WT20162112-seql-000001

SEQUENCE LISTING

<110> EXPLOIT TECHNOLOGIES PTE LTD

<120> DERIVATION OF HEPATIC STEM CELLS AND MATURE LIVER CELL TYPES AND USES THEREOF

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<151> 2015-06-12

<150> SG 10201504659X
<151> 2015-06-12

<160> 42

<170> PatentIn version 3.5

<210> 1
<211> 17
<212> PRT
<213> Homo sapiens

<400> 1

Cys Asp Asp Tyr Tyr Tyr Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro
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Arg

<210> 2
<211> 509
<212> PRT
<213> Homo sapiens

<400> 2

Met Asn Leu Leu Asp Pro Phe Met Lys Met Thr Asp Glu Gln Glu Lys
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Gly Leu Ser Gly Ala Pro Ser Pro Thr Met Ser Glu Asp Ser Ala Gly
20 25 30

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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


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

<400>  3

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>  4
<211>  469
<212>  PRT
<213>  Homo sapiens

<400>  4

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> 5
<211> 474
<212> PRT
<213> Homo sapiens

<400> 5

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 Ser Pro Ser Asp Ala Pro His
    370                 375                 380

Ala His His Pro Leu His Pro His Leu Met Gln Glu His Met Gly Thr
385                 390                 395                 400

Asn Val Ile Val Ala Asn Thr Met Pro Thr His Leu Ser Asn Gly Gln
                405                 410                 415

Met Cys Glu Trp Pro Arg Pro Arg Gly Gln Ala Ala Thr Pro Glu Thr
            420                 425                 430

Pro Gln Pro Ser Pro Pro Gly Gly Ser Gly Ser Glu Pro Tyr Lys Leu
        435                 440                 445

Leu Pro Gly Ala Val Ala Thr Ile Val Lys Pro Leu Ser Ala Ile Pro
    450                 455                 460

Gln Pro Thr Ile Thr Lys Gln Glu Val Ile
465                 470
```

<210> 6
<211> 457
<212> PRT
<213> Homo sapiens

<400> 6

```
Met Leu Gly Ala Val Lys Met Glu Gly His Glu Pro Ser Asp Trp Ser
1               5                  10                  15


Ser Tyr Tyr Ala Glu Pro Glu Gly Tyr Ser Ser Val Ser Asn Met Asn
            20                  25                  30


Ala Gly Leu Gly Met Asn Gly Met Asn Thr Tyr Met Ser Met Ser Ala
        35                  40                  45


Ala Ala Met Gly Ser Gly Ser Gly Asn Met Ser Ala Gly Ser Met Asn
    50                  55                  60


Met Ser Ser Tyr Val Gly Ala Gly Met Ser Pro Ser Leu Ala Gly Met
65                  70                  75                  80


Ser Pro Gly Ala Gly Ala Met Ala Gly Met Gly Gly Ser Ala Gly Ala
                85                  90                  95


Ala Gly Val Ala Gly Met Gly Pro His Leu Ser Pro Ser Leu Ser Pro
            100                 105                 110


Leu Gly Gly Gln Ala Ala Gly Ala Met Gly Gly Leu Ala Pro Tyr Ala
        115                 120                 125


Asn Met Asn Ser Met Ser Pro Met Tyr Gly Gln Ala Gly Leu Ser Arg
    130                 135                 140


Ala Arg Asp Pro Lys Thr Tyr Arg Arg Ser Tyr Thr His Ala Lys Pro
145                 150                 155                 160
```

```
Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met Ala Ile Gln Gln Ser Pro
                165                 170                 175

Asn Lys Met Leu Thr Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu
            180                 185                 190

Phe Pro Phe Tyr Arg Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg
        195                 200                 205

His Ser Leu Ser Phe Asn Asp Cys Phe Leu Lys Val Pro Arg Ser Pro
    210                 215                 220

Asp Lys Pro Gly Lys Gly Ser Phe Trp Thr Leu His Pro Asp Ser Gly
225                 230                 235                 240

Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg Arg Gln Lys Arg Phe Lys
                245                 250                 255

Cys Glu Lys Gln Leu Ala Leu Lys Glu Ala Ala Gly Ala Ala Gly Ser
            260                 265                 270

Gly Lys Lys Ala Ala Ala Gly Ala Gln Ala Ser Gln Ala Gln Leu Gly
        275                 280                 285

Glu Ala Ala Gly Pro Ala Ser Glu Thr Pro Ala Gly Thr Glu Ser Pro
    290                 295                 300

His Ser Ser Ala Ser Pro Cys Gln Glu His Lys Arg Gly Gly Leu Gly
305                 310                 315                 320

Glu Leu Lys Gly Thr Pro Ala Ala Ala Leu Ser Pro Pro Glu Pro Ala
                325                 330                 335

Pro Ser Pro Gly Gln Gln Gln Gln Ala Ala Ala His Leu Leu Gly Pro
            340                 345                 350
```

```
Pro His His Pro Gly Leu Pro Pro Glu Ala His Leu Lys Pro Glu His
        355                 360                 365

His Tyr Ala Phe Asn His Pro Phe Ser Ile Asn Asn Leu Met Ser Ser
    370                 375                 380

Glu Gln Gln His His His Ser His His His His Gln Pro His Lys Met
385                 390                 395                 400

Asp Leu Lys Ala Tyr Glu Gln Val Met His Tyr Pro Gly Tyr Gly Ser
                405                 410                 415

Pro Met Pro Gly Ser Leu Ala Met Gly Pro Val Thr Asn Lys Thr Gly
            420                 425                 430

Leu Asp Ala Ser Pro Leu Ala Ala Asp Thr Ser Tyr Tyr Gln Gly Val
        435                 440                 445

Tyr Ser Arg Pro Ile Met Asn Ser Ser
    450                 455
```

<210> 7
<211> 882
<212> PRT
<213> Homo sapiens

<400> 7

```
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 Thr 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 Ala Trp Glu Ala Val Tyr Thr Ile Leu
               405                 410                 415

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

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

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

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

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

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

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

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

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

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

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

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

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

```
Pro Phe Thr Ala Glu Leu Thr His Gly Ala Ser Ala Asn Trp Thr Ile
625                 630                 635                 640


Gln Tyr Asn Asp Pro Thr Gln Glu Ser Ile Ile Leu Lys Pro Lys Met
                645                 650                 655


Ala Leu Glu Val Gly Asp Tyr Lys Ile Asn Leu Lys Leu Met Asp Asn
            660                 665                 670


Gln Asn Lys Asp Gln Val Thr Thr Leu Glu Val Ser Val Cys Asp Cys
        675                 680                 685


Glu Gly Ala Ala Gly Val Cys Arg Lys Ala Gln Pro Val Glu Ala Gly
    690                 695                 700


Leu Gln Ile Pro Ala Ile Leu Gly Ile Leu Gly Gly Ile Leu Ala Leu
705                 710                 715                 720


Leu Ile Leu Ile Leu Leu Leu Leu Leu Phe Leu Arg Arg Arg Ala Val
                725                 730                 735


Val Lys Glu Pro Leu Leu Pro Pro Glu Asp Asp Thr Arg Asp Asn Val
            740                 745                 750


Tyr Tyr Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp Phe Asp
        755                 760                 765


Leu Ser Gln Leu His Arg Gly Leu Asp Ala Arg Pro Glu Val Thr Arg
    770                 775                 780


Asn Asp Val Ala Pro Thr Leu Met Ser Val Pro Arg Tyr Leu Pro Arg
785                 790                 795                 800


Pro Ala Asn Pro Asp Glu Ile Gly Asn Phe Ile Asp Glu Asn Leu Lys
                805                 810                 815
```

Ala Ala Asp Thr Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu Leu Val
820 825 830

Phe Asp Tyr Glu Gly Ser Gly Ser Glu Ala Ala Ser Leu Ser Ser Leu
835 840 845

Asn Ser Ser Glu Ser Asp Lys Asp Gln Asp Tyr Asp Tyr Leu Asn Glu
850 855 860

Trp Gly Asn Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Glu
865 870 875 880

Asp Asp

<210> 8
<211> 314
<212> PRT
<213> Homo sapiens

<400> 8

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 Met 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> 9
<211> 609
<212> PRT
<213> Homo sapiens

<400> 9

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> 10
<211> 3256
<212> PRT
<213> Homo sapiens

