val Val Ser Gly Thr Pro Ile Arg Arg Pro
                165                 170                 175

Met Gly Gln Met Lys Pro Asp Asp Ser Lys Pro Pro Val Tyr Gly Ala
            180                 185                 190

Cys Lys Leu Leu Asp Met Glu Leu Glu Met Ala Phe Phe Val Gly Pro
        195                 200                 205

Gly Asn Arg Leu Gly Glu Pro Ile Pro Ile Ser Lys Ala His Glu His
    210                 215                 220

Ile Phe Gly Met Val Leu Met Asn Asp Trp Ser Ala Arg Asp Ile Gln
225                 230                 235                 240

Lys Trp Glu Tyr Val Pro Leu Gly Pro Phe Leu Gly Lys Ser Phe Gly
                245                 250                 255

Thr Thr Val Ser Pro Trp Val Val Pro Met Asp Ala Leu Met Pro Phe
            260                 265                 270

Ala Val Pro Asn Pro Lys Gln Asp Pro Arg Pro Leu Pro Tyr Leu Cys
        275                 280                 285
```

His Asp Glu Pro Tyr Thr Phe Asp Ile Asn Leu Ser Val Asn Leu Lys
290 295 300

Gly Glu Gly Met Ser Gln Ala Ala Thr Ile Cys Lys Ser Asn Phe Lys
305 310 315 320

Tyr Met Tyr Trp Thr Met Leu Gln Gln Leu Thr His His Ser Val Asn
325 330 335

Gly Cys Asn Leu Arg Pro Gly Asp Leu Leu Ala Ser Gly Thr Ile Ser
340 345 350

Gly Pro Glu Pro Glu Asn Phe Gly Ser Met Leu Glu Leu Ser Trp Lys
355 360 365

Gly Thr Lys Pro Ile Asp Leu Gly Asn Gly Gln Thr Arg Lys Phe Leu
370 375 380

Leu Asp Gly Asp Glu Val Ile Ile Thr Gly Tyr Cys Gln Gly Asp Gly
385 390 395 400

Tyr Arg Ile Gly Phe Gly Gln Cys Ala Gly Lys Val Leu Pro Ala Leu
405 410 415

Leu Pro Ser

<210> 33
<211> 454
<212> PRT
<213> Homo sapiens

<400> 33

Met Asp Pro Tyr Met Ile Gln Met Ser Ser Lys Gly Asn Leu Pro Ser
1 5 10 15

Ile Leu Asp Val His Val Asn Val Gly Gly Arg Ser Ser Val Pro Gly

```
            20                  25                  30

Lys Met Lys Gly Arg Lys Ala Arg Trp Ser Val Arg Pro Ser Asp Met
        35                  40                  45

Ala Lys Lys Thr Phe Asn Pro Ile Arg Ala Ile Val Asp Asn Met Lys
    50                  55                  60

Val Lys Pro Asn Pro Asn Lys Thr Met Ile Ser Leu Ser Ile Gly Asp
65                  70                  75                  80

Pro Thr Val Phe Gly Asn Leu Pro Thr Asp Pro Glu Val Thr Gln Ala
                85                  90                  95

Met Lys Asp Ala Leu Asp Ser Gly Lys Tyr Asn Gly Tyr Ala Pro Ser
            100                 105                 110

Ile Gly Phe Leu Ser Ser Arg Glu Glu Ile Ala Ser Tyr Tyr His Cys
        115                 120                 125

Pro Glu Ala Pro Leu Glu Ala Lys Asp Val Ile Leu Thr Ser Gly Cys
    130                 135                 140

Ser Gln Ala Ile Asp Leu Cys Leu Ala Val Leu Ala Asn Pro Gly Gln
145                 150                 155                 160

Asn Ile Leu Val Pro Arg Pro Gly Phe Ser Leu Tyr Lys Thr Leu Ala
                165                 170                 175

Glu Ser Met Gly Ile Glu Val Lys Leu Tyr Asn Leu Leu Pro Glu Lys
            180                 185                 190

Ser Trp Glu Ile Asp Leu Lys Gln Leu Glu Tyr Leu Ile Asp Glu Lys
        195                 200                 205

Thr Ala Cys Leu Ile Val Asn Asn Pro Ser Asn Pro Cys Gly Ser Val
```

210 215 220

Phe Ser Lys Arg His Leu Gln Lys Ile Leu Ala Val Ala Ala Arg Gln
225 230 235 240

Cys Val Pro Ile Leu Ala Asp Glu Ile Tyr Gly Asp Met Val Phe Ser
245 250 255

Asp Cys Lys Tyr Glu Pro Leu Ala Thr Leu Ser Thr Asp Val Pro Ile
260 265 270

Leu Ser Cys Gly Gly Leu Ala Lys Arg Trp Leu Val Pro Gly Trp Arg
275 280 285

Leu Gly Trp Ile Leu Ile His Asp Arg Arg Asp Ile Phe Gly Asn Glu
290 295 300

Ile Arg Asp Gly Leu Val Lys Leu Ser Gln Arg Ile Leu Gly Pro Cys
305 310 315 320

Thr Ile Val Gln Gly Ala Leu Lys Ser Ile Leu Cys Arg Thr Pro Gly
325 330 335

Glu Phe Tyr His Asn Thr Leu Ser Phe Leu Lys Ser Asn Ala Asp Leu
340 345 350

Cys Tyr Gly Ala Leu Ala Ala Ile Pro Gly Leu Arg Pro Val Arg Pro
355 360 365

Ser Gly Ala Met Tyr Leu Met Val Gly Ile Glu Met Glu His Phe Pro
370 375 380

Glu Phe Glu Asn Asp Val Glu Phe Thr Glu Arg Leu Val Ala Glu Gln
385 390 395 400

Ser Val His Cys Leu Pro Ala Thr Cys Phe Glu Tyr Pro Asn Phe Ile

405 410 415

Arg Val Val Ile Thr Val Pro Glu Val Met Met Leu Glu Ala Cys Ser
420 425 430

Arg Ile Gln Glu Phe Cys Glu Gln His Tyr His Cys Ala Glu Gly Ser
435 440 445

Gln Glu Glu Cys Asp Lys
450

<210> 34
<211> 465
<212> PRT
<213> Homo sapiens

<400> 34

Met Leu Asp Asp Arg Ala Arg Met Glu Ala Ala Lys Lys Glu Lys Val
1 5 10 15

Glu Gln Ile Leu Ala Glu Phe Gln Leu Gln Glu Glu Asp Leu Lys Lys
20 25 30

Val Met Arg Arg Met Gln Lys Glu Met Asp Arg Gly Leu Arg Leu Glu
35 40 45

Thr His Glu Glu Ala Ser Val Lys Met Leu Pro Thr Tyr Val Arg Ser
50 55 60

Thr Pro Glu Gly Ser Glu Val Gly Asp Phe Leu Ser Leu Asp Leu Gly
65 70 75 80

Gly Thr Asn Phe Arg Val Met Leu Val Lys Val Gly Glu Gly Glu Glu
85 90 95

Gly Gln Trp Ser Val Lys Thr Lys His Gln Met Tyr Ser Ile Pro Glu
100 105 110

```
Asp Ala Met Thr Gly Thr Ala Glu Met Leu Phe Asp Tyr Ile Ser Glu
        115                 120                 125

Cys Ile Ser Asp Phe Leu Asp Lys His Gln Met Lys His Lys Lys Leu
    130                 135                 140

Pro Leu Gly Phe Thr Phe Ser Phe Pro Val Arg His Glu Asp Ile Asp
145                 150                 155                 160

Lys Gly Ile Leu Leu Asn Trp Thr Lys Gly Phe Lys Ala Ser Gly Ala
                165                 170                 175

Glu Gly Asn Asn Val Val Gly Leu Leu Arg Asp Ala Ile Lys Arg Arg
            180                 185                 190

Gly Asp Phe Glu Met Asp Val Val Ala Met Val Asn Asp Thr Val Ala
        195                 200                 205

Thr Met Ile Ser Cys Tyr Tyr Glu Asp His Gln Cys Glu Val Gly Met
    210                 215                 220

Ile Val Gly Thr Gly Cys Asn Ala Cys Tyr Met Glu Glu Met Gln Asn
225                 230                 235                 240

Val Glu Leu Val Glu Gly Asp Glu Gly Arg Met Cys Val Asn Thr Glu
                245                 250                 255

Trp Gly Ala Phe Gly Asp Ser Gly Glu Leu Asp Glu Phe Leu Leu Glu
            260                 265                 270

Tyr Asp Arg Leu Val Asp Glu Ser Ser Ala Asn Pro Gly Gln Gln Leu
        275                 280                 285

Tyr Glu Lys Leu Ile Gly Gly Lys Tyr Met Gly Glu Leu Val Arg Leu
    290                 295                 300
```

```
Val Leu Leu Arg Leu Val Asp Glu Asn Leu Leu Phe His Gly Glu Ala
305                 310                 315                 320

Ser Glu Gln Leu Arg Thr Arg Gly Ala Phe Glu Thr Arg Phe Val Ser
                325                 330                 335

Gln Val Glu Ser Asp Thr Gly Asp Arg Lys Gln Ile Tyr Asn Ile Leu
            340                 345                 350

Ser Thr Leu Gly Leu Arg Pro Ser Thr Thr Asp Cys Asp Ile Val Arg
        355                 360                 365

Arg Ala Cys Glu Ser Val Ser Thr Arg Ala Ala His Met Cys Ser Ala
    370                 375                 380

Gly Leu Ala Gly Val Ile Asn Arg Met Arg Glu Ser Arg Ser Glu Asp
385                 390                 395                 400

Val Met Arg Ile Thr Val Gly Val Asp Gly Ser Val Tyr Lys Leu His
                405                 410                 415

Pro Ser Phe Lys Glu Arg Phe His Ala Ser Val Arg Arg Leu Thr Pro
            420                 425                 430

Ser Cys Glu Ile Thr Phe Ile Glu Ser Glu Glu Gly Ser Gly Arg Gly
        435                 440                 445

Ala Ala Leu Val Ser Ala Val Ala Cys Lys Lys Ala Cys Met Leu Gly
    450                 455                 460

Gln
465
```

<210> 35
<211> 147

<212> PRT
<213> Homo sapiens

<400> 35

Met Ala Ser His Arg Leu Leu Leu Leu Cys Leu Ala Gly Leu Val Phe
1 5 10 15

Val Ser Glu Ala Gly Pro Thr Gly Thr Gly Glu Ser Lys Cys Pro Leu
20 25 30

Met Val Lys Val Leu Asp Ala Val Arg Gly Ser Pro Ala Ile Asn Val
35 40 45

Ala Val His Val Phe Arg Lys Ala Ala Asp Asp Thr Trp Glu Pro Phe
50 55 60

Ala Ser Gly Lys Thr Ser Glu Ser Gly Glu Leu His Gly Leu Thr Thr
65 70 75 80

Glu Glu Glu Phe Val Glu Gly Ile Tyr Lys Val Glu Ile Asp Thr Lys
85 90 95

Ser Tyr Trp Lys Ala Leu Gly Ile Ser Pro Phe His Glu His Ala Glu
100 105 110

Val Val Phe Thr Ala Asn Asp Ser Gly Pro Arg Arg Tyr Thr Ile Ala
115 120 125

Ala Leu Leu Ser Pro Tyr Ser Tyr Ser Thr Thr Ala Val Val Thr Asn
130 135 140

Pro Lys Glu
145

<210> 36
<211> 1856
<212> PRT

<213> Homo sapiens

<400> 36

```
Met Ala Arg Lys Lys Leu Lys Lys Phe Thr Thr Leu Glu Ile Val Leu
1               5                   10                  15


Ser Val Leu Leu Leu Val Leu Phe Ile Ile Ser Ile Val Leu Ile Val
            20                  25                  30


Leu Leu Ala Lys Glu Ser Leu Lys Ser Thr Ala Pro Asp Pro Gly Thr
        35                  40                  45


Thr Gly Thr Pro Asp Pro Gly Thr Thr Gly Thr Pro Asp Pro Gly Thr
    50                  55                  60


Thr Gly Thr Thr His Ala Arg Thr Thr Gly Pro Pro Asp Pro Gly Thr
65                  70                  75                  80


Thr Gly Thr Thr Pro Val Ser Ala Glu Cys Pro Val Val Asn Glu Leu
                85                  90                  95


Glu Arg Ile Asn Cys Ile Pro Asp Gln Pro Pro Thr Lys Ala Thr Cys
            100                 105                 110


Asp Gln Arg Gly Cys Cys Trp Asn Pro Gln Gly Ala Val Ser Val Pro
        115                 120                 125


Trp Cys Tyr Tyr Ser Lys Asn His Ser Tyr His Val Glu Gly Asn Leu
    130                 135                 140


Val Asn Thr Asn Ala Gly Phe Thr Ala Arg Leu Lys Asn Leu Pro Ser
145                 150                 155                 160


Ser Pro Val Phe Gly Ser Asn Val Asp Asn Val Leu Leu Thr Ala Glu
                165                 170                 175
```

```
Tyr Gln Thr Ser Asn Arg Phe His Phe Lys Leu Thr Asp Gln Thr Asn
            180                 185                 190

Asn Arg Phe Glu Val Pro His Glu His Val Gln Ser Phe Ser Gly Asn
        195                 200                 205

Ala Ala Ala Ser Leu Thr Tyr Gln Val Glu Ile Ser Arg Gln Pro Phe
    210                 215                 220

Ser Ile Lys Val Thr Arg Arg Ser Asn Asn Arg Val Leu Phe Asp Ser
225                 230                 235                 240

Ser Ile Gly Pro Leu Leu Phe Ala Asp Gln Phe Leu Gln Leu Ser Thr
                245                 250                 255

Arg Leu Pro Ser Thr Asn Val Tyr Gly Leu Gly Glu His Val His Gln
            260                 265                 270

Gln Tyr Arg His Asp Met Asn Trp Lys Thr Trp Pro Ile Phe Asn Arg
        275                 280                 285

Asp Thr Thr Pro Asn Gly Asn Gly Thr Asn Leu Tyr Gly Ala Gln Thr
    290                 295                 300

Phe Phe Leu Cys Leu Glu Asp Ala Ser Gly Leu Ser Phe Gly Val Phe
305                 310                 315                 320

Leu Met Asn Ser Asn Ala Met Glu Val Val Leu Gln Pro Ala Pro Ala
                325                 330                 335

Ile Thr Tyr Arg Thr Ile Gly Gly Ile Leu Asp Phe Tyr Val Phe Leu
            340                 345                 350

Gly Asn Thr Pro Glu Gln Val Val Gln Glu Tyr Leu Glu Leu Ile Gly
        355                 360                 365
```

```
Arg Pro Ala Leu Pro Ser Tyr Trp Ala Leu Gly Phe His Leu Ser Arg
    370                 375                 380

Tyr Glu Tyr Gly Thr Leu Asp Asn Met Arg Glu Val Val Glu Arg Asn
385                 390                 395                 400

Arg Ala Ala Gln Leu Pro Tyr Asp Val Gln His Ala Asp Ile Asp Tyr
                405                 410                 415

Met Asp Glu Arg Arg Asp Phe Thr Tyr Asp Ser Val Asp Phe Lys Gly
            420                 425                 430

Phe Pro Glu Phe Val Asn Glu Leu His Asn Asn Gly Gln Lys Leu Val
        435                 440                 445

Ile Ile Val Asp Pro Ala Ile Ser Asn Asn Ser Ser Ser Ser Lys Pro
    450                 455                 460

Tyr Gly Pro Tyr Asp Arg Gly Ser Asp Met Lys Ile Trp Val Asn Ser
465                 470                 475                 480

Ser Asp Gly Val Thr Pro Leu Ile Gly Glu Val Trp Pro Gly Gln Thr
                485                 490                 495

Val Phe Pro Asp Tyr Thr Asn Pro Asn Cys Ala Val Trp Trp Thr Lys
            500                 505                 510

Glu Phe Glu Leu Phe His Asn Gln Val Glu Phe Asp Gly Ile Trp Ile
        515                 520                 525

Asp Met Asn Glu Val Ser Asn Phe Val Asp Gly Ser Val Ser Gly Cys
    530                 535                 540

Ser Thr Asn Asn Leu Asn Asn Pro Pro Phe Thr Pro Arg Ile Leu Asp
545                 550                 555                 560
```

```
Gly Tyr Leu Phe Cys Lys Thr Leu Cys Met Asp Ala Val Gln His Trp
                565                 570                 575

Gly Lys Gln Tyr Asp Ile His Asn Leu Tyr Gly Tyr Ser Met Ala Val
            580                 585                 590

Ala Thr Ala Glu Ala Ala Lys Thr Val Phe Pro Asn Lys Arg Ser Phe
        595                 600                 605

Ile Leu Thr Arg Ser Thr Phe Ala Gly Ser Gly Lys Phe Ala Ala His
    610                 615                 620

Trp Leu Gly Asp Asn Thr Ala Thr Trp Asp Asp Leu Arg Trp Ser Ile
625                 630                 635                 640

Pro Gly Val Leu Glu Phe Asn Leu Phe Gly Ile Pro Met Val Gly Pro
                645                 650                 655

Asp Ile Cys Gly Phe Ala Leu Asp Thr Pro Glu Glu Leu Cys Arg Arg
            660                 665                 670

Trp Met Gln Leu Gly Ala Phe Tyr Pro Phe Ser Arg Asn His Asn Gly
        675                 680                 685

Gln Gly Tyr Lys Asp Gln Asp Pro Ala Ser Phe Gly Ala Asp Ser Leu
    690                 695                 700

Leu Leu Asn Ser Ser Arg His Tyr Leu Asn Ile Arg Tyr Thr Leu Leu
705                 710                 715                 720

Pro Tyr Leu Tyr Thr Leu Phe Phe Arg Ala His Ser Arg Gly Asp Thr
                725                 730                 735

Val Ala Arg Pro Leu Leu His Glu Phe Tyr Glu Asp Asn Ser Thr Trp
            740                 745                 750
```

```
Asp Val His Gln Gln Phe Leu Trp Gly Pro Gly Leu Leu Ile Thr Pro
        755                 760                 765

Val Leu Asp Glu Gly Ala Glu Lys Val Met Ala Tyr Val Pro Asp Ala
    770                 775                 780

Val Trp Tyr Asp Tyr Glu Thr Gly Ser Gln Val Arg Trp Arg Lys Gln
785                 790                 795                 800

Lys Val Glu Met Glu Leu Pro Gly Asp Lys Ile Gly Leu His Leu Arg
                805                 810                 815

Gly Gly Tyr Ile Phe Pro Thr Gln Gln Pro Asn Thr Thr Thr Leu Ala
            820                 825                 830

Ser Arg Lys Asn Pro Leu Gly Leu Ile Ile Ala Leu Asp Glu Asn Lys
        835                 840                 845

Glu Ala Lys Gly Glu Leu Phe Trp Asp Asn Gly Glu Thr Lys Asp Thr
    850                 855                 860

Val Ala Asn Lys Val Tyr Leu Leu Cys Glu Phe Ser Val Thr Gln Asn
865                 870                 875                 880

Arg Leu Glu Val Asn Ile Ser Gln Ser Thr Tyr Lys Asp Pro Asn Asn
                885                 890                 895

Leu Ala Phe Asn Glu Ile Lys Ile Leu Gly Thr Glu Glu Pro Asn Val
            900                 905                 910

Thr Val Lys His Asn Gly Val Pro Ser Gln Thr Ser Pro Thr Val Thr
        915                 920                 925

Tyr Asp Ser Asn Leu Lys Val Ala Ile Ile Thr Asp Ile Asp Leu Leu
    930                 935                 940
```

```
Leu Gly Glu Ala Tyr Thr Val Glu Trp Ser Ile Lys Ile Arg Asp Glu
945                 950                 955                 960


Glu Lys Ile Asp Cys Tyr Pro Asp Glu Asn Gly Ala Ser Ala Glu Asn
                965                 970                 975


Cys Thr Ala Arg Gly Cys Ile Trp Glu Ala Ser Asn Ser Ser Gly Val
            980                 985                 990


Pro Phe Cys Tyr Phe Val Asn Asp  Leu Tyr Ser Val Ser  Asp Val Gln
        995                 1000                1005


Tyr Asn  Ser His Gly Ala Thr  Ala Asp Ile Ser Leu  Lys Ser Ser
    1010                1015                1020


Val Tyr  Ala Asn Ala Phe Pro  Ser Thr Pro Val Asn  Pro Leu Arg
    1025                1030                1035


Leu Asp  Val Thr Tyr His Lys  Asn Glu Met Leu Gln  Phe Lys Ile
    1040                1045                1050


Tyr Asp  Pro Asn Lys Asn Arg  Tyr Glu Val Pro Val  Pro Leu Asn
    1055                1060                1065


Ile Pro  Ser Met Pro Ser Ser  Thr Pro Glu Gly Gln  Leu Tyr Asp
    1070                1075                1080


Val Leu  Ile Lys Lys Asn Pro  Phe Gly Ile Glu Ile  Arg Arg Lys
    1085                1090                1095


Ser Thr  Gly Thr Ile Ile Trp  Asp Ser Gln Leu Leu  Gly Phe Thr
    1100                1105                1110


Phe Ser  Asp Met Phe Ile Arg  Ile Ser Thr Arg Leu  Pro Ser Lys
    1115                1120                1125
```

```
Tyr Leu  Tyr Gly Phe Gly Glu  Thr Glu His Arg Ser  Tyr Arg Arg
    1130                1135                1140

Asp Leu  Glu Trp His Thr Trp  Gly Met Phe Ser Arg  Asp Gln Pro
    1145                1150                1155

Pro Gly  Tyr Lys Lys Asn Ser  Tyr Gly Val His Pro  Tyr Tyr Met
    1160                1165                1170

Gly Leu  Glu Glu Asp Gly Ser  Ala His Gly Val Leu  Leu Leu Asn
    1175                1180                1185

Ser Asn  Ala Met Asp Val Thr  Phe Gln Pro Leu Pro  Ala Leu Thr
    1190                1195                1200

Tyr Arg  Thr Thr Gly Gly Val  Leu Asp Phe Tyr Val  Phe Leu Gly
    1205                1210                1215

Pro Thr  Pro Glu Leu Val Thr  Gln Gln Tyr Thr Glu  Leu Ile Gly
    1220                1225                1230

Arg Pro  Val Met Val Pro Tyr  Trp Ser Leu Gly Phe  Gln Leu Cys
    1235                1240                1245

Arg Tyr  Gly Tyr Gln Asn Asp  Ser Glu Ile Ala Ser  Leu Tyr Asp
    1250                1255                1260

Glu Met  Val Ala Ala Gln Ile  Pro Tyr Asp Val Gln  Tyr Ser Asp
    1265                1270                1275

Ile Asp  Tyr Met Glu Arg Gln  Leu Asp Phe Thr Leu  Ser Pro Lys
    1280                1285                1290

Phe Ala  Gly Phe Pro Ala Leu  Ile Asn Arg Met Lys  Ala Asp Gly
    1295                1300                1305
```

```
Met Arg  Val Ile Leu Ile Leu  Asp Pro Ala Ile Ser  Gly Asn Glu
    1310                1315                1320

Thr Gln  Pro Tyr Pro Ala Phe  Thr Arg Gly Val Glu  Asp Asp Val
    1325                1330                1335

Phe Ile  Lys Tyr Pro Asn Asp  Gly Asp Ile Val Trp  Gly Lys Val
    1340                1345                1350

Trp Pro  Asp Phe Pro Asp Val  Val Val Asn Gly Ser  Leu Asp Trp
    1355                1360                1365

Asp Ser  Gln Val Glu Leu Tyr  Arg Ala Tyr Val Ala  Phe Pro Asp
    1370                1375                1380

Phe Phe  Arg Asn Ser Thr Ala  Lys Trp Trp Lys Arg  Glu Ile Glu
    1385                1390                1395

Glu Leu  Tyr Asn Asn Pro Gln  Asn Pro Glu Arg Ser  Leu Lys Phe
    1400                1405                1410

Asp Gly  Met Trp Ile Asp Met  Asn Glu Pro Ser Ser  Phe Val Asn
    1415                1420                1425

Gly Ala  Val Ser Pro Gly Cys  Arg Asp Ala Ser Leu  Asn His Pro
    1430                1435                1440

Pro Tyr  Met Pro His Leu Glu  Ser Arg Asp Arg Gly  Leu Ser Ser
    1445                1450                1455

Lys Thr  Leu Cys Met Glu Ser  Gln Gln Ile Leu Pro  Asp Gly Ser
    1460                1465                1470

Leu Val  Gln His Tyr Asn Val  His Asn Leu Tyr Gly  Trp Ser Gln
    1475                1480                1485
```

```
Thr Arg  Pro Thr Tyr Glu Ala  Val Gln Glu Val Thr  Gly Gln Arg
    1490                1495                1500

Gly Val  Val Ile Thr Arg Ser  Thr Phe Pro Ser Ser  Gly Arg Trp
    1505                1510                1515

Ala Gly  His Trp Leu Gly Asp  Asn Thr Ala Ala Trp  Asp Gln Leu
    1520                1525                1530

Lys Lys  Ser Ile Ile Gly Met  Met Glu Phe Ser Leu  Phe Gly Ile
    1535                1540                1545

Ser Tyr  Thr Gly Ala Asp Ile  Cys Gly Phe Phe Gln  Asp Ala Glu
    1550                1555                1560

Tyr Glu  Met Cys Val Arg Trp  Met Gln Leu Gly Ala  Phe Tyr Pro
    1565                1570                1575

Phe Ser  Arg Asn His Asn Thr  Ile Gly Thr Arg Arg  Gln Asp Pro
    1580                1585                1590

Val Ser  Trp Asp Val Ala Phe  Val Asn Ile Ser Arg  Thr Val Leu
    1595                1600                1605

Gln Thr  Arg Tyr Thr Leu Leu  Pro Tyr Leu Tyr Thr  Leu Met His
    1610                1615                1620

Lys Ala  His Thr Glu Gly Val  Thr Val Val Arg Pro  Leu Leu His
    1625                1630                1635

Glu Phe  Val Ser Asp Gln Val  Thr Trp Asp Ile Asp  Ser Gln Phe
    1640                1645                1650

Leu Leu  Gly Pro Ala Phe Leu  Val Ser Pro Val Leu  Glu Arg Asn
    1655                1660                1665
```

```
Ala Arg  Asn Val Thr Ala Tyr  Phe Pro Arg Ala Arg  Trp Tyr Asp
    1670                1675                1680

Tyr Tyr  Thr Gly Val Asp Ile  Asn Ala Arg Gly Glu  Trp Lys Thr
    1685                1690                1695

Leu Pro  Ala Pro Leu Asp His  Ile Asn Leu His Val  Arg Gly Gly
    1700                1705                1710

Tyr Ile  Leu Pro Trp Gln Glu  Pro Ala Leu Asn Thr  His Leu Ser
    1715                1720                1725

Arg Gln  Lys Phe Met Gly Phe  Lys Ile Ala Leu Asp  Asp Glu Gly
    1730                1735                1740

Thr Ala  Gly Gly Trp Leu Phe  Trp Asp Asp Gly Gln  Ser Ile Asp
    1745                1750                1755

Thr Tyr  Gly Lys Gly Leu Tyr  Tyr Leu Ala Ser Phe  Ser Ala Ser
    1760                1765                1770

Gln Asn  Thr Met Gln Ser His  Ile Ile Phe Asn Asn  Tyr Ile Thr
    1775                1780                1785

Gly Thr  Asn Pro Leu Lys Leu  Gly Tyr Ile Glu Ile  Trp Gly Val
    1790                1795                1800

Gly Ser  Val Pro Val Thr Ser  Val Ser Ile Ser Val  Ser Gly Met
    1805                1810                1815

Val Ile  Thr Pro Ser Phe Asn  Asn Asp Pro Thr Thr  Gln Val Leu
    1820                1825                1830

Ser Ile  Asp Val Thr Asp Arg  Asn Ile Ser Leu His  Asn Phe Thr
    1835                1840                1845
```

Ser Leu Thr Trp Ile Ser Thr Leu
    1850   1855

<210> 37
<211> 314
<212> PRT
<213> Homo sapiens

<400> 37

Met Leu Val Ser Gly Arg Arg Arg Leu Leu Thr Val Leu Leu Gln Ala
1   5   10   15

Gln Lys Trp Pro Phe Gln Pro Ser Arg Asp Met Arg Leu Val Gln Phe
            20   25   30

Arg Ala Pro His Leu Val Gly Pro His Leu Gly Leu Glu Thr Gly Asn
        35   40   45

Gly Gly Gly Val Ile Asn Leu Asn Ala Phe Asp Pro Thr Leu Pro Lys
    50   55   60

Thr Met Thr Gln Phe Leu Glu Gln Gly Glu Ala Thr Leu Ser Val Ala
65   70   75   80

Arg Arg Ala Leu Ala Ala Gln Leu Pro Val Leu Pro Arg Ser Glu Val
                85   90   95

Thr Phe Leu Ala Pro Val Thr Arg Pro Asp Lys Val Val Cys Val Gly
            100   105   110

Met Asn Tyr Val Asp His Cys Lys Glu Gln Asn Val Pro Val Pro Lys
        115   120   125

Glu Pro Ile Ile Phe Ser Lys Phe Ala Ser Ser Ile Val Gly Pro Tyr
    130   135   140

Asp Glu Val Val Leu Pro Pro Gln Ser Gln Glu Val Asp Trp Glu Val

```
145                 150                 155                 160

Glu Leu Ala Val Val Ile Gly Lys Lys Gly Lys His Ile Lys Ala Thr
                165                 170                 175

Asp Ala Met Ala His Val Ala Gly Phe Thr Val Ala His Asp Val Ser
            180                 185                 190

Ala Arg Asp Trp Gln Met Arg Arg Asn Gly Lys Gln Trp Leu Leu Gly
        195                 200                 205

Lys Thr Phe Asp Thr Phe Cys Pro Leu Gly Pro Ala Leu Val Thr Lys
    210                 215                 220

Asp Ser Val Ala Asp Pro His Asn Leu Lys Ile Cys Cys Arg Val Asn
225                 230                 235                 240

Gly Glu Val Val Gln Ser Gly Asn Thr Asn Gln Met Val Phe Lys Thr
                245                 250                 255

Glu Asp Leu Ile Ala Trp Val Ser Gln Phe Val Thr Phe Tyr Pro Gly
            260                 265                 270

Asp Val Ile Leu Thr Gly Thr Pro Pro Gly Val Gly Val Phe Arg Lys
        275                 280                 285

Pro Pro Val Phe Leu Lys Lys Gly Asp Glu Val Gln Cys Glu Ile Glu
    290                 295                 300

Glu Leu Gly Val Ile Ile Asn Lys Val Val
305                 310
```

<210> 38
<211> 557
<212> PRT
<213> Homo sapiens

<400> 38

```
Met Val Ser Lys Leu Thr Ser Leu Gln Gln Glu Leu Leu Ser Ala Leu
1               5                  10                  15

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

Leu Leu Pro Ser Pro Asn Phe Gly Val Lys Leu Glu Thr Leu Pro Leu
        35                  40                  45

Ser Pro Gly Ser Gly Ala Glu Pro Asp Thr Lys Pro Val Phe His Thr
    50                  55                  60

Leu Thr Asn Gly His Ala Lys Gly Arg Leu Ser Gly Asp Glu Gly Ser
65                  70                  75                  80

Glu Asp Gly Asp Asp Tyr Asp Thr Pro Pro Ile Leu Lys Glu Leu Gln
                85                  90                  95

Ala Leu Asn Thr Glu Glu Ala Ala Glu Gln Arg Ala Glu Val Asp Arg
            100                 105                 110

Met Leu Ser Glu Asp Pro Trp Arg Ala Ala Lys Met Ile Lys Gly Tyr
        115                 120                 125

Met Gln Gln His Asn Ile Pro Gln Arg Glu Val Val Asp Val Thr Gly
    130                 135                 140

Leu Asn Gln Ser His Leu Ser Gln His Leu Asn Lys Gly Thr Pro Met
145                 150                 155                 160

Lys Thr Gln Lys Arg Ala Ala Leu Tyr Thr Trp Tyr Val Arg Lys Gln
                165                 170                 175

Arg Glu Ile Leu Arg Gln Phe Asn Gln Thr Val Gln Ser Ser Gly Asn
            180                 185                 190
```

```
Met Thr Asp Lys Ser Ser Gln Asp Gln Leu Leu Phe Leu Phe Pro Glu
        195                 200                 205

Phe Ser Gln Gln Ser His Gly Pro Gly Gln Ser Asp Asp Ala Cys Ser
    210                 215                 220

Glu Pro Thr Asn Lys Lys Met Arg Arg Asn Arg Phe Lys Trp Gly Pro
225                 230                 235                 240

Ala Ser Gln Gln Ile Leu Tyr Gln Ala Tyr Asp Arg Gln Lys Asn Pro
                245                 250                 255

Ser Lys Glu Glu Arg Glu Ala Leu Val Glu Glu Cys Asn Arg Ala Glu
            260                 265                 270

Cys Leu Gln Arg Gly Val Ser Pro Ser Lys Ala His Gly Leu Gly Ser
        275                 280                 285

Asn Leu Val Thr Glu Val Arg Val Tyr Asn Trp Phe Ala Asn Arg Arg
    290                 295                 300

Lys Glu Glu Ala Phe Arg Gln Lys Leu Ala Met Asp Ala Tyr Ser Ser
305                 310                 315                 320

Asn Gln Thr His Ser Leu Asn Pro Leu Leu Ser His Gly Ser Pro His
                325                 330                 335

His Gln Pro Ser Ser Ser Pro Pro Asn Lys Leu Ser Gly Val Arg Tyr
            340                 345                 350

Ser Gln Gln Gly Asn Asn Glu Ile Thr Ser Ser Ser Thr Ile Ser His
        355                 360                 365

His Gly Asn Ser Ala Met Val Thr Ser Gln Ser Val Leu Gln Gln Val
    370                 375                 380
```

```
Ser Pro Ala Ser Leu Asp Pro Gly His Asn Leu Leu Ser Pro Asp Gly
385                 390                 395                 400

Lys Met Ile Ser Val Ser Gly Gly Gly Leu Pro Pro Val Ser Thr Leu
                405                 410                 415

Thr Asn Ile His Ser Leu Ser His His Asn Pro Gln Gln Ser Gln Asn
            420                 425                 430

Leu Ile Met Thr Pro Leu Ser Gly Val Met Ala Ile Ala Gln Ser Leu
        435                 440                 445

Asn Thr Ser Gln Ala Gln Ser Val Pro Val Ile Asn Ser Val Ala Gly
    450                 455                 460

Ser Leu Ala Ala Leu Gln Pro Val Gln Phe Ser Gln Gln Leu His Ser
465                 470                 475                 480

Pro His Gln Gln Pro Leu Met Gln Gln Ser Pro Gly Ser His Met Ala
                485                 490                 495

Gln Gln Pro Phe Met Ala Ala Val Thr Gln Leu Gln Asn Ser His Met
            500                 505                 510

Tyr Ala His Lys Gln Glu Pro Pro Gln Tyr Ser His Thr Ser Arg Phe
        515                 520                 525

Pro Ser Ala Met Val Val Thr Asp Thr Ser Ser Ile Ser Thr Leu Thr
    530                 535                 540

Asn Met Ser Ser Ser Lys Gln Cys Pro Leu Gln Ala Trp
545                 550                 555
```

<210> 39
<211> 638

<212> PRT
<213> Homo sapiens

<400> 39

```
Met Val Ser Lys Leu Ser Gln Leu Gln Thr Glu Leu Leu Ala Ala Leu
1               5                  10                  15

Leu Glu Ser Gly Leu Ser Lys Glu Ala Leu Ile Gln Ala Leu Gly Glu
            20                  25                  30

Pro Gly Pro Tyr Leu Leu Ala Gly Glu Gly Pro Leu Asp Lys Gly Glu
        35                  40                  45

Ser Cys Gly Gly Gly Arg Gly Glu Leu Ala Glu Leu Pro Asn Gly Leu
    50                  55                  60

Gly Glu Thr Arg Gly Ser Glu Asp Glu Thr Asp Asp Asp Gly Glu Asp
65                  70                  75                  80

Phe Thr Pro Pro Ile Leu Lys Glu Leu Glu Asn Leu Ser Pro Glu Glu
                85                  90                  95

Ala Ala His Gln Lys Ala Val Val Glu Thr Leu Leu Gln Glu Asp Pro
            100                 105                 110

Trp Arg Val Ala Lys Met Val Lys Ser Tyr Leu Gln Gln His Asn Ile
        115                 120                 125

Pro Gln Arg Glu Val Val Asp Thr Thr Gly Leu Asn Gln Ser His Leu
    130                 135                 140

Ser Gln His Leu Asn Lys Gly Thr Pro Met Lys Thr Gln Lys Arg Ala
145                 150                 155                 160

Ala Leu Tyr Thr Trp Tyr Val Arg Lys Gln Arg Glu Val Ala Gln Gln
                165                 170                 175
```

```
Phe Thr His Ala Gly Gln Gly Gly Leu Ile Glu Glu Pro Thr Gly Asp
            180                 185                 190

Glu Leu Pro Thr Lys Lys Gly Arg Arg Asn Arg Phe Lys Trp Gly Pro
        195                 200                 205

Ala Ser Gln Gln Ile Leu Phe Gln Ala Tyr Glu Arg Gln Lys Asn Pro
    210                 215                 220

Ser Lys Glu Glu Arg Glu Thr Leu Val Glu Glu Cys Asn Arg Ala Glu
225                 230                 235                 240

Cys Ile Gln Arg Gly Val Ser Pro Ser Gln Ala Gln Gly Leu Gly Ser
                245                 250                 255

Asn Leu Val Thr Glu Val Arg Val Tyr Asn Trp Phe Ala Asn Arg Arg
            260                 265                 270

Lys Glu Glu Ala Phe Arg His Lys Leu Ala Met Asp Thr Tyr Ser Gly
        275                 280                 285

Pro Pro Pro Gly Pro Gly Pro Gly Pro Ala Leu Pro Ala His Ser Ser
    290                 295                 300

Pro Gly Leu Pro Pro Pro Ala Leu Ser Pro Ser Lys Val His Gly Val
305                 310                 315                 320

Arg Tyr Gly Gln Pro Ala Thr Ser Glu Thr Ala Glu Val Pro Ser Ser
                325                 330                 335

Ser Gly Gly Pro Leu Val Thr Val Ser Thr Pro Leu His Gln Val Ser
            340                 345                 350

Pro Thr Gly Leu Glu Pro Ser His Ser Leu Leu Ser Thr Glu Ala Lys
        355                 360                 365
```

```
Leu Val Ser Ala Ala Gly Gly Pro Leu Pro Pro Val Ser Thr Leu Thr
    370                 375                 380

Ala Leu His Ser Leu Glu Gln Thr Ser Pro Gly Leu Asn Gln Gln Pro
385                 390                 395                 400

Gln Asn Leu Ile Met Ala Ser Leu Pro Gly Val Met Thr Ile Gly Pro
                405                 410                 415

Gly Glu Pro Ala Ser Leu Gly Pro Thr Phe Thr Asn Thr Gly Ala Ser
            420                 425                 430

Thr Leu Val Ile Gly Leu Ala Ser Thr Gln Ala Gln Ser Val Pro Val
        435                 440                 445

Ile Asn Ser Met Gly Ser Ser Leu Thr Thr Leu Gln Pro Val Gln Phe
    450                 455                 460

Ser Gln Pro Leu His Pro Ser Tyr Gln Gln Pro Leu Met Pro Pro Val
465                 470                 475                 480