<400> 10

```
Met Trp Pro Thr Arg Arg Leu Val Thr Ile Lys Arg Ser Gly Val Asp
1               5                   10                  15

Gly Pro His Phe Pro Leu Ser Leu Ser Thr Cys Leu Phe Gly Arg Gly
            20                  25                  30

Ile Glu Cys Asp Ile Arg Ile Gln Leu Pro Val Val Ser Lys Gln His
        35                  40                  45
```

```
Cys Lys Ile Glu Ile His Glu Gln Glu Ala Ile Leu His Asn Phe Ser
    50                  55                  60

Ser Thr Asn Pro Thr Gln Val Asn Gly Ser Val Ile Asp Glu Pro Val
65                  70                  75                  80

Arg Leu Lys His Gly Asp Val Ile Thr Ile Ile Asp Arg Ser Phe Arg
                85                  90                  95

Tyr Glu Asn Glu Ser Leu Gln Asn Gly Arg Lys Ser Thr Glu Phe Pro
            100                 105                 110

Arg Lys Ile Arg Glu Gln Glu Pro Ala Arg Arg Val Ser Arg Ser Ser
        115                 120                 125

Phe Ser Ser Asp Pro Asp Glu Lys Ala Gln Asp Ser Lys Ala Tyr Ser
    130                 135                 140

Lys Ile Thr Glu Gly Lys Val Ser Gly Asn Pro Gln Val His Ile Lys
145                 150                 155                 160

Asn Val Lys Glu Asp Ser Thr Ala Asp Asp Ser Lys Asp Ser Val Ala
                165                 170                 175

Gln Gly Thr Thr Asn Val His Ser Ser Glu His Ala Gly Arg Asn Gly
            180                 185                 190

Arg Asn Ala Ala Asp Pro Ile Ser Gly Asp Phe Lys Glu Ile Ser Ser
        195                 200                 205

Val Lys Leu Val Ser Arg Tyr Gly Glu Leu Lys Ser Val Pro Thr Thr
    210                 215                 220

Gln Cys Leu Asp Asn Ser Lys Lys Asn Glu Ser Pro Phe Trp Lys Leu
225                 230                 235                 240
```

```
Tyr Glu Ser Val Lys Lys Glu Leu Asp Val Lys Ser Gln Lys Glu Asn
                245                 250                 255

Val Leu Gln Tyr Cys Arg Lys Ser Gly Leu Gln Thr Asp Tyr Ala Thr
            260                 265                 270

Glu Lys Glu Ser Ala Asp Gly Leu Gln Gly Glu Thr Gln Leu Leu Val
        275                 280                 285

Ser Arg Lys Ser Arg Pro Lys Ser Gly Gly Ser Gly His Ala Val Ala
    290                 295                 300

Glu Pro Ala Ser Pro Glu Gln Glu Leu Asp Gln Asn Lys Gly Lys Gly
305                 310                 315                 320

Arg Asp Val Glu Ser Val Gln Thr Pro Ser Lys Ala Val Gly Ala Ser
                325                 330                 335

Phe Pro Leu Tyr Glu Pro Ala Lys Met Lys Thr Pro Val Gln Tyr Ser
            340                 345                 350

Gln Gln Gln Asn Ser Pro Gln Lys His Lys Asn Lys Asp Leu Tyr Thr
        355                 360                 365

Thr Gly Arg Arg Glu Ser Val Asn Leu Gly Lys Ser Glu Gly Phe Lys
    370                 375                 380

Ala Gly Asp Lys Thr Leu Thr Pro Arg Lys Leu Ser Thr Arg Asn Arg
385                 390                 395                 400

Thr Pro Ala Lys Val Glu Asp Ala Ala Asp Ser Ala Thr Lys Pro Glu
                405                 410                 415

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

```
Leu Pro Thr Glu Thr Glu Ile His Asn Glu Pro Phe Leu Thr Leu Trp
        435                 440                 445

Leu Thr Gln Val Glu Arg Lys Ile Gln Lys Asp Ser Leu Ser Lys Pro
    450                 455                 460

Glu Lys Leu Gly Thr Thr Ala Gly Gln Met Cys Ser Gly Leu Pro Gly
465                 470                 475                 480

Leu Ser Ser Val Asp Ile Asn Asn Phe Gly Asp Ser Ile Asn Glu Ser
                485                 490                 495

Glu Gly Ile Pro Leu Lys Arg Arg Arg Val Ser Phe Gly Gly His Leu
            500                 505                 510

Arg Pro Glu Leu Phe Asp Glu Asn Leu Pro Pro Asn Thr Pro Leu Lys
        515                 520                 525

Arg Gly Glu Ala Pro Thr Lys Arg Lys Ser Leu Val Met His Thr Pro
    530                 535                 540

Pro Val Leu Lys Lys Ile Ile Lys Glu Gln Pro Gln Pro Ser Gly Lys
545                 550                 555                 560

Gln Glu Ser Gly Ser Glu Ile His Val Glu Val Lys Ala Gln Ser Leu
                565                 570                 575

Val Ile Ser Pro Pro Ala Pro Ser Pro Arg Lys Thr Pro Val Ala Ser
            580                 585                 590

Asp Gln Arg Arg Arg Ser Cys Lys Thr Ala Pro Ala Ser Ser Ser Lys
        595                 600                 605

Ser Gln Thr Glu Val Pro Lys Arg Gly Gly Arg Lys Ser Gly Asn Leu
    610                 615                 620
```

```
Pro Ser Lys Arg Val Ser Ile Ser Arg Ser Gln His Asp Ile Leu Gln
625                 630                 635                 640


Met Ile Cys Ser Lys Arg Arg Ser Gly Ala Ser Glu Ala Asn Leu Ile
                645                 650                 655


Val Ala Lys Ser Trp Ala Asp Val Val Lys Leu Gly Ala Lys Gln Thr
            660                 665                 670


Gln Thr Lys Val Ile Lys His Gly Pro Gln Arg Ser Met Asn Lys Arg
        675                 680                 685


Gln Arg Arg Pro Ala Thr Pro Lys Lys Pro Val Gly Glu Val His Ser
    690                 695                 700


Gln Phe Ser Thr Gly His Ala Asn Ser Pro Cys Thr Ile Ile Ile Gly
705                 710                 715                 720


Lys Ala His Thr Glu Lys Val His Val Pro Ala Arg Pro Tyr Arg Val
                725                 730                 735


Leu Asn Asn Phe Ile Ser Asn Gln Lys Met Asp Phe Lys Glu Asp Leu
            740                 745                 750


Ser Gly Ile Ala Glu Met Phe Lys Thr Pro Val Lys Glu Gln Pro Gln
        755                 760                 765


Leu Thr Ser Thr Cys His Ile Ala Ile Ser Asn Ser Glu Asn Leu Leu
    770                 775                 780


Gly Lys Gln Phe Gln Gly Thr Asp Ser Gly Glu Glu Pro Leu Leu Pro
785                 790                 795                 800


Thr Ser Glu Ser Phe Gly Gly Asn Val Phe Phe Ser Ala Gln Asn Ala
                805                 810                 815
```

```
Ala Lys Gln Pro Ser Asp Lys Cys Ser Ala Ser Pro Pro Leu Arg Arg
            820                 825                 830

Gln Cys Ile Arg Glu Asn Gly Asn Val Ala Lys Thr Pro Arg Asn Thr
        835                 840                 845

Tyr Lys Met Thr Ser Leu Glu Thr Lys Thr Ser Asp Thr Glu Thr Glu
    850                 855                 860

Pro Ser Lys Thr Val Ser Thr Ala Asn Arg Ser Gly Arg Ser Thr Glu
865                 870                 875                 880

Phe Arg Asn Ile Gln Lys Leu Pro Val Glu Ser Lys Ser Glu Glu Thr
                885                 890                 895

Asn Thr Glu Ile Val Glu Cys Ile Leu Lys Arg Gly Gln Lys Ala Thr
            900                 905                 910

Leu Leu Gln Gln Arg Arg Glu Gly Glu Met Lys Glu Ile Glu Arg Pro
        915                 920                 925

Phe Glu Thr Tyr Lys Glu Asn Ile Glu Leu Lys Glu Asn Asp Glu Lys
    930                 935                 940

Met Lys Ala Met Lys Arg Ser Arg Thr Trp Gly Gln Lys Cys Ala Pro
945                 950                 955                 960

Met Ser Asp Leu Thr Asp Leu Lys Ser Leu Pro Asp Thr Glu Leu Met
                965                 970                 975

Lys Asp Thr Ala Arg Gly Gln Asn Leu Leu Gln Thr Gln Asp His Ala
            980                 985                 990

Lys Ala Pro Lys Ser Glu Lys Gly  Lys Ile Thr Lys Met  Pro Cys Gln
        995                 1000                1005
```

```
Ser Leu  Gln Pro Glu Pro Ile  Asn Thr Pro Thr His  Thr Lys Gln
    1010                1015                1020

Gln Leu  Lys Ala Ser Leu Gly  Lys Val Gly Val Lys  Glu Glu Leu
    1025                1030                1035

Leu Ala  Val Gly Lys Phe Thr  Arg Thr Ser Gly Glu  Thr Thr His
    1040                1045                1050

Thr His  Arg Glu Pro Ala Gly  Asp Gly Lys Ser Ile  Arg Thr Phe
    1055                1060                1065

Lys Glu  Ser Pro Lys Gln Ile  Leu Asp Pro Ala Ala  Arg Val Thr
    1070                1075                1080

Gly Met  Lys Lys Trp Pro Arg  Thr Pro Lys Glu Glu  Ala Gln Ser
    1085                1090                1095

Leu Glu  Asp Leu Ala Gly Phe  Lys Glu Leu Phe Gln  Thr Pro Gly
    1100                1105                1110

Pro Ser  Glu Glu Ser Met Thr  Asp Glu Lys Thr Thr  Lys Ile Ala
    1115                1120                1125

Cys Lys  Ser Pro Pro Pro Glu  Ser Val Asp Thr Pro  Thr Ser Thr
    1130                1135                1140

Lys Gln  Trp Pro Lys Arg Ser  Leu Arg Lys Ala Asp  Val Glu Glu
    1145                1150                1155

Glu Phe  Leu Ala Leu Arg Lys  Leu Thr Pro Ser Ala  Gly Lys Ala
    1160                1165                1170

Met Leu  Thr Pro Lys Pro Ala  Gly Gly Asp Glu Lys  Asp Ile Lys
    1175                1180                1185
```

```
Ala Phe  Met Gly Thr Pro Val  Gln Lys Leu Asp Leu  Ala Gly Thr
    1190                1195                1200

Leu Pro  Gly Ser Lys Arg Gln  Leu Gln Thr Pro Lys  Glu Lys Ala
    1205                1210                1215

Gln Ala  Leu Glu Asp Leu Ala  Gly Phe Lys Glu Leu  Phe Gln Thr
    1220                1225                1230

Pro Gly  His Thr Glu Glu Leu  Val Ala Ala Gly Lys  Thr Thr Lys
    1235                1240                1245

Ile Pro  Cys Asp Ser Pro Gln  Ser Asp Pro Val Asp  Thr Pro Thr
    1250                1255                1260

Ser Thr  Lys Gln Arg Pro Lys  Arg Ser Ile Arg Lys  Ala Asp Val
    1265                1270                1275

Glu Gly  Glu Leu Leu Ala Cys  Arg Asn Leu Met Pro  Ser Ala Gly
    1280                1285                1290

Lys Ala  Met His Thr Pro Lys  Pro Ser Val Gly Glu  Glu Lys Asp
    1295                1300                1305

Ile Ile  Ile Phe Val Gly Thr  Pro Val Gln Lys Leu  Asp Leu Thr
    1310                1315                1320

Glu Asn  Leu Thr Gly Ser Lys  Arg Arg Pro Gln Thr  Pro Lys Glu
    1325                1330                1335

Glu Ala  Gln Ala Leu Glu Asp  Leu Thr Gly Phe Lys  Glu Leu Phe
    1340                1345                1350

Gln Thr  Pro Gly His Thr Glu  Glu Ala Val Ala Ala  Gly Lys Thr
    1355                1360                1365
```

```
Thr Lys  Met Pro Cys Glu Ser  Ser Pro Pro Glu Ser  Ala Asp Thr
    1370                1375                1380

Pro Thr  Ser Thr Arg Arg Gln  Pro Lys Thr Pro Leu  Glu Lys Arg
    1385                1390                1395

Asp Val  Gln Lys Glu Leu Ser  Ala Leu Lys Lys Leu  Thr Gln Thr
    1400                1405                1410

Ser Gly  Glu Thr Thr His Thr  Asp Lys Val Pro Gly  Gly Glu Asp
    1415                1420                1425

Lys Ser  Ile Asn Ala Phe Arg  Glu Thr Ala Lys Gln  Lys Leu Asp
    1430                1435                1440

Pro Ala  Ala Ser Val Thr Gly  Ser Lys Arg His Pro  Lys Thr Lys
    1445                1450                1455

Glu Lys  Ala Gln Pro Leu Glu  Asp Leu Ala Gly Leu  Lys Glu Leu
    1460                1465                1470

Phe Gln  Thr Pro Val Cys Thr  Asp Lys Pro Thr Thr  His Glu Lys
    1475                1480                1485

Thr Thr  Lys Ile Ala Cys Arg  Ser Gln Pro Asp Pro  Val Asp Thr
    1490                1495                1500

Pro Thr  Ser Ser Lys Pro Gln  Ser Lys Arg Ser Leu  Arg Lys Val
    1505                1510                1515

Asp Val  Glu Glu Glu Phe Phe  Ala Leu Arg Lys Arg  Thr Pro Ser
    1520                1525                1530

Ala Gly  Lys Ala Met His Thr  Pro Lys Pro Ala Val  Ser Gly Glu
    1535                1540                1545
```

```
Lys Asn  Ile Tyr Ala Phe Met  Gly Thr Pro Val Gln  Lys Leu Asp
    1550                1555                1560

Leu Thr  Glu Asn Leu Thr Gly  Ser Lys Arg Arg Leu  Gln Thr Pro
    1565                1570                1575

Lys Glu  Lys Ala Gln Ala Leu  Glu Asp Leu Ala Gly  Phe Lys Glu
    1580                1585                1590

Leu Phe  Gln Thr Arg Gly His  Thr Glu Glu Ser Met  Thr Asn Asp
    1595                1600                1605

Lys Thr  Ala Lys Val Ala Cys  Lys Ser Ser Gln Pro  Asp Pro Asp
    1610                1615                1620

Lys Asn  Pro Ala Ser Ser Lys  Arg Arg Leu Lys Thr  Ser Leu Gly
    1625                1630                1635

Lys Val  Gly Val Lys Glu Glu  Leu Leu Ala Val Gly  Lys Leu Thr
    1640                1645                1650

Gln Thr  Ser Gly Glu Thr Thr  His Thr His Thr Glu  Pro Thr Gly
    1655                1660                1665

Asp Gly  Lys Ser Met Lys Ala  Phe Met Glu Ser Pro  Lys Gln Ile
    1670                1675                1680

Leu Asp  Ser Ala Ala Ser Leu  Thr Gly Ser Lys Arg  Gln Leu Arg
    1685                1690                1695

Thr Pro  Lys Gly Lys Ser Glu  Val Pro Glu Asp Leu  Ala Gly Phe
    1700                1705                1710

Ile Glu  Leu Phe Gln Thr Pro  Ser His Thr Lys Glu  Ser Met Thr
    1715                1720                1725
```

```
Asn Glu  Lys Thr Thr Lys Val  Ser Tyr Arg Ala Ser  Gln Pro Asp
    1730                1735                1740

Leu Val  Asp Thr Pro Thr Ser  Ser Lys Pro Gln Pro  Lys Arg Ser
    1745                1750                1755

Leu Arg  Lys Ala Asp Thr Glu  Glu Glu Phe Leu Ala  Phe Arg Lys
    1760                1765                1770

Gln Thr  Pro Ser Ala Gly Lys  Ala Met His Thr Pro  Lys Pro Ala
    1775                1780                1785

Val Gly  Glu Glu Lys Asp Ile  Asn Thr Phe Leu Gly  Thr Pro Val
    1790                1795                1800

Gln Lys  Leu Asp Gln Pro Gly  Asn Leu Pro Gly Ser  Asn Arg Arg
    1805                1810                1815

Leu Gln  Thr Arg Lys Glu Lys  Ala Gln Ala Leu Glu  Glu Leu Thr
    1820                1825                1830

Gly Phe  Arg Glu Leu Phe Gln  Thr Pro Cys Thr Asp  Asn Pro Thr
    1835                1840                1845

Thr Asp  Glu Lys Thr Thr Lys  Lys Ile Leu Cys Lys  Ser Pro Gln
    1850                1855                1860

Ser Asp  Pro Ala Asp Thr Pro  Thr Asn Thr Lys Gln  Arg Pro Lys
    1865                1870                1875

Arg Ser  Leu Lys Lys Ala Asp  Val Glu Glu Glu Phe  Leu Ala Phe
    1880                1885                1890

Arg Lys  Leu Thr Pro Ser Ala  Gly Lys Ala Met His  Thr Pro Lys
    1895                1900                1905
```

```
Ala Ala  Val Gly Glu Glu Lys  Asp Ile Asn Thr Phe  Val Gly Thr
    1910                1915                1920