Gln Ser His Val Thr Gln Ser Pro Phe Met Ala Thr Met Ala Gln Leu
                485                 490                 495

Gln Ser Pro His Ala Leu Tyr Ser His Lys Pro Glu Val Ala Gln Tyr
            500                 505                 510

Thr His Thr Gly Leu Leu Pro Gln Thr Met Leu Ile Thr Asp Thr Thr
        515                 520                 525

Asn Leu Ser Ala Leu Ala Ser Leu Thr Pro Thr Lys Gln Glu Ala Ala
    530                 535                 540

Leu Leu Pro Gln Val Phe Thr Ser Asp Thr Glu Ala Ser Ser Glu Ser
545                 550                 555                 560
```

```
Gly Leu His Thr Pro Ala Ser Gln Ala Thr Thr Leu His Val Pro Ser
                565                 570                 575


Gln Asp Pro Ala Gly Ile Gln His Leu Gln Pro Ala His Arg Leu Ser
            580                 585                 590


Ala Ser Pro Thr Val Ser Ser Ser Ser Leu Val Leu Tyr Gln Ser Ser
        595                 600                 605


Asp Ser Ser Asn Gly Gln Ser His Leu Leu Pro Ser Asn His Ser Val
    610                 615                 620


Ile Glu Thr Phe Ile Ser Thr Gln Met Ala Ser Ser Ser Gln
625                 630                 635


<210>  40
<211>  503
<212>  PRT
<213>  Homo sapiens

<400>  40

Met Ala Leu Ile Pro Asp Leu Ala Met Glu Thr Trp Leu Leu Leu Ala
1               5                   10                  15


Val Ser Leu Val Leu Leu Tyr Leu Tyr Gly Thr His Ser His Gly Leu
            20                  25                  30


Phe Lys Lys Leu Gly Ile Pro Gly Pro Thr Pro Leu Pro Phe Leu Gly
        35                  40                  45


Asn Ile Leu Ser Tyr His Lys Gly Phe Cys Met Phe Asp Met Glu Cys
    50                  55                  60


His Lys Lys Tyr Gly Lys Val Trp Gly Phe Tyr Asp Gly Gln Gln Pro
65                  70                  75                  80
```

```
Val Leu Ala Ile Thr Asp Pro Asp Met Ile Lys Thr Val Leu Val Lys
                85                  90                  95

Glu Cys Tyr Ser Val Phe Thr Asn Arg Arg Pro Phe Gly Pro Val Gly
            100                 105                 110

Phe Met Lys Ser Ala Ile Ser Ile Ala Glu Asp Glu Glu Trp Lys Arg
        115                 120                 125

Leu Arg Ser Leu Leu Ser Pro Thr Phe Thr Ser Gly Lys Leu Lys Glu
    130                 135                 140

Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg Asn Leu
145                 150                 155                 160

Arg Arg Glu Ala Glu Thr Gly Lys Pro Val Thr Leu Lys Asp Val Phe
                165                 170                 175

Gly Ala Tyr Ser Met Asp Val Ile Thr Ser Thr Ser Phe Gly Val Asn
            180                 185                 190

Ile Asp Ser Leu Asn Asn Pro Gln Asp Pro Phe Val Glu Asn Thr Lys
        195                 200                 205

Lys Leu Leu Arg Phe Asp Phe Leu Asp Pro Phe Phe Leu Ser Ile Thr
    210                 215                 220

Val Phe Pro Phe Leu Ile Pro Ile Leu Glu Val Leu Asn Ile Cys Val
225                 230                 235                 240

Phe Pro Arg Glu Val Thr Asn Phe Leu Arg Lys Ser Val Lys Arg Met
                245                 250                 255

Lys Glu Ser Arg Leu Glu Asp Thr Gln Lys His Arg Val Asp Phe Leu
            260                 265                 270
```

```
Gln Leu Met Ile Asp Ser Gln Asn Ser Lys Glu Thr Glu Ser His Lys
        275                 280                 285

Ala Leu Ser Asp Leu Glu Leu Val Ala Gln Ser Ile Ile Phe Ile Phe
    290                 295                 300

Ala Gly Tyr Glu Thr Thr Ser Ser Val Leu Ser Phe Ile Met Tyr Glu
305                 310                 315                 320

Leu Ala Thr His Pro Asp Val Gln Gln Lys Leu Gln Glu Glu Ile Asp
                325                 330                 335

Ala Val Leu Pro Asn Lys Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln
            340                 345                 350

Met Glu Tyr Leu Asp Met Val Val Asn Glu Thr Leu Arg Leu Phe Pro
        355                 360                 365

Ile Ala Met Arg Leu Glu Arg Val Cys Lys Lys Asp Val Glu Ile Asn
    370                 375                 380

Gly Met Phe Ile Pro Lys Gly Val Val Val Met Ile Pro Ser Tyr Ala
385                 390                 395                 400

Leu His Arg Asp Pro Lys Tyr Trp Thr Glu Pro Glu Lys Phe Leu Pro
                405                 410                 415

Glu Arg Phe Ser Lys Lys Asn Lys Asp Asn Ile Asp Pro Tyr Ile Tyr
            420                 425                 430

Thr Pro Phe Gly Ser Gly Pro Arg Asn Cys Ile Gly Met Arg Phe Ala
        435                 440                 445

Leu Met Asn Met Lys Leu Ala Leu Ile Arg Val Leu Gln Asn Phe Ser
    450                 455                 460
```

```
Phe Lys Pro Cys Lys Glu Thr Gln Ile Pro Leu Lys Leu Ser Leu Gly
465                 470                 475                 480


Gly Leu Leu Gln Pro Glu Lys Pro Val Val Leu Lys Val Glu Ser Arg
                485                 490                 495


Asp Gly Thr Val Ser Gly Ala
            500


<210>  41
<211>  490
<212>  PRT
<213>  Homo sapiens

<400>  41

Met Asp Ser Leu Val Val Leu Val Leu Cys Leu Ser Cys Leu Leu Leu
1               5                   10                  15


Leu Ser Leu Trp Arg Gln Ser Ser Gly Arg Gly Lys Leu Pro Pro Gly
            20                  25                  30


Pro Thr Pro Leu Pro Val Ile Gly Asn Ile Leu Gln Ile Gly Ile Lys
        35                  40                  45


Asp Ile Ser Lys Ser Leu Thr Asn Leu Ser Lys Val Tyr Gly Pro Val
    50                  55                  60


Phe Thr Leu Tyr Phe Gly Leu Lys Pro Ile Val Val Leu His Gly Tyr
65                  70                  75                  80


Glu Ala Val Lys Glu Ala Leu Ile Asp Leu Gly Glu Glu Phe Ser Gly
                85                  90                  95


Arg Gly Ile Phe Pro Leu Ala Glu Arg Ala Asn Arg Gly Phe Gly Ile
            100                 105                 110


Val Phe Ser Asn Gly Lys Lys Trp Lys Glu Ile Arg Arg Phe Ser Leu
```

```
        115                 120                 125

Met Thr Leu Arg Asn Phe Gly Met Gly Lys Arg Ser Ile Glu Asp Arg
    130                 135                 140

Val Gln Glu Glu Ala Arg Cys Leu Val Glu Glu Leu Arg Lys Thr Lys
145                 150                 155                 160

Ala Ser Pro Cys Asp Pro Thr Phe Ile Leu Gly Cys Ala Pro Cys Asn
                165                 170                 175

Val Ile Cys Ser Ile Ile Phe His Lys Arg Phe Asp Tyr Lys Asp Gln
            180                 185                 190

Gln Phe Leu Asn Leu Met Glu Lys Leu Asn Glu Asn Ile Lys Ile Leu
        195                 200                 205

Ser Ser Pro Trp Ile Gln Ile Cys Asn Asn Phe Ser Pro Ile Ile Asp
    210                 215                 220

Tyr Phe Pro Gly Thr His Asn Lys Leu Leu Lys Asn Val Ala Phe Met
225                 230                 235                 240

Lys Ser Tyr Ile Leu Glu Lys Val Lys Glu His Gln Glu Ser Met Asp
                245                 250                 255

Met Asn Asn Pro Gln Asp Phe Ile Asp Cys Phe Leu Met Lys Met Glu
            260                 265                 270

Lys Glu Lys His Asn Gln Pro Ser Glu Phe Thr Ile Glu Ser Leu Glu
        275                 280                 285

Asn Thr Ala Val Asp Leu Phe Gly Ala Gly Thr Glu Thr Thr Ser Thr
    290                 295                 300

Thr Leu Arg Tyr Ala Leu Leu Leu Leu Leu Lys His Pro Glu Val Thr
```

305 310 315 320

Ala Lys Val Gln Glu Glu Ile Glu Arg Val Ile Gly Arg Asn Arg Ser
325 330 335

Pro Cys Met Gln Asp Arg Ser His Met Pro Tyr Thr Asp Ala Val Val
340 345 350

His Glu Val Gln Arg Tyr Ile Asp Leu Leu Pro Thr Ser Leu Pro His
355 360 365

Ala Val Thr Cys Asp Ile Lys Phe Arg Asn Tyr Leu Ile Pro Lys Gly
370 375 380

Thr Thr Ile Leu Ile Ser Leu Thr Ser Val Leu His Asp Asn Lys Glu
385 390 395 400

Phe Pro Asn Pro Glu Met Phe Asp Pro His His Phe Leu Asp Glu Gly
405 410 415

Gly Asn Phe Lys Lys Ser Lys Tyr Phe Met Pro Phe Ser Ala Gly Lys
420 425 430

Arg Ile Cys Val Gly Glu Ala Leu Ala Gly Met Glu Leu Phe Leu Phe
435 440 445

Leu Thr Ser Ile Leu Gln Asn Phe Asn Leu Lys Ser Leu Val Asp Pro
450 455 460

Lys Asn Leu Asp Thr Thr Pro Val Val Asn Gly Phe Ala Ser Val Pro
465 470 475 480

Pro Phe Tyr Gln Leu Cys Phe Ile Pro Val
485 490

<210> 42

<211> 490
<212> PRT
<213> Homo sapiens

<400> 42

```
Met Asp Pro Phe Val Val Leu Val Leu Cys Leu Ser Cys Leu Leu Leu
1               5                  10                  15


Leu Ser Ile Trp Arg Gln Ser Ser Gly Arg Gly Lys Leu Pro Pro Gly
            20                  25                  30


Pro Thr Pro Leu Pro Val Ile Gly Asn Ile Leu Gln Ile Asp Ile Lys
        35                  40                  45


Asp Val Ser Lys Ser Leu Thr Asn Leu Ser Lys Ile Tyr Gly Pro Val
    50                  55                  60


Phe Thr Leu Tyr Phe Gly Leu Glu Arg Met Val Val Leu His Gly Tyr
65                  70                  75                  80


Glu Val Val Lys Glu Ala Leu Ile Asp Leu Gly Glu Glu Phe Ser Gly
                85                  90                  95


Arg Gly His Phe Pro Leu Ala Glu Arg Ala Asn Arg Gly Phe Gly Ile
            100                 105                 110


Val Phe Ser Asn Gly Lys Arg Trp Lys Glu Ile Arg Arg Phe Ser Leu
        115                 120                 125


Met Thr Leu Arg Asn Phe Gly Met Gly Lys Arg Ser Ile Glu Asp Arg
    130                 135                 140


Val Gln Glu Glu Ala Arg Cys Leu Val Glu Glu Leu Arg Lys Thr Lys
145                 150                 155                 160


Ala Ser Pro Cys Asp Pro Thr Phe Ile Leu Gly Cys Ala Pro Cys Asn
                165                 170                 175
```

```
Val Ile Cys Ser Ile Ile Phe Gln Lys Arg Phe Asp Tyr Lys Asp Gln
            180                 185                 190

Gln Phe Leu Asn Leu Met Glu Lys Leu Asn Glu Asn Ile Arg Ile Val
        195                 200                 205

Ser Thr Pro Trp Ile Gln Ile Cys Asn Asn Phe Pro Thr Ile Ile Asp
    210                 215                 220

Tyr Phe Pro Gly Thr His Asn Lys Leu Leu Lys Asn Leu Ala Phe Met
225                 230                 235                 240

Glu Ser Asp Ile Leu Glu Lys Val Lys Glu His Gln Glu Ser Met Asp
                245                 250                 255

Ile Asn Asn Pro Arg Asp Phe Ile Asp Cys Phe Leu Ile Lys Met Glu
            260                 265                 270

Lys Glu Lys Gln Asn Gln Gln Ser Glu Phe Thr Ile Glu Asn Leu Val
        275                 280                 285

Ile Thr Ala Ala Asp Leu Leu Gly Ala Gly Thr Glu Thr Thr Ser Thr
    290                 295                 300

Thr Leu Arg Tyr Ala Leu Leu Leu Leu Leu Lys His Pro Glu Val Thr
305                 310                 315                 320

Ala Lys Val Gln Glu Glu Ile Glu Arg Val Val Gly Arg Asn Arg Ser
                325                 330                 335

Pro Cys Met Gln Asp Arg Gly His Met Pro Tyr Thr Asp Ala Val Val
            340                 345                 350

His Glu Val Gln Arg Tyr Ile Asp Leu Ile Pro Thr Ser Leu Pro His
        355                 360                 365
```

```
Ala Val Thr Cys Asp Val Lys Phe Arg Asn Tyr Leu Ile Pro Lys Gly
    370                 375                 380

Thr Thr Ile Leu Thr Ser Leu Thr Ser Val Leu His Asp Asn Lys Glu
385                 390                 395                 400

Phe Pro Asn Pro Glu Met Phe Asp Pro Arg His Phe Leu Asp Glu Gly
                405                 410                 415

Gly Asn Phe Lys Lys Ser Asn Tyr Phe Met Pro Phe Ser Ala Gly Lys
            420                 425                 430

Arg Ile Cys Val Gly Glu Gly Leu Ala Arg Met Glu Leu Phe Leu Phe
        435                 440                 445

Leu Thr Phe Ile Leu Gln Asn Phe Asn Leu Lys Ser Leu Ile Asp Pro
    450                 455                 460

Lys Asp Leu Asp Thr Thr Pro Val Val Asn Gly Phe Ala Ser Val Pro
465                 470                 475                 480

Pro Phe Tyr Gln Leu Cys Phe Ile Pro Val
                485                 490
```

<210> 43
<211> 515
<212> PRT
<213> Homo sapiens

<400> 43

```
Met Ala Leu Ser Gln Ser Val Pro Phe Ser Ala Thr Glu Leu Leu Leu
1               5                   10                  15

Ala Ser Ala Ile Phe Cys Leu Val Phe Trp Val Leu Lys Gly Leu Arg
            20                  25                  30
```

```
Pro Arg Val Pro Lys Gly Leu Lys Ser Pro Pro Glu Pro Trp Gly Trp
        35                  40                  45

Pro Leu Leu Gly His Val Leu Thr Leu Gly Lys Asn Pro His Leu Ala
    50                  55                  60

Leu Ser Arg Met Ser Gln Arg Tyr Gly Asp Val Leu Gln Ile Arg Ile
65                  70                  75                  80

Gly Ser Thr Pro Val Leu Val Leu Ser Arg Leu Asp Thr Ile Arg Gln
                85                  90                  95

Ala Leu Val Arg Gln Gly Asp Asp Phe Lys Gly Arg Pro Asp Leu Tyr
            100                 105                 110

Thr Ser Thr Leu Ile Thr Asp Gly Gln Ser Leu Thr Phe Ser Thr Asp
        115                 120                 125

Ser Gly Pro Val Trp Ala Ala Arg Arg Arg Leu Ala Gln Asn Ala Leu
    130                 135                 140

Asn Thr Phe Ser Ile Ala Ser Asp Pro Ala Ser Ser Ser Ser Cys Tyr
145                 150                 155                 160

Leu Glu Glu His Val Ser Lys Glu Ala Lys Ala Leu Ile Ser Arg Leu
                165                 170                 175

Gln Glu Leu Met Ala Gly Pro Gly His Phe Asp Pro Tyr Asn Gln Val
            180                 185                 190

Val Val Ser Val Ala Asn Val Ile Gly Ala Met Cys Phe Gly Gln His
        195                 200                 205

Phe Pro Glu Ser Ser Asp Glu Met Leu Ser Leu Val Lys Asn Thr His
    210                 215                 220
```

```
Glu Phe Val Glu Thr Ala Ser Ser Gly Asn Pro Leu Asp Phe Phe Pro
225                 230                 235                 240

Ile Leu Arg Tyr Leu Pro Asn Pro Ala Leu Gln Arg Phe Lys Ala Phe
                245                 250                 255

Asn Gln Arg Phe Leu Trp Phe Leu Gln Lys Thr Val Gln Glu His Tyr
            260                 265                 270

Gln Asp Phe Asp Lys Asn Ser Val Arg Asp Ile Thr Gly Ala Leu Phe
        275                 280                 285

Lys His Ser Lys Lys Gly Pro Arg Ala Ser Gly Asn Leu Ile Pro Gln
    290                 295                 300

Glu Lys Ile Val Asn Leu Val Asn Asp Ile Phe Gly Ala Gly Phe Asp
305                 310                 315                 320

Thr Val Thr Thr Ala Ile Ser Trp Ser Leu Met Tyr Leu Val Thr Lys
                325                 330                 335

Pro Glu Ile Gln Arg Lys Ile Gln Lys Glu Leu Asp Thr Val Ile Gly
            340                 345                 350

Arg Glu Arg Arg Pro Arg Leu Ser Asp Arg Pro Gln Leu Pro Tyr Leu
        355                 360                 365

Glu Ala Phe Ile Leu Glu Thr Phe Arg His Ser Ser Phe Leu Pro Phe
    370                 375                 380

Thr Ile Pro His Ser Thr Thr Arg Asp Thr Thr Leu Asn Gly Phe Tyr
385                 390                 395                 400

Ile Pro Lys Lys Cys Val Phe Val Asn Gln Trp Gln Val Asn His Asp
                405                 410                 415
```

```
Pro Glu Leu Trp Glu Asp Pro Ser Glu Phe Arg Pro Glu Arg Phe Leu
            420                 425                 430


Thr Ala Asp Gly Thr Ala Ile Asn Lys Pro Leu Ser Glu Lys Met Met
        435                 440                 445


Leu Phe Gly Met Gly Lys Arg Arg Cys Ile Gly Glu Val Leu Ala Lys
    450                 455                 460


Trp Glu Ile Phe Leu Phe Leu Ala Ile Leu Leu Gln Gln Leu Glu Phe
465                 470                 475                 480


Ser Val Pro Pro Gly Val Lys Val Asp Leu Thr Pro Ile Tyr Gly Leu
                485                 490                 495


Thr Met Lys His Ala Arg Cys Glu His Val Gln Ala Arg Leu Arg Phe
            500                 505                 510


Ser Ile Asn
        515


<210>  44
<211>  493
<212>  PRT
<213>  Homo sapiens

<400>  44

Met Ser Ala Leu Gly Val Thr Val Ala Leu Leu Val Trp Ala Ala Phe
1               5                   10                  15


Leu Leu Leu Val Ser Met Trp Arg Gln Val His Ser Ser Trp Asn Leu
            20                  25                  30


Pro Pro Gly Pro Phe Pro Leu Pro Ile Ile Gly Asn Leu Phe Gln Leu
        35                  40                  45
```

```
Glu Leu Lys Asn Ile Pro Lys Ser Phe Thr Arg Leu Ala Gln Arg Phe
    50                  55                  60

Gly Pro Val Phe Thr Leu Tyr Val Gly Ser Gln Arg Met Val Val Met
65                  70                  75                  80

His Gly Tyr Lys Ala Val Lys Glu Ala Leu Leu Asp Tyr Lys Asp Glu
                85                  90                  95

Phe Ser Gly Arg Gly Asp Leu Pro Ala Phe His Ala His Arg Asp Arg
            100                 105                 110

Gly Ile Ile Phe Asn Asn Gly Pro Ala Trp Lys Asp Ile Arg Arg Phe
        115                 120                 125

Ser Leu Thr Thr Leu Arg Asn Tyr Gly Met Gly Lys Gln Gly Asn Glu
    130                 135                 140

Ser Arg Ile Gln Arg Glu Ala His Phe Leu Leu Glu Ala Leu Arg Lys
145                 150                 155                 160

Thr Gln Gly Gln Pro Phe Asp Pro Thr Phe Leu Ile Gly Cys Ala Pro
                165                 170                 175

Cys Asn Val Ile Ala Asp Ile Leu Phe Arg Lys His Phe Asp Tyr Asn
            180                 185                 190

Asp Glu Lys Phe Leu Arg Leu Met Tyr Leu Phe Asn Glu Asn Phe His
        195                 200                 205

Leu Leu Ser Thr Pro Trp Leu Gln Leu Tyr Asn Asn Phe Pro Ser Phe
    210                 215                 220

Leu His Tyr Leu Pro Gly Ser His Arg Lys Val Ile Lys Asn Val Ala
225                 230                 235                 240
```

```
Glu Val Lys Glu Tyr Val Ser Glu Arg Val Lys Glu His His Gln Ser
                245                 250                 255

Leu Asp Pro Asn Cys Pro Arg Asp Leu Thr Asp Cys Leu Leu Val Glu
            260                 265                 270

Met Glu Lys Glu Lys His Ser Ala Glu Arg Leu Tyr Thr Met Asp Gly
        275                 280                 285

Ile Thr Val Thr Val Ala Asp Leu Phe Phe Ala Gly Thr Glu Thr Thr
    290                 295                 300

Ser Thr Thr Leu Arg Tyr Gly Leu Leu Ile Leu Met Lys Tyr Pro Glu
305                 310                 315                 320

Ile Glu Glu Lys Leu His Glu Glu Ile Asp Arg Val Ile Gly Pro Ser
                325                 330                 335

Arg Ile Pro Ala Ile Lys Asp Arg Gln Glu Met Pro Tyr Met Asp Ala
            340                 345                 350

Val Val His Glu Ile Gln Arg Phe Ile Thr Leu Val Pro Ser Asn Leu
        355                 360                 365

Pro His Glu Ala Thr Arg Asp Thr Ile Phe Arg Gly Tyr Leu Ile Pro
    370                 375                 380

Lys Gly Thr Val Val Val Pro Thr Leu Asp Ser Val Leu Tyr Asp Asn
385                 390                 395                 400

Gln Glu Phe Pro Asp Pro Glu Lys Phe Lys Pro Glu His Phe Leu Asn
                405                 410                 415

Glu Asn Gly Lys Phe Lys Tyr Ser Asp Tyr Phe Lys Pro Phe Ser Thr
            420                 425                 430
```

```
Gly Lys Arg Val Cys Ala Gly Glu Gly Leu Ala Arg Thr Glu Leu Phe
        435                 440                 445


Leu Leu Leu Cys Ala Ile Leu Gln His Phe Asn Leu Lys Pro Leu Val
    450                 455                 460


Asp Pro Lys Asp Ile Asp Leu Ser Pro Ile His Ile Gly Phe Gly Cys
465                 470                 475                 480


Ile Pro Pro Arg Tyr Lys Leu Cys Val Ile Pro Arg Ser
                485                 490


<210>  45
<211>  497
<212>  PRT
<213>  Homo sapiens

<400>  45

Met Gly Leu Glu Ala Leu Val Pro Leu Ala Val Ile Val Ala Ile Phe
1               5                   10                  15


Leu Leu Leu Val Asp Leu Met His Arg Arg Gln Arg Trp Ala Ala Arg
            20                  25                  30


Tyr Ser Pro Gly Pro Leu Pro Leu Pro Gly Leu Gly Asn Leu Leu His
        35                  40                  45


Val Asp Phe Gln Asn Thr Pro Tyr Cys Phe Asp Gln Leu Arg Arg Arg
    50                  55                  60


Phe Gly Asp Val Phe Ser Leu Gln Leu Ala Trp Thr Pro Val Val Val
65                  70                  75                  80


Leu Asn Gly Leu Ala Ala Val Arg Glu Ala Leu Val Thr His Gly Glu
                85                  90                  95


Asp Thr Ala Asp Arg Pro Pro Val Pro Ile Thr Gln Ile Leu Gly Phe
```

100 105 110

Gly Pro Arg Ser Gln Gly Val Phe Leu Ala Arg Tyr Gly Pro Ala Trp
115 120 125

Arg Glu Gln Arg Arg Phe Ser Val Ser Thr Leu Arg Asn Leu Gly Leu
130 135 140

Gly Lys Lys Ser Leu Glu Gln Trp Val Thr Glu Glu Ala Ala Cys Leu
145 150 155 160

Cys Ala Ala Phe Ala Asn His Ser Gly Arg Pro Phe Arg Pro Asn Gly
165 170 175

Leu Leu Asp Lys Ala Val Ser Asn Val Ile Ala Ser Leu Thr Cys Gly
180 185 190

Arg Arg Phe Glu Tyr Asp Asp Pro Arg Phe Leu Arg Leu Leu Asp Leu
195 200 205

Ala Gln Glu Gly Leu Lys Glu Glu Ser Gly Phe Leu Arg Glu Val Leu
210 215 220

Asn Ala Val Pro Val Leu Leu His Ile Pro Ala Leu Ala Gly Lys Val
225 230 235 240

Leu Arg Phe Gln Lys Ala Phe Leu Thr Gln Leu Asp Glu Leu Leu Thr
245 250 255

Glu His Arg Met Thr Trp Asp Pro Ala Gln Pro Pro Arg Asp Leu Thr
260 265 270

Glu Ala Phe Leu Ala Glu Met Glu Lys Ala Lys Gly Asn Pro Glu Ser
275 280 285

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

```
    290                 295                 300

Ala Gly Met Val Thr Thr Ser Thr Thr Leu Ala Trp Gly Leu Leu Leu
305                 310                 315                 320

Met Ile Leu His Pro Asp Val Gln Arg Arg Val Gln Gln Glu Ile Asp
                325                 330                 335

Asp Val Ile Gly Gln Val Arg Arg Pro Glu Met Gly Asp Gln Ala His
            340                 345                 350

Met Pro Tyr Thr Thr Ala Val Ile His Glu Val Gln Arg Phe Gly Asp
        355                 360                 365

Ile Val Pro Leu Gly Val Thr His Met Thr Ser Arg Asp Ile Glu Val
    370                 375                 380

Gln Gly Phe Arg Ile Pro Lys Gly Thr Thr Leu Ile Thr Asn Leu Ser
385                 390                 395                 400

Ser Val Leu Lys Asp Glu Ala Val Trp Glu Lys Pro Phe Arg Phe His
                405                 410                 415

Pro Glu His Phe Leu Asp Ala Gln Gly His Phe Val Lys Pro Glu Ala
            420                 425                 430

Phe Leu Pro Phe Ser Ala Gly Arg Arg Ala Cys Leu Gly Glu Pro Leu
        435                 440                 445

Ala Arg Met Glu Leu Phe Leu Phe Phe Thr Ser Leu Leu Gln His Phe
    450                 455                 460

Ser Phe Ser Val Pro Thr Gly Gln Pro Arg Pro Ser His His Gly Val
465                 470                 475                 480

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

485 490 495

Arg

<210> 46
<211> 503
<212> PRT
<213> Homo sapiens

<400> 46

Met Asp Leu Ile Pro Asn Leu Ala Val Glu Thr Trp Leu Leu Leu Ala
1 5 10 15

Val Ser Leu Ile Leu Leu Tyr Leu Tyr Gly Thr Arg Thr His Gly Leu
20 25 30

Phe Lys Lys Leu Gly Ile Pro Gly Pro Thr Pro Leu Pro Phe Leu Gly
35 40 45

Asn Ala Leu Ser Phe Arg Lys Gly Tyr Trp Thr Phe Asp Met Glu Cys
50 55 60

Tyr Lys Lys Tyr Arg Lys Val Trp Gly Ile Tyr Asp Cys Gln Gln Pro
65 70 75 80

Met Leu Ala Ile Thr Asp Pro Asp Met Ile Lys Thr Val Leu Val Lys
85 90 95

Glu Cys Tyr Ser Val Phe Thr Asn Arg Arg Pro Phe Gly Pro Val Gly
100 105 110

Phe Met Lys Asn Ala Ile Ser Ile Ala Glu Asp Glu Glu Trp Lys Arg
115 120 125

Ile Arg Ser Leu Leu Ser Pro Thr Phe Thr Ser Gly Lys Leu Lys Glu
130 135 140

```
Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg Asn Leu
145                 150                 155                 160

Arg Arg Glu Ala Glu Thr Gly Lys Pro Val Thr Leu Lys His Val Phe
                165                 170                 175

Gly Ala Tyr Ser Met Asp Val Ile Thr Ser Thr Ser Phe Gly Val Ser
            180                 185                 190

Ile Asp Ser Leu Asn Asn Pro Gln Asp Pro Phe Val Glu Asn Thr Lys
        195                 200                 205

Lys Leu Leu Arg Phe Asn Pro Leu Asp Pro Phe Val Leu Ser Ile Lys
    210                 215                 220

Val Phe Pro Phe Leu Thr Pro Ile Leu Glu Ala Leu Asn Ile Thr Val
225                 230                 235                 240

Phe Pro Arg Lys Val Ile Ser Phe Leu Thr Lys Ser Val Lys Gln Ile
                245                 250                 255

Lys Glu Gly Arg Leu Lys Glu Thr Gln Lys His Arg Val Asp Phe Leu
            260                 265                 270

Gln Leu Met Ile Asp Ser Gln Asn Ser Lys Asp Ser Glu Thr His Lys
        275                 280                 285

Ala Leu Ser Asp Leu Glu Leu Met Ala Gln Ser Ile Ile Phe Ile Phe
    290                 295                 300

Ala Gly Tyr Glu Thr Thr Ser Ser Val Leu Ser Phe Ile Ile Tyr Glu
305                 310                 315                 320

Leu Ala Thr His Pro Asp Val Gln Gln Lys Val Gln Lys Glu Ile Asp
                325                 330                 335
```

```
Thr Val Leu Pro Asn Lys Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln
            340                 345                 350

Leu Glu Tyr Leu Asp Met Val Val Asn Glu Thr Leu Arg Leu Phe Pro
        355                 360                 365

Val Ala Met Arg Leu Glu Arg Val Cys Lys Lys Asp Val Glu Ile Asn
    370                 375                 380

Gly Met Phe Ile Pro Lys Gly Val Val Val Met Ile Pro Ser Tyr Val
385                 390                 395                 400

Leu His His Asp Pro Lys Tyr Trp Thr Glu Pro Glu Lys Phe Leu Pro
                405                 410                 415

Glu Arg Phe Ser Lys Lys Asn Lys Asp Asn Ile Asp Pro Tyr Ile Tyr
            420                 425                 430

Thr Pro Phe Gly Ser Gly Pro Arg Asn Cys Ile Gly Met Arg Phe Ala
        435                 440                 445

Leu Val Asn Met Lys Leu Ala Leu Val Arg Val Leu Gln Asn Phe Ser
    450                 455                 460

Phe Lys Pro Cys Lys Glu Thr Gln Ile Pro Leu Lys Leu Arg Phe Gly
465                 470                 475                 480

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

Asp Glu Thr Val Ser Gly Ala
            500
```

<210> 47
<211> 511

<212> PRT
<213> Homo sapiens

<400> 47

```
Leu Phe Pro Ile Ser Met Ser Ala Thr Glu Phe Leu Leu Ala Ser Val
1               5                  10                  15

Ile Phe Cys Leu Val Phe Trp Val Ile Arg Ala Ser Arg Pro Gln Val
            20                  25                  30

Pro Lys Gly Leu Lys Asn Pro Pro Gly Pro Trp Gly Trp Pro Leu Ile
        35                  40                  45

Gly His Met Leu Thr Leu Gly Lys Asn Pro His Leu Ala Leu Ser Arg
    50                  55                  60

Met Ser Gln Gln Tyr Gly Asp Val Leu Gln Ile Arg Ile Gly Ser Thr
65                  70                  75                  80

Pro Val Val Val Leu Ser Gly Leu Asp Thr Ile Arg Gln Ala Leu Val
                85                  90                  95

Arg Gln Gly Asp Asp Phe Lys Gly Arg Pro Asp Leu Tyr Thr Phe Thr
            100                 105                 110

Leu Ile Ser Asn Gly Gln Ser Met Ser Phe Ser Pro Asp Ser Gly Pro
        115                 120                 125

Val Trp Ala Ala Arg Arg Arg Leu Ala Gln Asn Gly Leu Lys Ser Phe
    130                 135                 140

Ser Ile Ala Ser Asp Pro Ala Ser Ser Thr Ser Cys Tyr Leu Glu Glu
145                 150                 155                 160

His Val Ser Lys Glu Ala Glu Val Leu Ile Ser Thr Leu Gln Glu Leu
                165                 170                 175
```

```
Met Ala Gly Pro Gly His Phe Asn Pro Tyr Arg Tyr Val Val Val Ser
            180                 185                 190

Val Thr Asn Val Ile Cys Ala Ile Cys Phe Gly Arg Arg Tyr Asp His
        195                 200                 205

Asn His Gln Glu Leu Leu Ser Leu Val Asn Leu Asn Asn Asn Phe Gly
    210                 215                 220

Glu Val Val Gly Ser Gly Asn Pro Ala Asp Phe Ile Pro Ile Leu Arg
225                 230                 235                 240

Tyr Leu Pro Asn Pro Ser Leu Asn Ala Phe Lys Asp Leu Asn Glu Lys
                245                 250                 255

Phe Tyr Ser Phe Met Gln Lys Met Val Lys Glu His Tyr Lys Thr Phe
            260                 265                 270

Glu Lys Gly His Ile Arg Asp Ile Thr Asp Ser Leu Ile Glu His Cys
        275                 280                 285

Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu Ser Asp Glu
    290                 295                 300

Lys Ile Ile Asn Ile Val Leu Asp Leu Phe Gly Ala Gly Phe Asp Thr
305                 310                 315                 320

Val Thr Thr Ala Ile Ser Trp Ser Leu Met Tyr Leu Val Met Asn Pro
                325                 330                 335

Arg Val Gln Arg Lys Ile Gln Glu Glu Leu Asp Thr Val Ile Gly Arg
            340                 345                 350

Ser Arg Arg Pro Arg Leu Ser Asp Arg Ser His Leu Pro Tyr Met Glu
        355                 360                 365
```

```
Ala Phe Ile Leu Glu Thr Phe Arg His Ser Ser Phe Val Pro Phe Thr
    370                 375                 380

Ile Pro His Ser Thr Thr Arg Asp Thr Ser Leu Lys Gly Phe Tyr Ile
385                 390                 395                 400

Pro Lys Gly Arg Cys Val Phe Val Asn Gln Trp Gln Ile Asn His Asp
                405                 410                 415

Gln Lys Leu Trp Val Asn Pro Ser Glu Phe Leu Pro Glu Arg Phe Leu
            420                 425                 430

Thr Pro Asp Gly Ala Ile Asp Lys Val Leu Ser Glu Lys Val Ile Ile
        435                 440                 445

Phe Gly Met Gly Lys Arg Lys Cys Ile Gly Glu Thr Ile Ala Arg Trp
    450                 455                 460

Glu Val Phe Leu Phe Leu Ala Ile Leu Leu Gln Arg Val Glu Phe Ser
465                 470                 475                 480

Val Pro Leu Gly Val Lys Val Asp Met Thr Pro Ile Tyr Gly Leu Thr
                485                 490                 495

Met Lys His Ala Cys Cys Glu His Phe Gln Met Gln Leu Arg Ser
            500                 505                 510
```

<210> 48
<211> 502
<212> PRT
<213> Homo sapiens

<400> 48

```
Met Asp Leu Ile Pro Asn Leu Ala Val Glu Thr Trp Leu Leu Leu Ala
1               5                   10                  15
```

```
Val Ser Leu Val Leu Leu Tyr Leu Tyr Gly Thr Arg Thr His Gly Leu
            20                  25                  30

Phe Lys Arg Leu Gly Ile Pro Gly Pro Thr Pro Leu Pro Leu Leu Gly
        35                  40                  45

Asn Val Leu Ser Tyr Arg Gln Gly Leu Trp Lys Phe Asp Thr Glu Cys
    50                  55                  60

Tyr Lys Lys Tyr Gly Lys Met Trp Gly Thr Tyr Glu Gly Gln Leu Pro
65                  70                  75                  80

Val Leu Ala Ile Thr Asp Pro Asp Val Ile Arg Thr Val Leu Val Lys
                85                  90                  95

Glu Cys Tyr Ser Val Phe Thr Asn Arg Arg Ser Leu Gly Pro Val Gly
            100                 105                 110

Phe Met Lys Ser Ala Ile Ser Leu Ala Glu Asp Glu Glu Trp Lys Arg
        115                 120                 125

Ile Arg Ser Leu Leu Ser Pro Thr Phe Thr Ser Gly Lys Leu Lys Glu
    130                 135                 140

Met Phe Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg Asn Leu
145                 150                 155                 160

Arg Arg Glu Ala Glu Lys Gly Lys Pro Val Thr Leu Lys Asp Ile Phe
                165                 170                 175

Gly Ala Tyr Ser Met Asp Val Ile Thr Gly Thr Ser Phe Gly Val Asn
            180                 185                 190

Ile Asp Ser Leu Asn Asn Pro Gln Asp Pro Phe Val Glu Ser Thr Lys
        195                 200                 205
```

```
Lys Phe Leu Lys Phe Gly Phe Leu Asp Pro Leu Phe Leu Ser Ile Ile
    210                 215                 220

Leu Phe Pro Phe Leu Thr Pro Val Phe Glu Ala Leu Asn Val Ser Leu
225                 230                 235                 240

Phe Pro Lys Asp Thr Ile Asn Phe Leu Ser Lys Ser Val Asn Arg Met
                245                 250                 255

Lys Lys Ser Arg Leu Asn Asp Lys Gln Lys His Arg Leu Asp Phe Leu
            260                 265                 270

Gln Leu Met Ile Asp Ser Gln Asn Ser Lys Glu Thr Glu Ser His Lys
        275                 280                 285

Ala Leu Ser Asp Leu Glu Leu Ala Ala Gln Ser Ile Ile Phe Ile Phe
    290                 295                 300

Ala Gly Tyr Glu Thr Thr Ser Ser Val Leu Ser Phe Thr Leu Tyr Glu
305                 310                 315                 320

Leu Ala Thr His Pro Asp Val Gln Gln Lys Leu Gln Lys Glu Ile Asp
                325                 330                 335

Ala Val Leu Pro Asn Lys Ala Pro Pro Thr Tyr Asp Ala Val Val Gln
            340                 345                 350

Met Glu Tyr Leu Asp Met Val Val Asn Glu Thr Leu Arg Leu Phe Pro
        355                 360                 365

Val Ala Ile Arg Leu Glu Arg Thr Cys Lys Lys Asp Val Glu Ile Asn
    370                 375                 380

Gly Val Phe Ile Pro Lys Gly Ser Met Val Val Ile Pro Thr Tyr Ala
385                 390                 395                 400
```

```
Leu His His Asp Pro Lys Tyr Trp Thr Glu Pro Glu Glu Phe Arg Pro
                405                 410                 415

Glu Arg Phe Ser Lys Lys Lys Asp Ser Ile Asp Pro Tyr Ile Tyr Thr
            420                 425                 430

Pro Phe Gly Thr Gly Pro Arg Asn Cys Ile Gly Met Arg Phe Ala Leu
        435                 440                 445

Met Asn Met Lys Leu Ala Leu Ile Arg Val Leu Gln Asn Phe Ser Phe
    450                 455                 460

Lys Pro Cys Lys Glu Thr Gln Ile Pro Leu Lys Leu Asp Thr Gln Gly
465                 470                 475                 480

Leu Leu Gln Pro Glu Lys Pro Ile Val Leu Lys Val Asp Ser Arg Asp
                485                 490                 495

Gly Thr Leu Ser Gly Glu
            500
```