Pro Val  Glu Lys Leu Asp Leu  Leu Gly Asn Leu Pro  Gly Ser Lys
    1925                1930                1935

Arg Arg  Pro Gln Thr Pro Lys  Glu Lys Ala Lys Ala  Leu Glu Asp
    1940                1945                1950

Leu Ala  Gly Phe Lys Glu Leu  Phe Gln Thr Pro Gly  His Thr Glu
    1955                1960                1965

Glu Ser  Met Thr Asp Asp Lys  Ile Thr Glu Val Ser  Cys Lys Ser
    1970                1975                1980

Pro Gln  Pro Asp Pro Val Lys  Thr Pro Thr Ser Ser  Lys Gln Arg
    1985                1990                1995

Leu Lys  Ile Ser Leu Gly Lys  Val Gly Val Lys Glu  Glu Val Leu
    2000                2005                2010

Pro Val  Gly Lys Leu Thr Gln  Thr Ser Gly Lys Thr  Thr Gln Thr
    2015                2020                2025

His Arg  Glu Thr Ala Gly Asp  Gly Lys Ser Ile Lys  Ala Phe Lys
    2030                2035                2040

Glu Ser  Ala Lys Gln Met Leu  Asp Pro Ala Asn Tyr  Gly Thr Gly
    2045                2050                2055

Met Glu  Arg Trp Pro Arg Thr  Pro Lys Glu Glu Ala  Gln Ser Leu
    2060                2065                2070

Glu Asp  Leu Ala Gly Phe Lys  Glu Leu Phe Gln Thr  Pro Asp His
    2075                2080                2085
```

```
Thr Glu  Glu Ser Thr Thr Asp  Asp Lys Thr Thr Lys  Ile Ala Cys
    2090                2095                2100

Lys Ser  Pro Pro Pro Glu Ser  Met Asp Thr Pro Thr  Ser Thr Arg
    2105                2110                2115

Arg Arg  Pro Lys Thr Pro Leu  Gly Lys Arg Asp Ile  Val Glu Glu
    2120                2125                2130

Leu Ser  Ala Leu Lys Gln Leu  Thr Gln Thr Thr His  Thr Asp Lys
    2135                2140                2145

Val Pro  Gly Asp Glu Asp Lys  Gly Ile Asn Val Phe  Arg Glu Thr
    2150                2155                2160

Ala Lys  Gln Lys Leu Asp Pro  Ala Ala Ser Val Thr  Gly Ser Lys
    2165                2170                2175

Arg Gln  Pro Arg Thr Pro Lys  Gly Lys Ala Gln Pro  Leu Glu Asp
    2180                2185                2190

Leu Ala  Gly Leu Lys Glu Leu  Phe Gln Thr Pro Ile  Cys Thr Asp
    2195                2200                2205

Lys Pro  Thr Thr His Glu Lys  Thr Thr Lys Ile Ala  Cys Arg Ser
    2210                2215                2220

Pro Gln  Pro Asp Pro Val Gly  Thr Pro Thr Ile Phe  Lys Pro Gln
    2225                2230                2235

Ser Lys  Arg Ser Leu Arg Lys  Ala Asp Val Glu Glu  Glu Ser Leu
    2240                2245                2250

Ala Leu  Arg Lys Arg Thr Pro  Ser Val Gly Lys Ala  Met Asp Thr
    2255                2260                2265
```

```
Pro Lys  Pro Ala Gly Gly Asp  Glu Lys Asp Met Lys  Ala Phe Met
    2270                2275                2280

Gly Thr  Pro Val Gln Lys Leu  Asp Leu Pro Gly Asn  Leu Pro Gly
    2285                2290                2295

Ser Lys  Arg Trp Pro Gln Thr  Pro Lys Glu Lys Ala  Gln Ala Leu
    2300                2305                2310

Glu Asp  Leu Ala Gly Phe Lys  Glu Leu Phe Gln Thr  Pro Gly Thr
    2315                2320                2325

Asp Lys  Pro Thr Thr Asp Glu  Lys Thr Thr Lys Ile  Ala Cys Lys
    2330                2335                2340

Ser Pro  Gln Pro Asp Pro Val  Asp Thr Pro Ala Ser  Thr Lys Gln
    2345                2350                2355

Arg Pro  Lys Arg Asn Leu Arg  Lys Ala Asp Val Glu  Glu Glu Phe
    2360                2365                2370

Leu Ala  Leu Arg Lys Arg Thr  Pro Ser Ala Gly Lys  Ala Met Asp
    2375                2380                2385

Thr Pro  Lys Pro Ala Val Ser  Asp Glu Lys Asn Ile  Asn Thr Phe
    2390                2395                2400

Val Glu  Thr Pro Val Gln Lys  Leu Asp Leu Leu Gly  Asn Leu Pro
    2405                2410                2415

Gly Ser  Lys Arg Gln Pro Gln  Thr Pro Lys Glu Lys  Ala Glu Ala
    2420                2425                2430

Leu Glu  Asp Leu Val Gly Phe  Lys Glu Leu Phe Gln  Thr Pro Gly
    2435                2440                2445
```

```
His Thr  Glu Glu Ser Met Thr  Asp Asp Lys Ile Thr  Glu Val Ser
    2450                2455                2460

Cys Lys  Ser Pro Gln Pro Glu  Ser Phe Lys Thr Ser  Arg Ser Ser
    2465                2470                2475

Lys Gln  Arg Leu Lys Ile Pro  Leu Val Lys Val Asp  Met Lys Glu
    2480                2485                2490

Glu Pro  Leu Ala Val Ser Lys  Leu Thr Arg Thr Ser  Gly Glu Thr
    2495                2500                2505

Thr Gln  Thr His Thr Glu Pro  Thr Gly Asp Ser Lys  Ser Ile Lys
    2510                2515                2520

Ala Phe  Lys Glu Ser Pro Lys  Gln Ile Leu Asp Pro  Ala Ala Ser
    2525                2530                2535

Val Thr  Gly Ser Arg Arg Gln  Leu Arg Thr Arg Lys  Glu Lys Ala
    2540                2545                2550

Arg Ala  Leu Glu Asp Leu Val  Asp Phe Lys Glu Leu  Phe Ser Ala
    2555                2560                2565

Pro Gly  His Thr Glu Glu Ser  Met Thr Ile Asp Lys  Asn Thr Lys
    2570                2575                2580

Ile Pro  Cys Lys Ser Pro Pro  Pro Glu Leu Thr Asp  Thr Ala Thr
    2585                2590                2595

Ser Thr  Lys Arg Cys Pro Lys  Thr Arg Pro Arg Lys  Glu Val Lys
    2600                2605                2610

Glu Glu  Leu Ser Ala Val Glu  Arg Leu Thr Gln Thr  Ser Gly Gln
    2615                2620                2625
```

```
Ser Thr  His Thr His Lys Glu  Pro Ala Ser Gly Asp  Glu Gly Ile
    2630                2635                2640

Lys Val  Leu Lys Gln Arg Ala  Lys Lys Lys Pro Asn  Pro Val Glu
    2645                2650                2655

Glu Glu  Pro Ser Arg Arg Arg  Pro Arg Ala Pro Lys  Glu Lys Ala
    2660                2665                2670

Gln Pro  Leu Glu Asp Leu Ala  Gly Phe Thr Glu Leu  Ser Glu Thr
    2675                2680                2685

Ser Gly  His Thr Gln Glu Ser  Leu Thr Ala Gly Lys  Ala Thr Lys
    2690                2695                2700

Ile Pro  Cys Glu Ser Pro Pro  Leu Glu Val Val Asp  Thr Thr Ala
    2705                2710                2715

Ser Thr  Lys Arg His Leu Arg  Thr Arg Val Gln Lys  Val Gln Val
    2720                2725                2730

Lys Glu  Glu Pro Ser Ala Val  Lys Phe Thr Gln Thr  Ser Gly Glu
    2735                2740                2745

Thr Thr  Asp Ala Asp Lys Glu  Pro Ala Gly Glu Asp  Lys Gly Ile
    2750                2755                2760

Lys Ala  Leu Lys Glu Ser Ala  Lys Gln Thr Pro Ala  Pro Ala Ala
    2765                2770                2775

Ser Val  Thr Gly Ser Arg Arg  Arg Pro Arg Ala Pro  Arg Glu Ser
    2780                2785                2790

Ala Gln  Ala Ile Glu Asp Leu  Ala Gly Phe Lys Asp  Pro Ala Ala
    2795                2800                2805
```

```
Gly His  Thr Glu Glu Ser Met  Thr Asp Asp Lys Thr  Thr Lys Ile
    2810                2815                2820

Pro Cys  Lys Ser Ser Pro Glu  Leu Glu Asp Thr Ala  Thr Ser Ser
    2825                2830                2835

Lys Arg  Arg Pro Arg Thr Arg  Ala Gln Lys Val Glu  Val Lys Glu
    2840                2845                2850

Glu Leu  Leu Ala Val Gly Lys  Leu Thr Gln Thr Ser  Gly Glu Thr
    2855                2860                2865

Thr His  Thr Asp Lys Glu Pro  Val Gly Glu Gly Lys  Gly Thr Lys
    2870                2875                2880

Ala Phe  Lys Gln Pro Ala Lys  Arg Lys Leu Asp Ala  Glu Asp Val
    2885                2890                2895

Ile Gly  Ser Arg Arg Gln Pro  Arg Ala Pro Lys Glu  Lys Ala Gln
    2900                2905                2910

Pro Leu  Glu Asp Leu Ala Ser  Phe Gln Glu Leu Ser  Gln Thr Pro
    2915                2920                2925

Gly His  Thr Glu Glu Leu Ala  Asn Gly Ala Ala Asp  Ser Phe Thr
    2930                2935                2940

Ser Ala  Pro Lys Gln Thr Pro  Asp Ser Gly Lys Pro  Leu Lys Ile
    2945                2950                2955

Ser Arg  Arg Val Leu Arg Ala  Pro Lys Val Glu Pro  Val Gly Asp
    2960                2965                2970

Val Val  Ser Thr Arg Asp Pro  Val Lys Ser Gln Ser  Lys Ser Asn
    2975                2980                2985
```

```
Thr Ser  Leu Pro Pro Leu Pro  Phe Lys Arg Gly Gly  Gly Lys Asp
    2990                 2995                 3000

Gly Ser  Val Thr Gly Thr Lys  Arg Leu Arg Cys Met  Pro Ala Pro
    3005                 3010                 3015

Glu Glu  Ile Val Glu Glu Leu  Pro Ala Ser Lys Lys  Gln Arg Val
    3020                 3025                 3030

Ala Pro  Arg Ala Arg Gly Lys  Ser Ser Glu Pro Val  Val Ile Met
    3035                 3040                 3045

Lys Arg  Ser Leu Arg Thr Ser  Ala Lys Arg Ile Glu  Pro Ala Glu
    3050                 3055                 3060

Glu Leu  Asn Ser Asn Asp Met  Lys Thr Asn Lys Glu  Glu His Lys
    3065                 3070                 3075

Leu Gln  Asp Ser Val Pro Glu  Asn Lys Gly Ile Ser  Leu Arg Ser
    3080                 3085                 3090

Arg Arg  Gln Asn Lys Thr Glu  Ala Glu Gln Gln Ile  Thr Glu Val
    3095                 3100                 3105

Phe Val  Leu Ala Glu Arg Ile  Glu Ile Asn Arg Asn  Glu Lys Lys
    3110                 3115                 3120

Pro Met  Lys Thr Ser Pro Glu  Met Asp Ile Gln Asn  Pro Asp Asp
    3125                 3130                 3135

Gly Ala  Arg Lys Pro Ile Pro  Arg Asp Lys Val Thr  Glu Asn Lys
    3140                 3145                 3150

Arg Cys  Leu Arg Ser Ala Arg  Gln Asn Glu Ser Ser  Gln Pro Lys
    3155                 3160                 3165
```

```
Val Ala  Glu Glu Ser Gly Gly  Gln Lys Ser Ala Lys  Val Leu Met
    3170                 3175                 3180


Gln Asn  Gln Lys Gly Lys Gly  Glu Ala Gly Asn Ser  Asp Ser Met
    3185                 3190                 3195


Cys Leu  Arg Ser Arg Lys Thr  Lys Ser Gln Pro Ala  Ala Ser Thr
    3200                 3205                 3210


Leu Glu  Ser Lys Ser Val Gln  Arg Val Thr Arg Ser  Val Lys Arg
    3215                 3220                 3225


Cys Ala  Glu Asn Pro Lys Lys  Ala Glu Asp Asn Val  Cys Val Lys
    3230                 3235                 3240


Lys Ile  Arg Thr Arg Ser His  Arg Asp Ser Glu Asp  Ile
    3245                 3250                 3255
```

<210> 11
<211> 80
<212> PRT
<213> Homo sapiens

<400> 11

```
Met Gly Arg Ala Met Val Ala Arg Leu Gly Leu Gly Leu Leu Leu Leu
1               5                  10                  15


Ala Leu Leu Leu Pro Thr Gln Ile Tyr Ser Ser Glu Thr Thr Thr Gly
            20                  25                  30


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


Asn Pro Thr Asn Ala Thr Thr Lys Ala Ala Gly Gly Ala Leu Gln Ser
    50                  55                  60
```

```
Thr Ala Ser Leu Phe Val Val Ser Leu Ser Leu Leu His Leu Tyr Ser
65                  70                  75                  80
```

<210> 12
<211> 865
<212> PRT
<213> Homo sapiens

<400> 12

```
Met Ala Leu Val Leu Gly Ser Leu Leu Leu Leu Gly Leu Cys Gly Asn
1               5                   10                  15

Ser Phe Ser Gly Gly Gln Pro Ser Ser Thr Asp Ala Pro Lys Ala Trp
            20                  25                  30

Asn Tyr Glu Leu Pro Ala Thr Asn Tyr Glu Thr Gln Asp Ser His Lys
        35                  40                  45

Ala Gly Pro Ile Gly Ile Leu Phe Glu Leu Val His Ile Phe Leu Tyr
    50                  55                  60

Val Val Gln Pro Arg Asp Phe Pro Glu Asp Thr Leu Arg Lys Phe Leu
65                  70                  75                  80

Gln Lys Ala Tyr Glu Ser Lys Ile Asp Tyr Asp Lys Pro Glu Thr Val
                85                  90                  95

Ile Leu Gly Leu Lys Ile Val Tyr Tyr Glu Ala Gly Ile Ile Leu Cys
            100                 105                 110

Cys Val Leu Gly Leu Leu Phe Ile Ile Leu Met Pro Leu Val Gly Tyr
        115                 120                 125

Phe Phe Cys Met Cys Arg Cys Cys Asn Lys Cys Gly Gly Glu Met His
    130                 135                 140

Gln Arg Gln Lys Glu Asn Gly Pro Phe Leu Arg Lys Cys Phe Ala Ile
```

```
145                 150                 155                 160

Ser Leu Leu Val Ile Cys Ile Ile Ile Ser Ile Gly Ile Phe Tyr Gly
                165                 170                 175

Phe Val Ala Asn His Gln Val Arg Thr Arg Ile Lys Arg Ser Arg Lys
            180                 185                 190

Leu Ala Asp Ser Asn Phe Lys Asp Leu Arg Thr Leu Leu Asn Glu Thr
        195                 200                 205

Pro Glu Gln Ile Lys Tyr Ile Leu Ala Gln Tyr Asn Thr Thr Lys Asp
    210                 215                 220

Lys Ala Phe Thr Asp Leu Asn Ser Ile Asn Ser Val Leu Gly Gly Gly
225                 230                 235                 240

Ile Leu Asp Arg Leu Arg Pro Asn Ile Ile Pro Val Leu Asp Glu Ile
                245                 250                 255

Lys Ser Met Ala Thr Ala Ile Lys Glu Thr Lys Glu Ala Leu Glu Asn
            260                 265                 270

Met Asn Ser Thr Leu Lys Ser Leu His Gln Gln Ser Thr Gln Leu Ser
        275                 280                 285

Ser Ser Leu Thr Ser Val Lys Thr Ser Leu Arg Ser Ser Leu Asn Asp
    290                 295                 300

Pro Leu Cys Leu Val His Pro Ser Ser Glu Thr Cys Asn Ser Ile Arg
305                 310                 315                 320

Leu Ser Leu Ser Gln Leu Asn Ser Asn Pro Glu Leu Arg Gln Leu Pro
                325                 330                 335

Pro Val Asp Ala Glu Leu Asp Asn Val Asn Asn Val Leu Arg Thr Asp
```

```
            340                 345                 350

Leu Asp Gly Leu Val Gln Gln Gly Tyr Gln Ser Leu Asn Asp Ile Pro
        355                 360                 365

Asp Arg Val Gln Arg Gln Thr Thr Thr Val Val Ala Gly Ile Lys Arg
    370                 375                 380

Val Leu Asn Ser Ile Gly Ser Asp Ile Asp Asn Val Thr Gln Arg Leu
385                 390                 395                 400