<210> 49
<211> 531
<212> PRT
<213> Homo sapiens

<400> 49

```
Met Ala Ala Leu Gly Cys Ala Arg Leu Arg Trp Ala Leu Arg Gly Ala
1               5                   10                  15

Gly Arg Gly Leu Cys Pro His Gly Ala Arg Ala Lys Ala Ala Ile Pro
            20                  25                  30

Ala Ala Leu Pro Ser Asp Lys Ala Thr Gly Ala Pro Gly Ala Gly Pro
        35                  40                  45

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

```
    50                  55                  60

Gln Leu Arg Phe Phe Phe Gln Leu Phe Val Gln Gly Tyr Ala Leu Gln
65                  70                  75                  80

Leu His Gln Leu Gln Val Leu Tyr Lys Ala Lys Tyr Gly Pro Met Trp
                85                  90                  95

Met Ser Tyr Leu Gly Pro Gln Met His Val Asn Leu Ala Ser Ala Pro
            100                 105                 110

Leu Leu Glu Gln Val Met Arg Gln Glu Gly Lys Tyr Pro Val Arg Asn
        115                 120                 125

Asp Met Glu Leu Trp Lys Glu His Arg Asp Gln His Asp Leu Thr Tyr
    130                 135                 140

Gly Pro Phe Thr Thr Glu Gly His His Trp Tyr Gln Leu Arg Gln Ala
145                 150                 155                 160

Leu Asn Gln Arg Leu Leu Lys Pro Ala Glu Ala Ala Leu Tyr Thr Asp
                165                 170                 175

Ala Phe Asn Glu Val Ile Asp Asp Phe Met Thr Arg Leu Asp Gln Leu
            180                 185                 190

Arg Ala Glu Ser Ala Ser Gly Asn Gln Val Ser Asp Met Ala Gln Leu
        195                 200                 205

Phe Tyr Tyr Phe Ala Leu Glu Ala Ile Cys Tyr Ile Leu Phe Glu Lys
    210                 215                 220

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

Val Arg Ser Ile Gly Leu Met Phe Gln Asn Ser Leu Tyr Ala Thr Phe
```

```
                245                 250                 255

Leu Pro Lys Trp Thr Arg Pro Val Leu Pro Phe Trp Lys Arg Tyr Leu
            260                 265                 270

Asp Gly Trp Asn Ala Ile Phe Ser Phe Gly Lys Lys Leu Ile Asp Glu
        275                 280                 285

Lys Leu Glu Asp Met Glu Ala Gln Leu Gln Ala Ala Gly Pro Asp Gly
    290                 295                 300

Ile Gln Val Ser Gly Tyr Leu His Phe Leu Leu Ala Ser Gly Gln Leu
305                 310                 315                 320

Ser Pro Arg Glu Ala Met Gly Ser Leu Pro Glu Leu Leu Met Ala Gly
                325                 330                 335

Val Asp Thr Thr Ser Asn Thr Leu Thr Trp Ala Leu Tyr His Leu Ser
            340                 345                 350

Lys Asp Pro Glu Ile Gln Glu Ala Leu His Glu Glu Val Val Gly Val
        355                 360                 365

Val Pro Ala Gly Gln Val Pro Gln His Lys Asp Phe Ala His Met Pro
    370                 375                 380

Leu Leu Lys Ala Val Leu Lys Glu Thr Leu Arg Leu Tyr Pro Val Val
385                 390                 395                 400

Pro Thr Asn Ser Arg Ile Ile Glu Lys Glu Ile Glu Val Asp Gly Phe
                405                 410                 415

Leu Phe Pro Lys Asn Thr Gln Phe Val Phe Cys His Tyr Val Val Ser
            420                 425                 430

Arg Asp Pro Thr Ala Phe Ser Glu Pro Glu Ser Phe Gln Pro His Arg
```

435 440 445

Trp Leu Arg Asn Ser Gln Pro Ala Thr Pro Arg Ile Gln His Pro Phe
450 455 460

Gly Ser Val Pro Phe Gly Tyr Gly Val Arg Ala Cys Leu Gly Arg Arg
465 470 475 480

Ile Ala Glu Leu Glu Met Gln Leu Leu Leu Ala Arg Leu Ile Gln Lys
485 490 495

Tyr Lys Val Val Leu Ala Pro Glu Thr Gly Glu Leu Lys Ser Val Ala
500 505 510

Arg Ile Val Leu Val Pro Asn Lys Lys Val Gly Leu Gln Phe Leu Gln
515 520 525

Arg Gln Cys
530

<210> 50
<211> 491
<212> PRT
<213> Homo sapiens

<400> 50

Met Glu Leu Ser Val Leu Leu Phe Leu Ala Leu Leu Thr Gly Leu Leu
1 5 10 15

Leu Leu Leu Val Gln Arg His Pro Asn Thr His Asp Arg Leu Pro Pro
20 25 30

Gly Pro Arg Pro Leu Pro Leu Leu Gly Asn Leu Leu Gln Met Asp Arg
35 40 45

Arg Gly Leu Leu Lys Ser Phe Leu Arg Phe Arg Glu Lys Tyr Gly Asp
50 55 60

```
Val Phe Thr Val His Leu Gly Pro Arg Pro Val Val Met Leu Cys Gly
65                  70                  75                  80

Val Glu Ala Ile Arg Glu Ala Leu Val Asp Lys Ala Glu Ala Phe Ser
                85                  90                  95

Gly Arg Gly Lys Ile Ala Met Val Asp Pro Phe Phe Arg Gly Tyr Gly
            100                 105                 110

Val Ile Phe Ala Asn Gly Asn Arg Trp Lys Val Leu Arg Arg Phe Ser
        115                 120                 125

Val Thr Thr Met Arg Asp Phe Gly Met Gly Lys Arg Ser Val Glu Glu
    130                 135                 140

Arg Ile Gln Glu Glu Ala Gln Cys Leu Ile Glu Glu Leu Arg Lys Ser
145                 150                 155                 160

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

Asn Ile Ile Cys Ser Ile Val Phe Gly Lys Arg Phe His Tyr Gln Asp
            180                 185                 190

Gln Glu Phe Leu Lys Met Leu Asn Leu Phe Tyr Gln Thr Phe Ser Leu
        195                 200                 205

Ile Ser Ser Val Phe Gly Gln Leu Phe Glu Leu Phe Ser Gly Phe Leu
    210                 215                 220

Lys Tyr Phe Pro Gly Ala His Arg Gln Val Tyr Lys Asn Leu Gln Glu
225                 230                 235                 240

Ile Asn Ala Tyr Ile Gly His Ser Val Glu Lys His Arg Glu Thr Leu
                245                 250                 255
```

```
Asp Pro Ser Ala Pro Lys Asp Leu Ile Asp Thr Tyr Leu Leu His Met
            260                 265                 270

Glu Lys Glu Lys Ser Asn Ala His Ser Glu Phe Ser His Gln Asn Leu
        275                 280                 285

Asn Leu Asn Thr Leu Ser Leu Phe Phe Ala Gly Thr Glu Thr Thr Ser
    290                 295                 300

Thr Thr Leu Arg Tyr Gly Phe Leu Leu Met Leu Lys Tyr Pro His Val
305                 310                 315                 320

Ala Glu Arg Val Tyr Arg Glu Ile Glu Gln Val Ile Gly Pro His Arg
                325                 330                 335

Pro Pro Glu Leu His Asp Arg Ala Lys Met Pro Tyr Thr Glu Ala Val
            340                 345                 350

Ile Tyr Glu Ile Gln Arg Phe Ser Asp Leu Leu Pro Met Gly Val Pro
        355                 360                 365

His Ile Val Thr Gln His Thr Ser Phe Arg Gly Tyr Ile Ile Pro Lys
    370                 375                 380

Asp Thr Glu Val Phe Leu Ile Leu Ser Thr Ala Leu His Asp Pro His
385                 390                 395                 400

Tyr Phe Glu Lys Pro Asp Ala Phe Asn Pro Asp His Phe Leu Asp Ala
                405                 410                 415

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

Lys Arg Ile Cys Leu Gly Glu Gly Ile Ala Arg Ala Glu Leu Phe Leu
        435                 440                 445
```

```
Phe Phe Thr Thr Ile Leu Gln Asn Phe Ser Met Ala Ser Pro Val Ala
    450                 455                 460


Pro Glu Asp Ile Asp Leu Thr Pro Gln Glu Cys Gly Val Gly Lys Ile
465                 470                 475                 480


Pro Pro Thr Tyr Gln Ile Arg Phe Leu Pro Arg
                485                 490


<210>  51
<211>  430
<212>  PRT
<213>  Homo sapiens

<400>  51

Met Ser Phe Thr Thr Arg Ser Thr Phe Ser Thr Asn Tyr Arg Ser Leu
1               5                   10                  15


Gly Ser Val Gln Ala Pro Ser Tyr Gly Ala Arg Pro Val Ser Ser Ala
            20                  25                  30


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


Ser Arg Ser Thr Ser Phe Arg Gly Gly Met Gly Ser Gly Gly Leu Ala
    50                  55                  60


Thr Gly Ile Ala Gly Gly Leu Ala Gly Met Gly Gly Ile Gln Asn Glu
65                  70                  75                  80


Lys Glu Thr Met Gln Ser Leu Asn Asp Arg Leu Ala Ser Tyr Leu Asp
                85                  90                  95


Arg Val Arg Ser Leu Glu Thr Glu Asn Arg Arg Leu Glu Ser Lys Ile
            100                 105                 110
```

```
Arg Glu His Leu Glu Lys Lys Gly Pro Gln Val Arg Asp Trp Ser His
        115                 120                 125

Tyr Phe Lys Ile Ile Glu Asp Leu Arg Ala Gln Ile Phe Ala Asn Thr
    130                 135                 140

Val Asp Asn Ala Arg Ile Val Leu Gln Ile Asp Asn Ala Arg Leu Ala
145                 150                 155                 160

Ala Asp Asp Phe Arg Val Lys Tyr Glu Thr Glu Leu Ala Met Arg Gln
                165                 170                 175

Ser Val Glu Asn Asp Ile His Gly Leu Arg Lys Val Ile Asp Asp Thr
            180                 185                 190

Asn Ile Thr Arg Leu Gln Leu Glu Thr Glu Ile Glu Ala Leu Lys Glu
        195                 200                 205

Glu Leu Leu Phe Met Lys Lys Asn His Glu Glu Glu Val Lys Gly Leu
    210                 215                 220

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

Lys Ser Gln Asp Leu Ala Lys Ile Met Ala Asp Ile Arg Ala Gln Tyr
                245                 250                 255

Asp Glu Leu Ala Arg Lys Asn Arg Glu Glu Leu Asp Lys Tyr Trp Ser
            260                 265                 270

Gln Gln Ile Glu Glu Ser Thr Thr Val Val Thr Thr Gln Ser Ala Glu
        275                 280                 285

Val Gly Ala Ala Glu Thr Thr Leu Thr Glu Leu Arg Arg Thr Val Gln
    290                 295                 300
```

```
Ser Leu Glu Ile Asp Leu Asp Ser Met Arg Asn Leu Lys Ala Ser Leu
305                 310                 315                 320


Glu Asn Ser Leu Arg Glu Val Glu Ala Arg Tyr Ala Leu Gln Met Glu
                325                 330                 335


Gln Leu Asn Gly Ile Leu Leu His Leu Glu Ser Glu Leu Ala Gln Thr
            340                 345                 350


Arg Ala Glu Gly Gln Arg Gln Ala Gln Glu Tyr Glu Ala Leu Leu Asn
        355                 360                 365


Ile Lys Val Lys Leu Glu Ala Glu Ile Ala Thr Tyr Arg Arg Leu Leu
    370                 375                 380


Glu Asp Gly Glu Asp Phe Asn Leu Gly Asp Ala Leu Asp Ser Ser Asn
385                 390                 395                 400


Ser Met Gln Thr Ile Gln Lys Thr Thr Thr Arg Arg Ile Val Asp Gly
                405                 410                 415


Lys Val Val Ser Glu Thr Asn Asp Thr Lys Val Leu Arg His
            420                 425                 430
```

<210> 52
<211> 737
<212> PRT
<213> Homo sapiens

<400> 52

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


Arg Arg Val Asp Ile Gly Val Lys Arg Thr Val Gly Thr Ala Ser Ala
            20                  25                  30
```

```
Phe Phe Ala Lys Ala Arg Ala Thr Phe Phe Ser Ala Met Asn Pro Gln
        35                  40                  45

Gly Ser Glu Gln Asp Val Glu Tyr Ser Val Val Gln His Ala Asp Gly
    50                  55                  60

Glu Lys Ser Asn Val Leu Arg Lys Leu Leu Lys Arg Ala Asn Ser Tyr
65                  70                  75                  80

Glu Asp Ala Met Met Pro Phe Pro Gly Ala Thr Ile Ile Ser Gln Leu
                85                  90                  95

Leu Lys Asn Asn Met Asn Lys Asn Gly Gly Thr Glu Pro Ser Phe Gln
            100                 105                 110

Ala Ser Gly Leu Ser Ser Thr Gly Ser Glu Val His Gln Glu Asp Ile
        115                 120                 125

Cys Ser Asn Ser Ser Arg Asp Ser Pro Pro Glu Cys Leu Ser Pro Phe
    130                 135                 140

Gly Arg Pro Thr Met Ser Gln Phe Asp Met Asp Arg Leu Cys Asp Glu
145                 150                 155                 160

His Leu Arg Ala Lys Arg Ala Arg Val Glu Asn Ile Ile Arg Gly Met
                165                 170                 175

Ser His Ser Pro Ser Val Ala Leu Arg Gly Asn Glu Asn Glu Arg Glu
            180                 185                 190

Met Ala Pro Gln Ser Val Ser Pro Arg Glu Ser Tyr Arg Glu Asn Lys
        195                 200                 205

Arg Lys Gln Lys Leu Pro Gln Gln Gln Gln Gln Ser Phe Gln Gln Leu
    210                 215                 220
```

```
Val Ser Ala Arg Lys Glu Gln Lys Arg Glu Glu Arg Arg Gln Leu Lys
225                 230                 235                 240


Gln Gln Leu Glu Asp Met Gln Lys Gln Leu Arg Gln Leu Gln Glu Lys
                245                 250                 255


Phe Tyr Gln Ile Tyr Asp Ser Thr Asp Ser Glu Asn Asp Glu Asp Gly
            260                 265                 270


Asn Leu Ser Glu Asp Ser Met Arg Ser Glu Ile Leu Asp Ala Arg Ala
        275                 280                 285


Gln Asp Ser Val Gly Arg Ser Asp Asn Glu Met Cys Glu Leu Asp Pro
    290                 295                 300


Gly Gln Phe Ile Asp Arg Ala Arg Ala Leu Ile Arg Glu Gln Glu Met
305                 310                 315                 320


Ala Glu Asn Lys Pro Lys Arg Glu Gly Asn Asn Lys Glu Arg Asp His
                325                 330                 335


Gly Pro Asn Ser Leu Gln Pro Glu Gly Lys His Leu Ala Glu Thr Leu
            340                 345                 350


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


Lys Val Phe Ser Ala Lys Pro Ser Arg Gln Val Pro Gln Val Phe Pro
    370                 375                 380


Pro Leu Gln Ile Pro Gln Ala Arg Phe Ala Val Asn Gly Glu Asn His
385                 390                 395                 400


Asn Phe His Thr Ala Asn Gln Arg Leu Gln Cys Phe Gly Asp Val Ile
                405                 410                 415
```

```
Ile Pro Asn Pro Leu Asp Thr Phe Gly Asn Val Gln Met Ala Ser Ser
            420                 425                 430

Thr Asp Gln Thr Glu Ala Leu Pro Leu Val Val Arg Lys Asn Ser Ser
        435                 440                 445

Asp Gln Ser Ala Ser Gly Pro Ala Ala Gly Gly His His Gln Pro Leu
    450                 455                 460

His Gln Ser Pro Leu Ser Ala Thr Thr Gly Phe Thr Thr Ser Thr Phe
465                 470                 475                 480

Arg His Pro Phe Pro Leu Pro Leu Met Ala Tyr Pro Phe Gln Ser Pro
                485                 490                 495

Leu Gly Ala Pro Ser Gly Ser Phe Ser Gly Lys Asp Arg Ala Ser Pro
            500                 505                 510

Glu Ser Leu Asp Leu Thr Arg Asp Thr Thr Ser Leu Arg Thr Lys Met
        515                 520                 525

Ser Ser His His Leu Ser His His Pro Cys Ser Pro Ala His Pro Pro
    530                 535                 540

Ser Thr Ala Glu Gly Leu Ser Leu Ser Leu Ile Lys Ser Glu Cys Gly
545                 550                 555                 560

Asp Leu Gln Asp Met Ser Glu Ile Ser Pro Tyr Ser Gly Ser Ala Met
                565                 570                 575

Gln Glu Gly Leu Ser Pro Asn His Leu Lys Lys Ala Lys Leu Met Phe
            580                 585                 590

Phe Tyr Thr Arg Tyr Pro Ser Ser Asn Met Leu Lys Thr Tyr Phe Ser
        595                 600                 605
```

Asp Val Lys Phe Asn Arg Cys Ile Thr Ser Gln Leu Ile Lys Trp Phe
610 615 620

Ser Asn Phe Arg Glu Phe Tyr Tyr Ile Gln Met Glu Lys Tyr Ala Arg
625 630 635 640

Gln Ala Ile Asn Asp Gly Val Thr Ser Thr Glu Glu Leu Ser Ile Thr
645 650 655

Arg Asp Cys Glu Leu Tyr Arg Ala Leu Asn Met His Tyr Asn Lys Ala
660 665 670

Asn Asp Phe Glu Val Pro Glu Arg Phe Leu Glu Val Ala Gln Ile Thr
675 680 685

Leu Arg Glu Phe Phe Asn Ala Ile Ile Ala Gly Lys Asp Val Asp Pro
690 695 700

Ser Trp Lys Lys Ala Ile Tyr Lys Val Ile Cys Lys Leu Asp Ser Glu
705 710 715 720

Val Pro Glu Ile Phe Lys Ser Pro Asn Cys Leu Gln Glu Leu Leu His
725 730 735

Glu

<210> 53
<211> 465
<212> PRT
<213> Homo sapiens

<400> 53

Met Asn Ala Gln Leu Thr Met Glu Ala Ile Gly Glu Leu His Gly Val
1 5 10 15

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

20 25 30

His Ala Arg Ser Ser Val Ala His Arg Gly Ser His Leu Pro Pro Ala
35 40 45

His Pro Arg Ser Met Gly Met Ala Ser Leu Leu Asp Gly Gly Ser Gly
50 55 60

Gly Gly Asp Tyr His His His His Arg Ala Pro Glu His Ser Leu Ala
65 70 75 80

Gly Pro Leu His Pro Thr Met Thr Met Ala Cys Glu Thr Pro Pro Gly
85 90 95

Met Ser Met Pro Thr Thr Tyr Thr Thr Leu Thr Pro Leu Gln Pro Leu
100 105 110

Pro Pro Ile Ser Thr Val Ser Asp Lys Phe Pro His His His His His
115 120 125

His His His His His His Pro His His His Gln Arg Leu Ala Gly Asn
130 135 140

Val Ser Gly Ser Phe Thr Leu Met Arg Asp Glu Arg Gly Leu Ala Ser
145 150 155 160

Met Asn Asn Leu Tyr Thr Pro Tyr His Lys Asp Val Ala Gly Met Gly
165 170 175

Gln Ser Leu Ser Pro Leu Ser Ser Ser Gly Leu Gly Ser Ile His Asn
180 185 190

Ser Gln Gln Gly Leu Pro His Tyr Ala His Pro Gly Ala Ala Met Pro
195 200 205

Thr Asp Lys Met Leu Thr Pro Asn Gly Phe Glu Ala His His Pro Ala

```
    210                 215                 220

Met Leu Gly Arg His Gly Glu Gln His Leu Thr Pro Thr Ser Ala Gly
225                 230                 235                 240

Met Val Pro Ile Asn Gly Leu Pro Pro His His Pro His Ala His Leu
                245                 250                 255

Asn Ala Gln Gly His Gly Gln Leu Leu Gly Thr Ala Arg Glu Pro Asn
            260                 265                 270

Pro Ser Val Thr Gly Ala Gln Val Ser Asn Gly Ser Asn Ser Gly Gln
        275                 280                 285

Met Glu Glu Ile Asn Thr Lys Glu Val Ala Gln Arg Ile Thr Thr Glu
    290                 295                 300

Leu Lys Arg Tyr Ser Ile Pro Gln Ala Ile Phe Ala Gln Arg Val Leu
305                 310                 315                 320

Cys Arg Ser Gln Gly Thr Leu Ser Asp Leu Leu Arg Asn Pro Lys Pro
                325                 330                 335

Trp Ser Lys Leu Lys Ser Gly Arg Glu Thr Phe Arg Arg Met Trp Lys
            340                 345                 350

Trp Leu Gln Glu Pro Glu Phe Gln Arg Met Ser Ala Leu Arg Leu Ala
        355                 360                 365

Ala Cys Lys Arg Lys Glu Gln Glu His Gly Lys Asp Arg Gly Asn Thr
    370                 375                 380

Pro Lys Lys Pro Arg Leu Val Phe Thr Asp Val Gln Arg Arg Thr Leu
385                 390                 395                 400

His Ala Ile Phe Lys Glu Asn Lys Arg Pro Ser Lys Glu Leu Gln Ile
```

405 410 415

Thr Ile Ser Gln Gln Leu Gly Leu Glu Leu Ser Thr Val Ser Asn Phe
420 425 430

Phe Met Asn Ala Arg Arg Arg Ser Leu Asp Lys Trp Gln Asp Glu Gly
435 440 445

Ser Ser Asn Ser Gly Asn Ser Ser Ser Ser Ser Ser Thr Cys Thr Lys
450 455 460

Ala
465

<210> 54
<211> 609
<212> PRT
<213> Homo sapiens

<400> 54

Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
1 5 10 15

Tyr Ser Arg Gly Val Phe Arg Arg Asp Ala His Lys Ser Glu Val Ala
20 25 30

His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu
35 40 45

Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val
50 55 60

Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp
65 70 75 80

Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
85 90 95

```
Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala
            100                 105                 110

Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
        115                 120                 125

His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val
    130                 135                 140

Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys
145                 150                 155                 160

Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
                165                 170                 175

Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys
            180                 185                 190

Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu
        195                 200                 205

Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys
    210                 215                 220

Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
225                 230                 235                 240

Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser
                245                 250                 255

Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly
            260                 265                 270

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile
        275                 280                 285
```

```
Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu
    290                 295                 300

Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp
305                 310                 315                 320

Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser
                325                 330                 335

Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
            340                 345                 350

Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val
        355                 360                 365

Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys
    370                 375                 380

Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu
385                 390                 395                 400

Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys
                405                 410                 415

Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu
            420                 425                 430

Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val
        435                 440                 445

Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His
    450                 455                 460

Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val
465                 470                 475                 480
```

```
Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg
                485                 490                 495

Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe
            500                 505                 510

Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala
        515                 520                 525

Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu
    530                 535                 540

Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys
545                 550                 555                 560

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala
                565                 570                 575

Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe
            580                 585                 590

Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly
        595                 600                 605

Leu
```

<210> 55
<211> 1306
<212> PRT
<213> Homo sapiens

<400> 55

```
Met Thr Met Tyr Leu Trp Leu Lys Leu Leu Ala Phe Gly Phe Ala Phe
1               5                   10                  15
```

```
Leu Asp Thr Glu Val Phe Val Thr Gly Gln Ser Pro Thr Pro Ser Pro
            20                  25                  30

Thr Gly Leu Thr Thr Ala Lys Met Pro Ser Val Pro Leu Ser Ser Asp
        35                  40                  45

Pro Leu Pro Thr His Thr Thr Ala Phe Ser Pro Ala Ser Thr Phe Glu
    50                  55                  60

Arg Glu Asn Asp Phe Ser Glu Thr Thr Thr Ser Leu Ser Pro Asp Asn
65                  70                  75                  80

Thr Ser Thr Gln Val Ser Pro Asp Ser Leu Asp Asn Ala Ser Ala Phe
                85                  90                  95

Asn Thr Thr Gly Val Ser Ser Val Gln Thr Pro His Leu Pro Thr His
            100                 105                 110

Ala Asp Ser Gln Thr Pro Ser Ala Gly Thr Asp Thr Gln Thr Phe Ser
        115                 120                 125

Gly Ser Ala Ala Asn Ala Lys Leu Asn Pro Thr Pro Gly Ser Asn Ala
    130                 135                 140

Ile Ser Asp Val Pro Gly Glu Arg Ser Thr Ala Ser Thr Phe Pro Thr
145                 150                 155                 160

Asp Pro Val Ser Pro Leu Thr Thr Thr Leu Ser Leu Ala His His Ser
                165                 170                 175

Ser Ala Ala Leu Pro Ala Arg Thr Ser Asn Thr Thr Ile Thr Ala Asn
            180                 185                 190

Thr Ser Asp Ala Tyr Leu Asn Ala Ser Glu Thr Thr Thr Leu Ser Pro
        195                 200                 205
```

```
Ser Gly Ser Ala Val Ile Ser Thr Thr Thr Ile Ala Thr Thr Pro Ser
    210                 215                 220

Lys Pro Thr Cys Asp Glu Lys Tyr Ala Asn Ile Thr Val Asp Tyr Leu
225                 230                 235                 240

Tyr Asn Lys Glu Thr Lys Leu Phe Thr Ala Lys Leu Asn Val Asn Glu
                245                 250                 255

Asn Val Glu Cys Gly Asn Asn Thr Cys Thr Asn Asn Glu Val His Asn
            260                 265                 270

Leu Thr Glu Cys Lys Asn Ala Ser Val Ser Ile Ser His Asn Ser Cys
        275                 280                 285

Thr Ala Pro Asp Lys Thr Leu Ile Leu Asp Val Pro Pro Gly Val Glu
    290                 295                 300

Lys Phe Gln Leu His Asp Cys Thr Gln Val Glu Lys Ala Asp Thr Thr
305                 310                 315                 320

Ile Cys Leu Lys Trp Lys Asn Ile Glu Thr Phe Thr Cys Asp Thr Gln
                325                 330                 335

Asn Ile Thr Tyr Arg Phe Gln Cys Gly Asn Met Ile Phe Asp Asn Lys
            340                 345                 350

Glu Ile Lys Leu Glu Asn Leu Glu Pro Glu His Glu Tyr Lys Cys Asp
        355                 360                 365

Ser Glu Ile Leu Tyr Asn Asn His Lys Phe Thr Asn Ala Ser Lys Ile
    370                 375                 380

Ile Lys Thr Asp Phe Gly Ser Pro Gly Glu Pro Gln Ile Ile Phe Cys
385                 390                 395                 400
```

```
Arg Ser Glu Ala Ala His Gln Gly Val Ile Thr Trp Asn Pro Pro Gln
                405                 410                 415

Arg Ser Phe His Asn Phe Thr Leu Cys Tyr Ile Lys Glu Thr Glu Lys
            420                 425                 430

Asp Cys Leu Asn Leu Asp Lys Asn Leu Ile Lys Tyr Asp Leu Gln Asn
        435                 440                 445

Leu Lys Pro Tyr Thr Lys Tyr Val Leu Ser Leu His Ala Tyr Ile Ile
    450                 455                 460

Ala Lys Val Gln Arg Asn Gly Ser Ala Ala Met Cys His Phe Thr Thr
465                 470                 475                 480

Lys Ser Ala Pro Pro Ser Gln Val Trp Asn Met Thr Val Ser Met Thr
                485                 490                 495

Ser Asp Asn Ser Met His Val Lys Cys Arg Pro Pro Arg Asp Arg Asn
            500                 505                 510

Gly Pro His Glu Arg Tyr His Leu Glu Val Glu Ala Gly Asn Thr Leu
        515                 520                 525

Val Arg Asn Glu Ser His Lys Asn Cys Asp Phe Arg Val Lys Asp Leu
    530                 535                 540

Gln Tyr Ser Thr Asp Tyr Thr Phe Lys Ala Tyr Phe His Asn Gly Asp
545                 550                 555                 560

Tyr Pro Gly Glu Pro Phe Ile Leu His His Ser Thr Ser Tyr Asn Ser
                565                 570                 575

Lys Ala Leu Ile Ala Phe Leu Ala Phe Leu Ile Ile Val Thr Ser Ile
            580                 585                 590
```

```
Ala Leu Leu Val Val Leu Tyr Lys Ile Tyr Asp Leu His Lys Lys Arg
        595                 600                 605

Ser Cys Asn Leu Asp Glu Gln Gln Glu Leu Val Glu Arg Asp Asp Glu
    610                 615                 620

Lys Gln Leu Met Asn Val Glu Pro Ile His Ala Asp Ile Leu Leu Glu
625                 630                 635                 640

Thr Tyr Lys Arg Lys Ile Ala Asp Glu Gly Arg Leu Phe Leu Ala Glu
                645                 650                 655

Phe Gln Ser Ile Pro Arg Val Phe Ser Lys Phe Pro Ile Lys Glu Ala
            660                 665                 670

Arg Lys Pro Phe Asn Gln Asn Lys Asn Arg Tyr Val Asp Ile Leu Pro
        675                 680                 685

Tyr Asp Tyr Asn Arg Val Glu Leu Ser Glu Ile Asn Gly Asp Ala Gly
    690                 695                 700

Ser Asn Tyr Ile Asn Ala Ser Tyr Ile Asp Gly Phe Lys Glu Pro Arg
705                 710                 715                 720

Lys Tyr Ile Ala Ala Gln Gly Pro Arg Asp Glu Thr Val Asp Asp Phe
                725                 730                 735

Trp Arg Met Ile Trp Glu Gln Lys Ala Thr Val Ile Val Met Val Thr
            740                 745                 750

Arg Cys Glu Glu Gly Asn Arg Asn Lys Cys Ala Glu Tyr Trp Pro Ser
        755                 760                 765

Met Glu Glu Gly Thr Arg Ala Phe Gly Asp Val Val Val Lys Ile Asn
    770                 775                 780
```

```
Gln His Lys Arg Cys Pro Asp Tyr Ile Ile Gln Lys Leu Asn Ile Val
785                 790                 795                 800

Asn Lys Lys Glu Lys Ala Thr Gly Arg Glu Val Thr His Ile Gln Phe
                805                 810                 815

Thr Ser Trp Pro Asp His Gly Val Pro Glu Asp Pro His Leu Leu Leu
            820                 825                 830

Lys Leu Arg Arg Arg Val Asn Ala Phe Ser Asn Phe Phe Ser Gly Pro
        835                 840                 845

Ile Val Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Tyr Ile
    850                 855                 860

Gly Ile Asp Ala Met Leu Glu Gly Leu Glu Ala Glu Asn Lys Val Asp
865                 870                 875                 880

Val Tyr Gly Tyr Val Val Lys Leu Arg Arg Gln Arg Cys Leu Met Val
                885                 890                 895

Gln Val Glu Ala Gln Tyr Ile Leu Ile His Gln Ala Leu Val Glu Tyr
            900                 905                 910

Asn Gln Phe Gly Glu Thr Glu Val Asn Leu Ser Glu Leu His Pro Tyr
        915                 920                 925

Leu His Asn Met Lys Lys Arg Asp Pro Pro Ser Glu Pro Ser Pro Leu
    930                 935                 940

Glu Ala Glu Phe Gln Arg Leu Pro Ser Tyr Arg Ser Trp Arg Thr Gln
945                 950                 955                 960

His Ile Gly Asn Gln Glu Glu Asn Lys Ser Lys Asn Arg Asn Ser Asn
                965                 970                 975
```

```
Val Ile Pro Tyr Asp Tyr Asn Arg Val Pro Leu Lys His Glu Leu Glu
            980                 985                 990


Met Ser Lys Glu Ser Glu His Asp  Ser Asp Glu Ser Ser  Asp Asp Asp
        995                 1000                1005


Ser Asp  Ser Glu Glu Pro Ser  Lys Tyr Ile Asn Ala  Ser Phe Ile
    1010                1015                1020


Met Ser  Tyr Trp Lys Pro Glu  Val Met Ile Ala Ala  Gln Gly Pro
    1025                1030                1035


Leu Lys  Glu Thr Ile Gly Asp  Phe Trp Gln Met Ile  Phe Gln Arg
    1040                1045                1050


Lys Val  Lys Val Ile Val Met  Leu Thr Glu Leu Lys  His Gly Asp
    1055                1060                1065


Gln Glu  Ile Cys Ala Gln Tyr  Trp Gly Glu Gly Lys  Gln Thr Tyr
    1070                1075                1080


Gly Asp  Ile Glu Val Asp Leu  Lys Asp Thr Asp Lys  Ser Ser Thr
    1085                1090                1095


Tyr Thr  Leu Arg Val Phe Glu  Leu Arg His Ser Lys  Arg Lys Asp
    1100                1105                1110


Ser Arg  Thr Val Tyr Gln Tyr  Gln Tyr Thr Asn Trp  Ser Val Glu
    1115                1120                1125


Gln Leu  Pro Ala Glu Pro Lys  Glu Leu Ile Ser Met  Ile Gln Val
    1130                1135                1140


Val Lys  Gln Lys Leu Pro Gln  Lys Asn Ser Ser Glu  Gly Asn Lys
    1145                1150                1155
```

```
His His  Lys Ser Thr Pro Leu  Leu Ile His Cys Arg  Asp Gly Ser
    1160                1165                1170


Gln Gln  Thr Gly Ile Phe Cys  Ala Leu Leu Asn Leu  Leu Glu Ser
    1175                1180                1185


Ala Glu  Thr Glu Glu Val Val  Asp Ile Phe Gln Val  Val Lys Ala
    1190                1195                1200


Leu Arg  Lys Ala Arg Pro Gly  Met Val Ser Thr Phe  Glu Gln Tyr
    1205                1210                1215


Gln Phe  Leu Tyr Asp Val Ile  Ala Ser Thr Tyr Pro  Ala Gln Asn
    1220                1225                1230


Gly Gln  Val Lys Lys Asn Asn  His Gln Glu Asp Lys  Ile Glu Phe
    1235                1240                1245


Asp Asn  Glu Val Asp Lys Val  Lys Gln Asp Ala Asn  Cys Val Asn
    1250                1255                1260


Pro Leu  Gly Ala Pro Glu Lys  Leu Pro Glu Ala Lys  Glu Gln Ala
    1265                1270                1275


Glu Gly  Ser Glu Pro Thr Ser  Gly Thr Glu Gly Pro  Glu His Ser
    1280                1285                1290


Val Asn  Gly Pro Ala Ser Pro  Ala Leu Asn Gln Gly  Ser
    1295                1300                1305
```

<210> 56
<211> 288
<212> PRT
<213> Homo sapiens

<400> 56

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```
Met Gly His Thr Arg Arg Gln Gly Thr Ser Pro Ser Lys Cys Pro Tyr
1               5                   10                  15

Leu Asn Phe Phe Gln Leu Leu Val Leu Ala Gly Leu Ser His Phe Cys
            20                  25                  30

Ser Gly Val Ile His Val Thr Lys Glu Val Lys Glu Val Ala Thr Leu
        35                  40                  45

Ser Cys Gly His Asn Val Ser Val Glu Glu Leu Ala Gln Thr Arg Ile
    50                  55                  60

Tyr Trp Gln Lys Glu Lys Lys Met Val Leu Thr Met Met Ser Gly Asp
65                  70                  75                  80

Met Asn Ile Trp Pro Glu Tyr Lys Asn Arg Thr Ile Phe Asp Ile Thr
                85                  90                  95

Asn Asn Leu Ser Ile Val Ile Leu Ala Leu Arg Pro Ser Asp Glu Gly
            100                 105                 110

Thr Tyr Glu Cys Val Val Leu Lys Tyr Glu Lys Asp Ala Phe Lys Arg
        115                 120                 125

Glu His Leu Ala Glu Val Thr Leu Ser Val Lys Ala Asp Phe Pro Thr
    130                 135                 140

Pro Ser Ile Ser Asp Phe Glu Ile Pro Thr Ser Asn Ile Arg Arg Ile
145                 150                 155                 160

Ile Cys Ser Thr Ser Gly Gly Phe Pro Glu Pro His Leu Ser Trp Leu
                165                 170                 175

Glu Asn Gly Glu Glu Leu Asn Ala Ile Asn Thr Thr Val Ser Gln Asp
            180                 185                 190
```

```
Pro Glu Thr Glu Leu Tyr Ala Val Ser Ser Lys Leu Asp Phe Asn Met
        195                 200                 205

Thr Thr Asn His Ser Phe Met Cys Leu Ile Lys Tyr Gly His Leu Arg
    210                 215                 220

Val Asn Gln Thr Phe Asn Trp Asn Thr Thr Lys Gln Glu His Phe Pro
225                 230                 235                 240

Asp Asn Leu Leu Pro Ser Trp Ala Ile Thr Leu Ile Ser Val Asn Gly
                245                 250                 255

Ile Phe Val Ile Cys Cys Leu Thr Tyr Cys Phe Ala Pro Arg Cys Arg
            260                 265                 270

Glu Arg Arg Arg Asn Glu Arg Leu Arg Arg Glu Ser Val Arg Pro Val
        275                 280                 285
```

<210> 57
<211> 329
<212> PRT
<213> Homo sapiens

<400> 57

```
Met Asp Pro Gln Cys Thr Met Gly Leu Ser Asn Ile Leu Phe Val Met
1               5                   10                  15

Ala Phe Leu Leu Ser Gly Ala Ala Pro Leu Lys Ile Gln Ala Tyr Phe
            20                  25                  30

Asn Glu Thr Ala Asp Leu Pro Cys Gln Phe Ala Asn Ser Gln Asn Gln
        35                  40                  45

Ser Leu Ser Glu Leu Val Val Phe Trp Gln Asp Gln Glu Asn Leu Val
    50                  55                  60

Leu Asn Glu Val Tyr Leu Gly Lys Glu Lys Phe Asp Ser Val His Ser
```

```
65                  70                  75                  80

Lys Tyr Met Gly Arg Thr Ser Phe Asp Ser Asp Ser Trp Thr Leu Arg
                85                  90                  95

Leu His Asn Leu Gln Ile Lys Asp Lys Gly Leu Tyr Gln Cys Ile Ile
            100                 105                 110

His His Lys Lys Pro Thr Gly Met Ile Arg Ile His Gln Met Asn Ser
        115                 120                 125

Glu Leu Ser Val Leu Ala Asn Phe Ser Gln Pro Glu Ile Val Pro Ile
    130                 135                 140

Ser Asn Ile Thr Glu Asn Val Tyr Ile Asn Leu Thr Cys Ser Ser Ile
145                 150                 155                 160

His Gly Tyr Pro Glu Pro Lys Lys Met Ser Val Leu Leu Arg Thr Lys
                165                 170                 175

Asn Ser Thr Ile Glu Tyr Asp Gly Ile Met Gln Lys Ser Gln Asp Asn
            180                 185                 190

Val Thr Glu Leu Tyr Asp Val Ser Ile Ser Leu Ser Val Ser Phe Pro
        195                 200                 205

Asp Val Thr Ser Asn Met Thr Ile Phe Cys Ile Leu Glu Thr Asp Lys
    210                 215                 220