Pro Ile Gln Asp Ile Leu Ser Ala Phe Ser Val Tyr Val Asn Asn Thr
                405                 410                 415

Glu Ser Tyr Ile His Arg Asn Leu Pro Thr Leu Glu Glu Tyr Asp Ser
            420                 425                 430

Tyr Trp Trp Leu Gly Gly Leu Val Ile Cys Ser Leu Leu Thr Leu Ile
        435                 440                 445

Val Ile Phe Tyr Tyr Leu Gly Leu Leu Cys Gly Val Cys Gly Tyr Asp
    450                 455                 460

Arg His Ala Thr Pro Thr Thr Arg Gly Cys Val Ser Asn Thr Gly Gly
465                 470                 475                 480

Val Phe Leu Met Val Gly Val Gly Leu Ser Phe Leu Phe Cys Trp Ile
                485                 490                 495

Leu Met Ile Ile Val Val Leu Thr Phe Val Phe Gly Ala Asn Val Glu
            500                 505                 510

Lys Leu Ile Cys Glu Pro Tyr Thr Ser Lys Glu Leu Phe Arg Val Leu
        515                 520                 525

Asp Thr Pro Tyr Leu Leu Asn Glu Asp Trp Glu Tyr Tyr Leu Ser Gly
```

```
    530                 535                 540

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

Ser Asp Cys Lys Lys Asn Arg Gly Thr Tyr Gly Thr Leu His Leu Gln
                565                 570                 575

Asn Ser Phe Asn Ile Ser Glu His Leu Asn Ile Asn Glu His Thr Gly
            580                 585                 590

Ser Ile Ser Ser Glu Leu Glu Ser Leu Lys Val Asn Leu Asn Ile Phe
        595                 600                 605

Leu Leu Gly Ala Ala Gly Arg Lys Asn Leu Gln Asp Phe Ala Ala Cys
    610                 615                 620

Gly Ile Asp Arg Met Asn Tyr Asp Ser Tyr Leu Ala Gln Thr Gly Lys
625                 630                 635                 640

Ser Pro Ala Gly Val Asn Leu Leu Ser Phe Ala Tyr Asp Leu Glu Ala
                645                 650                 655

Lys Ala Asn Ser Leu Pro Pro Gly Asn Leu Arg Asn Ser Leu Lys Arg
            660                 665                 670

Asp Ala Gln Thr Ile Lys Thr Ile His Gln Gln Arg Val Leu Pro Ile
        675                 680                 685

Glu Gln Ser Leu Ser Thr Leu Tyr Gln Ser Val Lys Ile Leu Gln Arg
    690                 695                 700

Thr Gly Asn Gly Leu Leu Glu Arg Val Thr Arg Ile Leu Ala Ser Leu
705                 710                 715                 720

Asp Phe Ala Gln Asn Phe Ile Thr Asn Asn Thr Ser Ser Val Ile Ile
```

```
                725                 730                 735

Glu Glu Thr Lys Lys Tyr Gly Arg Thr Ile Ile Gly Tyr Phe Glu His
            740                 745                 750

Tyr Leu Gln Trp Ile Glu Phe Ser Ile Ser Glu Lys Val Ala Ser Cys
        755                 760                 765

Lys Pro Val Ala Thr Ala Leu Asp Thr Ala Val Asp Val Phe Leu Cys
    770                 775                 780

Ser Tyr Ile Ile Asp Pro Leu Asn Leu Phe Trp Phe Gly Ile Gly Lys
785                 790                 795                 800

Ala Thr Val Phe Leu Leu Pro Ala Leu Ile Phe Ala Val Lys Leu Ala
                805                 810                 815

Lys Tyr Tyr Arg Arg Met Asp Ser Glu Asp Val Tyr Asp Asp Val Glu
            820                 825                 830

Thr Ile Pro Met Lys Asn Met Glu Asn Gly Asn Asn Gly Tyr His Lys
        835                 840                 845

Asp His Val Tyr Gly Ile His Asn Pro Val Met Thr Ser Pro Ser Gln
    850                 855                 860

His
865
```

<210> 13
<211> 350
<212> PRT
<213> Homo sapiens

<400> 13

```
Met Leu Gly Ser Val Lys Met Glu Ala His Asp Leu Ala Glu Trp Ser
1               5                   10                  15
```

```
Tyr Tyr Pro Glu Ala Gly Glu Val Tyr Ser Pro Val Thr Pro Val Pro
            20                  25                  30

Thr Met Ala Pro Leu Asn Ser Tyr Met Thr Leu Asn Pro Leu Ser Ser
        35                  40                  45

Pro Tyr Pro Pro Gly Gly Leu Pro Ala Ser Pro Leu Pro Ser Gly Pro
    50                  55                  60

Leu Ala Pro Pro Ala Pro Ala Ala Pro Leu Gly Pro Thr Phe Pro Gly
65                  70                  75                  80

Leu Gly Val Ser Gly Gly Ser Ser Ser Ser Gly Tyr Gly Ala Pro Gly
                85                  90                  95

Pro Gly Leu Val His Gly Lys Glu Met Pro Lys Gly Tyr Arg Arg Pro
            100                 105                 110

Leu Ala His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met
        115                 120                 125

Ala Ile Gln Gln Ala Pro Gly Lys Met Leu Thr Leu Ser Glu Ile Tyr
    130                 135                 140

Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr Arg Glu Asn Gln Gln Arg
145                 150                 155                 160

Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Val
                165                 170                 175

Lys Val Ala Arg Ser Pro Asp Lys Pro Gly Lys Gly Ser Tyr Trp Ala
            180                 185                 190

Leu His Pro Ser Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg
        195                 200                 205
```

```
Arg Gln Lys Arg Phe Lys Leu Glu Glu Lys Val Lys Lys Gly Gly Ser
    210                 215                 220

Gly Ala Ala Thr Thr Thr Arg Asn Gly Thr Gly Ser Ala Ala Ser Thr
225                 230                 235                 240

Thr Thr Pro Ala Ala Thr Val Thr Ser Pro Pro Gln Pro Pro Pro Pro
                245                 250                 255

Ala Pro Glu Pro Glu Ala Gln Gly Gly Glu Asp Val Gly Ala Leu Asp
            260                 265                 270

Cys Gly Ser Pro Ala Ser Ser Thr Pro Tyr Phe Thr Gly Leu Glu Leu
        275                 280                 285

Pro Gly Glu Leu Lys Leu Asp Ala Pro Tyr Asn Phe Asn His Pro Phe
    290                 295                 300

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

Asp Val Gly Phe Gly Gly Tyr Gly Ala Glu Gly Gly Glu Pro Gly Val
                325                 330                 335

Tyr Tyr Gln Gly Leu Tyr Ser Arg Ser Leu Leu Asn Ala Ser
            340                 345                 350
```

<210> 14
<211> 403
<212> PRT
<213> Homo sapiens

<400> 14

```
Met Lys Leu Glu Val Phe Val Pro Arg Ala Ala His Gly Asp Lys Gln
1               5                   10                  15
```

```
Gly Ser Asp Leu Glu Gly Ala Gly Gly Ser Asp Ala Pro Ser Pro Leu
            20                  25                  30

Ser Ala Ala Gly Asp Asp Ser Leu Gly Ser Asp Gly Asp Cys Ala Ala
        35                  40                  45

Asn Ser Pro Ala Ala Gly Gly Gly Ala Arg Asp Thr Gln Gly Asp Gly
    50                  55                  60

Glu Gln Ser Ala Gly Gly Gly Pro Gly Ala Glu Glu Ala Ile Pro Ala
65                  70                  75                  80

Ala Ala Ala Ala Ala Val Val Ala Glu Gly Ala Glu Ala Gly Ala Ala
                85                  90                  95

Gly Pro Gly Ala Gly Gly Ala Gly Ser Gly Glu Gly Ala Arg Ser Lys
            100                 105                 110

Pro Tyr Thr Arg Arg Pro Lys Pro Pro Tyr Ser Tyr Ile Ala Leu Ile
        115                 120                 125

Ala Met Ala Ile Arg Asp Ser Ala Gly Gly Arg Leu Thr Leu Ala Glu
    130                 135                 140

Ile Asn Glu Tyr Leu Met Gly Lys Phe Pro Phe Phe Arg Gly Ser Tyr
145                 150                 155                 160

Thr Gly Trp Arg Asn Ser Val Arg His Asn Leu Ser Leu Asn Asp Cys
                165                 170                 175

Phe Val Lys Val Leu Arg Asp Pro Ser Arg Pro Trp Gly Lys Asp Asn
            180                 185                 190