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

Pro Pro Pro Asp His Ile Pro Trp Ile Thr Ala Val Leu Pro Thr Val
                245                 250                 255

Ile Ile Cys Val Met Val Phe Cys Leu Ile Leu Trp Lys Trp Lys Lys
```

260 265 270

Lys Lys Arg Pro Arg Asn Ser Tyr Lys Cys Gly Thr Asn Thr Met Glu
275 280 285

Arg Glu Glu Ser Glu Gln Thr Lys Lys Arg Glu Lys Ile His Ile Pro
290 295 300

Glu Arg Ser Asp Glu Ala Gln Arg Val Phe Lys Ser Ser Lys Thr Ser
305 310 315 320

Ser Cys Asp Lys Ser Asp Thr Cys Phe
325

<210> 58
<211> 1169
<212> PRT
<213> Homo sapiens

<400> 58

Met Thr Arg Thr Arg Ala Ala Leu Leu Leu Phe Thr Ala Leu Ala Thr
1 5 10 15

Ser Leu Gly Phe Asn Leu Asp Thr Glu Glu Leu Thr Ala Phe Arg Val
20 25 30

Asp Ser Ala Gly Phe Gly Asp Ser Val Val Gln Tyr Ala Asn Ser Trp
35 40 45

Val Val Val Gly Ala Pro Gln Lys Ile Thr Ala Ala Asn Gln Thr Gly
50 55 60

Gly Leu Tyr Gln Cys Gly Tyr Ser Thr Gly Ala Cys Glu Pro Ile Gly
65 70 75 80

Leu Gln Val Pro Pro Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu
85 90 95

```
Ala Ser Thr Thr Ser Pro Ser Gln Leu Leu Ala Cys Gly Pro Thr Val
            100                 105                 110

His His Glu Cys Gly Arg Asn Met Tyr Leu Thr Gly Leu Cys Phe Leu
        115                 120                 125

Leu Gly Pro Thr Gln Leu Thr Gln Arg Leu Pro Val Ser Arg Gln Glu
    130                 135                 140

Cys Pro Arg Gln Glu Gln Asp Ile Val Phe Leu Ile Asp Gly Ser Gly
145                 150                 155                 160

Ser Ile Ser Ser Arg Asn Phe Ala Thr Met Met Asn Phe Val Arg Ala
                165                 170                 175

Val Ile Ser Gln Phe Gln Arg Pro Ser Thr Gln Phe Ser Leu Met Gln
            180                 185                 190

Phe Ser Asn Lys Phe Gln Thr His Phe Thr Phe Glu Glu Phe Arg Arg
        195                 200                 205

Ser Ser Asn Pro Leu Ser Leu Leu Ala Ser Val His Gln Leu Gln Gly
    210                 215                 220

Phe Thr Tyr Thr Ala Thr Ala Ile Gln Asn Val Val His Arg Leu Phe
225                 230                 235                 240

His Ala Ser Tyr Gly Ala Arg Arg Asp Ala Ala Lys Ile Leu Ile Val
                245                 250                 255

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

Ile Pro Met Ala Asp Ala Ala Gly Ile Ile Arg Tyr Ala Ile Gly Val
        275                 280                 285
```

```
Gly Leu Ala Phe Gln Asn Arg Asn Ser Trp Lys Glu Leu Asn Asp Ile
    290                 295                 300

Ala Ser Lys Pro Ser Gln Glu His Ile Phe Lys Val Glu Asp Phe Asp
305                 310                 315                 320

Ala Leu Lys Asp Ile Gln Asn Gln Leu Lys Glu Lys Ile Phe Ala Ile
                325                 330                 335

Glu Gly Thr Glu Thr Thr Ser Ser Ser Ser Phe Glu Leu Glu Met Ala
            340                 345                 350

Gln Glu Gly Phe Ser Ala Val Phe Thr Pro Asp Gly Pro Val Leu Gly
        355                 360                 365

Ala Val Gly Ser Phe Thr Trp Ser Gly Gly Ala Phe Leu Tyr Pro Pro
    370                 375                 380

Asn Met Ser Pro Thr Phe Ile Asn Met Ser Gln Glu Asn Val Asp Met
385                 390                 395                 400

Arg Asp Ser Tyr Leu Gly Tyr Ser Thr Glu Leu Ala Leu Trp Lys Gly
                405                 410                 415

Val Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His Thr Gly Lys
            420                 425                 430

Ala Val Ile Phe Thr Gln Val Ser Arg Gln Trp Arg Met Lys Ala Glu
        435                 440                 445

Val Thr Gly Thr Gln Ile Gly Ser Tyr Phe Gly Ala Ser Leu Cys Ser
    450                 455                 460

Val Asp Val Asp Ser Asp Gly Ser Thr Asp Leu Val Leu Ile Gly Ala
465                 470                 475                 480
```

```
Pro His Tyr Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser Val Cys Pro
                485                 490                 495

Leu Pro Arg Gly Trp Arg Arg Trp Trp Cys Asp Ala Val Leu Tyr Gly
            500                 505                 510

Glu Gln Gly His Pro Trp Gly Arg Phe Gly Ala Ala Leu Thr Val Leu
        515                 520                 525

Gly Asp Val Asn Gly Asp Lys Leu Thr Asp Val Val Ile Gly Ala Pro
    530                 535                 540

Gly Glu Glu Glu Asn Arg Gly Ala Val Tyr Leu Phe His Gly Val Leu
545                 550                 555                 560

Gly Pro Ser Ile Ser Pro Ser His Ser Gln Arg Ile Ala Gly Ser Gln
                565                 570                 575

Leu Ser Ser Arg Leu Gln Tyr Phe Gly Gln Ala Leu Ser Gly Gly Gln
            580                 585                 590

Asp Leu Thr Gln Asp Gly Leu Val Asp Leu Ala Val Gly Ala Arg Gly
        595                 600                 605

Gln Val Leu Leu Leu Arg Thr Arg Pro Val Leu Trp Val Gly Val Ser
    610                 615                 620

Met Gln Phe Ile Pro Ala Glu Ile Pro Arg Ser Ala Phe Glu Cys Arg
625                 630                 635                 640

Glu Gln Val Val Ser Glu Gln Thr Leu Val Gln Ser Asn Ile Cys Leu
                645                 650                 655

Tyr Ile Asp Lys Arg Ser Lys Asn Leu Leu Gly Ser Arg Asp Leu Gln
            660                 665                 670
```

```
Ser Ser Val Thr Leu Asp Leu Ala Leu Asp Pro Gly Arg Leu Ser Pro
        675                 680                 685

Arg Ala Thr Phe Gln Glu Thr Lys Asn Arg Ser Leu Ser Arg Val Arg
    690                 695                 700

Val Leu Gly Leu Lys Ala His Cys Glu Asn Phe Asn Leu Leu Leu Pro
705                 710                 715                 720

Ser Cys Val Glu Asp Ser Val Thr Pro Ile Thr Leu Arg Leu Asn Phe
                725                 730                 735

Thr Leu Val Gly Lys Pro Leu Leu Ala Phe Arg Asn Leu Arg Pro Met
            740                 745                 750

Leu Ala Ala Asp Ala Gln Arg Tyr Phe Thr Ala Ser Leu Pro Phe Glu
        755                 760                 765

Lys Asn Cys Gly Ala Asp His Ile Cys Gln Asp Asn Leu Gly Ile Ser
    770                 775                 780

Phe Ser Phe Pro Gly Leu Lys Ser Leu Leu Val Gly Ser Asn Leu Glu
785                 790                 795                 800

Leu Asn Ala Glu Val Met Val Trp Asn Asp Gly Glu Asp Ser Tyr Gly
                805                 810                 815

Thr Thr Ile Thr Phe Ser His Pro Ala Gly Leu Ser Tyr Arg Tyr Val
            820                 825                 830

Ala Glu Gly Gln Lys Gln Gly Gln Leu Arg Ser Leu His Leu Thr Cys
        835                 840                 845

Asp Ser Ala Pro Val Gly Ser Gln Gly Thr Trp Ser Thr Ser Cys Arg
    850                 855                 860
```

```
Ile Asn His Leu Ile Phe Arg Gly Gly Ala Gln Ile Thr Phe Leu Ala
865                 870                 875                 880

Thr Phe Asp Val Ser Pro Lys Ala Val Leu Gly Asp Arg Leu Leu Leu
                885                 890                 895

Thr Ala Asn Val Ser Ser Glu Asn Asn Thr Pro Arg Thr Ser Lys Thr
            900                 905                 910

Thr Phe Gln Leu Glu Leu Pro Val Lys Tyr Ala Val Tyr Thr Val Val
        915                 920                 925

Ser Ser His Glu Gln Phe Thr Lys Tyr Leu Asn Phe Ser Glu Ser Glu
    930                 935                 940

Glu Lys Glu Ser His Val Ala Met His Arg Tyr Gln Val Asn Asn Leu
945                 950                 955                 960

Gly Gln Arg Asp Leu Pro Val Ser Ile Asn Phe Trp Val Pro Val Glu
                965                 970                 975

Leu Asn Gln Glu Ala Val Trp Met Asp Val Glu Val Ser His Pro Gln
            980                 985                 990

Asn Pro Ser Leu Arg Cys Ser Ser  Glu Lys Ile Ala Pro  Pro Ala Ser
        995                 1000                1005

Asp Phe  Leu Ala His Ile Gln  Lys Asn Pro Val Leu  Asp Cys Ser
    1010                1015                1020

Ile Ala  Gly Cys Leu Arg Phe  Arg Cys Asp Val Pro  Ser Phe Ser
    1025                1030                1035

Val Gln  Glu Glu Leu Asp Phe  Thr Leu Lys Gly Asn  Leu Ser Phe
    1040                1045                1050
```

```
Gly Trp  Val Arg Gln Ile Leu  Gln Lys Lys Val Ser  Val Val Ser
    1055                 1060                 1065


Val Ala  Glu Ile Thr Phe Asp  Thr Ser Val Tyr Ser  Gln Leu Pro
    1070                 1075                 1080


Gly Gln  Glu Ala Phe Met Arg  Ala Gln Thr Thr Thr  Val Leu Glu
    1085                 1090                 1095


Lys Tyr  Lys Val His Asn Pro  Thr Pro Leu Ile Val  Gly Ser Ser
    1100                 1105                 1110


Ile Gly  Gly Leu Leu Leu Leu  Ala Leu Ile Thr Ala  Val Leu Tyr
    1115                 1120                 1125


Lys Val  Gly Phe Phe Lys Arg  Gln Tyr Lys Glu Met  Met Glu Glu
    1130                 1135                 1140


Ala Asn  Gly Gln Ile Ala Pro  Glu Asn Gly Thr Gln  Thr Pro Ser
    1145                 1150                 1155


Pro Pro  Thr Pro His Tyr Pro  Gln Asp Asn Val
    1160                 1165
```

<210> 59
<211> 763
<212> PRT
<213> Homo sapiens

<400> 59

```
Met Asn Gln Lys Thr Ile Leu Val Leu Leu Ile Leu Ala Val Ile Thr
1               5                  10                  15


Ile Phe Ala Leu Val Cys Val Leu Leu Val Gly Arg Gly Gly Asp Gly
            20                  25                  30
```

```
Gly Glu Pro Ser Gln Leu Pro His Cys Pro Ser Val Ser Pro Ser Ala
        35                  40                  45

Gln Pro Trp Thr His Pro Gly Gln Ser Gln Leu Phe Ala Asp Leu Ser
    50                  55                  60

Arg Glu Glu Leu Thr Ala Val Met Arg Phe Leu Thr Gln Arg Leu Gly
65                  70                  75                  80

Pro Gly Leu Val Asp Ala Ala Gln Ala Arg Pro Ser Asp Asn Cys Val
                85                  90                  95

Phe Ser Val Glu Leu Gln Leu Pro Pro Lys Ala Ala Ala Leu Ala His
            100                 105                 110

Leu Asp Arg Gly Ser Pro Pro Pro Ala Arg Glu Ala Leu Ala Ile Val
        115                 120                 125

Phe Phe Gly Arg Gln Pro Gln Pro Asn Val Ser Glu Leu Val Val Gly
    130                 135                 140

Pro Leu Pro His Pro Ser Tyr Met Arg Asp Val Thr Val Glu Arg His
145                 150                 155                 160

Gly Gly Pro Leu Pro Tyr His Arg Arg Pro Val Leu Phe Gln Glu Tyr
                165                 170                 175

Leu Asp Ile Asp Gln Met Ile Phe Asn Arg Glu Leu Pro Gln Ala Ser
            180                 185                 190

Gly Leu Leu His His Cys Cys Phe Tyr Lys His Arg Gly Arg Asn Leu
        195                 200                 205

Val Thr Met Thr Thr Ala Pro Arg Gly Leu Gln Ser Gly Asp Arg Ala
    210                 215                 220
```

```
Thr Trp Phe Gly Leu Tyr Tyr Asn Ile Ser Gly Ala Gly Phe Phe Leu
225                 230                 235                 240

His His Val Gly Leu Glu Leu Leu Val Asn His Lys Ala Leu Asp Pro
                245                 250                 255

Ala Arg Trp Thr Ile Gln Lys Val Phe Tyr Gln Gly Arg Tyr Tyr Asp
            260                 265                 270

Ser Leu Ala Gln Leu Glu Ala Gln Phe Glu Ala Gly Leu Val Asn Val
        275                 280                 285

Val Leu Ile Pro Asp Asn Gly Thr Gly Gly Ser Trp Ser Leu Lys Ser
    290                 295                 300

Pro Val Pro Pro Gly Pro Ala Pro Pro Leu Gln Phe Tyr Pro Gln Gly
305                 310                 315                 320

Pro Arg Phe Ser Val Gln Gly Ser Arg Val Ala Ser Ser Leu Trp Thr
                325                 330                 335

Phe Ser Phe Gly Leu Gly Ala Phe Ser Gly Pro Arg Ile Phe Asp Val
            340                 345                 350

Arg Phe Gln Gly Glu Arg Leu Val Tyr Glu Ile Ser Leu Gln Glu Ala
        355                 360                 365

Leu Ala Ile Tyr Gly Gly Asn Ser Pro Ala Ala Met Thr Thr Arg Tyr
    370                 375                 380

Val Asp Gly Gly Phe Gly Met Gly Lys Tyr Thr Thr Pro Leu Thr Arg
385                 390                 395                 400

Gly Val Asp Cys Pro Tyr Leu Ala Thr Tyr Val Asp Trp His Phe Leu
                405                 410                 415
```

```
Leu Glu Ser Gln Ala Pro Lys Thr Ile Arg Asp Ala Phe Cys Val Phe
            420                 425                 430

Glu Gln Asn Gln Gly Leu Pro Leu Arg Arg His His Ser Asp Leu Tyr
        435                 440                 445

Ser His Tyr Phe Gly Gly Leu Ala Glu Thr Val Leu Val Val Arg Ser
    450                 455                 460

Met Ser Thr Leu Leu Asn Tyr Asp Tyr Val Trp Asp Thr Val Phe His
465                 470                 475                 480

Pro Ser Gly Ala Ile Glu Ile Arg Phe Tyr Ala Thr Gly Tyr Ile Ser
                485                 490                 495

Ser Ala Phe Leu Phe Gly Ala Thr Gly Lys Tyr Gly Asn Gln Val Ser
            500                 505                 510

Glu His Thr Leu Gly Thr Val His Thr His Ser Ala His Phe Lys Val
        515                 520                 525

Asp Leu Asp Val Ala Gly Leu Glu Asn Trp Val Trp Ala Glu Asp Met
    530                 535                 540

Val Phe Val Pro Met Ala Val Pro Trp Ser Pro Glu His Gln Leu Gln
545                 550                 555                 560

Arg Leu Gln Val Thr Arg Lys Leu Leu Glu Met Glu Glu Gln Ala Ala
                565                 570                 575

Phe Leu Val Gly Ser Ala Thr Pro Arg Tyr Leu Tyr Leu Ala Ser Asn
            580                 585                 590

His Ser Asn Lys Trp Gly His Pro Arg Gly Tyr Arg Ile Gln Met Leu
        595                 600                 605
```

```
Ser Phe Ala Gly Glu Pro Leu Pro Gln Asn Ser Ser Met Ala Arg Gly
    610                 615                 620

Phe Ser Trp Glu Arg Tyr Gln Leu Ala Val Thr Gln Arg Lys Glu Glu
625                 630                 635                 640

Glu Pro Ser Ser Ser Ser Val Phe Asn Gln Asn Asp Pro Trp Ala Pro
                645                 650                 655

Thr Val Asp Phe Ser Asp Phe Ile Asn Asn Glu Thr Ile Ala Gly Lys
            660                 665                 670

Asp Leu Val Ala Trp Val Thr Ala Gly Phe Leu His Ile Pro His Ala
        675                 680                 685

Glu Asp Ile Pro Asn Thr Val Thr Val Gly Asn Gly Val Gly Phe Phe
    690                 695                 700

Leu Arg Pro Tyr Asn Phe Phe Asp Glu Asp Pro Ser Phe Tyr Ser Ala
705                 710                 715                 720

Asp Ser Ile Tyr Phe Arg Gly Asp Gln Asp Ala Gly Ala Cys Glu Val
                725                 730                 735

Asn Pro Leu Ala Cys Leu Pro Gln Ala Ala Ala Cys Ala Pro Asp Leu
            740                 745                 750

Pro Ala Phe Ser His Gly Gly Phe Ser His Asn
        755                 760
```

<210> 60
<211> 2570
<212> PRT
<213> Homo sapiens

<400> 60

WT20163125-seql-000001 (2)

```
Met Ala Gly Pro Arg Gly Leu Leu Pro Leu Cys Leu Leu Ala Phe Cys
1               5                  10                  15

Leu Ala Gly Phe Ser Phe Val Arg Gly Gln Val Leu Phe Lys Gly Cys
            20                  25                  30

Asp Val Lys Thr Thr Phe Val Thr His Val Pro Cys Thr Ser Cys Ala
        35                  40                  45

Ala Ile Lys Lys Gln Thr Cys Pro Ser Gly Trp Leu Arg Glu Leu Pro
    50                  55                  60

Asp Gln Ile Thr Gln Asp Cys Arg Tyr Glu Val Gln Leu Gly Gly Ser
65                  70                  75                  80

Met Val Ser Met Ser Gly Cys Arg Arg Lys Cys Arg Lys Gln Val Val
                85                  90                  95

Gln Lys Ala Cys Cys Pro Gly Tyr Trp Gly Ser Arg Cys His Glu Cys
            100                 105                 110

Pro Gly Gly Ala Glu Thr Pro Cys Asn Gly His Gly Thr Cys Leu Asp
        115                 120                 125

Gly Met Asp Arg Asn Gly Thr Cys Val Cys Gln Glu Asn Phe Arg Gly
    130                 135                 140

Ser Ala Cys Gln Glu Cys Gln Asp Pro Asn Arg Phe Gly Pro Asp Cys
145                 150                 155                 160

Gln Ser Val Cys Ser Cys Val His Gly Val Cys Asn His Gly Pro Arg
                165                 170                 175

Gly Asp Gly Ser Cys Leu Cys Phe Ala Gly Tyr Thr Gly Pro His Cys
            180                 185                 190
```

```
Asp Gln Glu Leu Pro Val Cys Gln Glu Leu Arg Cys Pro Gln Asn Thr
        195                 200                 205

Gln Cys Ser Ala Glu Ala Pro Ser Cys Arg Cys Leu Pro Gly Tyr Thr
    210                 215                 220

Gln Gln Gly Ser Glu Cys Arg Ala Pro Asn Pro Cys Trp Pro Ser Pro
225                 230                 235                 240

Cys Ser Leu Leu Ala Gln Cys Ser Val Ser Pro Lys Gly Gln Ala Gln
                245                 250                 255

Cys His Cys Pro Glu Asn Tyr His Gly Asp Gly Met Val Cys Leu Pro
            260                 265                 270

Lys Asp Pro Cys Thr Asp Asn Leu Gly Gly Cys Pro Ser Asn Ser Thr
        275                 280                 285

Leu Cys Val Tyr Gln Lys Pro Gly Gln Ala Phe Cys Thr Cys Arg Pro
    290                 295                 300

Gly Leu Val Ser Ile Asn Ser Asn Ala Ser Ala Gly Cys Phe Ala Phe
305                 310                 315                 320

Cys Ser Pro Phe Ser Cys Asp Arg Ser Ala Thr Cys Gln Val Thr Ala
                325                 330                 335

Asp Gly Lys Thr Ser Cys Val Cys Arg Glu Ser Glu Val Gly Asp Gly
            340                 345                 350

Arg Ala Cys Tyr Gly His Leu Leu His Glu Val Gln Lys Ala Thr Gln
        355                 360                 365

Thr Gly Arg Val Phe Leu Gln Leu Arg Val Ala Val Ala Met Met Asp
    370                 375                 380
```

```
Gln Gly Cys Arg Glu Ile Leu Thr Thr Ala Gly Pro Phe Thr Val Leu
385                 390                 395                 400

Val Pro Ser Val Ser Ser Phe Ser Ser Arg Thr Met Asn Ala Ser Leu
                405                 410                 415

Ala Gln Gln Leu Cys Arg Gln His Ile Ile Ala Gly Gln His Ile Leu
            420                 425                 430

Glu Asp Thr Arg Thr Gln Gln Thr Arg Arg Trp Trp Thr Leu Ala Gly
        435                 440                 445

Gln Glu Ile Thr Val Thr Phe Asn Gln Phe Thr Lys Tyr Ser Tyr Lys
    450                 455                 460

Tyr Lys Asp Gln Pro Gln Gln Thr Phe Asn Ile Tyr Lys Ala Asn Asn
465                 470                 475                 480

Ile Ala Ala Asn Gly Val Phe His Val Val Thr Gly Leu Arg Trp Gln
                485                 490                 495

Ala Pro Ser Gly Thr Pro Gly Asp Pro Lys Arg Thr Ile Gly Gln Ile
            500                 505                 510

Leu Ala Ser Thr Glu Ala Phe Ser Arg Phe Glu Thr Ile Leu Glu Asn
        515                 520                 525

Cys Gly Leu Pro Ser Ile Leu Asp Gly Pro Gly Pro Phe Thr Val Phe
    530                 535                 540

Ala Pro Ser Asn Glu Ala Val Asp Ser Leu Arg Asp Gly Arg Leu Ile
545                 550                 555                 560

Tyr Leu Phe Thr Ala Gly Leu Ser Lys Leu Gln Glu Leu Val Arg Tyr
                565                 570                 575
```

```
His Ile Tyr Asn His Gly Gln Leu Thr Val Glu Lys Leu Ile Ser Lys
            580                 585                 590

Gly Arg Ile Leu Thr Met Ala Asn Gln Val Leu Ala Val Asn Ile Ser
        595                 600                 605

Glu Glu Gly Arg Ile Leu Leu Gly Pro Glu Gly Val Pro Leu Gln Arg
    610                 615                 620

Val Asp Val Met Ala Ala Asn Gly Val Ile His Met Leu Asp Gly Ile
625                 630                 635                 640

Leu Leu Pro Pro Thr Ile Leu Pro Ile Leu Pro Lys His Cys Ser Glu
                645                 650                 655

Glu Gln His Lys Ile Val Ala Gly Ser Cys Val Asp Cys Gln Ala Leu
            660                 665                 670

Asn Thr Ser Thr Cys Pro Pro Asn Ser Val Lys Leu Asp Ile Phe Pro
        675                 680                 685

Lys Glu Cys Val Tyr Ile His Asp Pro Thr Gly Leu Asn Val Leu Lys
    690                 695                 700

Lys Gly Cys Ala Ser Tyr Cys Asn Gln Thr Ile Met Glu Gln Gly Cys
705                 710                 715                 720

Cys Lys Gly Phe Phe Gly Pro Asp Cys Thr Gln Cys Pro Gly Gly Phe
                725                 730                 735

Ser Asn Pro Cys Tyr Gly Lys Gly Asn Cys Ser Asp Gly Ile Gln Gly
            740                 745                 750

Asn Gly Ala Cys Leu Cys Phe Pro Asp Tyr Lys Gly Ile Ala Cys His
        755                 760                 765
```

```
Ile Cys Ser Asn Pro Asn Lys His Gly Glu Gln Cys Gln Glu Asp Cys
    770                 775                 780

Gly Cys Val His Gly Leu Cys Asp Asn Arg Pro Gly Ser Gly Gly Val
785                 790                 795                 800

Cys Gln Gln Gly Thr Cys Ala Pro Gly Phe Ser Gly Arg Phe Cys Asn
                805                 810                 815

Glu Ser Met Gly Asp Cys Gly Pro Thr Gly Leu Ala Gln His Cys His
            820                 825                 830

Leu His Ala Arg Cys Val Ser Gln Glu Gly Val Ala Arg Cys Arg Cys
        835                 840                 845

Leu Asp Gly Phe Glu Gly Asp Gly Phe Ser Cys Thr Pro Ser Asn Pro
    850                 855                 860

Cys Ser His Pro Asp Arg Gly Gly Cys Ser Glu Asn Ala Glu Cys Val
865                 870                 875                 880

Pro Gly Ser Leu Gly Thr His His Cys Thr Cys His Lys Gly Trp Ser
                885                 890                 895

Gly Asp Gly Arg Val Cys Val Ala Ile Asp Glu Cys Glu Leu Asp Met
            900                 905                 910

Arg Gly Gly Cys His Thr Asp Ala Leu Cys Ser Tyr Val Gly Pro Gly
        915                 920                 925

Gln Ser Arg Cys Thr Cys Lys Leu Gly Phe Ala Gly Asp Gly Tyr Gln
    930                 935                 940

Cys Ser Pro Ile Asp Pro Cys Arg Ala Gly Asn Gly Gly Cys His Gly
945                 950                 955                 960
```

```
Leu Ala Thr Cys Arg Ala Val Gly Gly Gly Gln Arg Val Cys Thr Cys
               965                 970                 975

Pro Pro Gly Phe Gly Gly Asp Gly Phe Ser Cys Tyr Gly Asp Ile Phe
            980                 985                 990

Arg Glu Leu Glu Ala Asn Ala His  Phe Ser Ile Phe Tyr  Gln Trp Leu
        995                 1000                1005

Lys Ser  Ala Gly Ile Thr Leu  Pro Ala Asp Arg Arg  Val Thr Ala
    1010                1015                1020

Leu Val  Pro Ser Glu Ala Ala  Val Arg Gln Leu Ser  Pro Glu Asp
    1025                1030                1035

Arg Ala  Phe Trp Leu Gln Pro  Arg Thr Leu Pro Asn  Leu Val Arg
    1040                1045                1050

Ala His  Phe Leu Gln Gly Ala  Leu Phe Glu Glu Glu  Leu Ala Arg
    1055                1060                1065

Leu Gly  Gly Gln Glu Val Ala  Thr Leu Asn Pro Thr  Thr Arg Trp
    1070                1075                1080

Glu Ile  Arg Asn Ile Ser Gly  Arg Val Trp Val Gln  Asn Ala Ser
    1085                1090                1095

Val Asp  Val Ala Asp Leu Leu  Ala Thr Asn Gly Val  Leu His Ile
    1100                1105                1110

Leu Ser  Gln Val Leu Leu Pro  Pro Arg Gly Asp Val  Pro Gly Gly
    1115                1120                1125

Gln Gly  Leu Leu Gln Gln Leu  Asp Leu Val Pro Ala  Phe Ser Leu
    1130                1135                1140
```

```
Phe Arg  Glu Leu Leu Gln His  His Gly Leu Val Pro  Gln Ile Glu
    1145                1150                1155

Ala Ala  Thr Ala Tyr Thr Ile  Phe Val Pro Thr Asn  Arg Ser Leu
    1160                1165                1170

Glu Ala  Gln Gly Asn Ser Ser  His Leu Asp Ala Asp  Thr Val Arg
    1175                1180                1185

His His  Val Val Leu Gly Glu  Ala Leu Ser Met Glu  Thr Leu Arg
    1190                1195                1200

Lys Gly  Gly His Arg Asn Ser  Leu Leu Gly Pro Ala  His Trp Ile
    1205                1210                1215

Val Phe  Tyr Asn His Ser Gly  Gln Pro Glu Val Asn  His Val Pro
    1220                1225                1230

Leu Glu  Gly Pro Met Leu Glu  Ala Pro Gly Arg Ser  Leu Ile Gly
    1235                1240                1245

Leu Ser  Gly Val Leu Thr Val  Gly Ser Ser Arg Cys  Leu His Ser
    1250                1255                1260

His Ala  Glu Ala Leu Arg Glu  Lys Cys Val Asn Cys  Thr Arg Arg
    1265                1270                1275

Phe Arg  Cys Thr Gln Gly Phe  Gln Leu Gln Asp Thr  Pro Arg Lys
    1280                1285                1290

Ser Cys  Val Tyr Arg Ser Gly  Phe Ser Phe Ser Arg  Gly Cys Ser
    1295                1300                1305

Tyr Thr  Cys Ala Lys Lys Ile  Gln Val Pro Asp Cys  Cys Pro Gly
    1310                1315                1320
```

```
Phe Phe  Gly Thr Leu Cys Glu  Pro Cys Pro Gly Gly  Leu Gly Gly
    1325                1330                1335

Val Cys  Ser Gly His Gly Gln  Cys Gln Asp Arg Phe  Leu Gly Ser
    1340                1345                1350

Gly Glu  Cys His Cys His Glu  Gly Phe His Gly Thr  Ala Cys Glu
    1355                1360                1365

Val Cys  Glu Leu Gly Arg Tyr  Gly Pro Asn Cys Thr  Gly Val Cys
    1370                1375                1380

Asp Cys  Ala His Gly Leu Cys  Gln Glu Gly Leu Gln  Gly Asp Gly
    1385                1390                1395

Ser Cys  Val Cys Asn Val Gly  Trp Gln Gly Leu Arg  Cys Asp Gln
    1400                1405                1410

Lys Ile  Thr Ser Pro Gln Cys  Pro Arg Lys Cys Asp  Pro Asn Ala
    1415                1420                1425

Asn Cys  Val Gln Asp Ser Ala  Gly Ala Ser Thr Cys  Ala Cys Ala
    1430                1435                1440

Ala Gly  Tyr Ser Gly Asn Gly  Ile Phe Cys Ser Glu  Val Asp Pro
    1445                1450                1455

Cys Ala  His Gly His Gly Gly  Cys Ser Pro His Ala  Asn Cys Thr
    1460                1465                1470

Lys Val  Ala Pro Gly Gln Arg  Thr Cys Thr Cys Gln  Asp Gly Tyr
    1475                1480                1485

Met Gly  Asp Gly Glu Leu Cys  Gln Glu Ile Asn Ser  Cys Leu Ile
    1490                1495                1500
```

```
His His  Gly Gly Cys His Ile  His Ala Glu Cys Ile  Pro Thr Gly
    1505                1510                1515

Pro Gln  Gln Val Ser Cys Ser  Cys Arg Glu Gly Tyr  Ser Gly Asp
    1520                1525                1530

Gly Ile  Arg Thr Cys Glu Leu  Leu Asp Pro Cys Ser  Lys Asn Asn
    1535                1540                1545

Gly Gly  Cys Ser Pro Tyr Ala  Thr Cys Lys Ser Thr  Gly Asp Gly
    1550                1555                1560

Gln Arg  Thr Cys Thr Cys Asp  Thr Ala His Thr Val  Gly Asp Gly
    1565                1570                1575

Leu Thr  Cys Arg Ala Arg Val  Gly Leu Glu Leu Leu  Arg Asp Lys
    1580                1585                1590

His Ala  Ser Phe Phe Ser Leu  Arg Leu Leu Glu Tyr  Lys Glu Leu
    1595                1600                1605

Lys Gly  Asp Gly Pro Phe Thr  Ile Phe Val Pro His  Ala Asp Leu
    1610                1615                1620

Met Ser  Asn Leu Ser Gln Asp  Glu Leu Ala Arg Ile  Arg Ala His
    1625                1630                1635

Arg Gln  Leu Val Phe Arg Tyr  His Val Val Gly Cys  Arg Arg Leu
    1640                1645                1650

Arg Ser  Glu Asp Leu Leu Glu  Gln Gly Tyr Ala Thr  Ala Leu Ser
    1655                1660                1665

Gly His  Pro Leu Arg Phe Ser  Glu Arg Glu Gly Ser  Ile Tyr Leu
    1670                1675                1680
```

```
Asn Asp  Phe Ala Arg Val Val  Ser Ser Asp His Glu  Ala Val Asn
    1685                1690                1695

Gly Ile  Leu His Phe Ile Asp  Arg Val Leu Leu Pro  Pro Glu Ala
    1700                1705                1710

Leu His  Trp Glu Pro Asp Asp  Ala Pro Ile Pro Arg  Arg Asn Val
    1715                1720                1725

Thr Ala  Ala Ala Gln Gly Phe  Gly Tyr Lys Ile Phe  Ser Gly Leu
    1730                1735                1740

Leu Lys  Val Ala Gly Leu Leu  Pro Leu Leu Arg Glu  Ala Ser His
    1745                1750                1755

Arg Pro  Phe Thr Met Leu Trp  Pro Thr Asp Ala Ala  Phe Arg Ala
    1760                1765                1770

Leu Pro  Pro Asp Arg Gln Ala  Trp Leu Tyr His Glu  Asp His Arg
    1775                1780                1785

Asp Lys  Leu Ala Ala Ile Leu  Arg Gly His Met Ile  Arg Asn Val
    1790                1795                1800

Glu Ala  Leu Ala Ser Asp Leu  Pro Asn Leu Gly Pro  Leu Arg Thr
    1805                1810                1815

Met His  Gly Thr Pro Ile Ser  Phe Ser Cys Ser Arg  Thr Arg Ala
    1820                1825                1830

Gly Glu  Leu Met Val Gly Glu  Asp Asp Ala Arg Ile  Val Gln Arg
    1835                1840                1845

His Leu  Pro Phe Glu Gly Gly  Leu Ala Tyr Gly Ile  Asp Gln Leu
    1850                1855                1860
```

```
Leu Glu  Pro Pro Gly Leu Gly  Ala Arg Cys Asp His  Phe Glu Thr
    1865                1870                1875

Arg Pro  Leu Arg Leu Asn Thr  Cys Ser Ile Cys Gly  Leu Glu Pro
    1880                1885                1890

Pro Cys  Pro Glu Gly Ser Gln  Glu Gln Gly Ser Pro  Glu Ala Cys
    1895                1900                1905

Trp Arg  Phe Tyr Pro Lys Phe  Trp Thr Ser Pro Pro  Leu His Ser
    1910                1915                1920

Leu Gly  Leu Arg Ser Val Trp  Val His Pro Ser Leu  Trp Gly Arg
    1925                1930                1935

Pro Gln  Gly Leu Gly Arg Gly  Cys His Arg Asn Cys  Val Thr Thr
    1940                1945                1950

Thr Trp  Lys Pro Ser Cys Cys  Pro Gly His Tyr Gly  Ser Glu Cys
    1955                1960                1965

Gln Ala  Cys Pro Gly Gly Pro  Ser Ser Pro Cys Ser  Asp Arg Gly
    1970                1975                1980

Val Cys  Met Asp Gly Met Ser  Gly Ser Gly Gln Cys  Leu Cys Arg
    1985                1990                1995

Ser Gly  Phe Ala Gly Thr Ala  Cys Glu Leu Cys Ala  Pro Gly Ala
    2000                2005                2010

Phe Gly  Pro His Cys Gln Ala  Cys Arg Cys Thr Val  His Gly Arg
    2015                2020                2025

Cys Asp  Glu Gly Leu Gly Gly  Ser Gly Ser Cys Phe  Cys Asp Glu
    2030                2035                2040
```

```
Gly Trp  Thr Gly Pro Arg Cys  Glu Val Gln Leu Glu  Leu Gln Pro
    2045                2050                2055

Val Cys  Thr Pro Pro Cys Ala  Pro Glu Ala Val Cys  Arg Ala Gly
    2060                2065                2070

Asn Ser  Cys Glu Cys Ser Leu  Gly Tyr Glu Gly Asp  Gly Arg Val
    2075                2080                2085

Cys Thr  Val Ala Asp Leu Cys  Gln Asp Gly His Gly  Gly Cys Ser
    2090                2095                2100

Glu His  Ala Asn Cys Ser Gln  Val Gly Thr Met Val  Thr Cys Thr
    2105                2110                2115

Cys Leu  Pro Asp Tyr Glu Gly  Asp Gly Trp Ser Cys  Arg Ala Arg
    2120                2125                2130

Asn Pro  Cys Thr Asp Gly His  Arg Gly Gly Cys Ser  Glu His Ala
    2135                2140                2145

Asn Cys  Leu Ser Thr Gly Leu  Asn Thr Arg Arg Cys  Glu Cys His
    2150                2155                2160

Ala Gly  Tyr Val Gly Asp Gly  Leu Gln Cys Leu Glu  Glu Ser Glu
    2165                2170                2175

Pro Pro  Val Asp Arg Cys Leu  Gly Gln Pro Pro Pro  Cys His Ser
    2180                2185                2190

Asp Ala  Met Cys Thr Asp Leu  His Phe Gln Glu Lys  Arg Ala Gly
    2195                2200                2205

Val Phe  His Leu Gln Ala Thr  Ser Gly Pro Tyr Gly  Leu Asn Phe
    2210                2215                2220
```

```
Ser Glu  Ala Glu Ala Ala Cys  Glu Ala Gln Gly Ala  Val Leu Ala
    2225                 2230                 2235

Ser Phe  Pro Gln Leu Ser Ala  Ala Gln Gln Leu Gly  Phe His Leu
    2240                 2245                 2250

Cys Leu  Met Gly Trp Leu Ala  Asn Gly Ser Thr Ala  His Pro Val
    2255                 2260                 2265

Val Phe  Pro Val Ala Asp Cys  Gly Asn Gly Arg Val  Gly Ile Val
    2270                 2275                 2280

Ser Leu  Gly Ala Arg Lys Asn  Leu Ser Glu Arg Trp  Asp Ala Tyr
    2285                 2290                 2295

Cys Phe  Arg Val Gln Asp Val  Ala Cys Arg Cys Arg  Asn Gly Phe
    2300                 2305                 2310

Val Gly  Asp Gly Ile Ser Thr  Cys Asn Gly Lys Leu  Leu Asp Val
    2315                 2320                 2325

Leu Ala  Ala Thr Ala Asn Phe  Ser Thr Phe Tyr Gly  Met Leu Leu
    2330                 2335                 2340

Gly Tyr  Ala Asn Ala Thr Gln  Arg Gly Leu Asp Phe  Leu Asp Phe
    2345                 2350                 2355

Leu Asp  Asp Glu Leu Thr Tyr  Lys Thr Leu Phe Val  Pro Val Asn
    2360                 2365                 2370

Glu Gly  Phe Val Asp Asn Met  Thr Leu Ser Gly Pro  Asp Leu Glu
    2375                 2380                 2385

Leu His  Ala Ser Asn Ala Thr  Leu Leu Ser Ala Asn  Ala Ser Gln
    2390                 2395                 2400
```

```
Gly Lys  Leu Leu Pro Ala His  Ser Gly Leu Ser Leu  Ile Ile Ser
    2405                2410                2415

Asp Ala  Gly Pro Asp Asn Ser  Ser Trp Ala Pro Val  Ala Pro Gly
    2420                2425                2430

Thr Val  Val Val Ser Arg Ile  Ile Val Trp Asp Ile  Met Ala Phe
    2435                2440                2445

Asn Gly  Ile Ile His Ala Leu  Ala Ser Pro Leu Leu  Ala Pro Pro
    2450                2455                2460

Gln Pro  Gln Ala Val Leu Ala  Pro Glu Ala Pro Pro  Val Ala Ala
    2465                2470                2475

Gly Val  Gly Ala Val Leu Ala  Ala Gly Ala Leu Leu  Gly Leu Val
    2480                2485                2490

Ala Gly  Ala Leu Tyr Leu Arg  Ala Arg Gly Lys Pro  Met Gly Phe
    2495                2500                2505

Gly Phe  Ser Ala Phe Gln Ala  Glu Asp Asp Ala Asp  Asp Asp Phe
    2510                2515                2520

Ser Pro  Trp Gln Glu Gly Thr  Asn Pro Thr Leu Val  Ser Val Pro
    2525                2530                2535

Asn Pro  Val Phe Gly Ser Asp  Thr Phe Cys Glu Pro  Phe Asp Asp
    2540                2545                2550

Ser Leu  Leu Glu Glu Asp Phe  Pro Asp Thr Gln Arg  Ile Leu Thr
    2555                2560                2565

Val Lys
    2570
```

<210> 61
<211> 737
<212> PRT
<213> Homo sapiens

<400> 61

```
Met Gln Pro Arg Trp Ala Gln Gly Ala Thr Met Trp Leu Gly Val Leu
1               5                   10                  15


Leu Thr Leu Leu Leu Cys Ser Ser Leu Glu Gly Gln Glu Asn Ser Phe
            20                  25                  30


Thr Ile Asn Ser Val Asp Met Lys Ser Leu Pro Asp Trp Thr Val Gln
        35                  40                  45


Asn Gly Lys Asn Leu Thr Leu Gln Cys Phe Ala Asp Val Ser Thr Thr
    50                  55                  60


Ser His Val Lys Pro Gln His Gln Met Leu Phe Tyr Lys Asp Asp Val
65                  70                  75                  80


Leu Phe Tyr Asn Ile Ser Ser Met Lys Ser Thr Glu Ser Tyr Phe Ile
                85                  90                  95


Pro Glu Val Arg Ile Tyr Asp Ser Gly Thr Tyr Lys Cys Thr Val Ile
            100                 105                 110


Val Asn Asn Lys Glu Lys Thr Thr Ala Glu Tyr Gln Val Leu Val Glu
        115                 120                 125


Gly Val Pro Ser Pro Arg Val Thr Leu Asp Lys Lys Glu Ala Ile Gln
    130                 135                 140


Gly Gly Ile Val Arg Val Asn Cys Ser Val Pro Glu Glu Lys Ala Pro
145                 150                 155                 160


Ile His Phe Thr Ile Glu Lys Leu Glu Leu Asn Glu Lys Met Val Lys
```

```
                165                 170                 175

Leu Lys Arg Glu Lys Asn Ser Arg Asp Gln Asn Phe Val Ile Leu Glu
            180                 185                 190

Phe Pro Val Glu Glu Gln Asp Arg Val Leu Ser Phe Arg Cys Gln Ala
        195                 200                 205

Arg Ile Ile Ser Gly Ile His Met Gln Thr Ser Glu Ser Thr Lys Ser
    210                 215                 220

Glu Leu Val Thr Val Thr Glu Ser Phe Ser Thr Pro Lys Phe His Ile
225                 230                 235                 240

Ser Pro Thr Gly Met Ile Met Glu Gly Ala Gln Leu His Ile Lys Cys
                245                 250                 255

Thr Ile Gln Val Thr His Leu Ala Gln Glu Phe Pro Glu Ile Ile Ile
            260                 265                 270

Gln Lys Asp Lys Ala Ile Val Ala His Asn Arg His Gly Asn Lys Ala
        275                 280                 285

Val Tyr Ser Val Met Ala Met Val Glu His Ser Gly Asn Tyr Thr Cys
    290                 295                 300

Lys Val Glu Ser Ser Arg Ile Ser Lys Val Ser Ser Ile Val Val Asn
305                 310                 315                 320

Ile Thr Glu Leu Phe Ser Lys Pro Glu Leu Glu Ser Ser Phe Thr His
                325                 330                 335

Leu Asp Gln Gly Glu Arg Leu Asn Leu Ser Cys Ser Ile Pro Gly Ala
            340                 345                 350

Pro Pro Ala Asn Phe Thr Ile Gln Lys Glu Asp Thr Ile Val Ser Gln
```

```
        355                 360                 365

Thr Gln Asp Phe Thr Lys Ile Ala Ser Lys Ser Asp Ser Gly Thr Tyr
    370                 375                 380

Ile Cys Thr Ala Gly Ile Asp Lys Val Val Lys Lys Ser Asn Thr Val
385                 390                 395                 400

Gln Ile Val Val Cys Glu Met Leu Ser Gln Pro Arg Ile Ser Tyr Asp
                405                 410                 415

Ala Gln Phe Glu Val Ile Lys Gly Gln Thr Ile Glu Val Arg Cys Glu
            420                 425                 430

Ser Ile Ser Gly Thr Leu Pro Ile Ser Tyr Gln Leu Leu Lys Thr Ser
        435                 440                 445

Lys Val Leu Glu Asn Ser Thr Lys Asn Ser Asn Asp Pro Ala Val Phe
    450                 455                 460

Lys Asp Asn Pro Thr Glu Asp Val Glu Tyr Gln Cys Val Ala Asp Asn
465                 470                 475                 480

Cys His Ser His Ala Lys Met Leu Ser Glu Val Leu Arg Val Lys Val
                485                 490                 495

Ile Ala Pro Val Asp Glu Val Gln Ile Ser Ile Leu Ser Ser Lys Val
            500                 505                 510

Val Glu Ser Gly Glu Asp Ile Val Leu Gln Cys Ala Val Asn Glu Gly
        515                 520                 525

Ser Gly Pro Ile Thr Tyr Lys Phe Tyr Arg Glu Lys Glu Gly Lys Pro
    530                 535                 540

Phe Tyr Gln Met Thr Ser Asn Ala Thr Gln Ala Phe Trp Thr Lys Gln
```

```
545                 550                 555                 560

Lys Ala Ser Lys Glu Gln Glu Gly Glu Tyr Tyr Cys Thr Ala Phe Asn
                565                 570                 575

Arg Ala Asn His Ala Ser Ser Val Pro Arg Ser Lys Ile Leu Thr Val
            580                 585                 590

Arg Val Ile Leu Ala Pro Trp Lys Lys Gly Leu Ile Ala Val Val Ile
        595                 600                 605

Ile Gly Val Ile Ile Ala Leu Leu Ile Ile Ala Ala Lys Cys Tyr Phe
    610                 615                 620

Leu Arg Lys Ala Lys Ala Lys Gln Met Pro Val Glu Met Ser Arg Pro
625                 630                 635                 640

Ala Val Pro Leu Leu Asn Ser Asn Asn Glu Lys Met Ser Asp Pro Asn
                645                 650                 655

Met Glu Ala Asn Ser His Tyr Gly His Asn Asp Asp Val Arg Asn His
            660                 665                 670

Ala Met Lys Pro Ile Asn Asp Asn Lys Glu Pro Leu Asn Ser Asp Val
        675                 680                 685

Gln Tyr Glu Val Gln Val Ser Ser Ala Glu Ser His Lys Asp Leu Gly
    690                 695                 700

Lys Lys Asp Thr Glu Thr Val Tyr Ser Glu Val Arg Lys Ala Val Pro
705                 710                 715                 720

Asp Ala Val Glu Ser Arg Tyr Ser Arg Thr Glu Gly Ser Leu Asp Gly
                725                 730                 735

Thr
```

<210> 62
<211> 431
<212> PRT
<213> Homo sapiens

<400> 62

```
Met Glu Arg Arg Arg Ile Thr Ser Ala Ala Arg Arg Ser Tyr Val Ser
1               5                   10                  15


Ser Gly Glu Met Met Val Gly Gly Leu Ala Pro Gly Arg Arg Leu Gly
            20                  25                  30


Pro Gly Thr Arg Leu Ser Leu Ala Arg Met Pro Pro Pro Leu Pro Thr
        35                  40                  45


Arg Val Asp Phe Ser Leu Ala Gly Ala Leu Asn Ala Gly Phe Lys Glu
    50                  55                  60


Thr Arg Ala Ser Glu Arg Ala Glu Met Met Glu Leu Asn Asp Arg Phe
65                  70                  75                  80


Ala Ser Tyr Ile Glu Lys Val Arg Phe Leu Glu Gln Gln Asn Lys Ala
                85                  90                  95


Leu Ala Ala Glu Leu Asn Gln Leu Arg Ala Lys Glu Pro Thr Lys Leu
            100                 105                 110


Ala Asp Val Tyr Gln Ala Glu Leu Arg Glu Leu Arg Leu Arg Leu Asp
        115                 120                 125


Gln Leu Thr Ala Asn Ser Ala Arg Leu Glu Val Glu Arg Asp Asn Leu
    130                 135                 140


Ala Gln Asp Leu Ala Thr Val Arg Gln Lys Leu Gln Asp Glu Thr Asn
145                 150                 155                 160
```

```
Leu Arg Leu Glu Ala Glu Asn Asn Leu Ala Ala Tyr Arg Gln Glu Ala
                165                 170                 175

Asp Glu Ala Thr Leu Ala Arg Leu Asp Leu Glu Arg Lys Ile Glu Ser
            180                 185                 190

Leu Glu Glu Glu Ile Arg Phe Leu Arg Lys Ile His Glu Glu Glu Val
        195                 200                 205

Arg Glu Leu Gln Glu Gln Leu Ala Arg Gln Gln Val His Val Glu Leu
    210                 215                 220

Asp Val Ala Lys Pro Asp Leu Thr Ala Ala Leu Lys Glu Ile Arg Thr
225                 230                 235                 240

Gln Tyr Glu Ala Met Ala Ser Ser Asn Met His Glu Ala Glu Glu Trp
                245                 250                 255

Tyr Arg Ser Lys Phe Ala Asp Leu Thr Asp Ala Ala Ala Arg Asn Ala
            260                 265                 270

Glu Leu Leu Arg Gln Ala Lys His Glu Ala Asn Asp Tyr Arg Arg Gln
        275                 280                 285

Leu Gln Ser Leu Thr Cys Asp Leu Glu Ser Leu Arg Gly Thr Asn Glu
    290                 295                 300

Ser Leu Glu Arg Gln Met Arg Glu Gln Glu Glu Arg His Val Arg Glu
305                 310                 315                 320

Ala Ala Ser Tyr Gln Glu Ala Leu Ala Arg Leu Glu Glu Glu Gly Gln
                325                 330                 335

Ser Lys Asp Glu Met Ala Arg His Leu Gln Glu Tyr Gln Asp Leu Leu
            340                 345                 350
```

```
Asn Val Lys Leu Ala Leu Asp Ile Glu Ile Ala Thr Tyr Arg Lys Leu
        355                 360                 365

Leu Glu Gly Glu Glu Asn Arg Ile Thr Ile Pro Val Gln Thr Phe Ser
    370                 375                 380

Asn Leu Gln Ile Arg Glu Thr Ser Leu Asp Thr Lys Ser Val Ser Glu
385                 390                 395                 400

Gly His Leu Lys Arg Asn Ile Val Val Lys Thr Val Glu Met Arg Asp
                405                 410                 415

Gly Glu Val Ile Lys Glu Ser Lys Gln Glu His Lys Asp Val Met
            420                 425                 430
```

<210> 63
<211> 466
<212> PRT
<213> Homo sapiens

<400> 63

```
Met Ser Thr Arg Ser Val Ser Ser Ser Ser Tyr Arg Arg Met Phe Gly
1               5                   10                  15

Gly Pro Gly Thr Ala Ser Arg Pro Ser Ser Ser Arg Ser Tyr Val Thr
            20                  25                  30

Thr Ser Thr Arg Thr Tyr Ser Leu Gly Ser Ala Leu Arg Pro Ser Thr
        35                  40                  45

Ser Arg Ser Leu Tyr Ala Ser Ser Pro Gly Gly Val Tyr Ala Thr Arg
    50                  55                  60

Ser Ser Ala Val Arg Leu Arg Ser Ser Val Pro Gly Val Arg Leu Leu
65                  70                  75                  80
```

```
Gln Asp Ser Val Asp Phe Ser Leu Ala Asp Ala Ile Asn Thr Glu Phe
                85                  90                  95

Lys Asn Thr Arg Thr Asn Glu Lys Val Glu Leu Gln Glu Leu Asn Asp
            100                 105                 110

Arg Phe Ala Asn Tyr Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn
        115                 120                 125

Lys Ile Leu Leu Ala Glu Leu Glu Gln Leu Lys Gly Gln Gly Lys Ser
    130                 135                 140

Arg Leu Gly Asp Leu Tyr Glu Glu Glu Met Arg Glu Leu Arg Arg Gln
145                 150                 155                 160

Val Asp Gln Leu Thr Asn Asp Lys Ala Arg Val Glu Val Glu Arg Asp
                165                 170                 175

Asn Leu Ala Glu Asp Ile Met Arg Leu Arg Glu Lys Leu Gln Glu Glu
            180                 185                 190

Met Leu Gln Arg Glu Glu Ala Glu Asn Thr Leu Gln Ser Phe Arg Gln
        195                 200                 205

Asp Val Asp Asn Ala Ser Leu Ala Arg Leu Asp Leu Glu Arg Lys Val
    210                 215                 220

Glu Ser Leu Gln Glu Glu Ile Ala Phe Leu Lys Lys Leu His Glu Glu
225                 230                 235                 240

Glu Ile Gln Glu Leu Gln Ala Gln Ile Gln Glu Gln His Val Gln Ile
                245                 250                 255

Asp Val Asp Val Ser Lys Pro Asp Leu Thr Ala Ala Leu Arg Asp Val
            260                 265                 270
```

```
Arg Gln Gln Tyr Glu Ser Val Ala Ala Lys Asn Leu Gln Glu Ala Glu
        275                 280                 285

Glu Trp Tyr Lys Ser Lys Phe Ala Asp Leu Ser Glu Ala Ala Asn Arg
    290                 295                 300

Asn Asn Asp Ala Leu Arg Gln Ala Lys Gln Glu Ser Thr Glu Tyr Arg
305                 310                 315                 320

Arg Gln Val Gln Ser Leu Thr Cys Glu Val Asp Ala Leu Lys Gly Thr
                325                 330                 335

Asn Glu Ser Leu Glu Arg Gln Met Arg Glu Met Glu Glu Asn Phe Ala
            340                 345                 350

Val Glu Ala Ala Asn Tyr Gln Asp Thr Ile Gly Arg Leu Gln Asp Glu
        355                 360                 365

Ile Gln Asn Met Lys Glu Glu Met Ala Arg His Leu Arg Glu Tyr Gln
    370                 375                 380

Asp Leu Leu Asn Val Lys Met Ala Leu Asp Ile Glu Ile Ala Thr Tyr
385                 390                 395                 400

Arg Lys Leu Leu Glu Gly Glu Glu Ser Arg Ile Ser Leu Pro Leu Pro
                405                 410                 415

Asn Phe Ser Ser Leu Asn Leu Arg Glu Thr Asn Leu Asp Ser Leu Pro
            420                 425                 430

Leu Val Asp Thr His Ser Lys Arg Thr Leu Leu Ile Lys Thr Val Glu
        435                 440                 445

Thr Arg Asp Gly Gln Val Ile Asn Glu Thr Ser Gln His His Asp Asp
    450                 455                 460
```

Leu Glu
465

<210> 64
<211> 406
<212> PRT
<213> Homo sapiens

<400> 64

Met Leu Phe His Ser Leu Ser Gly Pro Glu Val His Gly Val Ile Asp
1 5 10 15

Glu Met Asp Arg Arg Ala Lys Ser Glu Ala Pro Ala Ile Ser Ser Ala
20 25 30

Ile Asp Arg Gly Asp Thr Glu Thr Thr Met Pro Ser Ile Ser Ser Asp
35 40 45

Arg Ala Ala Leu Cys Ala Gly Cys Gly Gly Lys Ile Ser Asp Arg Tyr
50 55 60

Tyr Leu Leu Ala Val Asp Lys Gln Trp His Met Arg Cys Leu Lys Cys
65 70 75 80

Cys Glu Cys Lys Leu Asn Leu Glu Ser Glu Leu Thr Cys Phe Ser Lys
85 90 95

Asp Gly Ser Ile Tyr Cys Lys Glu Asp Tyr Tyr Arg Arg Phe Ser Val
100 105 110

Gln Arg Cys Ala Arg Cys His Leu Gly Ile Ser Ala Ser Glu Met Val
115 120 125

Met Arg Ala Arg Asp Leu Val Tyr His Leu Asn Cys Phe Thr Cys Thr
130 135 140

```
Thr Cys Asn Lys Met Leu Thr Thr Gly Asp His Phe Gly Met Lys Asp
145                 150                 155                 160


Ser Leu Val Tyr Cys Arg Leu His Phe Glu Ala Leu Leu Gln Gly Glu
                165                 170                 175


Tyr Pro Ala His Phe Asn His Ala Asp Val Ala Ala Ala Ala Ala Ala
            180                 185                 190


Ala Ala Ala Ala Lys Ser Ala Gly Leu Gly Ala Ala Gly Ala Asn Pro
        195                 200                 205


Leu Gly Leu Pro Tyr Tyr Asn Gly Val Gly Thr Val Gln Lys Gly Arg
    210                 215                 220


Pro Arg Lys Arg Lys Ser Pro Gly Pro Gly Ala Asp Leu Ala Ala Tyr
225                 230                 235                 240


Asn Ala Ala Leu Ser Cys Asn Glu Asn Asp Ala Glu His Leu Asp Arg
                245                 250                 255


Asp Gln Pro Tyr Pro Ser Ser Gln Lys Thr Lys Arg Met Arg Thr Ser
            260                 265                 270


Phe Lys His His Gln Leu Arg Thr Met Lys Ser Tyr Phe Ala Ile Asn
        275                 280                 285


His Asn Pro Asp Ala Lys Asp Leu Lys Gln Leu Ala Gln Lys Thr Gly
    290                 295                 300


Leu Thr Lys Arg Val Leu Gln Val Trp Phe Gln Asn Ala Arg Ala Lys
305                 310                 315                 320


Phe Arg Arg Asn Leu Leu Arg Gln Glu Asn Thr Gly Val Asp Lys Ser
                325                 330                 335
```

```
Thr Asp Ala Ala Leu Gln Thr Gly Thr Pro Ser Gly Pro Ala Ser Glu
            340                 345                 350


Leu Ser Asn Ala Ser Leu Ser Pro Ser Ser Thr Pro Thr Thr Leu Thr
        355                 360                 365


Asp Leu Thr Ser Pro Thr Leu Pro Thr Val Thr Ser Val Leu Thr Ser
    370                 375                 380


Val Pro Gly Asn Leu Glu Gly His Glu Pro His Ser Pro Ser Gln Thr
385                 390                 395                 400


Thr Leu Thr Asn Leu Phe
                405


<210>  65
<211>  230
<212>  PRT
<213>  Homo sapiens

<400>  65

Met Lys Asn Pro Met Leu Glu Val Val Ser Leu Leu Leu Glu Lys Leu
1               5                   10                  15


Leu Leu Ile Ser Asn Phe Thr Leu Phe Ser Ser Gly Ala Ala Gly Lys
            20                  25                  30


Asp Lys Gly Arg Asn Ser Phe Tyr Glu Thr Ser Ser Phe His Arg Gly
        35                  40                  45


Asp Val Leu Glu Val Pro Arg Thr His Leu Thr His Tyr Gly Ile Tyr
    50                  55                  60


Leu Gly Asp Asn Arg Val Ala His Met Met Pro Asp Ile Leu Leu Ala
65                  70                  75                  80


Leu Thr Asp Asp Met Gly Arg Thr Gln Lys Val Val Ser Asn Lys Arg
```

85 90 95

Leu Ile Leu Gly Val Ile Val Lys Val Ala Ser Ile Arg Val Asp Thr
100 105 110

Val Glu Asp Phe Ala Tyr Gly Ala Asn Ile Leu Val Asn His Leu Asp
115 120 125

Glu Ser Leu Gln Lys Lys Ala Leu Leu Asn Glu Glu Val Ala Arg Arg
130 135 140

Ala Glu Lys Leu Leu Gly Phe Thr Pro Tyr Ser Leu Leu Trp Asn Asn
145 150 155 160

Cys Glu His Phe Val Thr Tyr Cys Arg Tyr Gly Thr Pro Ile Ser Pro
165 170 175

Gln Ser Asp Lys Phe Cys Glu Thr Val Lys Ile Ile Ile Arg Asp Gln
180 185 190

Arg Ser Val Leu Ala Ser Ala Val Leu Gly Leu Ala Ser Ile Val Cys
195 200 205

Thr Gly Leu Val Ser Tyr Thr Thr Leu Pro Ala Ile Phe Ile Pro Phe
210 215 220

Phe Leu Trp Met Ala Gly
225 230

<210> 66
<211> 1106
<212> PRT
<213> Homo sapiens

<400> 66

Met Arg Leu Pro Gly Ala Met Pro Ala Leu Ala Leu Lys Gly Glu Leu
1 5 10 15

```
Leu Leu Leu Ser Leu Leu Leu Leu Leu Glu Pro Gln Ile Ser Gln Gly
            20                  25                  30

Leu Val Val Thr Pro Pro Gly Pro Glu Leu Val Leu Asn Val Ser Ser
        35                  40                  45

Thr Phe Val Leu Thr Cys Ser Gly Ser Ala Pro Val Val Trp Glu Arg
    50                  55                  60

Met Ser Gln Glu Pro Pro Gln Glu Met Ala Lys Ala Gln Asp Gly Thr
65                  70                  75                  80

Phe Ser Ser Val Leu Thr Leu Thr Asn Leu Thr Gly Leu Asp Thr Gly
                85                  90                  95

Glu Tyr Phe Cys Thr His Asn Asp Ser Arg Gly Leu Glu Thr Asp Glu
            100                 105                 110

Arg Lys Arg Leu Tyr Ile Phe Val Pro Asp Pro Thr Val Gly Phe Leu
        115                 120                 125

Pro Asn Asp Ala Glu Glu Leu Phe Ile Phe Leu Thr Glu Ile Thr Glu
    130                 135                 140

Ile Thr Ile Pro Cys Arg Val Thr Asp Pro Gln Leu Val Val Thr Leu
145                 150                 155                 160

His Glu Lys Lys Gly Asp Val Ala Leu Pro Val Pro Tyr Asp His Gln
                165                 170                 175

Arg Gly Phe Ser Gly Ile Phe Glu Asp Arg Ser Tyr Ile Cys Lys Thr
            180                 185                 190

Thr Ile Gly Asp Arg Glu Val Asp Ser Asp Ala Tyr Tyr Val Tyr Arg
        195                 200                 205
```

```
Leu Gln Val Ser Ser Ile Asn Val Ser Val Asn Ala Val Gln Thr Val
    210                 215                 220

Val Arg Gln Gly Glu Asn Ile Thr Leu Met Cys Ile Val Ile Gly Asn
225                 230                 235                 240

Glu Val Val Asn Phe Glu Trp Thr Tyr Pro Arg Lys Glu Ser Gly Arg
                245                 250                 255

Leu Val Glu Pro Val Thr Asp Phe Leu Leu Asp Met Pro Tyr His Ile
            260                 265                 270

Arg Ser Ile Leu His Ile Pro Ser Ala Glu Leu Glu Asp Ser Gly Thr
        275                 280                 285

Tyr Thr Cys Asn Val Thr Glu Ser Val Asn Asp His Gln Asp Glu Lys
    290                 295                 300

Ala Ile Asn Ile Thr Val Val Glu Ser Gly Tyr Val Arg Leu Leu Gly
305                 310                 315                 320

Glu Val Gly Thr Leu Gln Phe Ala Glu Leu His Arg Ser Arg Thr Leu
                325                 330                 335

Gln Val Val Phe Glu Ala Tyr Pro Pro Pro Thr Val Leu Trp Phe Lys
            340                 345                 350

Asp Asn Arg Thr Leu Gly Asp Ser Ser Ala Gly Glu Ile Ala Leu Ser
        355                 360                 365

Thr Arg Asn Val Ser Glu Thr Arg Tyr Val Ser Glu Leu Thr Leu Val
    370                 375                 380

Arg Val Lys Val Ala Glu Ala Gly His Tyr Thr Met Arg Ala Phe His
385                 390                 395                 400
```

```
Glu Asp Ala Glu Val Gln Leu Ser Phe Gln Leu Gln Ile Asn Val Pro
                405                 410                 415

Val Arg Val Leu Glu Leu Ser Glu Ser His Pro Asp Ser Gly Glu Gln
            420                 425                 430

Thr Val Arg Cys Arg Gly Arg Gly Met Pro Gln Pro Asn Ile Ile Trp
        435                 440                 445

Ser Ala Cys Arg Asp Leu Lys Arg Cys Pro Arg Glu Leu Pro Pro Thr
    450                 455                 460

Leu Leu Gly Asn Ser Ser Glu Glu Glu Ser Gln Leu Glu Thr Asn Val
465                 470                 475                 480

Thr Tyr Trp Glu Glu Glu Gln Glu Phe Glu Val Val Ser Thr Leu Arg
                485                 490                 495

Leu Gln His Val Asp Arg Pro Leu Ser Val Arg Cys Thr Leu Arg Asn
            500                 505                 510

Ala Val Gly Gln Asp Thr Gln Glu Val Ile Val Val Pro His Ser Leu
        515                 520                 525

Pro Phe Lys Val Val Val Ile Ser Ala Ile Leu Ala Leu Val Val Leu
    530                 535                 540

Thr Ile Ile Ser Leu Ile Ile Leu Ile Met Leu Trp Gln Lys Lys Pro
545                 550                 555                 560

Arg Tyr Glu Ile Arg Trp Lys Val Ile Glu Ser Val Ser Ser Asp Gly
                565                 570                 575

His Glu Tyr Ile Tyr Val Asp Pro Met Gln Leu Pro Tyr Asp Ser Thr
            580                 585                 590
```

```
Trp Glu Leu Pro Arg Asp Gln Leu Val Leu Gly Arg Thr Leu Gly Ser
        595                 600                 605

Gly Ala Phe Gly Gln Val Val Glu Ala Thr Ala His Gly Leu Ser His
    610                 615                 620

Ser Gln Ala Thr Met Lys Val Ala Val Lys Met Leu Lys Ser Thr Ala
625                 630                 635                 640

Arg Ser Ser Glu Lys Gln Ala Leu Met Ser Glu Leu Lys Ile Met Ser
                645                 650                 655

His Leu Gly Pro His Leu Asn Val Val Asn Leu Leu Gly Ala Cys Thr
            660                 665                 670

Lys Gly Gly Pro Ile Tyr Ile Ile Thr Glu Tyr Cys Arg Tyr Gly Asp
        675                 680                 685

Leu Val Asp Tyr Leu His Arg Asn Lys His Thr Phe Leu Gln His His
    690                 695                 700

Ser Asp Lys Arg Arg Pro Pro Ser Ala Glu Leu Tyr Ser Asn Ala Leu
705                 710                 715                 720

Pro Val Gly Leu Pro Leu Pro Ser His Val Ser Leu Thr Gly Glu Ser
                725                 730                 735

Asp Gly Gly Tyr Met Asp Met Ser Lys Asp Glu Ser Val Asp Tyr Val
            740                 745                 750

Pro Met Leu Asp Met Lys Gly Asp Val Lys Tyr Ala Asp Ile Glu Ser
        755                 760                 765

Ser Asn Tyr Met Ala Pro Tyr Asp Asn Tyr Val Pro Ser Ala Pro Glu
    770                 775                 780
```

```
Arg Thr Cys Arg Ala Thr Leu Ile Asn Glu Ser Pro Val Leu Ser Tyr
785                 790                 795                 800

Met Asp Leu Val Gly Phe Ser Tyr Gln Val Ala Asn Gly Met Glu Phe
                805                 810                 815

Leu Ala Ser Lys Asn Cys Val His Arg Asp Leu Ala Ala Arg Asn Val
            820                 825                 830

Leu Ile Cys Glu Gly Lys Leu Val Lys Ile Cys Asp Phe Gly Leu Ala
        835                 840                 845

Arg Asp Ile Met Arg Asp Ser Asn Tyr Ile Ser Lys Gly Ser Thr Phe
    850                 855                 860

Leu Pro Leu Lys Trp Met Ala Pro Glu Ser Ile Phe Asn Ser Leu Tyr
865                 870                 875                 880

Thr Thr Leu Ser Asp Val Trp Ser Phe Gly Ile Leu Leu Trp Glu Ile
                885                 890                 895

Phe Thr Leu Gly Gly Thr Pro Tyr Pro Glu Leu Pro Met Asn Glu Gln
            900                 905                 910

Phe Tyr Asn Ala Ile Lys Arg Gly Tyr Arg Met Ala Gln Pro Ala His
        915                 920                 925

Ala Ser Asp Glu Ile Tyr Glu Ile Met Gln Lys Cys Trp Glu Glu Lys
    930                 935                 940

Phe Glu Ile Arg Pro Pro Phe Ser Gln Leu Val Leu Leu Leu Glu Arg
945                 950                 955                 960

Leu Leu Gly Glu Gly Tyr Lys Lys Lys Tyr Gln Gln Val Asp Glu Glu
                965                 970                 975
```

```
Phe Leu Arg Ser Asp His Pro Ala Ile Leu Arg Ser Gln Ala Arg Leu
            980                 985                 990


Pro Gly Phe His Gly Leu Arg Ser  Pro Leu Asp Thr Ser  Ser Val Leu
        995                 1000                1005


Tyr Thr  Ala Val Gln Pro Asn  Glu Gly Asp Asn Asp  Tyr Ile Ile
    1010                1015                1020


Pro Leu  Pro Asp Pro Lys Pro  Glu Val Ala Asp Glu  Gly Pro Leu
    1025                1030                1035


Glu Gly  Ser Pro Ser Leu Ala  Ser Ser Thr Leu Asn  Glu Val Asn
    1040                1045                1050


Thr Ser  Ser Thr Ile Ser Cys  Asp Ser Pro Leu Glu  Pro Gln Asp
    1055                1060                1065


Glu Pro  Glu Pro Glu Pro Gln  Leu Glu Leu Gln Val  Glu Pro Glu
    1070                1075                1080


Pro Glu  Leu Glu Gln Leu Pro  Asp Ser Gly Cys Pro  Ala Pro Arg
    1085                1090                1095


Ala Glu  Ala Glu Asp Ser Phe  Leu
    1100                1105
```

<210> 67
<211> 217
<212> PRT
<213> Homo sapiens

<400> 67

```
Met Ser Leu Val Gly Gly Phe Pro His His Pro Val Val His His Glu
1               5                  10                  15
```

```
Gly Tyr Pro Phe Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
            20                  25                  30

Ser Arg Cys Ser His Glu Glu Asn Pro Tyr Phe His Gly Trp Leu Ile
        35                  40                  45

Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser Tyr
    50                  55                  60

Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His Tyr
65                  70                  75                  80

Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro Arg
                85                  90                  95

Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg Thr
            100                 105                 110

Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn
        115                 120                 125

Val Pro Ala Asp Thr Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala
    130                 135                 140

Thr Ser Tyr Ile Ala Tyr Leu Met Asp Leu Leu Ala Lys Asp Asp Gln
145                 150                 155                 160

Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp Val
                165                 170                 175

Lys Glu Glu Lys Arg Lys Lys Glu Leu Asn Glu Ile Leu Lys Ser Thr
            180                 185                 190

Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro Gln
        195                 200                 205
```

```
His Val Trp Ala Leu Glu Leu Lys Gln
    210                 215


<210>  68
<211>  532
<212>  PRT
<213>  Homo sapiens

<400>  68

Met Ala Pro Ser Ser Pro Arg Pro Ala Leu Pro Ala Leu Leu Val Leu
1               5                   10                  15


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


Pro Ser Lys Val Ile Leu Pro Arg Gly Gly Ser Val Leu Val Thr Cys
        35                  40                  45


Ser Thr Ser Cys Asp Gln Pro Lys Leu Leu Gly Ile Glu Thr Pro Leu
    50                  55                  60


Pro Lys Lys Glu Leu Leu Leu Pro Gly Asn Asn Arg Lys Val Tyr Glu
65                  70                  75                  80


Leu Ser Asn Val Gln Glu Asp Ser Gln Pro Met Cys Tyr Ser Asn Cys
                85                  90                  95


Pro Asp Gly Gln Ser Thr Ala Lys Thr Phe Leu Thr Val Tyr Trp Thr
            100                 105                 110


Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Ser Trp Gln Pro Val Gly
        115                 120                 125


Lys Asn Leu Thr Leu Arg Cys Gln Val Glu Gly Gly Ala Pro Arg Ala
    130                 135                 140
```

```
Asn Leu Thr Val Val Leu Leu Arg Gly Glu Lys Glu Leu Lys Arg Glu
145                 150                 155                 160


Pro Ala Val Gly Glu Pro Ala Glu Val Thr Thr Thr Val Leu Val Arg
                165                 170                 175


Arg Asp His His Gly Ala Asn Phe Ser Cys Arg Thr Glu Leu Asp Leu
            180                 185                 190


Arg Pro Gln Gly Leu Glu Leu Phe Glu Asn Thr Ser Ala Pro Tyr Gln
        195                 200                 205


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


Arg Val Leu Glu Val Asp Thr Gln Gly Thr Val Val Cys Ser Leu Asp
225                 230                 235                 240


Gly Leu Phe Pro Val Ser Glu Ala Gln Val His Leu Ala Leu Gly Asp
                245                 250                 255


Gln Arg Leu Asn Pro Thr Val Thr Tyr Gly Asn Asp Ser Phe Ser Ala
            260                 265                 270


Lys Ala Ser Val Ser Val Thr Ala Glu Asp Glu Gly Thr Gln Arg Leu
        275                 280                 285


Thr Cys Ala Val Ile Leu Gly Asn Gln Ser Gln Glu Thr Leu Gln Thr
    290                 295                 300


Val Thr Ile Tyr Ser Phe Pro Ala Pro Asn Val Ile Leu Thr Lys Pro
305                 310                 315                 320


Glu Val Ser Glu Gly Thr Glu Val Thr Val Lys Cys Glu Ala His Pro
                325                 330                 335
```

```
Arg Ala Lys Val Thr Leu Asn Gly Val Pro Ala Gln Pro Leu Gly Pro
            340                 345                 350

Arg Ala Gln Leu Leu Leu Lys Ala Thr Pro Glu Asp Asn Gly Arg Ser
        355                 360                 365

Phe Ser Cys Ser Ala Thr Leu Glu Val Ala Gly Gln Leu Ile His Lys
    370                 375                 380

Asn Gln Thr Arg Glu Leu Arg Val Leu Tyr Gly Pro Arg Leu Asp Glu
385                 390                 395                 400

Arg Asp Cys Pro Gly Asn Trp Thr Trp Pro Glu Asn Ser Gln Gln Thr
                405                 410                 415

Pro Met Cys Gln Ala Trp Gly Asn Pro Leu Pro Glu Leu Lys Cys Leu
            420                 425                 430

Lys Asp Gly Thr Phe Pro Leu Pro Ile Gly Glu Ser Val Thr Val Thr
        435                 440                 445

Arg Asp Leu Glu Gly Thr Tyr Leu Cys Arg Ala Arg Ser Thr Gln Gly
    450                 455                 460

Glu Val Thr Arg Lys Val Thr Val Asn Val Leu Ser Pro Arg Tyr Glu
465                 470                 475                 480

Ile Val Ile Ile Thr Val Val Ala Ala Ala Val Ile Met Gly Thr Ala
                485                 490                 495

Gly Leu Ser Thr Tyr Leu Tyr Asn Arg Gln Arg Lys Ile Lys Lys Tyr
            500                 505                 510

Arg Leu Gln Gln Ala Gln Lys Gly Thr Pro Met Lys Pro Asn Thr Gln
        515                 520                 525
```

Ala Thr Pro Pro
530

<210> 69
<211> 739
<212> PRT
<213> Homo sapiens

<400> 69

Met Pro Gly Lys Met Val Val Ile Leu Gly Ala Ser Asn Ile Leu Trp
1 5 10 15

Ile Met Phe Ala Ala Ser Gln Ala Phe Lys Ile Glu Thr Thr Pro Glu
20 25 30

Ser Arg Tyr Leu Ala Gln Ile Gly Asp Ser Val Ser Leu Thr Cys Ser
35 40 45

Thr Thr Gly Cys Glu Ser Pro Phe Phe Ser Trp Arg Thr Gln Ile Asp
50 55 60

Ser Pro Leu Asn Gly Lys Val Thr Asn Glu Gly Thr Thr Ser Thr Leu
65 70 75 80

Thr Met Asn Pro Val Ser Phe Gly Asn Glu His Ser Tyr Leu Cys Thr
85 90 95

Ala Thr Cys Glu Ser Arg Lys Leu Glu Lys Gly Ile Gln Val Glu Ile
100 105 110

Tyr Ser Phe Pro Lys Asp Pro Glu Ile His Leu Ser Gly Pro Leu Glu
115 120 125

Ala Gly Lys Pro Ile Thr Val Lys Cys Ser Val Ala Asp Val Tyr Pro
130 135 140

Phe Asp Arg Leu Glu Ile Asp Leu Leu Lys Gly Asp His Leu Met Lys

```
145                 150                 155                 160

Ser Gln Glu Phe Leu Glu Asp Ala Asp Arg Lys Ser Leu Glu Thr Lys
                165                 170                 175

Ser Leu Glu Val Thr Phe Thr Pro Val Ile Glu Asp Ile Gly Lys Val
            180                 185                 190

Leu Val Cys Arg Ala Lys Leu His Ile Asp Glu Met Asp Ser Val Pro
        195                 200                 205

Thr Val Arg Gln Ala Val Lys Glu Leu Gln Val Tyr Ile Ser Pro Lys
    210                 215                 220

Asn Thr Val Ile Ser Val Asn Pro Ser Thr Lys Leu Gln Glu Gly Gly
225                 230                 235                 240

Ser Val Thr Met Thr Cys Ser Ser Glu Gly Leu Pro Ala Pro Glu Ile
                245                 250                 255

Phe Trp Ser Lys Lys Leu Asp Asn Gly Asn Leu Gln His Leu Ser Gly
            260                 265                 270

Asn Ala Thr Leu Thr Leu Ile Ala Met Arg Met Glu Asp Ser Gly Ile
        275                 280                 285

Tyr Val Cys Glu Gly Val Asn Leu Ile Gly Lys Asn Arg Lys Glu Val
    290                 295                 300

Glu Leu Ile Val Gln Glu Lys Pro Phe Thr Val Glu Ile Ser Pro Gly
305                 310                 315                 320

Pro Arg Ile Ala Ala Gln Ile Gly Asp Ser Val Met Leu Thr Cys Ser
                325                 330                 335

Val Met Gly Cys Glu Ser Pro Ser Phe Ser Trp Arg Thr Gln Ile Asp
```

```
            340                 345                 350

Ser Pro Leu Ser Gly Lys Val Arg Ser Glu Gly Thr Asn Ser Thr Leu
        355                 360                 365

Thr Leu Ser Pro Val Ser Phe Glu Asn Glu His Ser Tyr Leu Cys Thr
    370                 375                 380

Val Thr Cys Gly His Lys Lys Leu Glu Lys Gly Ile Gln Val Glu Leu
385                 390                 395                 400

Tyr Ser Phe Pro Arg Asp Pro Glu Ile Glu Met Ser Gly Gly Leu Val
                405                 410                 415