Tyr Trp Met Leu Asn Pro Asn Ser Glu Tyr Thr Phe Ala Asp Gly Val
        195                 200                 205
```

```
Phe Arg Arg Arg Arg Lys Arg Leu Ser His Arg Ala Pro Val Pro Ala
    210                 215                 220

Pro Gly Leu Arg Pro Glu Glu Ala Pro Gly Leu Pro Ala Ala Pro Pro
225                 230                 235                 240

Pro Ala Pro Ala Ala Pro Ala Ser Pro Arg Met Arg Ser Pro Ala Arg
                245                 250                 255

Gln Glu Glu Arg Ala Ser Pro Ala Gly Lys Phe Ser Ser Ser Phe Ala
            260                 265                 270

Ile Asp Ser Ile Leu Arg Lys Pro Phe Arg Ser Arg Arg Leu Arg Asp
        275                 280                 285

Thr Ala Pro Gly Thr Thr Leu Gln Trp Gly Ala Ala Pro Cys Pro Pro
    290                 295                 300

Leu Pro Ala Phe Pro Ala Leu Leu Pro Ala Ala Pro Cys Arg Ala Leu
305                 310                 315                 320

Leu Pro Leu Cys Ala Tyr Gly Ala Gly Glu Pro Ala Arg Leu Gly Ala
                325                 330                 335

Arg Glu Ala Glu Val Pro Pro Thr Ala Pro Pro Leu Leu Leu Ala Pro
            340                 345                 350

Leu Pro Ala Ala Ala Pro Ala Lys Pro Leu Arg Gly Pro Ala Ala Gly
        355                 360                 365

Gly Ala His Leu Tyr Cys Pro Leu Arg Leu Pro Ala Ala Leu Gln Ala
    370                 375                 380

Ala Ser Val Arg Arg Pro Gly Pro His Leu Pro Tyr Pro Val Glu Thr
385                 390                 395                 400
```

Leu Leu Ala

<210> 15
<211> 737
<212> PRT
<213> Homo sapiens

<400> 15

```
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> 16
<211> 609
<212> PRT
<213> Homo sapiens

<400> 16

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> 17
<211> 1748
<212> PRT
<213> Homo sapiens