Asn Gly Ser Ser Val Thr Val Ser Cys Lys Val Pro Ser Val Tyr Pro
            420                 425                 430

Leu Asp Arg Leu Glu Ile Glu Leu Leu Lys Gly Glu Thr Ile Leu Glu
        435                 440                 445

Asn Ile Glu Phe Leu Glu Asp Thr Asp Met Lys Ser Leu Glu Asn Lys
    450                 455                 460

Ser Leu Glu Met Thr Phe Ile Pro Thr Ile Glu Asp Thr Gly Lys Ala
465                 470                 475                 480

Leu Val Cys Gln Ala Lys Leu His Ile Asp Asp Met Glu Phe Glu Pro
                485                 490                 495

Lys Gln Arg Gln Ser Thr Gln Thr Leu Tyr Val Asn Val Ala Pro Arg
            500                 505                 510

Asp Thr Thr Val Leu Val Ser Pro Ser Ser Ile Leu Glu Glu Gly Ser
        515                 520                 525

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

```
    530                 535                 540

Leu Trp Ser Arg Gln Leu Pro Asn Gly Glu Leu Gln Pro Leu Ser Glu
545                 550                 555                 560

Asn Ala Thr Leu Thr Leu Ile Ser Thr Lys Met Glu Asp Ser Gly Val
                565                 570                 575

Tyr Leu Cys Glu Gly Ile Asn Gln Ala Gly Arg Ser Arg Lys Glu Val
            580                 585                 590

Glu Leu Ile Ile Gln Val Thr Pro Lys Asp Ile Lys Leu Thr Ala Phe
        595                 600                 605

Pro Ser Glu Ser Val Lys Glu Gly Asp Thr Val Ile Ile Ser Cys Thr
    610                 615                 620

Cys Gly Asn Val Pro Glu Thr Trp Ile Ile Leu Lys Lys Lys Ala Glu
625                 630                 635                 640

Thr Gly Asp Thr Val Leu Lys Ser Ile Asp Gly Ala Tyr Thr Ile Arg
                645                 650                 655

Lys Ala Gln Leu Lys Asp Ala Gly Val Tyr Glu Cys Glu Ser Lys Asn
            660                 665                 670

Lys Val Gly Ser Gln Leu Arg Ser Leu Thr Leu Asp Val Gln Gly Arg
        675                 680                 685

Glu Asn Asn Lys Asp Tyr Phe Ser Pro Glu Leu Leu Val Leu Tyr Phe
    690                 695                 700

Ala Ser Ser Leu Ile Ile Pro Ala Ile Gly Met Ile Ile Tyr Phe Ala
705                 710                 715                 720

Arg Lys Ala Asn Met Lys Gly Ser Tyr Ser Leu Val Glu Ala Gln Lys
```

725 730 735

Ser Lys Val

<210> 70
<211> 700
<212> PRT
<213> Homo sapiens

<400> 70

Met Leu Gln Thr Lys Asp Leu Ile Trp Thr Leu Phe Phe Leu Gly Thr
1 5 10 15

Ala Val Ser Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser
20 25 30

Val Gly Glu Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys
35 40 45

Asp Lys Asp Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro
50 55 60

Asn Gln Gln Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr
65 70 75 80

Leu Thr Ile Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys
85 90 95

Val Val Thr Gly Glu Asp Gly Ser Glu Ser Glu Ala Thr Val Asn Val
100 105 110

Lys Ile Phe Gln Lys Leu Met Phe Lys Asn Ala Pro Thr Pro Gln Glu
115 120 125

Phe Arg Glu Gly Glu Asp Ala Val Ile Val Cys Asp Val Val Ser Ser
130 135 140

```
Leu Pro Pro Thr Ile Ile Trp Lys His Lys Gly Arg Asp Val Ile Leu
145                 150                 155                 160

Lys Lys Asp Val Arg Phe Ile Val Leu Ser Asn Asn Tyr Leu Gln Ile
                165                 170                 175

Arg Gly Ile Lys Lys Thr Asp Glu Gly Thr Tyr Arg Cys Glu Gly Arg
            180                 185                 190

Ile Leu Ala Arg Gly Glu Ile Asn Phe Lys Asp Ile Gln Val Ile Val
        195                 200                 205

Asn Val Pro Pro Thr Ile Gln Ala Arg Gln Asn Ile Val Asn Ala Thr
    210                 215                 220

Ala Asn Leu Gly Gln Ser Val Thr Leu Val Cys Asp Ala Glu Gly Phe
225                 230                 235                 240

Pro Glu Pro Thr Met Ser Trp Thr Lys Asp Gly Glu Gln Ile Glu Gln
                245                 250                 255

Glu Glu Asp Asp Glu Lys Tyr Ile Phe Ser Asp Asp Ser Ser Gln Leu
            260                 265                 270

Thr Ile Lys Lys Val Asp Lys Asn Asp Glu Ala Glu Tyr Ile Cys Ile
        275                 280                 285

Ala Glu Asn Lys Ala Gly Glu Gln Asp Ala Thr Ile His Leu Lys Val
    290                 295                 300

Phe Ala Lys Pro Lys Ile Thr Tyr Val Glu Asn Gln Thr Ala Met Glu
305                 310                 315                 320

Leu Glu Glu Gln Val Thr Leu Thr Cys Glu Ala Ser Gly Asp Pro Ile
                325                 330                 335
```

```
Pro Ser Ile Thr Trp Arg Thr Ser Thr Arg Asn Ile Ser Ser Met Leu
            340                 345                 350

Gln Thr Lys Asp Leu Ile Trp Thr Leu Phe Phe Leu Gly Thr Ala Val
        355                 360                 365

Ser Leu Gln Val Asp Ile Val Pro Ser Gln Gly Glu Ile Ser Val Gly
    370                 375                 380

Glu Ser Lys Phe Phe Leu Cys Gln Val Ala Gly Asp Ala Lys Asp Lys
385                 390                 395                 400

Asp Ile Ser Trp Phe Ser Pro Asn Gly Glu Lys Leu Thr Pro Asn Gln
                405                 410                 415

Gln Arg Ile Ser Val Val Trp Asn Asp Asp Ser Ser Ser Thr Leu Thr
            420                 425                 430

Ile Tyr Asn Ala Asn Ile Asp Asp Ala Gly Ile Tyr Lys Cys Val Val
        435                 440                 445

Thr Gly Glu Asp Gly Ser Glu Ser Glu Ala Thr Val Asn Val Lys Ile
    450                 455                 460

Phe Gln Lys Leu Met Phe Lys Asn Ala Pro Thr Pro Gln Glu Phe Arg
465                 470                 475                 480

Glu Gly Glu Asp Ala Val Ile Val Cys Asp Val Val Ser Ser Leu Pro
                485                 490                 495

Pro Thr Ile Ile Trp Lys His Lys Gly Arg Asp Val Ile Leu Lys Lys
            500                 505                 510

Asp Val Arg Phe Ile Val Leu Ser Asn Asn Tyr Leu Gln Ile Arg Gly
        515                 520                 525
```

```
Ile Lys Lys Thr Asp Glu Gly Thr Tyr Arg Cys Glu Gly Arg Ile Leu
    530                 535                 540

Ala Arg Gly Glu Ile Asn Phe Lys Asp Ile Gln Val Ile Val Asn Val
545                 550                 555                 560

Pro Pro Thr Ile Gln Ala Arg Gln Asn Ile Val Asn Ala Thr Ala Asn
                565                 570                 575

Leu Gly Gln Ser Val Thr Leu Val Cys Asp Ala Glu Gly Phe Pro Glu
            580                 585                 590

Pro Thr Met Ser Trp Thr Lys Asp Gly Glu Gln Ile Glu Gln Glu Glu
        595                 600                 605

Asp Asp Glu Lys Tyr Ile Phe Ser Asp Asp Ser Ser Gln Leu Thr Ile
    610                 615                 620

Lys Lys Val Asp Lys Asn Asp Glu Ala Glu Tyr Ile Cys Ile Ala Glu
625                 630                 635                 640

Asn Lys Ala Gly Glu Gln Asp Ala Thr Ile His Leu Lys Val Phe Ala
                645                 650                 655

Lys Pro Lys Ile Thr Tyr Val Glu Asn Gln Thr Ala Met Glu Leu Glu
            660                 665                 670

Glu Gln Val Thr Leu Thr Cys Glu Ala Ser Gly Asp Pro Ile Pro Ser
        675                 680                 685

Ile Thr Trp Arg Thr Ser Thr Arg Asn Ile Ser Ser
    690                 695                 700
```

<210> 71
<211> 1464

<212> PRT
<213> Homo sapiens

<400> 71

```
Met Phe Ser Phe Val Asp Leu Arg Leu Leu Leu Leu Leu Ala Ala Thr
1               5                  10                  15

Ala Leu Leu Thr His Gly Gln Glu Glu Gly Gln Val Glu Gly Gln Asp
            20                  25                  30

Glu Asp Ile Pro Pro Ile Thr Cys Val Gln Asn Gly Leu Arg Tyr His
        35                  40                  45

Asp Arg Asp Val Trp Lys Pro Glu Pro Cys Arg Ile Cys Val Cys Asp
    50                  55                  60

Asn Gly Lys Val Leu Cys Asp Asp Val Ile Cys Asp Glu Thr Lys Asn
65                  70                  75                  80

Cys Pro Gly Ala Glu Val Pro Glu Gly Glu Cys Cys Pro Val Cys Pro
                85                  90                  95

Asp Gly Ser Glu Ser Pro Thr Asp Gln Glu Thr Thr Gly Val Glu Gly
            100                 105                 110

Pro Lys Gly Asp Thr Gly Pro Arg Gly Pro Arg Gly Pro Ala Gly Pro
        115                 120                 125

Pro Gly Arg Asp Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Pro Pro
    130                 135                 140

Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala
145                 150                 155                 160

Pro Gln Leu Ser Tyr Gly Tyr Asp Glu Lys Ser Thr Gly Gly Ile Ser
                165                 170                 175
```

```
Val Pro Gly Pro Met Gly Pro Ser Gly Pro Arg Gly Leu Pro Gly Pro
            180                 185                 190

Pro Gly Ala Pro Gly Pro Gln Gly Phe Gln Gly Pro Pro Gly Glu Pro
        195                 200                 205

Gly Glu Pro Gly Ala Ser Gly Pro Met Gly Pro Arg Gly Pro Pro Gly
    210                 215                 220

Pro Pro Gly Lys Asn Gly Asp Asp Gly Glu Ala Gly Lys Pro Gly Arg
225                 230                 235                 240

Pro Gly Glu Arg Gly Pro Pro Gly Pro Gln Gly Ala Arg Gly Leu Pro
                245                 250                 255

Gly Thr Ala Gly Leu Pro Gly Met Lys Gly His Arg Gly Phe Ser Gly
            260                 265                 270

Leu Asp Gly Ala Lys Gly Asp Ala Gly Pro Ala Gly Pro Lys Gly Glu
        275                 280                 285

Pro Gly Ser Pro Gly Glu Asn Gly Ala Pro Gly Gln Met Gly Pro Arg
    290                 295                 300

Gly Leu Pro Gly Glu Arg Gly Arg Pro Gly Ala Pro Gly Pro Ala Gly
305                 310                 315                 320

Ala Arg Gly Asn Asp Gly Ala Thr Gly Ala Ala Gly Pro Pro Gly Pro
                325                 330                 335

Thr Gly Pro Ala Gly Pro Pro Gly Phe Pro Gly Ala Val Gly Ala Lys
            340                 345                 350

Gly Glu Ala Gly Pro Gln Gly Pro Arg Gly Ser Glu Gly Pro Gln Gly
        355                 360                 365
```

```
Val Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Ala Ala Gly Pro
    370                 375                 380

Ala Gly Asn Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Ala Asn
385                 390                 395                 400

Gly Ala Pro Gly Ile Ala Gly Ala Pro Gly Phe Pro Gly Ala Arg Gly
                405                 410                 415

Pro Ser Gly Pro Gln Gly Pro Gly Gly Pro Pro Gly Pro Lys Gly Asn
            420                 425                 430

Ser Gly Glu Pro Gly Ala Pro Gly Ser Lys Gly Asp Thr Gly Ala Lys
        435                 440                 445

Gly Glu Pro Gly Pro Val Gly Val Gln Gly Pro Pro Gly Pro Ala Gly
    450                 455                 460

Glu Glu Gly Lys Arg Gly Ala Arg Gly Glu Pro Gly Pro Thr Gly Leu
465                 470                 475                 480

Pro Gly Pro Pro Gly Glu Arg Gly Gly Pro Gly Ser Arg Gly Phe Pro
                485                 490                 495

Gly Ala Asp Gly Val Ala Gly Pro Lys Gly Pro Ala Gly Glu Arg Gly
            500                 505                 510

Ser Pro Gly Pro Ala Gly Pro Lys Gly Ser Pro Gly Glu Ala Gly Arg
        515                 520                 525

Pro Gly Glu Ala Gly Leu Pro Gly Ala Lys Gly Leu Thr Gly Ser Pro
    530                 535                 540

Gly Ser Pro Gly Pro Asp Gly Lys Thr Gly Pro Pro Gly Pro Ala Gly
545                 550                 555                 560
```

```
Gln Asp Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Ala Arg Gly Gln
               565                 570                 575

Ala Gly Val Met Gly Phe Pro Gly Pro Lys Gly Ala Ala Gly Glu Pro
            580                 585                 590

Gly Lys Ala Gly Glu Arg Gly Val Pro Gly Pro Pro Gly Ala Val Gly
        595                 600                 605

Pro Ala Gly Lys Asp Gly Glu Ala Gly Ala Gln Gly Pro Pro Gly Pro
    610                 615                 620

Ala Gly Pro Ala Gly Glu Arg Gly Glu Gln Gly Pro Ala Gly Ser Pro
625                 630                 635                 640

Gly Phe Gln Gly Leu Pro Gly Pro Ala Gly Pro Pro Gly Glu Ala Gly
               645                 650                 655

Lys Pro Gly Glu Gln Gly Val Pro Gly Asp Leu Gly Ala Pro Gly Pro
            660                 665                 670

Ser Gly Ala Arg Gly Glu Arg Gly Phe Pro Gly Glu Arg Gly Val Gln
        675                 680                 685

Gly Pro Pro Gly Pro Ala Gly Pro Arg Gly Ala Asn Gly Ala Pro Gly
    690                 695                 700

Asn Asp Gly Ala Lys Gly Asp Ala Gly Ala Pro Gly Ala Pro Gly Ser
705                 710                 715                 720

Gln Gly Ala Pro Gly Leu Gln Gly Met Pro Gly Glu Arg Gly Ala Ala
               725                 730                 735

Gly Leu Pro Gly Pro Lys Gly Asp Arg Gly Asp Ala Gly Pro Lys Gly
            740                 745                 750
```

```
Ala Asp Gly Ser Pro Gly Lys Asp Gly Val Arg Gly Leu Thr Gly Pro
        755                 760                 765

Ile Gly Pro Pro Gly Pro Ala Gly Ala Pro Gly Asp Lys Gly Glu Ser
    770                 775                 780

Gly Pro Ser Gly Pro Ala Gly Pro Thr Gly Ala Arg Gly Ala Pro Gly
785                 790                 795                 800

Asp Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Phe Ala Gly Pro
                805                 810                 815

Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Glu Pro Gly Asp Ala
            820                 825                 830

Gly Ala Lys Gly Asp Ala Gly Pro Pro Gly Pro Ala Gly Pro Ala Gly
        835                 840                 845

Pro Pro Gly Pro Ile Gly Asn Val Gly Ala Pro Gly Ala Lys Gly Ala
    850                 855                 860

Arg Gly Ser Ala Gly Pro Pro Gly Ala Thr Gly Phe Pro Gly Ala Ala
865                 870                 875                 880

Gly Arg Val Gly Pro Pro Gly Pro Ser Gly Asn Ala Gly Pro Pro Gly
                885                 890                 895

Pro Pro Gly Pro Ala Gly Lys Glu Gly Gly Lys Gly Pro Arg Gly Glu
            900                 905                 910

Thr Gly Pro Ala Gly Arg Pro Gly Glu Val Gly Pro Pro Gly Pro Pro
        915                 920                 925

Gly Pro Ala Gly Glu Lys Gly Ser Pro Gly Ala Asp Gly Pro Ala Gly
    930                 935                 940
```

```
Ala Pro Gly Thr Pro Gly Pro Gln Gly Ile Ala Gly Gln Arg Gly Val
945                 950                 955                 960


Val Gly Leu Pro Gly Gln Arg Gly Glu Arg Gly Phe Pro Gly Leu Pro
                965                 970                 975


Gly Pro Ser Gly Glu Pro Gly Lys Gln Gly Pro Ser Gly Ala Ser Gly
            980                 985                 990


Glu Arg Gly Pro Pro Gly Pro Met  Gly Pro Pro Gly Leu  Ala Gly Pro
        995                 1000                1005


Pro Gly  Glu Ser Gly Arg Glu  Gly Ala Pro Gly Ala  Glu Gly Ser
    1010                1015                1020


Pro Gly  Arg Asp Gly Ser Pro  Gly Ala Lys Gly Asp  Arg Gly Glu
    1025                1030                1035


Thr Gly  Pro Ala Gly Pro Pro  Gly Ala Pro Gly Ala  Pro Gly Ala
    1040                1045                1050


Pro Gly  Pro Val Gly Pro Ala  Gly Lys Ser Gly Asp  Arg Gly Glu
    1055                1060                1065


Thr Gly  Pro Ala Gly Pro Ala  Gly Pro Val Gly Pro  Val Gly Ala
    1070                1075                1080


Arg Gly  Pro Ala Gly Pro Gln  Gly Pro Arg Gly Asp  Lys Gly Glu
    1085                1090                1095


Thr Gly  Glu Gln Gly Asp Arg  Gly Ile Lys Gly His  Arg Gly Phe
    1100                1105                1110


Ser Gly  Leu Gln Gly Pro Pro  Gly Pro Pro Gly Ser  Pro Gly Glu
    1115                1120                1125
```

```
Gln Gly  Pro Ser Gly Ala Ser  Gly Pro Ala Gly Pro  Arg Gly Pro
    1130                1135                1140

Pro Gly  Ser Ala Gly Ala Pro  Gly Lys Asp Gly Leu  Asn Gly Leu
    1145                1150                1155

Pro Gly  Pro Ile Gly Pro Pro  Gly Pro Arg Gly Arg  Thr Gly Asp
    1160                1165                1170

Ala Gly  Pro Val Gly Pro Pro  Gly Pro Pro Gly Pro  Pro Gly Pro
    1175                1180                1185

Pro Gly  Pro Pro Ser Ala Gly  Phe Asp Phe Ser Phe  Leu Pro Gln
    1190                1195                1200

Pro Pro  Gln Glu Lys Ala His  Asp Gly Gly Arg Tyr  Tyr Arg Ala
    1205                1210                1215

Asp Asp  Ala Asn Val Val Arg  Asp Arg Asp Leu Glu  Val Asp Thr
    1220                1225                1230

Thr Leu  Lys Ser Leu Ser Gln  Gln Ile Glu Asn Ile  Arg Ser Pro
    1235                1240                1245

Glu Gly  Ser Arg Lys Asn Pro  Ala Arg Thr Cys Arg  Asp Leu Lys
    1250                1255                1260

Met Cys  His Ser Asp Trp Lys  Ser Gly Glu Tyr Trp  Ile Asp Pro
    1265                1270                1275

Asn Gln  Gly Cys Asn Leu Asp  Ala Ile Lys Val Phe  Cys Asn Met
    1280                1285                1290

Glu Thr  Gly Glu Thr Cys Val  Tyr Pro Thr Gln Pro  Ser Val Ala
    1295                1300                1305
```

```
Gln Lys  Asn Trp Tyr Ile Ser  Lys Asn Pro Lys Asp  Lys Arg His
    1310                1315                1320

Val Trp  Phe Gly Glu Ser Met  Thr Asp Gly Phe Gln  Phe Glu Tyr
    1325                1330                1335

Gly Gly  Gln Gly Ser Asp Pro  Ala Asp Val Ala Ile  Gln Leu Thr
    1340                1345                1350

Phe Leu  Arg Leu Met Ser Thr  Glu Ala Ser Gln Asn  Ile Thr Tyr
    1355                1360                1365

His Cys  Lys Asn Ser Val Ala  Tyr Met Asp Gln Gln  Thr Gly Asn
    1370                1375                1380

Leu Lys  Lys Ala Leu Leu Leu  Gln Gly Ser Asn Glu  Ile Glu Ile
    1385                1390                1395

Arg Ala  Glu Gly Asn Ser Arg  Phe Thr Tyr Ser Val  Thr Val Asp
    1400                1405                1410

Gly Cys  Thr Ser His Thr Gly  Ala Trp Gly Lys Thr  Val Ile Glu
    1415                1420                1425

Tyr Lys  Thr Thr Lys Thr Ser  Arg Leu Pro Ile Ile  Asp Val Ala
    1430                1435                1440

Pro Leu  Asp Val Gly Ala Pro  Asp Gln Glu Phe Gly  Phe Asp Val
    1445                1450                1455

Gly Pro  Val Cys Phe Leu
    1460
```

<210> 72
<211> 377
<212> PRT

<213> Homo sapiens

<400> 72

```
Met Cys Glu Glu Glu Asp Ser Thr Ala Leu Val Cys Asp Asn Gly Ser
1               5                  10                  15

Gly Leu Cys Lys Ala Gly Phe Ala Gly Asp Asp Ala Pro Arg Ala Val
            20                  25                  30

Phe Pro Ser Ile Val Gly Arg Pro Arg His Gln Gly Val Met Val Gly
        35                  40                  45

Met Gly Gln Lys Asp Ser Tyr Val Gly Asp Glu Ala Gln Ser Lys Arg
    50                  55                  60

Gly Ile Leu Thr Leu Lys Tyr Pro Ile Glu His Gly Ile Ile Thr Asn
65                  70                  75                  80

Trp Asp Asp Met Glu Lys Ile Trp His His Ser Phe Tyr Asn Glu Leu
                85                  90                  95

Arg Val Ala Pro Glu Glu His Pro Thr Leu Leu Thr Glu Ala Pro Leu
            100                 105                 110

Asn Pro Lys Ala Asn Arg Glu Lys Met Thr Gln Ile Met Phe Glu Thr
        115                 120                 125

Phe Asn Val Pro Ala Met Tyr Val Ala Ile Gln Ala Val Leu Ser Leu
    130                 135                 140

Tyr Ala Ser Gly Arg Thr Thr Gly Ile Val Leu Asp Ser Gly Asp Gly
145                 150                 155                 160

Val Thr His Asn Val Pro Ile Tyr Glu Gly Tyr Ala Leu Pro His Ala
                165                 170                 175
```

```
Ile Met Arg Leu Asp Leu Ala Gly Arg Asp Leu Thr Asp Tyr Leu Met
            180                 185                 190

Lys Ile Leu Thr Glu Arg Gly Tyr Ser Phe Val Thr Thr Ala Glu Arg
        195                 200                 205

Glu Ile Val Arg Asp Ile Lys Glu Lys Leu Cys Tyr Val Ala Leu Asp
    210                 215                 220

Phe Glu Asn Glu Met Ala Thr Ala Ala Ser Ser Ser Ser Leu Glu Lys
225                 230                 235                 240

Ser Tyr Glu Leu Pro Asp Gly Gln Val Ile Thr Ile Gly Asn Glu Arg
                245                 250                 255

Phe Arg Cys Pro Glu Thr Leu Phe Gln Pro Ser Phe Ile Gly Met Glu
            260                 265                 270

Ser Ala Gly Ile His Glu Thr Thr Tyr Asn Ser Ile Met Lys Cys Asp
        275                 280                 285

Ile Asp Ile Arg Lys Asp Leu Tyr Ala Asn Asn Val Leu Ser Gly Gly
    290                 295                 300

Thr Thr Met Tyr Pro Gly Ile Ala Asp Arg Met Gln Lys Glu Ile Thr
305                 310                 315                 320

Ala Leu Ala Pro Ser Thr Met Lys Ile Lys Ile Ile Ala Pro Pro Glu
                325                 330                 335

Arg Lys Tyr Ser Val Trp Ile Gly Gly Ser Ile Leu Ala Ser Leu Ser
            340                 345                 350

Thr Phe Gln Gln Met Trp Ile Ser Lys Gln Glu Tyr Asp Glu Ala Gly
        355                 360                 365
```

```
Pro Ser Ile Val His Arg Lys Cys Phe
    370                 375


<210>  73
<211>  180
<212>  PRT
<213>  Homo sapiens

<400>  73

Met Lys Ser Ile Tyr Phe Val Ala Gly Leu Phe Val Met Leu Val Gln
1               5                   10                  15


Gly Ser Trp Gln Arg Ser Leu Gln Asp Thr Glu Glu Lys Ser Arg Ser
            20                  25                  30


Phe Ser Ala Ser Gln Ala Asp Pro Leu Ser Asp Pro Asp Gln Met Asn
        35                  40                  45


Glu Asp Lys Arg His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys
    50                  55                  60


Tyr Leu Asp Ser Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn
65                  70                  75                  80


Thr Lys Arg Asn Arg Asn Asn Ile Ala Lys Arg His Asp Glu Phe Glu
                85                  90                  95


Arg His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu
            100                 105                 110


Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
        115                 120                 125


Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg
    130                 135                 140


Arg His Ala Asp Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp
```

145 150 155 160

Asn Leu Ala Ala Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile
165 170 175

Thr Asp Arg Lys
180

<210> 74
<211> 110
<212> PRT
<213> Homo sapiens

<400> 74

Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu
1 5 10 15

Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly
20 25 30

Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
35 40 45

Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly
50 55 60

Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu
65 70 75 80

Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys
85 90 95

Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
100 105 110

<210> 75
<211> 116

<212> PRT
<213> Homo sapiens

<400> 75

Met Leu Ser Cys Arg Leu Gln Cys Ala Leu Ala Ala Leu Ser Ile Val
1 5 10 15

Leu Ala Leu Gly Cys Val Thr Gly Ala Pro Ser Asp Pro Arg Leu Arg
20 25 30

Gln Phe Leu Gln Lys Ser Leu Ala Ala Ala Ala Gly Lys Gln Glu Leu
35 40 45

Ala Lys Tyr Phe Leu Ala Glu Leu Leu Ser Glu Pro Asn Gln Thr Glu
50 55 60

Asn Asp Ala Leu Glu Pro Glu Asp Leu Ser Gln Ala Ala Glu Gln Asp
65 70 75 80

Glu Met Arg Leu Glu Leu Gln Arg Ser Ala Asn Ser Asn Pro Ala Met
85 90 95

Ala Pro Arg Glu Arg Lys Ala Gly Cys Lys Asn Phe Phe Trp Lys Thr
100 105 110

Phe Thr Ser Cys
115

<210> 76
<211> 367
<212> PRT
<213> Homo sapiens

<400> 76

Met Leu Ala Val Gly Ala Met Glu Gly Thr Arg Gln Ser Ala Phe Leu
1 5 10 15

```
Leu Ser Ser Pro Pro Leu Ala Ala Leu His Ser Met Ala Glu Met Lys
            20                  25                  30

Thr Pro Leu Tyr Pro Ala Ala Tyr Pro Pro Leu Pro Ala Gly Pro Pro
        35                  40                  45

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Pro Ser Pro Pro Leu
    50                  55                  60

Gly Thr His Asn Pro Gly Gly Leu Lys Pro Pro Ala Thr Gly Gly Leu
65                  70                  75                  80

Ser Ser Leu Gly Ser Pro Pro Gln Gln Leu Ser Ala Ala Thr Pro His
                85                  90                  95

Gly Ile Asn Asp Ile Leu Ser Arg Pro Ser Met Pro Val Ala Ser Gly
            100                 105                 110

Ala Ala Leu Pro Ser Ala Ser Pro Ser Gly Ser Ser Ser Ser Ser Ser
        115                 120                 125

Ser Ser Ala Ser Ala Ser Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala
    130                 135                 140

Ala Ala Ala Ala Ala Ala Ser Ser Pro Ala Gly Leu Leu Ala Gly Leu
145                 150                 155                 160

Pro Arg Phe Ser Ser Leu Ser Pro Pro Pro Pro Pro Pro Gly Leu Tyr
                165                 170                 175

Phe Ser Pro Ser Ala Ala Ala Val Ala Ala Val Gly Arg Tyr Pro Lys
            180                 185                 190

Pro Leu Ala Glu Leu Pro Gly Arg Thr Pro Ile Phe Trp Pro Gly Val
        195                 200                 205
```

```
Met Gln Ser Pro Pro Trp Arg Asp Ala Arg Leu Ala Cys Thr Pro His
    210                 215                 220

Gln Gly Ser Ile Leu Leu Asp Lys Asp Gly Lys Arg Lys His Thr Arg
225                 230                 235                 240

Pro Thr Phe Ser Gly Gln Gln Ile Phe Ala Leu Glu Lys Thr Phe Glu
                245                 250                 255

Gln Thr Lys Tyr Leu Ala Gly Pro Glu Arg Ala Arg Leu Ala Tyr Ser
            260                 265                 270

Leu Gly Met Thr Glu Ser Gln Val Lys Val Trp Phe Gln Asn Arg Arg
        275                 280                 285

Thr Lys Trp Arg Lys Lys His Ala Ala Glu Met Ala Thr Ala Lys Lys
    290                 295                 300

Lys Gln Asp Ser Glu Thr Glu Arg Leu Lys Gly Ala Ser Glu Asn Glu
305                 310                 315                 320

Glu Glu Asp Asp Asp Tyr Asn Lys Pro Leu Asp Pro Asn Ser Asp Asp
                325                 330                 335

Glu Lys Ile Thr Gln Leu Leu Lys Lys His Lys Ser Ser Ser Gly Gly
            340                 345                 350

Gly Gly Gly Leu Leu Leu His Ala Ser Glu Pro Glu Ser Ser Ser
        355                 360                 365
```

<210> 77
<211> 273
<212> PRT
<213> Homo sapiens

<400> 77

```
Met Ser Leu Thr Asn Thr Lys Thr Gly Phe Ser Val Lys Asp Ile Leu
```

```
1               5                   10                  15

Asp Leu Pro Asp Thr Asn Asp Glu Glu Gly Ser Val Ala Glu Gly Pro
            20                  25                  30

Glu Glu Glu Asn Glu Gly Pro Glu Pro Ala Lys Arg Ala Gly Pro Leu
        35                  40                  45

Gly Gln Gly Ala Leu Asp Ala Val Gln Ser Leu Pro Leu Lys Asn Pro
    50                  55                  60

Phe Tyr Asp Ser Ser Asp Asn Pro Tyr Thr Arg Trp Leu Ala Ser Thr
65                  70                  75                  80

Glu Gly Leu Gln Tyr Ser Leu His Gly Leu Ala Ala Gly Ala Pro Pro
                85                  90                  95

Gln Asp Ser Ser Ser Lys Ser Pro Glu Pro Ser Ala Asp Glu Ser Pro
            100                 105                 110

Asp Asn Asp Lys Glu Thr Pro Gly Gly Gly Gly Asp Ala Gly Lys Lys
        115                 120                 125

Arg Lys Arg Arg Val Leu Phe Ser Lys Ala Gln Thr Tyr Glu Leu Glu
    130                 135                 140

Arg Arg Phe Arg Gln Gln Arg Tyr Leu Ser Ala Pro Glu Arg Glu His
145                 150                 155                 160

Leu Ala Ser Leu Ile Arg Leu Thr Pro Thr Gln Val Lys Ile Trp Phe
                165                 170                 175

Gln Asn His Arg Tyr Lys Met Lys Arg Ala Arg Ala Glu Lys Gly Met
            180                 185                 190

Glu Val Thr Pro Leu Pro Ser Pro Arg Arg Val Ala Val Pro Val Leu
```

195 200 205

Val Arg Asp Gly Lys Pro Cys His Ala Leu Lys Ala Gln Asp Leu Ala
210 215 220

Ala Ala Thr Phe Gln Ala Gly Ile Pro Phe Ser Ala Tyr Ser Ala Gln
225 230 235 240

Ser Leu Gln His Met Gln Tyr Asn Ala Gln Tyr Ser Ser Ala Ser Thr
245 250 255

Pro Gln Tyr Pro Thr Ala His Pro Leu Val Gln Ala Gln Gln Trp Thr
260 265 270

Trp

<210> 78
<211> 356
<212> PRT
<213> Homo sapiens

<400> 78

Met Thr Lys Ser Tyr Ser Glu Ser Gly Leu Met Gly Glu Pro Gln Pro
1 5 10 15

Gln Gly Pro Pro Ser Trp Thr Asp Glu Cys Leu Ser Ser Gln Asp Glu
20 25 30

Glu His Glu Ala Asp Lys Lys Glu Asp Asp Leu Glu Ala Met Asn Ala
35 40 45

Glu Glu Asp Ser Leu Arg Asn Gly Gly Glu Glu Glu Asp Glu Asp Glu
50 55 60

Asp Leu Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Asp Asp Gln Lys
65 70 75 80

```
Pro Lys Arg Arg Gly Pro Lys Lys Lys Lys Met Thr Lys Ala Arg Leu
                85                  90                  95

Glu Arg Phe Lys Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn
            100                 105                 110

Arg Met His Gly Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val
        115                 120                 125

Pro Cys Tyr Ser Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg
    130                 135                 140

Leu Ala Lys Asn Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly
145                 150                 155                 160

Lys Ser Pro Asp Leu Val Ser Phe Val Gln Thr Leu Cys Lys Gly Leu
                165                 170                 175

Ser Gln Pro Thr Thr Asn Leu Val Ala Gly Cys Leu Gln Leu Asn Pro
            180                 185                 190

Arg Thr Phe Leu Pro Glu Gln Asn Gln Asp Met Pro Pro His Leu Pro
        195                 200                 205

Thr Ala Ser Ala Ser Phe Pro Val His Pro Tyr Ser Tyr Gln Ser Pro
    210                 215                 220

Gly Leu Pro Ser Pro Pro Tyr Gly Thr Met Asp Ser Ser His Val Phe
225                 230                 235                 240

His Val Lys Pro Pro Pro His Ala Tyr Ser Ala Ala Leu Glu Pro Phe
                245                 250                 255

Phe Glu Ser Pro Leu Thr Asp Cys Thr Ser Pro Ser Phe Asp Gly Pro
            260                 265                 270
```

```
Leu Ser Pro Pro Leu Ser Ile Asn Gly Asn Phe Ser Phe Lys His Glu
        275                 280                 285

Pro Ser Ala Glu Phe Glu Lys Asn Tyr Ala Phe Thr Met His Tyr Pro
    290                 295                 300

Ala Ala Thr Leu Ala Gly Ala Gln Ser His Gly Ser Ile Phe Ser Gly
305                 310                 315                 320

Thr Ala Ala Pro Arg Cys Glu Ile Pro Ile Asp Asn Ile Met Ser Phe
                325                 330                 335

Asp Ser His Ser His His Glu Arg Val Met Ser Ala Gln Leu Asn Ala
            340                 345                 350

Ile Phe His Asp
        355


<210>  79
<211>  353
<212>  PRT
<213>  Homo sapiens

<400>  79

Met Ala Ala Glu Leu Ala Met Gly Ala Glu Leu Pro Ser Ser Pro Leu
1               5                   10                  15

Ala Ile Glu Tyr Val Asn Asp Phe Asp Leu Met Lys Phe Glu Val Lys
            20                  25                  30

Lys Glu Pro Pro Glu Ala Glu Arg Phe Cys His Arg Leu Pro Pro Gly
        35                  40                  45

Ser Leu Ser Ser Thr Pro Leu Ser Thr Pro Cys Ser Ser Val Pro Ser
    50                  55                  60
```

```
Ser Pro Ser Phe Cys Ala Pro Ser Pro Gly Thr Gly Gly Gly Gly Gly
65                  70                  75                  80

Ala Gly Gly Gly Gly Gly Ser Ser Gln Ala Gly Gly Ala Pro Gly Pro
                85                  90                  95

Pro Ser Gly Gly Pro Gly Ala Val Gly Gly Thr Ser Gly Lys Pro Ala
            100                 105                 110

Leu Glu Asp Leu Tyr Trp Met Ser Gly Tyr Gln His His Leu Asn Pro
        115                 120                 125

Glu Ala Leu Asn Leu Thr Pro Glu Asp Ala Val Glu Ala Leu Ile Gly
    130                 135                 140

Ser Gly His His Gly Ala His His Gly Ala His His Pro Ala Ala Ala
145                 150                 155                 160

Ala Ala Tyr Glu Ala Phe Arg Gly Pro Gly Phe Ala Gly Gly Gly Gly
                165                 170                 175

Ala Asp Asp Met Gly Ala Gly His His His Gly Ala His His Ala Ala
            180                 185                 190

His His His His Ala Ala His His His His His His His His His His
        195                 200                 205

Gly Gly Ala Gly His Gly Gly Gly Ala Gly His His Val Arg Leu Glu
    210                 215                 220

Glu Arg Phe Ser Asp Asp Gln Leu Val Ser Met Ser Val Arg Glu Leu
225                 230                 235                 240

Asn Arg Gln Leu Arg Gly Phe Ser Lys Glu Glu Val Ile Arg Leu Lys
                245                 250                 255
```

```
Gln Lys Arg Arg Thr Leu Lys Asn Arg Gly Tyr Ala Gln Ser Cys Arg
            260                 265                 270


Phe Lys Arg Val Gln Gln Arg His Ile Leu Glu Ser Glu Lys Cys Gln
        275                 280                 285


Leu Gln Ser Gln Val Glu Gln Leu Lys Leu Glu Val Gly Arg Leu Ala
    290                 295                 300


Lys Glu Arg Asp Leu Tyr Lys Glu Lys Tyr Glu Lys Leu Ala Gly Arg
305                 310                 315                 320


Gly Gly Pro Gly Ser Ala Gly Gly Ala Gly Phe Pro Arg Glu Pro Ser
                325                 330                 335


Pro Pro Gln Ala Gly Pro Gly Gly Ala Lys Gly Thr Ala Asp Phe Phe
            340                 345                 350


Leu
```

<210> 80
<211> 247
<212> PRT
<213> Homo sapiens

<400> 80

```
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> 81
<211> 419
<212> PRT
<213> Homo sapiens

<400> 81

```
Met Arg Gly Leu Leu Val Leu Ser Val Leu Leu Gly Ala Val Phe Gly
1               5                   10                  15


Lys Glu Asp Phe Val Gly His Gln Val Leu Arg Ile Ser Val Ala Asp
            20                  25                  30


Glu Ala Gln Val Gln Lys Val Lys Glu Leu Glu Asp Leu Glu His Leu
        35                  40                  45


Gln Leu Asp Phe Trp Arg Gly Pro Ala His Pro Gly Ser Pro Ile Asp
    50                  55                  60


Val Arg Val Pro Phe Pro Ser Ile Gln Ala Val Lys Ile Phe Leu Glu
65                  70                  75                  80


Ser His Gly Ile Ser Tyr Glu Thr Met Ile Glu Asp Val Gln Ser Leu
                85                  90                  95


Leu Asp Glu Glu Gln Glu Gln Met Phe Ala Phe Arg Ser Arg Ala Arg
            100                 105                 110


Ser Thr Asp Thr Phe Asn Tyr Ala Thr Tyr His Thr Leu Glu Glu Ile
        115                 120                 125


Tyr Asp Phe Leu Asp Leu Leu Val Ala Glu Asn Pro His Leu Val Ser
    130                 135                 140


Lys Ile Gln Ile Gly Asn Thr Tyr Glu Gly Arg Pro Ile Tyr Val Leu
```

```
145                 150                 155                 160

Lys Phe Ser Thr Gly Gly Ser Lys Arg Pro Ala Ile Trp Ile Asp Thr
                165                 170                 175

Gly Ile His Ser Arg Glu Trp Val Thr Gln Ala Ser Gly Val Trp Phe
            180                 185                 190

Ala Lys Lys Ile Thr Gln Asp Tyr Gly Gln Asp Ala Ala Phe Thr Ala
        195                 200                 205

Ile Leu Asp Thr Leu Asp Ile Phe Leu Glu Ile Val Thr Asn Pro Asp
    210                 215                 220

Gly Phe Ala Phe Thr His Ser Thr Asn Arg Met Trp Arg Lys Thr Arg
225                 230                 235                 240

Ser His Thr Ala Gly Ser Leu Cys Ile Gly Val Asp Pro Asn Arg Asn
                245                 250                 255

Trp Asp Ala Gly Phe Gly Leu Ser Gly Ala Ser Ser Asn Pro Cys Ser
            260                 265                 270

Glu Thr Tyr His Gly Lys Phe Ala Asn Ser Glu Val Glu Val Lys Ser
        275                 280                 285

Ile Val Asp Phe Val Lys Asp His Gly Asn Ile Lys Ala Phe Ile Ser
    290                 295                 300

Ile His Ser Tyr Ser Gln Leu Leu Met Tyr Pro Tyr Gly Tyr Lys Thr
305                 310                 315                 320

Glu Pro Val Pro Asp Gln Asp Glu Leu Asp Gln Leu Ser Lys Ala Ala
                325                 330                 335

Val Thr Ala Leu Ala Ser Leu Tyr Gly Thr Lys Phe Asn Tyr Gly Ser
```

340 345 350

Ile Ile Lys Ala Ile Tyr Gln Ala Ser Gly Ser Thr Ile Asp Trp Thr
355 360 365

Tyr Ser Gln Gly Ile Lys Tyr Ser Phe Thr Phe Glu Leu Arg Asp Thr
370 375 380

Gly Arg Tyr Gly Phe Leu Leu Pro Ala Ser Gln Ile Ile Pro Thr Ala
385 390 395 400

Lys Glu Thr Trp Leu Ala Leu Leu Thr Ile Met Glu His Thr Leu Asn
405 410 415

His Pro Tyr

<210> 82
<211> 511
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (367)..(367)
<223> Xaa can be any naturally occurring amino acid

<400> 82

Met Lys Leu Phe Trp Leu Leu Phe Thr Ile Gly Phe Cys Trp Ala Gln
1 5 10 15

Tyr Ser Ser Asn Thr Gln Gln Gly Arg Thr Ser Ile Val His Leu Phe
20 25 30

Glu Trp Arg Trp Val Asp Ile Ala Leu Glu Cys Glu Arg Tyr Leu Ala
35 40 45

```
Pro Lys Gly Phe Gly Gly Val Gln Val Ser Pro Pro Asn Glu Asn Val
    50                  55                  60

Ala Ile His Asn Pro Phe Arg Pro Trp Trp Glu Arg Tyr Gln Pro Val
65                  70                  75                  80

Ser Tyr Lys Leu Cys Thr Arg Ser Gly Asn Glu Asp Glu Phe Arg Asn
                85                  90                  95

Met Val Thr Arg Cys Asn Asn Val Gly Val Arg Ile Tyr Val Asp Ala
            100                 105                 110

Val Ile Asn His Met Cys Gly Asn Ala Val Ser Ala Gly Thr Ser Ser
        115                 120                 125

Thr Cys Gly Ser Tyr Phe Asn Pro Gly Ser Arg Asp Phe Pro Ala Val
    130                 135                 140

Pro Tyr Ser Gly Trp Asp Phe Asn Asp Gly Lys Cys Lys Thr Gly Ser
145                 150                 155                 160

Gly Asp Ile Glu Asn Tyr Asn Asp Ala Thr Gln Val Arg Asp Cys Arg
                165                 170                 175

Leu Ser Gly Leu Leu Asp Leu Ala Leu Gly Lys Asp Tyr Val Arg Ser
            180                 185                 190

Lys Ile Ala Glu Tyr Met Asn His Leu Ile Asp Ile Gly Val Ala Gly
        195                 200                 205

Phe Arg Ile Asp Ala Ser Lys His Met Trp Pro Gly Asp Ile Lys Ala
    210                 215                 220

Ile Leu Asp Lys Leu His Asn Leu Asn Ser Asn Trp Phe Pro Glu Gly
225                 230                 235                 240
```

```
Ser Lys Pro Phe Ile Tyr Gln Glu Val Ile Asp Leu Gly Gly Glu Pro
                245                 250                 255

Ile Lys Ser Ser Asp Tyr Phe Gly Asn Gly Arg Val Thr Glu Phe Lys
            260                 265                 270

Tyr Gly Ala Lys Leu Gly Thr Val Ile Arg Lys Trp Asn Gly Glu Lys
        275                 280                 285

Met Ser Tyr Leu Lys Asn Trp Gly Glu Gly Trp Gly Phe Met Pro Ser
    290                 295                 300

Asp Arg Ala Leu Val Phe Val Asp Asn His Asp Asn Gln Arg Gly His
305                 310                 315                 320

Gly Ala Gly Gly Ala Ser Ile Leu Thr Phe Trp Asp Ala Arg Leu Tyr
                325                 330                 335

Lys Met Ala Val Gly Phe Met Leu Ala His Pro Tyr Gly Phe Thr Arg
            340                 345                 350

Val Met Ser Ser Tyr Arg Trp Pro Arg Tyr Phe Glu Asn Gly Xaa Asp
        355                 360                 365

Val Asn Asp Trp Val Gly Pro Pro Asn Asp Asn Gly Val Thr Lys Glu
    370                 375                 380

Val Thr Ile Asn Pro Asp Thr Thr Cys Gly Asn Asp Trp Val Cys Glu
385                 390                 395                 400

His Arg Trp Arg Gln Ile Arg Asn Met Val Asn Phe Arg Asn Val Val
                405                 410                 415

Asp Gly Gln Pro Phe Thr Asn Trp Tyr Asp Asn Gly Ser Asn Gln Val
            420                 425                 430
```

```
Ala Phe Gly Arg Gly Asn Arg Gly Phe Ile Val Phe Asn Asn Asp Asp
        435                 440                 445

Trp Thr Phe Ser Leu Thr Leu Gln Thr Gly Leu Pro Ala Gly Thr Tyr
    450                 455                 460

Cys Asp Val Ile Ser Gly Asp Lys Ile Asn Gly Asn Cys Thr Gly Ile
465                 470                 475                 480

Lys Ile Tyr Val Ser Asp Asp Gly Lys Ala His Phe Ser Ile Ser Asn
                485                 490                 495

Ser Ala Glu Asp Pro Phe Ile Ala Ile His Ala Glu Ser Lys Leu
            500                 505                 510
```

<210> 83
<211> 268
<212> PRT
<213> Homo sapiens

<400> 83

```
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

<210> 84

<211> 827
<212> PRT
<213> Homo sapiens

<400> 84

```
Met Thr Lys Leu Ser Ala Gln Val Lys Gly Ser Leu Asn Ile Thr Thr
1               5                   10                  15


Pro Gly Leu Gln Ile Trp Arg Ile Glu Ala Met Gln Met Val Pro Val
            20                  25                  30


Pro Ser Ser Thr Phe Gly Ser Phe Phe Asp Gly Asp Cys Tyr Ile Ile
        35                  40                  45


Leu Ala Ile His Lys Thr Ala Ser Ser Leu Ser Tyr Asp Ile His Tyr
    50                  55                  60


Trp Ile Gly Gln Asp Ser Ser Leu Asp Glu Gln Gly Ala Ala Ala Ile
65                  70                  75                  80


Tyr Thr Thr Gln Met Asp Asp Phe Leu Lys Gly Arg Ala Val Gln His
                85                  90                  95


Arg Glu Val Gln Gly Asn Glu Ser Glu Ala Phe Arg Gly Tyr Phe Lys
            100                 105                 110


Gln Gly Leu Val Ile Arg Lys Gly Gly Val Ala Ser Gly Met Lys His
        115                 120                 125


Val Glu Thr Asn Ser Tyr Asp Val Gln Arg Leu Leu His Val Lys Gly
    130                 135                 140


Lys Arg Asn Val Val Ala Gly Glu Val Glu Met Ser Trp Lys Ser Phe
145                 150                 155                 160


Asn Arg Gly Asp Val Phe Leu Leu Asp Leu Gly Lys Leu Ile Ile Gln
                165                 170                 175
```

```
Trp Asn Gly Pro Glu Ser Thr Arg Met Glu Arg Leu Arg Gly Met Thr
            180                 185                 190

Leu Ala Lys Glu Ile Arg Asp Gln Glu Arg Gly Gly Arg Thr Tyr Val
        195                 200                 205

Gly Val Val Asp Gly Glu Asn Glu Leu Ala Ser Pro Lys Leu Met Glu
    210                 215                 220

Val Met Asn His Val Leu Gly Lys Arg Arg Glu Leu Lys Ala Ala Val
225                 230                 235                 240

Pro Asp Thr Val Val Glu Pro Ala Leu Lys Ala Ala Leu Lys Leu Tyr
                245                 250                 255

His Val Ser Asp Ser Glu Gly Asn Leu Val Val Arg Glu Val Ala Thr
            260                 265                 270

Arg Pro Leu Thr Gln Asp Leu Leu Ser His Glu Asp Cys Tyr Ile Leu
        275                 280                 285

Asp Gln Gly Gly Leu Lys Ile Tyr Val Trp Lys Gly Lys Lys Ala Asn
    290                 295                 300

Glu Gln Glu Lys Lys Gly Ala Met Ser His Ala Leu Asn Phe Ile Lys
305                 310                 315                 320

Ala Lys Gln Tyr Pro Pro Ser Thr Gln Val Glu Val Gln Asn Asp Gly
                325                 330                 335

Ala Glu Ser Ala Val Phe Gln Gln Leu Phe Gln Lys Trp Thr Ala Ser
            340                 345                 350

Asn Arg Thr Ser Gly Leu Gly Lys Thr His Thr Val Gly Ser Val Ala
        355                 360                 365
```

```
Lys Val Glu Gln Val Lys Phe Asp Ala Thr Ser Met His Val Lys Pro
    370                 375                 380

Gln Val Ala Ala Gln Gln Lys Met Val Asp Asp Gly Ser Gly Glu Val
385                 390                 395                 400

Gln Val Trp Arg Ile Glu Asn Leu Glu Leu Val Pro Val Asp Ser Lys
                405                 410                 415

Trp Leu Gly His Phe Tyr Gly Gly Asp Cys Tyr Leu Leu Leu Tyr Thr
            420                 425                 430

Tyr Leu Ile Gly Glu Lys Gln His Tyr Leu Leu Tyr Val Trp Gln Gly
        435                 440                 445

Ser Gln Ala Ser Gln Asp Glu Ile Thr Ala Ser Ala Tyr Gln Ala Val
    450                 455                 460

Ile Leu Asp Gln Lys Tyr Asn Gly Glu Pro Val Gln Ile Arg Val Pro
465                 470                 475                 480

Met Gly Lys Glu Pro Pro His Leu Met Ser Ile Phe Lys Gly Arg Met
                485                 490                 495

Val Val Tyr Gln Gly Gly Thr Ser Arg Thr Asn Asn Leu Glu Thr Gly
            500                 505                 510

Pro Ser Thr Arg Leu Phe Gln Val Gln Gly Thr Gly Ala Asn Asn Thr
        515                 520                 525

Lys Ala Phe Glu Val Pro Ala Arg Ala Asn Phe Leu Asn Ser Asn Asp
    530                 535                 540

Val Phe Val Leu Lys Thr Gln Ser Cys Cys Tyr Leu Trp Cys Gly Lys
545                 550                 555                 560
```

```
Gly Cys Ser Gly Asp Glu Arg Glu Met Ala Lys Met Val Ala Asp Thr
                565                 570                 575

Ile Ser Arg Thr Glu Lys Gln Val Val Val Glu Gly Gln Glu Pro Ala
            580                 585                 590

Asn Phe Trp Met Ala Leu Gly Gly Lys Ala Pro Tyr Ala Asn Thr Lys
        595                 600                 605

Arg Leu Gln Glu Glu Asn Leu Val Ile Thr Pro Arg Leu Phe Glu Cys
    610                 615                 620

Ser Asn Lys Thr Gly Arg Phe Leu Ala Thr Glu Ile Pro Asp Phe Asn
625                 630                 635                 640

Gln Asp Asp Leu Glu Glu Asp Asp Val Phe Leu Leu Asp Val Trp Asp
                645                 650                 655

Gln Val Phe Phe Trp Ile Gly Lys His Ala Asn Glu Glu Glu Lys Lys
            660                 665                 670

Ala Ala Ala Thr Thr Ala Gln Glu Tyr Leu Lys Thr His Pro Ser Gly
        675                 680                 685

Arg Asp Pro Glu Thr Pro Ile Ile Val Val Lys Gln Gly His Glu Pro
    690                 695                 700

Pro Thr Phe Thr Gly Trp Phe Leu Ala Trp Asp Pro Phe Lys Trp Ser
705                 710                 715                 720

Asn Thr Lys Ser Tyr Glu Asp Leu Lys Ala Glu Leu Gly Asn Ser Arg
                725                 730                 735

Asp Trp Ser Gln Ile Thr Ala Glu Val Thr Ser Pro Lys Val Asp Val
            740                 745                 750
```

```
Phe Asn Ala Asn Ser Asn Leu Ser Ser Gly Pro Leu Pro Ile Phe Pro
        755                 760                 765

Leu Glu Gln Leu Val Asn Lys Pro Val Glu Glu Leu Pro Glu Gly Val
    770                 775                 780

Asp Pro Ser Arg Lys Glu Glu His Leu Ser Ile Glu Asp Phe Thr Gln
785                 790                 795                 800

Ala Phe Gly Met Thr Pro Ala Ala Phe Ser Ala Leu Pro Arg Trp Lys
                805                 810                 815

Gln Gln Asn Leu Lys Lys Glu Lys Gly Leu Phe
            820                 825
```

<210> 85
<211> 393
<212> PRT
<213> Homo sapiens

<400> 85

```
Met Arg Gly Arg Gly Arg Ala Gly Ser Pro Gly Gly Arg Arg Arg Arg
1               5                   10                  15

Pro Ala Gln Ala Gly Gly Arg Arg Gly Ser Pro Cys Arg Glu Asn Ser
            20                  25                  30

Asn Ser Pro Met Glu Ser Ala Asp Phe Tyr Glu Ala Glu Pro Arg Pro
        35                  40                  45

Pro Met Ser Ser His Leu Gln Ser Pro Pro His Ala Pro Ser Ser Ala
    50                  55                  60

Ala Phe Gly Phe Pro Arg Gly Ala Gly Pro Ala Gln Pro Pro Ala Pro
65                  70                  75                  80
```

```
Pro Ala Ala Pro Glu Pro Leu Gly Gly Ile Cys Glu His Glu Thr Ser
                85                  90                  95

Ile Asp Ile Ser Ala Tyr Ile Asp Pro Ala Ala Phe Asn Asp Glu Phe
            100                 105                 110

Leu Ala Asp Leu Phe Gln His Ser Arg Gln Gln Glu Lys Ala Lys Ala
        115                 120                 125

Ala Val Gly Pro Thr Gly Gly Gly Gly Gly Gly Asp Phe Asp Tyr Pro
    130                 135                 140

Gly Ala Pro Ala Gly Pro Gly Gly Ala Val Met Pro Gly Gly Ala His
145                 150                 155                 160

Gly Pro Pro Pro Gly Tyr Gly Cys Ala Ala Ala Gly Tyr Leu Asp Gly
                165                 170                 175

Arg Leu Glu Pro Leu Tyr Glu Arg Val Gly Ala Pro Ala Leu Arg Pro
            180                 185                 190

Leu Val Ile Lys Gln Glu Pro Arg Glu Glu Asp Glu Ala Lys Gln Leu
        195                 200                 205

Ala Leu Ala Gly Leu Phe Pro Tyr Gln Pro Pro Pro Pro Pro Pro Pro
    210                 215                 220

Ser His Pro His Pro His Pro Pro Pro Ala His Leu Ala Ala Pro His
225                 230                 235                 240

Leu Gln Phe Gln Ile Ala His Cys Gly Gln Thr Thr Met His Leu Gln
                245                 250                 255

Pro Gly His Pro Thr Pro Pro Pro Thr Pro Val Pro Ser Pro His Pro
            260                 265                 270
```

```
Ala Pro Ala Leu Gly Ala Ala Gly Leu Pro Gly Pro Gly Ser Ala Leu
        275                 280                 285


Lys Gly Leu Gly Ala Ala His Pro Asp Leu Arg Ala Ser Gly Gly Ser
    290                 295                 300


Gly Ala Gly Lys Ala Lys Lys Ser Val Asp Lys Asn Ser Asn Glu Tyr
305                 310                 315                 320


Arg Val Arg Arg Glu Arg Asn Asn Ile Ala Val Arg Lys Ser Arg Asp
                325                 330                 335


Lys Ala Lys Gln Arg Asn Val Glu Thr Gln Gln Lys Val Leu Glu Leu
            340                 345                 350


Thr Ser Asp Asn Asp Arg Leu Arg Lys Arg Val Glu Gln Leu Ser Arg
        355                 360                 365


Glu Leu Asp Thr Leu Arg Gly Ile Phe Arg Gln Leu Pro Glu Ser Ser
    370                 375                 380


Leu Val Lys Ala Met Gly Asn Cys Ala
385                 390
```

<210> 86
<211> 511
<212> PRT
<213> Homo sapiens

<400> 86

```
Met Asn Gly Val Ser Trp Ser Gln Asp Leu Gln Glu Gly Ile Ser Ala
1               5                   10                  15


Trp Phe Gly Pro Pro Ala Ser Thr Pro Ala Ser Thr Met Ser Ile Arg
            20                  25                  30
```

```
Val Thr Gln Lys Ser Tyr Lys Val Ser Thr Ser Gly Pro Arg Ala Phe
        35                  40                  45

Ser Ser Arg Ser Tyr Thr Ser Gly Pro Gly Ser Arg Ile Ser Ser Ser
    50                  55                  60

Ser Phe Ser Arg Val Gly Ser Ser Asn Phe Arg Gly Gly Leu Gly Gly
65                  70                  75                  80

Gly Tyr Gly Gly Ala Ser Gly Met Gly Gly Ile Thr Ala Val Thr Val
                85                  90                  95

Asn Gln Ser Leu Leu Ser Pro Leu Val Leu Glu Val Asp Pro Asn Ile
            100                 105                 110

Gln Ala Val Arg Thr Gln Glu Lys Glu Gln Ile Lys Thr Leu Asn Asn
        115                 120                 125

Lys Phe Ala Ser Phe Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn
    130                 135                 140

Lys Met Leu Glu Thr Lys Trp Ser Leu Leu Gln Gln Gln Lys Thr Ala
145                 150                 155                 160

Arg Ser Asn Met Asp Asn Met Phe Glu Ser Tyr Ile Asn Asn Leu Arg
                165                 170                 175

Arg Gln Leu Glu Thr Leu Gly Gln Glu Lys Leu Lys Leu Glu Ala Glu
            180                 185                 190

Leu Gly Asn Met Gln Gly Leu Val Glu Asp Phe Lys Asn Lys Tyr Glu
        195                 200                 205

Asp Glu Ile Asn Lys Arg Thr Glu Met Glu Asn Glu Phe Val Leu Ile
    210                 215                 220
```

```
Lys Lys Asp Val Asp Glu Ala Tyr Met Asn Lys Val Glu Leu Glu Ser
225                 230                 235                 240

Arg Leu Glu Gly Leu Thr Asp Glu Ile Asn Phe Leu Arg Gln Leu Tyr
                245                 250                 255

Glu Glu Glu Ile Arg Glu Leu Gln Ser Gln Ile Ser Asp Thr Ser Val
            260                 265                 270

Val Leu Ser Met Asp Asn Ser Arg Ser Leu Asp Met Asp Ser Ile Ile
        275                 280                 285

Ala Glu Val Lys Ala Gln Tyr Glu Asp Ile Ala Asn Arg Ser Arg Ala
    290                 295                 300

Glu Ala Glu Ser Met Tyr Gln Ile Lys Tyr Glu Glu Leu Gln Ser Leu
305                 310                 315                 320

Ala Gly Lys His Gly Asp Asp Leu Arg Arg Thr Lys Thr Glu Ile Ser
                325                 330                 335

Glu Met Asn Arg Asn Ile Ser Arg Leu Gln Ala Glu Ile Glu Gly Leu
            340                 345                 350

Lys Gly Gln Arg Ala Ser Leu Glu Ala Ala Ile Ala Asp Ala Glu Gln
        355                 360                 365

Arg Gly Glu Leu Ala Ile Lys Asp Ala Asn Ala Lys Leu Ser Glu Leu
    370                 375                 380

Glu Ala Ala Leu Gln Arg Ala Lys Gln Asp Met Ala Arg Gln Leu Arg
385                 390                 395                 400

Glu Tyr Gln Glu Leu Met Asn Val Lys Leu Ala Leu Asp Ile Glu Ile
                405                 410                 415
```

```
Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu Ser Arg Leu Glu Ser
            420                 425                 430


Gly Met Gln Asn Met Ser Ile His Thr Lys Thr Thr Ser Gly Tyr Ala
        435                 440                 445


Gly Gly Leu Ser Ser Ala Tyr Gly Gly Leu Thr Ser Pro Gly Leu Ser
    450                 455                 460


Tyr Ser Leu Gly Ser Ser Phe Gly Ser Gly Ala Gly Ser Ser Ser Phe
465                 470                 475                 480


Ser Arg Thr Ser Ser Ser Arg Ala Val Val Val Lys Lys Ile Glu Thr
                485                 490                 495


Arg Asp Gly Lys Leu Val Ser Glu Ser Ser Asp Val Leu Pro Lys
            500                 505                 510


<210>  87
<211>  2471
<212>  PRT
<213>  Homo sapiens

<400>  87

Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp
1               5                   10                  15


Leu Cys Cys Ala Thr Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr
            20                  25                  30


Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
        35                  40                  45


Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
    50                  55                  60


Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
```

```
65                  70                  75                  80

Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
                85                  90                  95

Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
            100                 105                 110

Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
        115                 120                 125

Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys Gln Trp
    130                 135                 140

Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr Cys Thr
145                 150                 155                 160

Thr Val Ala Asn Gln Phe Ser Cys Lys Cys Leu Thr Gly Phe Thr Gly
                165                 170                 175

Gln Lys Cys Glu Thr Asp Val Asn Glu Cys Asp Ile Pro Gly His Cys
            180                 185                 190

Gln His Gly Gly Thr Cys Leu Asn Leu Pro Gly Ser Tyr Gln Cys Gln
        195                 200                 205

Cys Leu Gln Gly Phe Thr Gly Gln Tyr Cys Asp Ser Leu Tyr Val Pro
    210                 215                 220

Cys Ala Pro Ser Pro Cys Val Asn Gly Gly Thr Cys Arg Gln Thr Gly
225                 230                 235                 240

Asp Phe Thr Phe Glu Cys Asn Cys Leu Pro Gly Phe Glu Gly Ser Thr
                245                 250                 255

Cys Glu Arg Asn Ile Asp Asp Cys Pro Asn His Arg Cys Gln Asn Gly
```

```
            260                 265                 270

Gly Val Cys Val Asp Gly Val Asn Thr Tyr Asn Cys Arg Cys Pro Pro
        275                 280                 285

Gln Trp Thr Gly Gln Phe Cys Thr Glu Asp Val Asp Glu Cys Leu Leu
    290                 295                 300

Gln Pro Asn Ala Cys Gln Asn Gly Gly Thr Cys Ala Asn Arg Asn Gly
305                 310                 315                 320

Gly Tyr Gly Cys Val Cys Val Asn Gly Trp Ser Gly Asp Asp Cys Ser
                325                 330                 335

Glu Asn Ile Asp Asp Cys Ala Phe Ala Ser Cys Thr Pro Gly Ser Thr
            340                 345                 350

Cys Ile Asp Arg Val Ala Ser Phe Ser Cys Met Cys Pro Glu Gly Lys
        355                 360                 365

Ala Gly Leu Leu Cys His Leu Asp Asp Ala Cys Ile Ser Asn Pro Cys
    370                 375                 380

His Lys Gly Ala Leu Cys Asp Thr Asn Pro Leu Asn Gly Gln Tyr Ile
385                 390                 395                 400

Cys Thr Cys Pro Gln Gly Tyr Lys Gly Ala Asp Cys Thr Glu Asp Val
                405                 410                 415

Asp Glu Cys Ala Met Ala Asn Ser Asn Pro Cys Glu His Ala Gly Lys
            420                 425                 430

Cys Val Asn Thr Asp Gly Ala Phe His Cys Glu Cys Leu Lys Gly Tyr
        435                 440                 445

Ala Gly Pro Arg Cys Glu Met Asp Ile Asn Glu Cys His Ser Asp Pro
```

```
    450                 455                 460

Cys Gln Asn Asp Ala Thr Cys Leu Asp Lys Ile Gly Gly Phe Thr Cys
465                 470                 475                 480

Leu Cys Met Pro Gly Phe Lys Gly Val His Cys Glu Leu Glu Ile Asn
                485                 490                 495

Glu Cys Gln Ser Asn Pro Cys Val Asn Asn Gly Gln Cys Val Asp Lys
            500                 505                 510

Val Asn Arg Phe Gln Cys Leu Cys Pro Pro Gly Phe Thr Gly Pro Val
        515                 520                 525

Cys Gln Ile Asp Ile Asp Asp Cys Ser Ser Thr Pro Cys Leu Asn Gly
    530                 535                 540

Ala Lys Cys Ile Asp His Pro Asn Gly Tyr Glu Cys Gln Cys Ala Thr
545                 550                 555                 560

Gly Phe Thr Gly Val Leu Cys Glu Glu Asn Ile Asp Asn Cys Asp Pro
                565                 570                 575

Asp Pro Cys His His Gly Gln Cys Gln Asp Gly Ile Asp Ser Tyr Thr
            580                 585                 590

Cys Ile Cys Asn Pro Gly Tyr Met Gly Ala Ile Cys Ser Asp Gln Ile
        595                 600                 605

Asp Glu Cys Tyr Ser Ser Pro Cys Leu Asn Asp Gly Arg Cys Ile Asp
    610                 615                 620

Leu Val Asn Gly Tyr Gln Cys Asn Cys Gln Pro Gly Thr Ser Gly Val
625                 630                 635                 640

Asn Cys Glu Ile Asn Phe Asp Asp Cys Ala Ser Asn Pro Cys Ile His
```

645 650 655

Gly Ile Cys Met Asp Gly Ile Asn Arg Tyr Ser Cys Val Cys Ser Pro
660 665 670

Gly Phe Thr Gly Gln Arg Cys Asn Ile Asp Ile Asp Glu Cys Ala Ser
675 680 685

Asn Pro Cys Arg Lys Gly Ala Thr Cys Ile Asn Gly Val Asn Gly Phe
690 695 700

Arg Cys Ile Cys Pro Glu Gly Pro His His Pro Ser Cys Tyr Ser Gln
705 710 715 720

Val Asn Glu Cys Leu Ser Asn Pro Cys Ile His Gly Asn Cys Thr Gly
725 730 735

Gly Leu Ser Gly Tyr Lys Cys Leu Cys Asp Ala Gly Trp Val Gly Ile
740 745 750

Asn Cys Glu Val Asp Lys Asn Glu Cys Leu Ser Asn Pro Cys Gln Asn
755 760 765

Gly Gly Thr Cys Asp Asn Leu Val Asn Gly Tyr Arg Cys Thr Cys Lys
770 775 780

Lys Gly Phe Lys Gly Tyr Asn Cys Gln Val Asn Ile Asp Glu Cys Ala
785 790 795 800

Ser Asn Pro Cys Leu Asn Gln Gly Thr Cys Phe Asp Asp Ile Ser Gly
805 810 815

Tyr Thr Cys His Cys Val Leu Pro Tyr Thr Gly Lys Asn Cys Gln Thr
820 825 830

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

```
        835                 840                 845

Lys Glu Ser Pro Asn Phe Glu Ser Tyr Thr Cys Leu Cys Ala Pro Gly
    850                 855                 860

Trp Gln Gly Gln Arg Cys Thr Ile Asp Ile Asp Glu Cys Ile Ser Lys
865                 870                 875                 880

Pro Cys Met Asn His Gly Leu Cys His Asn Thr Gln Gly Ser Tyr Met
                885                 890                 895

Cys Glu Cys Pro Pro Gly Phe Ser Gly Met Asp Cys Glu Glu Asp Ile
            900                 905                 910

Asp Asp Cys Leu Ala Asn Pro Cys Gln Asn Gly Gly Ser Cys Met Asp
        915                 920                 925

Gly Val Asn Thr Phe Ser Cys Leu Cys Leu Pro Gly Phe Thr Gly Asp
    930                 935                 940

Lys Cys Gln Thr Asp Met Asn Glu Cys Leu Ser Glu Pro Cys Lys Asn
945                 950                 955                 960

Gly Gly Thr Cys Ser Asp Tyr Val Asn Ser Tyr Thr Cys Lys Cys Gln
                965                 970                 975

Ala Gly Phe Asp Gly Val His Cys Glu Asn Asn Ile Asn Glu Cys Thr
            980                 985                 990

Glu Ser Ser Cys Phe Asn Gly Gly  Thr Cys Val Asp Gly  Ile Asn Ser
        995                 1000                1005

Phe Ser  Cys Leu Cys Pro Val  Gly Phe Thr Gly Ser  Phe Cys Leu
    1010                1015                1020

His Glu  Ile Asn Glu Cys Ser  Ser His Pro Cys Leu  Asn Glu Gly
```

```
    1025                1030                1035

Thr Cys  Val Asp Gly Leu Gly  Thr Tyr Arg Cys Ser  Cys Pro Leu
    1040                1045                1050

Gly Tyr  Thr Gly Lys Asn Cys  Gln Thr Leu Val Asn  Leu Cys Ser
    1055                1060                1065

Arg Ser  Pro Cys Lys Asn Lys  Gly Thr Cys Val Gln  Lys Lys Ala
    1070                1075                1080

Glu Ser  Gln Cys Leu Cys Pro  Ser Gly Trp Ala Gly  Ala Tyr Cys
    1085                1090                1095

Asp Val  Pro Asn Val Ser Cys  Asp Ile Ala Ala Ser  Arg Arg Gly
    1100                1105                1110

Val Leu  Val Glu His Leu Cys  Gln His Ser Gly Val  Cys Ile Asn
    1115                1120                1125

Ala Gly  Asn Thr His Tyr Cys  Gln Cys Pro Leu Gly  Tyr Thr Gly
    1130                1135                1140

Ser Tyr  Cys Glu Glu Gln Leu  Asp Glu Cys Ala Ser  Asn Pro Cys
    1145                1150                1155

Gln His  Gly Ala Thr Cys Ser  Asp Phe Ile Gly Gly  Tyr Arg Cys
    1160                1165                1170

Glu Cys  Val Pro Gly Tyr Gln  Gly Val Asn Cys Glu  Tyr Glu Val
    1175                1180                1185

Asp Glu  Cys Gln Asn Gln Pro  Cys Gln Asn Gly Gly  Thr Cys Ile
    1190                1195                1200

Asp Leu  Val Asn His Phe Lys  Cys Ser Cys Pro Pro  Gly Thr Arg
```

```
    1205                1210                1215

Gly Leu  Leu Cys Glu Glu Asn  Ile Asp Asp Cys Ala  Arg Gly Pro
    1220                1225                1230

His Cys  Leu Asn Gly Gly Gln  Cys Met Asp Arg Ile  Gly Gly Tyr
    1235                1240                1245

Ser Cys  Arg Cys Leu Pro Gly  Phe Ala Gly Glu Arg  Cys Glu Gly
    1250                1255                1260

Asp Ile  Asn Glu Cys Leu Ser  Asn Pro Cys Ser Ser  Glu Gly Ser
    1265                1270                1275

Leu Asp  Cys Ile Gln Leu Thr  Asn Asp Tyr Leu Cys  Val Cys Arg
    1280                1285                1290

Ser Ala  Phe Thr Gly Arg His  Cys Glu Thr Phe Val  Asp Val Cys
    1295                1300                1305

Pro Gln  Met Pro Cys Leu Asn  Gly Gly Thr Cys Ala  Val Ala Ser
    1310                1315                1320

Asn Met  Pro Asp Gly Phe Ile  Cys Arg Cys Pro Pro  Gly Phe Ser
    1325                1330                1335

Gly Ala  Arg Cys Gln Ser Ser  Cys Gly Gln Val Lys  Cys Arg Lys
    1340                1345                1350

Gly Glu  Gln Cys Val His Thr  Ala Ser Gly Pro Arg  Cys Phe Cys
    1355                1360                1365

Pro Ser  Pro Arg Asp Cys Glu  Ser Gly Cys Ala Ser  Ser Pro Cys
    1370                1375                1380

Gln His  Gly Gly Ser Cys His  Pro Gln Arg Gln Pro  Pro Tyr Tyr
```

```
    1385                1390                1395

Ser Cys  Gln Cys Ala Pro Pro  Phe Ser Gly Ser Arg  Cys Glu Leu
    1400                1405                1410

Tyr Thr  Ala Pro Pro Ser Thr  Pro Pro Ala Thr Cys  Leu Ser Gln
    1415                1420                1425

Tyr Cys  Ala Asp Lys Ala Arg  Asp Gly Val Cys Asp  Glu Ala Cys
    1430                1435                1440

Asn Ser  His Ala Cys Gln Trp  Asp Gly Gly Asp Cys  Ser Leu Thr
    1445                1450                1455

Met Glu  Asn Pro Trp Ala Asn  Cys Ser Ser Pro Leu  Pro Cys Trp
    1460                1465                1470

Asp Tyr  Ile Asn Asn Gln Cys  Asp Glu Leu Cys Asn  Thr Val Glu
    1475                1480                1485

Cys Leu  Phe Asp Asn Phe Glu  Cys Gln Gly Asn Ser  Lys Thr Cys
    1490                1495                1500

Lys Tyr  Asp Lys Tyr Cys Ala  Asp His Phe Lys Asp  Asn His Cys
    1505                1510                1515

Asp Gln  Gly Cys Asn Ser Glu  Glu Cys Gly Trp Asp  Gly Leu Asp
    1520                1525                1530

Cys Ala  Ala Asp Gln Pro Glu  Asn Leu Ala Glu Gly  Thr Leu Val
    1535                1540                1545

Ile Val  Val Leu Met Pro Pro  Glu Gln Leu Leu Gln  Asp Ala Arg
    1550                1555                1560

Ser Phe  Leu Arg Ala Leu Gly  Thr Leu Leu His Thr  Asn Leu Arg
```

1565 1570 1575

Ile Lys Arg Asp Ser Gln Gly Glu Leu Met Val Tyr Pro Tyr Tyr
1580 1585 1590

Gly Glu Lys Ser Ala Ala Met Lys Lys Gln Arg Met Thr Arg Arg
1595 1600 1605

Ser Leu Pro Gly Glu Gln Glu Gln Glu Val Ala Gly Ser Lys Val
1610 1615 1620

Phe Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Asp Ser Asp His
1625 1630 1635

Cys Phe Lys Asn Thr Asp Ala Ala Ala Ala Leu Leu Ala Ser His
1640 1645 1650

Ala Ile Gln Gly Thr Leu Ser Tyr Pro Leu Val Ser Val Val Ser
1655 1660 1665

Glu Ser Leu Thr Pro Glu Arg Thr Gln Leu Leu Tyr Leu Leu Ala
1670 1675 1680

Val Ala Val Val Ile Ile Leu Phe Ile Ile Leu Leu Gly Val Ile
1685 1690 1695

Met Ala Lys Arg Lys Arg Lys His Gly Ser Leu Trp Leu Pro Glu
1700 1705 1710

Gly Phe Thr Leu Arg Arg Asp Ala Ser Asn His Lys Arg Arg Glu
1715 1720 1725

Pro Val Gly Gln Asp Ala Val Gly Leu Lys Asn Leu Ser Val Gln
1730 1735 1740

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

1745 1750 1755

Val Asp Asp Glu Gly Pro Gln Pro Lys Lys Val Lys Ala Glu Asp
1760 1765 1770

Glu Ala Leu Leu Ser Glu Glu Asp Asp Pro Ile Asp Arg Arg Pro
1775 1780 1785

Trp Thr Gln Gln His Leu Glu Ala Ala Asp Ile Arg Arg Thr Pro
1790 1795 1800

Ser Leu Ala Leu Thr Pro Pro Gln Ala Glu Gln Glu Val Asp Val
1805 1810 1815

Leu Asp Val Asn Val Arg Gly Pro Asp Gly Cys Thr Pro Leu Met
1820 1825 1830

Leu Ala Ser Leu Arg Gly Gly Ser Ser Asp Leu Ser Asp Glu Asp
1835 1840 1845

Glu Asp Ala Glu Asp Ser Ser Ala Asn Ile Ile Thr Asp Leu Val
1850 1855 1860

Tyr Gln Gly Ala Ser Leu Gln Ala Gln Thr Asp Arg Thr Gly Glu
1865 1870 1875

Met Ala Leu His Leu Ala Ala Arg Tyr Ser Arg Ala Asp Ala Ala
1880 1885 1890

Lys Arg Leu Leu Asp Ala Gly Ala Asp Ala Asn Ala Gln Asp Asn
1895 1900 1905

Met Gly Arg Cys Pro Leu His Ala Ala Val Ala Ala Asp Ala Gln
1910 1915 1920

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

```
    1925                1930                1935

Ala Arg  Met Asn Asp Gly Thr  Thr Pro Leu Ile Leu  Ala Ala Arg
    1940                1945                1950

Leu Ala  Val Glu Gly Met Val  Ala Glu Leu Ile Asn  Cys Gln Ala
    1955                1960                1965

Asp Val  Asn Ala Val Asp Asp  His Gly Lys Ser Ala  Leu His Trp
    1970                1975                1980

Ala Ala  Ala Val Asn Asn Val  Glu Ala Thr Leu Leu  Leu Leu Lys
    1985                1990                1995

Asn Gly  Ala Asn Arg Asp Met  Gln Asp Asn Lys Glu  Glu Thr Pro
    2000                2005                2010

Leu Phe  Leu Ala Ala Arg Glu  Gly Ser Tyr Glu Ala  Ala Lys Ile
    2015                2020                2025

Leu Leu  Asp His Phe Ala Asn  Arg Asp Ile Thr Asp  His Met Asp
    2030                2035                2040

Arg Leu  Pro Arg Asp Val Ala  Arg Asp His Met His  His Asp Ile
    2045                2050                2055

Val Arg  Leu Leu Asp Glu Tyr  Asn Val Thr Pro Ser  Pro Pro Gly
    2060                2065                2070

Thr Val  Leu Thr Ser Ala Leu  Ser Pro Val Ile Cys  Gly Pro Asn
    2075                2080                2085

Arg Ser  Phe Leu Ser Leu Lys  His Thr Pro Met Gly  Lys Lys Ser
    2090                2095                2100

Arg Arg  Pro Ser Ala Lys Ser  Thr Met Pro Thr Ser  Leu Pro Asn
```

2105 2110 2115

Leu Ala Lys Glu Ala Lys Asp Ala Lys Gly Ser Arg Arg Lys Lys
2120 2125 2130

Ser Leu Ser Glu Lys Val Gln Leu Ser Glu Ser Ser Val Thr Leu
2135 2140 2145

Ser Pro Val Asp Ser Leu Glu Ser Pro His Thr Tyr Val Ser Asp
2150 2155 2160

Thr Thr Ser Ser Pro Met Ile Thr Ser Pro Gly Ile Leu Gln Ala
2165 2170 2175

Ser Pro Asn Pro Met Leu Ala Thr Ala Ala Pro Pro Ala Pro Val
2180 2185 2190

His Ala Gln His Ala Leu Ser Phe Ser Asn Leu His Glu Met Gln
2195 2200 2205

Pro Leu Ala His Gly Ala Ser Thr Val Leu Pro Ser Val Ser Gln
2210 2215 2220

Leu Leu Ser His His His Ile Val Ser Pro Gly Ser Gly Ser Ala
2225 2230 2235

Gly Ser Leu Ser Arg Leu His Pro Val Pro Val Pro Ala Asp Trp
2240 2245 2250

Met Asn Arg Met Glu Val Asn Glu Thr Gln Tyr Asn Glu Met Phe
2255 2260 2265

Gly Met Val Leu Ala Pro Ala Glu Gly Thr His Pro Gly Ile Ala
2270 2275 2280

Pro Gln Ser Arg Pro Pro Glu Gly Lys His Ile Thr Thr Pro Arg

2285 2290 2295

Glu Pro Leu Pro Pro Ile Val Thr Phe Gln Leu Ile Pro Lys Gly
2300 2305 2310

Ser Ile Ala Gln Pro Ala Gly Ala Pro Gln Pro Gln Ser Thr Cys
2315 2320 2325

Pro Pro Ala Val Ala Gly Pro Leu Pro Thr Met Tyr Gln Ile Pro
2330 2335 2340

Glu Met Ala Arg Leu Pro Ser Val Ala Phe Pro Thr Ala Met Met
2345 2350 2355

Pro Gln Gln Asp Gly Gln Val Ala Gln Thr Ile Leu Pro Ala Tyr
2360 2365 2370

His Pro Phe Pro Ala Ser Val Gly Lys Tyr Pro Thr Pro Pro Ser
2375 2380 2385

Gln His Ser Tyr Ala Ser Ser Asn Ala Ala Glu Arg Thr Pro Ser
2390 2395 2400

His Ser Gly His Leu Gln Gly Glu His Pro Tyr Leu Thr Pro Ser
2405 2410 2415

Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser Ala
2420 2425 2430

Ser Asp Trp Ser Asp Val Thr Thr Ser Pro Thr Pro Gly Gly Ala
2435 2440 2445

Gly Gly Gly Gln Arg Gly Pro Gly Thr His Met Ser Glu Pro Pro
2450 2455 2460

His Asn Asn Met Gln Val Tyr Ala

2465 2470

<210> 88
<211> 1476
<212> PRT
<213> Homo sapiens

<400> 88

Met Gln Arg Ser Pro Leu Glu Lys Ala Ser Val Val Ser Lys Leu Phe
1 5 10 15

Phe Ser Trp Thr Arg Pro Ile Leu Arg Lys Gly Tyr Arg Gln Arg Leu
20 25 30

Glu Leu Ser Asp Ile Tyr Gln Ile Pro Ser Val Asp Ser Ala Asp Asn
35 40 45

Leu Ser Glu Lys Leu Glu Arg Glu Trp Asp Arg Glu Leu Ala Ser Lys
50 55 60

Lys Asn Pro Lys Leu Ile Asn Ala Leu Arg Arg Cys Phe Phe Trp Arg
65 70 75 80

Phe Met Phe Tyr Gly Ile Phe Leu Tyr Leu Gly Glu Val Thr Lys Ala
85 90 95

Val Gln Pro Leu Leu Leu Gly Arg Ile Ile Ala Ser Tyr Asp Pro Asp
100 105 110

Asn Lys Glu Glu Arg Ser Ile Ala Ile Tyr Leu Gly Ile Gly Leu Cys
115 120 125

Leu Leu Phe Ile Val Arg Thr Leu Leu Leu His Pro Ala Ile Phe Gly
130 135 140

Leu His His Ile Gly Met Gln Met Arg Ile Ala Met Phe Ser Leu Ile
145 150 155 160

```
Tyr Lys Lys Thr Leu Lys Leu Ser Ser Arg Val Leu Asp Lys Ile Ser
                165                 170                 175

Ile Gly Gln Leu Val Ser Leu Leu Ser Asn Asn Leu Asn Lys Phe Asp
            180                 185                 190

Glu Gly Leu Ala Leu Ala His Phe Val Trp Ile Ala Pro Leu Gln Val
        195                 200                 205

Ala Leu Leu Met Gly Leu Ile Trp Glu Leu Leu Gln Ala Ser Ala Phe
    210                 215                 220

Cys Gly Leu Gly Phe Leu Ile Val Leu Ala Leu Phe Gln Ala Gly Leu
225                 230                 235                 240

Gly Arg Met Met Met Lys Tyr Arg Asp Gln Arg Ala Gly Lys Ile Ser
                245                 250                 255

Glu Arg Leu Val Ile Thr Ser Glu Met Ile Glu Asn Ile Gln Ser Val
            260                 265                 270

Lys Ala Tyr Cys Trp Glu Glu Ala Met Glu Lys Met Ile Glu Asn Leu
        275                 280                 285

Arg Gln Thr Glu Leu Lys Leu Thr Arg Lys Ala Ala Tyr Val Arg Tyr
    290                 295                 300

Phe Asn Ser Ser Ala Phe Phe Phe Ser Gly Phe Phe Val Val Phe Leu
305                 310                 315                 320

Ser Val Leu Pro Tyr Ala Leu Ile Lys Gly Ile Ile Leu Arg Lys Ile
                325                 330                 335

Phe Thr Thr Ile Ser Phe Cys Ile Val Leu Arg Met Ala Val Gln Phe
            340                 345                 350
```

```
Pro Trp Ala Val Gln Thr Trp Tyr Asp Ser Leu Gly Ala Ile Asn Lys
        355                 360                 365

Ile Gln Asp Phe Leu Gln Lys Gln Glu Tyr Lys Thr Leu Glu Tyr Asn
    370                 375                 380

Leu Thr Thr Thr Glu Val Val Met Glu Asn Val Thr Ala Phe Trp Glu
385                 390                 395                 400

Glu Gly Phe Gly Glu Leu Phe Glu Lys Ala Lys Gln Asn Asn Asn Asn
                405                 410                 415

Arg Lys Thr Ser Asn Gly Asp Asp Ser Leu Phe Phe Ser Asn Phe Ser
            420                 425                 430

Leu Leu Gly Thr Pro Val Leu Lys Asp Ile Asn Phe Lys Ile Glu Arg
        435                 440                 445

Gly Gln Leu Leu Ala Val Ala Gly Ser Thr Gly Ala Gly Lys Thr Ser
    450                 455                 460

Leu Leu Met Val Ile Met Gly Glu Leu Glu Pro Ser Glu Gly Lys Ile
465                 470                 475                 480

Lys His Ser Gly Arg Ile Ser Phe Cys Ser Gln Phe Ser Trp Ile Met
                485                 490                 495

Pro Gly Thr Ile Lys Glu Asn Ile Ile Phe Gly Val Ser Tyr Asp Glu
            500                 505                 510

Tyr Arg Tyr Arg Ser Val Ile Lys Ala Cys Gln Leu Glu Glu Asp Ile
        515                 520                 525

Ser Lys Phe Ala Glu Lys Asp Asn Ile Val Leu Gly Glu Gly Gly Ile
    530                 535                 540
```

```
Thr Leu Ser Gly Gly Gln Arg Ala Arg Ile Ser Leu Ala Arg Ala Val
545                 550                 555                 560

Tyr Lys Asp Ala Asp Leu Tyr Leu Leu Asp Ser Pro Phe Gly Tyr Leu
                565                 570                 575

Asp Val Leu Thr Glu Lys Glu Ile Phe Glu Ser Cys Val Cys Lys Leu
            580                 585                 590

Met Ala Asn Lys Thr Arg Ile Leu Val Thr Ser Lys Met Glu His Leu
        595                 600                 605

Lys Lys Ala Asp Lys Ile Leu Ile Leu His Glu Gly Ser Ser Tyr Phe
    610                 615                 620

Tyr Gly Thr Phe Ser Glu Leu Gln Asn Leu Gln Pro Asp Phe Ser Ser
625                 630                 635                 640

Lys Leu Met Gly Cys Asp Ser Phe Asp Gln Phe Ser Ala Glu Arg Arg
                645                 650                 655

Asn Ser Ile Leu Thr Glu Thr Leu His Arg Phe Ser Leu Glu Gly Asp
            660                 665                 670

Ala Pro Val Ser Trp Thr Glu Thr Lys Lys Gln Ser Phe Lys Gln Thr
        675                 680                 685

Gly Glu Phe Gly Glu Lys Arg Lys Asn Ser Ile Leu Asn Pro Ile Asn
    690                 695                 700

Ser Ile Arg Lys Phe Ser Ile Val Gln Lys Thr Pro Leu Gln Met Asn
705                 710                 715                 720

Gly Ile Glu Glu Asp Ser Asp Glu Pro Leu Glu Arg Arg Leu Ser Leu
                725                 730                 735
```

```
Val Pro Asp Ser Glu Gln Gly Glu Ala Ile Leu Pro Arg Ile Ser Val
            740                 745                 750

Ile Ser Thr Gly Pro Thr Leu Gln Ala Arg Arg Arg Gln Ser Val Leu
        755                 760                 765

Asn Leu Met Thr His Ser Val Asn Gln Gly Gln Asn Ile His Arg Lys
    770                 775                 780

Thr Thr Ala Ser Thr Arg Lys Val Ser Leu Ala Pro Gln Ala Asn Leu
785                 790                 795                 800

Thr Glu Leu Asp Ile Tyr Ser Arg Arg Leu Ser Gln Glu Thr Gly Leu
                805                 810                 815

Glu Ile Ser Glu Glu Ile Asn Glu Glu Asp Leu Lys Glu Cys Phe Phe
            820                 825                 830

Asp Asp Met Glu Ser Ile Pro Ala Val Thr Thr Trp Asn Thr Tyr Leu
        835                 840                 845

Arg Tyr Ile Thr Val His Lys Ser Leu Ile Phe Val Leu Ile Trp Cys
    850                 855                 860

Leu Val Ile Phe Leu Ala Glu Val Ala Ala Ser Leu Val Val Leu Trp
865                 870                 875                 880

Leu Leu Gly Asn Thr Pro Leu Gln Asp Lys Gly Asn Ser Thr His Ser
                885                 890                 895

Arg Asn Asn Ser Tyr Ala Val Ile Ile Thr Ser Thr Ser Ser Tyr Tyr
            900                 905                 910

Val Phe Tyr Ile Tyr Val Gly Val Ala Asp Thr Leu Leu Ala Met Gly
        915                 920                 925
```

```
Phe Phe Gly Leu Pro Leu Val His Thr Leu Ile Thr Val Ser Lys Ile
    930                 935                 940

Leu His His Lys Met Leu His Ser Val Leu Gln Ala Pro Met Ser Thr
945                 950                 955                 960

Leu Asn Thr Leu Lys Ala Gly Gly Ile Leu Asn Arg Phe Ser Lys Asp
                965                 970                 975

Ile Ala Ile Leu Asp Asp Leu Leu Pro Leu Thr Ile Phe Asp Phe Ile
            980                 985                 990

Gln Leu Leu Leu Ile Val Ile Gly  Ala Ile Ala Val Val  Ala Val Leu
        995                 1000                1005

Gln Pro  Tyr Ile Phe Val Ala  Thr Val Pro Val Ile  Val Ala Phe
    1010                1015                1020

Ile Met  Leu Arg Ala Tyr Phe  Leu Gln Thr Ser Gln  Gln Leu Lys
    1025                1030                1035

Gln Leu  Glu Ser Glu Gly Arg  Ser Pro Ile Phe Thr  His Leu Val
    1040                1045                1050

Thr Ser  Leu Lys Gly Leu Trp  Thr Leu Arg Ala Phe  Gly Arg Gln
    1055                1060                1065

Pro Tyr  Phe Glu Thr Leu Phe  His Lys Ala Leu Asn  Leu His Thr
    1070                1075                1080

Ala Asn  Trp Phe Leu Tyr Leu  Ser Thr Leu Arg Trp  Phe Gln Met
    1085                1090                1095

Arg Ile  Glu Met Ile Phe Val  Ile Phe Phe Ile Ala  Val Thr Phe
    1100                1105                1110
```

```
Ile Ser  Ile Leu Thr Thr Gly  Glu Gly Glu Gly Arg  Val Gly Ile
    1115                 1120                 1125

Ile Leu  Thr Leu Ala Met Asn  Ile Met Ser Thr Leu  Gln Trp Ala
    1130                 1135                 1140

Val Asn  Ser Ser Ile Asp Val  Asp Ser Leu Met Arg  Ser Val Ser
    1145                 1150                 1155

Arg Val  Phe Lys Phe Ile Asp  Met Pro Thr Glu Gly  Lys Pro Thr
    1160                 1165                 1170

Lys Ser  Thr Lys Pro Tyr Lys  Asn Gly Gln Leu Ser  Lys Val Met
    1175                 1180                 1185

Ile Ile  Glu Asn Ser His Val  Lys Lys Asp Asp Ile  Trp Pro Ser
    1190                 1195                 1200

Gly Gly  Gln Met Thr Val Lys  Asp Leu Thr Ala Lys  Tyr Thr Glu
    1205                 1210                 1215

Gly Gly  Asn Ala Ile Leu Glu  Asn Ile Ser Phe Ser  Ile Ser Pro
    1220                 1225                 1230

Gly Gln  Arg Val Gly Leu Leu  Gly Arg Thr Gly Ser  Gly Lys Ser
    1235                 1240                 1245

Thr Leu  Leu Ser Ala Phe Leu  Arg Leu Leu Asn Thr  Glu Gly Glu
    1250                 1255                 1260

Ile Gln  Ile Asp Gly Val Ser  Trp Asp Ser Ile Thr  Leu Gln Gln
    1265                 1270                 1275

Trp Arg  Ala Phe Gly Val Ile  Pro Gln Lys Val Phe  Ile Phe Ser
    1280                 1285                 1290
```

```
Gly Thr  Phe Arg Lys Asn Leu  Asp Pro Tyr Glu Gln  Trp Ser Asp
    1295                1300                1305

Gln Glu  Ile Trp Lys Val Ala  Asp Glu Val Gly Leu  Arg Ser Val
    1310                1315                1320

Ile Glu  Gln Phe Pro Gly Lys  Leu Asp Phe Val Leu  Val Asp Gly
    1325                1330                1335

Gly Cys  Val Leu Ser His Gly  His Lys Gln Leu Met  Cys Leu Ala
    1340                1345                1350

Arg Ser  Val Leu Ser Lys Ala  Lys Ile Leu Leu Leu  Asp Glu Pro
    1355                1360                1365

Ser Ala  His Leu Asp Pro Val  Thr Tyr Gln Ile Ile  Arg Arg Thr
    1370                1375                1380

Leu Lys  Gln Ala Phe Ala Asp  Cys Thr Val Ile Leu  Cys Glu His
    1385                1390                1395

Arg Ile  Glu Ala Met Leu Glu  Cys Gln Gln Phe Leu  Val Ile Glu
    1400                1405                1410

Glu Asn  Lys Val Arg Gln Tyr  Asp Ser Ile Gln Lys  Leu Leu Asn
    1415                1420                1425

Glu Arg  Ser Leu Phe Arg Gln  Ala Ile Ser Pro Ser  Asp Arg Val
    1430                1435                1440

Lys Leu  Phe Pro His Arg Asn  Ser Ser Lys Cys Lys  Ser Lys Pro
    1445                1450                1455

Gln Ile  Ala Ala Leu Lys Glu  Glu Thr Glu Glu Glu  Val Gln Asp
    1460                1465                1470
```

Thr Arg Leu
1475

<210> 89
<211> 533
<212> PRT
<213> Homo sapiens

<400> 89

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

Leu Cys Val Leu Gly Pro Val Val Ser His Ala Gly Lys Ile Leu Leu
20 25 30

Ile Pro Val Asp Gly Ser His Trp Leu Ser Met Leu Gly Ala Ile Gln
35 40 45

Gln Leu Gln Gln Arg Gly His Glu Ile Val Val Leu Ala Pro Asp Ala
50 55 60

Ser Leu Tyr Ile Arg Asp Gly Ala Phe Tyr Thr Leu Lys Thr Tyr Pro
65 70 75 80

Val Pro Phe Gln Arg Glu Asp Val Lys Glu Ser Phe Val Ser Leu Gly
85 90 95

His Asn Val Phe Glu Asn Asp Ser Phe Leu Gln Arg Val Ile Lys Thr
100 105 110

Tyr Lys Lys Ile Lys Lys Asp Ser Ala Met Leu Leu Ser Gly Cys Ser
115 120 125

His Leu Leu His Asn Lys Glu Leu Met Ala Ser Leu Ala Glu Ser Ser
130 135 140

```
Phe Asp Val Met Leu Thr Asp Pro Phe Leu Pro Cys Ser Pro Ile Val
145                 150                 155                 160

Ala Gln Tyr Leu Ser Leu Pro Thr Val Phe Phe Leu His Ala Leu Pro
                165                 170                 175

Cys Ser Leu Glu Phe Glu Ala Thr Gln Cys Pro Asn Pro Phe Ser Tyr
            180                 185                 190

Val Pro Arg Pro Leu Ser Ser His Ser Asp His Met Thr Phe Leu Gln
        195                 200                 205

Arg Val Lys Asn Met Leu Ile Ala Phe Ser Gln Asn Phe Leu Cys Asp
    210                 215                 220

Val Val Tyr Ser Pro Tyr Ala Thr Leu Ala Ser Glu Phe Leu Gln Arg
225                 230                 235                 240

Glu Val Thr Val Gln Asp Leu Leu Ser Ser Ala Ser Val Trp Leu Phe
                245                 250                 255

Arg Ser Asp Phe Val Lys Asp Tyr Pro Arg Pro Ile Met Pro Asn Met
            260                 265                 270

Val Phe Val Gly Gly Ile Asn Cys Leu His Gln Asn Pro Leu Ser Gln
        275                 280                 285

Glu Phe Glu Ala Tyr Ile Asn Ala Ser Gly Glu His Gly Ile Val Val
    290                 295                 300

Phe Ser Leu Gly Ser Met Val Ser Glu Ile Pro Glu Lys Lys Ala Met
305                 310                 315                 320

Ala Ile Ala Asp Ala Leu Gly Lys Ile Pro Gln Thr Val Leu Trp Arg
                325                 330                 335
```

```
Tyr Thr Gly Thr Arg Pro Ser Asn Leu Ala Asn Asn Thr Ile Leu Val
            340                 345                 350

Lys Trp Leu Pro Gln Asn Asp Leu Leu Gly His Pro Met Thr Arg Ala
        355                 360                 365

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

Gly Val Pro Met Val Met Met Pro Leu Phe Gly Asp Gln Met Asp Asn
385                 390                 395                 400

Ala Lys Arg Met Glu Thr Lys Gly Ala Gly Val Thr Leu Asn Val Leu
                405                 410                 415

Glu Met Thr Ser Glu Asp Leu Glu Asn Ala Leu Lys Ala Val Ile Asn
            420                 425                 430

Asp Lys Ser Tyr Lys Glu Asn Ile Met Arg Leu Ser Ser Leu His Lys
        435                 440                 445

Asp Arg Pro Val Glu Pro Leu Asp Leu Ala Val Phe Trp Val Glu Phe
    450                 455                 460

Val Met Arg His Lys Gly Ala Pro His Leu Arg Pro Ala Ala His Asp
465                 470                 475                 480

Leu Thr Trp Tyr Gln Tyr His Ser Leu Asp Val Ile Gly Phe Leu Leu
                485                 490                 495

Ala Val Val Leu Thr Val Ala Phe Ile Thr Phe Lys Cys Cys Ala Tyr
            500                 505                 510

Gly Tyr Arg Lys Cys Leu Gly Lys Lys Gly Arg Val Lys Lys Ala His
        515                 520                 525
```

```
Lys Ser Lys Thr His
    530


<210>  90
<211>  530
<212>  PRT
<213>  Homo sapiens

<400>  90

Met Ser Leu Lys Trp Thr Ser Val Phe Leu Leu Ile Gln Leu Ser Cys
1               5                   10                  15


Tyr Phe Ser Ser Gly Ser Cys Gly Lys Val Leu Val Trp Pro Thr Glu
            20                  25                  30


Tyr Ser His Trp Ile Asn Met Lys Thr Ile Leu Glu Glu Leu Val Gln
        35                  40                  45


Arg Gly His Glu Val Thr Val Leu Thr Ser Ser Ala Ser Thr Leu Val
    50                  55                  60


Asn Ala Ser Lys Ser Ser Ala Ile Lys Leu Glu Val Tyr Pro Thr Ser
65                  70                  75                  80


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


Trp Ile Tyr Gly Val Ser Lys Asn Thr Phe Trp Ser Tyr Phe Ser Gln
            100                 105                 110


Leu Gln Glu Leu Cys Trp Glu Tyr Tyr Asp Tyr Ser Asn Lys Leu Cys
        115                 120                 125


Lys Asp Ala Val Leu Asn Lys Lys Leu Met Met Lys Leu Gln Glu Ser
    130                 135                 140
```

```
Lys Phe Asp Val Ile Leu Ala Asp Ala Leu Asn Pro Cys Gly Glu Leu
145                 150                 155                 160


Leu Ala Glu Leu Phe Asn Ile Pro Phe Leu Tyr Ser Leu Arg Phe Ser
                165                 170                 175


Val Gly Tyr Thr Phe Glu Lys Asn Gly Gly Gly Phe Leu Phe Pro Pro
            180                 185                 190


Ser Tyr Val Pro Val Val Met Ser Glu Leu Ser Asp Gln Met Ile Phe
        195                 200                 205


Met Glu Arg Ile Lys Asn Met Ile His Met Leu Tyr Phe Asp Phe Trp
    210                 215                 220


Phe Gln Ile Tyr Asp Leu Lys Lys Trp Asp Gln Phe Tyr Ser Glu Val
225                 230                 235                 240


Leu Gly Arg Pro Thr Thr Leu Phe Glu Thr Met Gly Lys Ala Glu Met
                245                 250                 255


Trp Leu Ile Arg Thr Tyr Trp Asp Phe Glu Phe Pro Arg Pro Phe Leu
            260                 265                 270


Pro Asn Val Asp Phe Val Gly Gly Leu His Cys Lys Pro Ala Lys Pro
        275                 280                 285


Leu Pro Lys Glu Met Glu Glu Phe Val Gln Ser Ser Gly Glu Asn Gly
    290                 295                 300


Ile Val Val Phe Ser Leu Gly Ser Met Ile Ser Asn Met Ser Glu Glu
305                 310                 315                 320


Ser Ala Asn Met Ile Ala Ser Ala Leu Ala Gln Ile Pro Gln Lys Val
                325                 330                 335
```

```
Leu Trp Arg Phe Asp Gly Lys Lys Pro Asn Thr Leu Gly Ser Asn Thr
            340                 345                 350

Arg Leu Tyr Lys Trp Leu Pro Gln Asn Asp Leu Leu Gly His Pro Lys
        355                 360                 365

Thr Lys Ala Phe Ile Thr His Gly Gly Thr Asn Gly Ile Tyr Glu Ala
    370                 375                 380

Ile Tyr His Gly Ile Pro Met Val Gly Ile Pro Leu Phe Ala Asp Gln
385                 390                 395                 400

His Asp Asn Ile Ala His Met Lys Ala Lys Gly Ala Ala Leu Ser Val
                405                 410                 415

Asp Ile Arg Thr Met Ser Ser Arg Asp Leu Leu Asn Ala Leu Lys Ser
            420                 425                 430

Val Ile Asn Asp Pro Val Tyr Lys Glu Asn Val Met Lys Leu Ser Arg
        435                 440                 445

Ile His His Asp Gln Pro Met Lys Pro Leu Asp Arg Ala Val Phe Trp
    450                 455                 460

Ile Glu Phe Val Met Arg His Lys Gly Ala Lys His Leu Arg Val Ala
465                 470                 475                 480

Ala His Asn Leu Thr Trp Ile Gln Tyr His Ser Leu Asp Val Ile Ala
                485                 490                 495

Phe Leu Leu Ala Cys Val Ala Thr Val Ile Phe Ile Ile Thr Lys Phe
            500                 505                 510

Cys Leu Phe Cys Phe Arg Lys Leu Ala Lys Lys Gly Lys Lys Lys Lys
        515                 520                 525
```

Arg Asp
    530

<210> 91
<211> 528
<212> PRT
<213> Homo sapiens

<400> 91

Met Ser Val Lys Trp Thr Ser Val Ile Leu Leu Ile Gln Leu Ser Phe
1   5   10   15

Cys Phe Ser Ser Gly Asn Cys Gly Lys Val Leu Val Trp Ala Ala Glu
            20   25   30

Tyr Ser His Trp Met Asn Ile Lys Thr Ile Leu Asp Glu Leu Ile Gln
        35   40   45

Arg Gly His Glu Val Thr Val Leu Ala Ser Ser Ala Ser Ile Leu Phe
    50   55   60

Asp Pro Asn Asn Ser Ser Ala Leu Lys Ile Glu Ile Tyr Pro Thr Ser
65   70   75   80

Leu Thr Lys Thr Glu Leu Glu Asn Phe Ile Met Gln Gln Ile Lys Arg
                85   90   95

Trp Ser Asp Leu Pro Lys Asp Thr Phe Trp Leu Tyr Phe Ser Gln Val
            100   105   110

Gln Glu Ile Met Ser Ile Phe Gly Asp Ile Thr Arg Lys Phe Cys Lys
        115   120   125

Asp Val Val Ser Asn Lys Lys Phe Met Lys Lys Val Gln Glu Ser Arg
    130   135   140

Phe Asp Val Ile Phe Ala Asp Ala Ile Phe Pro Cys Ser Glu Leu Leu

```
145                 150                 155                 160

Ala Glu Leu Phe Asn Ile Pro Phe Val Tyr Ser Leu Ser Phe Ser Pro
                165                 170                 175

Gly Tyr Thr Phe Glu Lys His Ser Gly Gly Phe Ile Phe Pro Pro Ser
            180                 185                 190

Tyr Val Pro Val Val Met Ser Glu Leu Thr Asp Gln Met Thr Phe Met
        195                 200                 205

Glu Arg Val Lys Asn Met Ile Tyr Val Leu Tyr Phe Asp Phe Trp Phe
    210                 215                 220

Glu Ile Phe Asp Met Lys Lys Trp Asp Gln Phe Tyr Ser Glu Val Leu
225                 230                 235                 240

Gly Arg Pro Thr Thr Leu Ser Glu Thr Met Gly Lys Ala Asp Val Trp
                245                 250                 255

Leu Ile Arg Asn Ser Trp Asn Phe Gln Phe Pro Tyr Pro Leu Leu Pro
            260                 265                 270

Asn Val Asp Phe Val Gly Gly Leu His Cys Lys Pro Ala Lys Pro Leu
        275                 280                 285

Pro Lys Glu Met Glu Asp Phe Val Gln Ser Ser Gly Glu Asn Gly Val
    290                 295                 300

Val Val Phe Ser Leu Gly Ser Met Val Ser Asn Met Thr Glu Glu Arg
305                 310                 315                 320

Ala Asn Val Ile Ala Ser Ala Leu Ala Gln Ile Pro Gln Lys Val Leu
                325                 330                 335

Trp Arg Phe Asp Gly Asn Lys Pro Asp Thr Leu Gly Leu Asn Thr Arg
```

340 345 350

Leu Tyr Lys Trp Ile Pro Gln Asn Asp Leu Leu Gly His Pro Lys Thr
355 360 365

Arg Ala Phe Ile Thr His Gly Gly Ala Asn Gly Ile Tyr Glu Ala Ile
370 375 380

Tyr His Gly Ile Pro Met Val Gly Ile Pro Leu Phe Ala Asp Gln Pro
385 390 395 400

Asp Asn Ile Ala His Met Lys Ala Arg Gly Ala Ala Val Arg Val Asp
405 410 415

Phe Asn Thr Met Ser Ser Thr Asp Leu Leu Asn Ala Leu Lys Arg Val
420 425 430

Ile Asn Asp Pro Ser Tyr Lys Glu Asn Val Met Lys Leu Ser Arg Ile
435 440 445

Gln His Asp Gln Pro Val Lys Pro Leu Asp Ala Val Phe Trp Ile Glu
450 455 460

Phe Val Met Arg His Lys Gly Ala Lys His Leu Arg Val Ala Ala His
465 470 475 480

Asp Leu Thr Trp Phe Gln Tyr His Ser Leu Asp Val Ile Gly Phe Leu
485 490 495

Leu Val Cys Val Ala Thr Val Ile Phe Ile Val Thr Lys Cys Cys Leu
500 505 510

Phe Cys Phe Trp Lys Phe Ala Arg Lys Ala Lys Lys Gly Lys Asn Asp
515 520 525

<210> 92

<211> 349
<212> PRT
<213> Homo sapiens

<400> 92

```
Met Glu Ala His Asn Ala Ser Ala Pro Phe Asn Phe Thr Leu Pro Pro
1               5                   10                  15


Asn Phe Gly Lys Arg Pro Thr Asp Leu Ala Leu Ser Val Ile Leu Val
            20                  25                  30


Phe Met Leu Phe Phe Ile Met Leu Ser Leu Gly Cys Thr Met Glu Phe
        35                  40                  45


Ser Lys Ile Lys Ala His Leu Trp Lys Pro Lys Gly Leu Ala Ile Ala
    50                  55                  60


Leu Val Ala Gln Tyr Gly Ile Met Pro Leu Thr Ala Phe Val Leu Gly
65                  70                  75                  80


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


Gly Cys Ser Pro Gly Gly Asn Leu Ser Asn Val Phe Ser Leu Ala Met
            100                 105                 110


Lys Gly Asp Met Asn Leu Ser Ile Val Met Thr Thr Cys Ser Thr Phe
        115                 120                 125


Cys Ala Leu Gly Met Met Pro Leu Leu Leu Tyr Ile Tyr Ser Arg Gly
    130                 135                 140


Ile Tyr Asp Gly Asp Leu Lys Asp Lys Val Pro Tyr Lys Gly Ile Val
145                 150                 155                 160


Ile Ser Leu Val Leu Val Leu Ile Pro Cys Thr Ile Gly Ile Val Leu
                165                 170                 175
```

```
Lys Ser Lys Arg Pro Gln Tyr Met Arg Tyr Val Ile Lys Gly Gly Met
            180                 185                 190

Ile Ile Ile Leu Leu Cys Ser Val Ala Val Thr Val Leu Ser Ala Ile
        195                 200                 205

Asn Val Gly Lys Ser Ile Met Phe Ala Met Thr Pro Leu Leu Ile Ala
    210                 215                 220

Thr Ser Ser Leu Met Pro Phe Ile Gly Phe Leu Leu Gly Tyr Val Leu
225                 230                 235                 240

Ser Ala Leu Phe Cys Leu Asn Gly Arg Cys Arg Arg Thr Val Ser Met
                245                 250                 255

Glu Thr Gly Cys Gln Asn Val Gln Leu Cys Ser Thr Ile Leu Asn Val
            260                 265                 270

Ala Phe Pro Pro Glu Val Ile Gly Pro Leu Phe Phe Phe Pro Leu Leu
        275                 280                 285

Tyr Met Ile Phe Gln Leu Gly Glu Gly Leu Leu Leu Ile Ala Ile Phe
    290                 295                 300

Trp Cys Tyr Glu Lys Phe Lys Thr Pro Lys Asp Lys Thr Lys Met Ile
305                 310                 315                 320

Tyr Thr Ala Ala Thr Thr Glu Glu Thr Ile Pro Gly Ala Leu Gly Asn
                325                 330                 335

Gly Thr Tyr Lys Gly Glu Asp Cys Ser Pro Cys Thr Ala
            340                 345
```

<210> 93
<211> 702

<212> PRT
<213> Homo sapiens

<400> 93

```
Met Asp Gln His Gln His Leu Asn Lys Thr Ala Glu Ser Ala Ser Ser
1               5                  10                  15

Glu Lys Lys Lys Thr Arg Arg Cys Asn Gly Phe Lys Met Phe Leu Ala
            20                  25                  30

Ala Leu Ser Phe Ser Tyr Ile Ala Lys Ala Leu Gly Gly Ile Ile Met
        35                  40                  45

Lys Ile Ser Ile Thr Gln Ile Glu Arg Arg Phe Asp Ile Ser Ser Ser
    50                  55                  60

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

Ile Val Phe Val Ser Tyr Phe Gly Ser Lys Leu His Arg Pro Lys Leu
                85                  90                  95

Ile Gly Ile Gly Cys Leu Leu Met Gly Thr Gly Ser Ile Leu Thr Ser
            100                 105                 110

Leu Pro His Phe Phe Met Gly Tyr Tyr Arg Tyr Ser Lys Glu Thr His
        115                 120                 125

Ile Asn Pro Ser Glu Asn Ser Thr Ser Ser Leu Ser Thr Cys Leu Ile
    130                 135                 140

Asn Gln Thr Leu Ser Phe Asn Gly Thr Ser Pro Glu Ile Val Glu Lys
145                 150                 155                 160

Asp Cys Val Lys Glu Ser Gly Ser His Met Trp Ile Tyr Val Phe Met
                165                 170                 175
```

```
Gly Asn Met Leu Arg Gly Ile Gly Glu Thr Pro Ile Val Pro Leu Gly
            180                 185                 190

Ile Ser Tyr Ile Asp Asp Phe Ala Lys Glu Gly His Ser Ser Leu Tyr
        195                 200                 205

Leu Gly Ser Leu Asn Ala Ile Gly Met Ile Gly Pro Val Ile Gly Phe
    210                 215                 220

Ala Leu Gly Ser Leu Phe Ala Lys Met Tyr Val Asp Ile Gly Tyr Val
225                 230                 235                 240

Asp Leu Ser Thr Ile Arg Ile Thr Pro Lys Asp Ser Arg Trp Val Gly
                245                 250                 255

Ala Trp Trp Leu Gly Phe Leu Val Ser Gly Leu Phe Ser Ile Ile Ser
            260                 265                 270

Ser Ile Pro Phe Phe Phe Leu Pro Lys Asn Pro Asn Lys Pro Gln Lys
        275                 280                 285

Glu Arg Lys Ile Ser Leu Ser Leu His Val Leu Lys Thr Asn Asp Asp
    290                 295                 300

Arg Asn Gln Thr Ala Asn Leu Thr Asn Gln Gly Lys Asn Val Thr Lys
305                 310                 315                 320

Asn Val Thr Gly Phe Phe Gln Ser Leu Lys Ser Ile Leu Thr Asn Pro
                325                 330                 335

Leu Tyr Val Ile Phe Leu Leu Leu Thr Leu Leu Gln Val Ser Ser Phe
            340                 345                 350

Ile Gly Ser Phe Thr Tyr Val Phe Lys Tyr Met Glu Gln Gln Tyr Gly
        355                 360                 365
```

```
Gln Ser Ala Ser His Ala Asn Phe Leu Leu Gly Ile Ile Thr Ile Pro
    370                 375                 380

Thr Val Ala Thr Gly Met Phe Leu Gly Gly Phe Ile Ile Lys Lys Phe
385                 390                 395                 400

Lys Leu Ser Leu Val Gly Ile Ala Lys Phe Ser Phe Leu Thr Ser Met
                405                 410                 415

Ile Ser Phe Leu Phe Gln Leu Leu Tyr Phe Pro Leu Ile Cys Glu Ser
            420                 425                 430

Lys Ser Val Ala Gly Leu Thr Leu Thr Tyr Asp Gly Asn Asn Ser Val
        435                 440                 445

Ala Ser His Val Asp Val Pro Leu Ser Tyr Cys Asn Ser Glu Cys Asn
    450                 455                 460

Cys Asp Glu Ser Gln Trp Glu Pro Val Cys Gly Asn Asn Gly Ile Thr
465                 470                 475                 480

Tyr Leu Ser Pro Cys Leu Ala Gly Cys Lys Ser Ser Ser Gly Ile Lys
                485                 490                 495

Lys His Thr Val Phe Tyr Asn Cys Ser Cys Val Glu Val Thr Gly Leu
            500                 505                 510

Gln Asn Arg Asn Tyr Ser Ala His Leu Gly Glu Cys Pro Arg Asp Asn
        515                 520                 525

Thr Cys Thr Arg Lys Phe Phe Ile Tyr Val Ala Ile Gln Val Ile Asn
    530                 535                 540

Ser Leu Phe Ser Ala Thr Gly Gly Thr Thr Phe Ile Leu Leu Thr Val
545                 550                 555                 560
```

Lys Ile Val Gln Pro Glu Leu Lys Ala Leu Ala Met Gly Phe Gln Ser
565 570 575

Met Val Ile Arg Thr Leu Gly Gly Ile Leu Ala Pro Ile Tyr Phe Gly
580 585 590

Ala Leu Ile Asp Lys Thr Cys Met Lys Trp Ser Thr Asn Ser Cys Gly
595 600 605

Ala Gln Gly Ala Cys Arg Ile Tyr Asn Ser Val Phe Phe Gly Arg Val
610 615 620

Tyr Leu Gly Leu Ser Ile Ala Leu Arg Phe Pro Ala Leu Val Leu Tyr
625 630 635 640

Ile Val Phe Ile Phe Ala Met Lys Lys Lys Phe Gln Gly Lys Asp Thr
645 650 655

Lys Ala Ser Asp Asn Glu Arg Lys Val Met Asp Glu Ala Asn Leu Glu
660 665 670

Phe Leu Asn Asn Gly Glu His Phe Val Pro Ser Ala Gly Thr Asp Ser
675 680 685

Lys Thr Cys Asn Leu Asp Met Gln Asp Asn Ala Ala Ala Asn
690 695 700

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic nucleotide primer

<400> 94
gagggcctat ttcccatgat 20

<210> 95
<211> 254
<212> DNA
<213> Homo sapiens

<400> 95
ctcttgcagt gaggtgaaga catttgaaaa tcaccccact gcaaactcct ccccctgcta 60

gaaacctcac attgaaatgc tgtaaatgac gtgggccccg agtgcaatcg cgggaagcca 120

gggtttccag ctaggacaca gcaggtcgtg atccgggtcg ggacactgcc tggcagaggc 180

tgcgagcatg gggccctggg gctggaaatt gcgctggacc gtcgccttgc tcctcgccgc 240

ggcggggact gcag 254

<210> 96
<211> 254
<212> DNA
<213> Homo sapiens

<400> 96
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ctttggagtg taactttacg acatttactg cacccggggc tcacgttagc gcccttcggt 120

cccaaaggtc gatcctgtgt cgtccagcac taggcccagc cctgtgacgg accgtctccg 180

acgctcgtac cccgggaccc cgacctttaa cgcgacctgg cagcggaacg aggagcggcg 240

ccgcccctga cgtc 254

<210> 97
<211> 31
<212> DNA
<213> Homo sapiens

<400> 97
gggctggaaa ttgcgctgga ccgtcgcctt g 31

<210> 98
<211> 21
<212> DNA
<213> Homo sapiens

<400> 98
ctggggctgg aaattgcgct g 21

<210> 99
<211> 20
<212> DNA
<213> Homo sapiens

<400> 99
gccttgctcc tcgccgcggc 20