<400> 17

Met Ser Ala Arg Ala Ala Ala Ala Lys Ser Thr Ala Met Glu Glu Thr
1 5 10 15

Ala Ile Trp Glu Gln His Thr Val Thr Leu His Arg Ala Pro Gly Phe
20 25 30

Gly Phe Gly Ile Ala Ile Ser Gly Gly Arg Asp Asn Pro His Phe Gln
35 40 45

Ser Gly Glu Thr Ser Ile Val Ile Ser Asp Val Leu Lys Gly Gly Pro
50 55 60

```
Ala Glu Gly Gln Leu Gln Glu Asn Asp Arg Val Ala Met Val Asn Gly
65                  70                  75                  80

Val Ser Met Asp Asn Val Glu His Ala Phe Ala Val Gln Gln Leu Arg
                85                  90                  95

Lys Ser Gly Lys Asn Ala Lys Ile Thr Ile Arg Arg Lys Lys Lys Val
            100                 105                 110

Gln Ile Pro Val Ser Arg Pro Asp Pro Glu Pro Val Ser Asp Asn Glu
        115                 120                 125

Glu Asp Ser Tyr Asp Glu Glu Ile His Asp Pro Arg Ser Gly Arg Ser
    130                 135                 140

Gly Val Val Asn Arg Arg Ser Glu Lys Ile Trp Pro Arg Asp Arg Ser
145                 150                 155                 160

Ala Ser Arg Glu Arg Ser Leu Ser Pro Arg Ser Asp Arg Arg Ser Val
                165                 170                 175

Ala Ser Ser Gln Pro Ala Lys Pro Thr Lys Val Thr Leu Val Lys Ser
            180                 185                 190

Arg Lys Asn Glu Glu Tyr Gly Leu Arg Leu Ala Ser His Ile Phe Val
        195                 200                 205

Lys Glu Ile Ser Gln Asp Ser Leu Ala Ala Arg Asp Gly Asn Ile Gln
    210                 215                 220

Glu Gly Asp Val Val Leu Lys Ile Asn Gly Thr Val Thr Glu Asn Met
225                 230                 235                 240

Ser Leu Thr Asp Ala Lys Thr Leu Ile Glu Arg Ser Lys Gly Lys Leu
                245                 250                 255
```

```
Lys Met Val Val Gln Arg Asp Glu Arg Ala Thr Leu Leu Asn Val Pro
            260                 265                 270

Asp Leu Ser Asp Ser Ile His Ser Ala Asn Ala Ser Glu Arg Asp Asp
        275                 280                 285

Ile Ser Glu Ile Gln Ser Leu Ala Ser Asp His Ser Gly Arg Ser His
    290                 295                 300

Asp Arg Pro Pro Arg Arg Ser Arg Ser Arg Ser Pro Asp Gln Arg Ser
305                 310                 315                 320

Glu Pro Ser Asp His Ser Arg His Ser Pro Gln Gln Pro Ser Asn Gly
                325                 330                 335

Ser Leu Arg Ser Arg Asp Glu Glu Arg Ile Ser Lys Pro Gly Ala Val
            340                 345                 350

Ser Thr Pro Val Lys His Ala Asp Asp His Thr Pro Lys Thr Val Glu
        355                 360                 365

Glu Val Thr Val Glu Arg Asn Glu Lys Gln Thr Pro Ser Leu Pro Glu
    370                 375                 380

Pro Lys Pro Val Tyr Ala Gln Val Gly Gln Pro Asp Val Asp Leu Pro
385                 390                 395                 400

Val Ser Pro Ser Asp Gly Val Leu Pro Asn Ser Thr His Glu Asp Gly
                405                 410                 415

Ile Leu Arg Pro Ser Met Lys Leu Val Lys Phe Arg Lys Gly Asp Ser
            420                 425                 430

Val Gly Leu Arg Leu Ala Gly Gly Asn Asp Val Gly Ile Phe Val Ala
        435                 440                 445
```

```
Gly Val Leu Glu Asp Ser Pro Ala Ala Lys Glu Gly Leu Glu Glu Gly
    450                 455                 460

Asp Gln Ile Leu Arg Val Asn Asn Val Asp Phe Thr Asn Ile Ile Arg
465                 470                 475                 480

Glu Glu Ala Val Leu Phe Leu Leu Asp Leu Pro Lys Gly Glu Glu Val
                485                 490                 495

Thr Ile Leu Ala Gln Lys Lys Lys Asp Val Tyr Arg Arg Ile Val Glu
            500                 505                 510

Ser Asp Val Gly Asp Ser Phe Tyr Ile Arg Thr His Phe Glu Tyr Glu
        515                 520                 525

Lys Glu Ser Pro Tyr Gly Leu Ser Phe Asn Lys Gly Glu Val Phe Arg
    530                 535                 540

Val Val Asp Thr Leu Tyr Asn Gly Lys Leu Gly Ser Trp Leu Ala Ile
545                 550                 555                 560

Arg Ile Gly Lys Asn His Lys Glu Val Glu Arg Gly Ile Ile Pro Asn
                565                 570                 575

Lys Asn Arg Ala Glu Gln Leu Ala Ser Val Gln Tyr Thr Leu Pro Lys
            580                 585                 590

Thr Ala Gly Gly Asp Arg Ala Asp Phe Trp Arg Phe Arg Gly Leu Arg
        595                 600                 605

Ser Ser Lys Arg Asn Leu Arg Lys Ser Arg Glu Asp Leu Ser Ala Gln
    610                 615                 620

Pro Val Gln Thr Lys Phe Pro Ala Tyr Glu Arg Val Val Leu Arg Glu
625                 630                 635                 640
```

```
Ala Gly Phe Leu Arg Pro Val Thr Ile Phe Gly Pro Ile Ala Asp Val
                645                 650                 655

Ala Arg Glu Lys Leu Ala Arg Glu Glu Pro Asp Ile Tyr Gln Ile Ala
            660                 665                 670

Lys Ser Glu Pro Arg Asp Ala Gly Thr Asp Gln Arg Ser Ser Gly Ile
        675                 680                 685

Ile Arg Leu His Thr Ile Lys Gln Ile Ile Asp Gln Asp Lys His Ala
    690                 695                 700

Leu Leu Asp Val Thr Pro Asn Ala Val Asp Arg Leu Asn Tyr Ala Gln
705                 710                 715                 720

Trp Tyr Pro Ile Val Val Phe Leu Asn Pro Asp Ser Lys Gln Gly Val
                725                 730                 735

Lys Thr Met Arg Met Arg Leu Cys Pro Glu Ser Arg Lys Ser Ala Arg
            740                 745                 750

Lys Leu Tyr Glu Arg Ser His Lys Leu Arg Lys Asn Asn His His Leu
        755                 760                 765

Phe Thr Thr Thr Ile Asn Leu Asn Ser Met Asn Asp Gly Trp Tyr Gly
    770                 775                 780

Ala Leu Lys Glu Ala Ile Gln Gln Gln Gln Asn Gln Leu Val Trp Val
785                 790                 795                 800

Ser Glu Gly Lys Ala Asp Gly Ala Thr Ser Asp Asp Leu Asp Leu His
                805                 810                 815

Asp Asp Arg Leu Ser Tyr Leu Ser Ala Pro Gly Ser Glu Tyr Ser Met
            820                 825                 830
```

```
Tyr Ser Thr Asp Ser Arg His Thr Ser Asp Tyr Glu Asp Thr Asp Thr
        835                 840                 845

Glu Gly Gly Ala Tyr Thr Asp Gln Glu Leu Asp Glu Thr Leu Asn Asp
    850                 855                 860

Glu Val Gly Thr Pro Pro Glu Ser Ala Ile Thr Arg Ser Ser Glu Pro
865                 870                 875                 880

Val Arg Glu Asp Ser Ser Gly Met His His Glu Asn Gln Thr Tyr Pro
                885                 890                 895

Pro Tyr Ser Pro Gln Ala Gln Pro Gln Pro Ile His Arg Ile Asp Ser
            900                 905                 910

Pro Gly Phe Lys Pro Ala Ser Gln Gln Lys Ala Glu Ala Ser Ser Pro
        915                 920                 925

Val Pro Tyr Leu Ser Pro Glu Thr Asn Pro Ala Ser Ser Thr Ser Ala
    930                 935                 940

Val Asn His Asn Val Asn Leu Thr Asn Val Arg Leu Glu Glu Pro Thr
945                 950                 955                 960

Pro Ala Pro Ser Thr Ser Tyr Ser Pro Gln Ala Asp Ser Leu Arg Thr
                965                 970                 975

Pro Ser Thr Glu Ala Ala His Ile Met Leu Arg Asp Gln Glu Pro Ser
            980                 985                 990

Leu Ser Ser His Val Asp Pro Thr  Lys Val Tyr Arg Lys  Asp Pro Tyr
        995                 1000                1005

Pro Glu  Glu Met Met Arg Gln  Asn His Val Leu Lys  Gln Pro Ala
    1010                1015                1020
```

```
Val Ser  His Pro Gly His Arg  Pro Asp Lys Glu Pro  Asn Leu Thr
    1025                1030                1035

Tyr Glu  Pro Gln Leu Pro Tyr  Val Glu Lys Gln Ala  Ser Arg Asp
    1040                1045                1050

Leu Glu  Gln Pro Thr Tyr Arg  Tyr Glu Ser Ser Ser  Tyr Thr Asp
    1055                1060                1065

Gln Phe  Ser Arg Asn Tyr Glu  His Arg Leu Arg Tyr  Glu Asp Arg
    1070                1075                1080

Val Pro  Met Tyr Glu Glu Gln  Trp Ser Tyr Tyr Asp  Asp Lys Gln
    1085                1090                1095

Pro Tyr  Pro Ser Arg Pro Pro  Phe Asp Asn Gln His  Ser Gln Asp
    1100                1105                1110

Leu Asp  Ser Arg Gln His Pro  Glu Glu Ser Ser Glu  Arg Gly Tyr
    1115                1120                1125

Phe Pro  Arg Phe Glu Glu Pro  Ala Pro Leu Ser Tyr  Asp Ser Arg
    1130                1135                1140

Pro Arg  Tyr Glu Gln Ala Pro  Arg Ala Ser Ala Leu  Arg His Glu
    1145                1150                1155

Glu Gln  Pro Ala Pro Gly Tyr  Asp Thr His Gly Arg  Leu Arg Pro
    1160                1165                1170

Glu Ala  Gln Pro His Pro Ser  Ala Gly Pro Lys Pro  Ala Glu Ser
    1175                1180                1185

Lys Gln  Tyr Phe Glu Gln Tyr  Ser Arg Ser Tyr Glu  Gln Val Pro
    1190                1195                1200
```

```
Pro Gln  Gly Phe Thr Ser Arg  Ala Gly His Phe Glu  Pro Leu His
    1205                 1210                 1215

Gly Ala  Ala Ala Val Pro Pro  Leu Ile Pro Ser Ser  Gln His Lys
    1220                 1225                 1230

Pro Glu  Ala Leu Pro Ser Asn  Thr Lys Pro Leu Pro  Pro Pro Pro
    1235                 1240                 1245

Thr Gln  Thr Glu Glu Glu Glu  Asp Pro Ala Met Lys  Pro Gln Ser
    1250                 1255                 1260

Val Leu  Thr Arg Val Lys Met  Phe Glu Asn Lys Arg  Ser Ala Ser
    1265                 1270                 1275

Leu Glu  Thr Lys Lys Asp Val  Asn Asp Thr Gly Ser  Phe Lys Pro
    1280                 1285                 1290

Pro Glu  Val Ala Ser Lys Pro  Ser Gly Ala Pro Ile  Ile Gly Pro
    1295                 1300                 1305

Lys Pro  Thr Ser Gln Asn Gln  Phe Ser Glu His Asp  Lys Thr Leu
    1310                 1315                 1320

Tyr Arg  Ile Pro Glu Pro Gln  Lys Pro Gln Leu Lys  Pro Pro Glu
    1325                 1330                 1335

Asp Ile  Val Arg Ser Asn His  Tyr Asp Pro Glu Glu  Asp Glu Glu
    1340                 1345                 1350

Tyr Tyr  Arg Lys Gln Leu Ser  Tyr Phe Asp Arg Arg  Ser Phe Glu
    1355                 1360                 1365

Asn Lys  Pro Pro Ala His Ile  Ala Ala Ser His Leu  Ser Glu Pro
    1370                 1375                 1380
```

```
Ala Lys  Pro Ala His Ser Gln  Asn Gln Ser Asn Phe  Ser Ser Tyr
    1385                1390                1395

Ser Ser  Lys Gly Lys Pro Pro  Glu Ala Asp Gly Val  Asp Arg Ser
    1400                1405                1410

Phe Gly  Glu Lys Arg Tyr Glu  Pro Ile Gln Ala Thr  Pro Pro Pro
    1415                1420                1425

Pro Pro  Leu Pro Ser Gln Tyr  Ala Gln Pro Ser Gln  Pro Val Thr
    1430                1435                1440

Ser Ala  Ser Leu His Ile His  Ser Lys Gly Ala His  Gly Glu Gly
    1445                1450                1455

Asn Ser  Val Ser Leu Asp Phe  Gln Asn Ser Leu Val  Ser Lys Pro
    1460                1465                1470

Asp Pro  Pro Pro Ser Gln Asn  Lys Pro Ala Thr Phe  Arg Pro Pro
    1475                1480                1485

Asn Arg  Glu Asp Thr Ala Gln  Ala Ala Phe Tyr Pro  Gln Lys Ser
    1490                1495                1500

Phe Pro  Asp Lys Ala Pro Val  Asn Gly Thr Glu Gln  Thr Gln Lys
    1505                1510                1515

Thr Val  Thr Pro Ala Tyr Asn  Arg Phe Thr Pro Lys  Pro Tyr Thr
    1520                1525                1530

Ser Ser  Ala Arg Pro Phe Glu  Arg Lys Phe Glu Ser  Pro Lys Phe
    1535                1540                1545

Asn His  Asn Leu Leu Pro Ser  Glu Thr Ala His Lys  Pro Asp Leu
    1550                1555                1560
```

```
Ser Ser  Lys Thr Pro Thr Ser  Pro Lys Thr Leu Val  Lys Ser His
    1565                1570                1575

Ser Leu  Ala Gln Pro Pro Glu  Phe Asp Ser Gly Val  Glu Thr Phe
    1580                1585                1590

Ser Ile  His Ala Glu Lys Pro  Lys Tyr Gln Ile Asn  Asn Ile Ser
    1595                1600                1605

Thr Val  Pro Lys Ala Ile Pro  Val Ser Pro Ser Ala  Val Glu Glu
    1610                1615                1620

Asp Glu  Asp Glu Asp Gly His  Thr Val Val Ala Thr  Ala Arg Gly
    1625                1630                1635

Ile Phe  Asn Ser Asn Gly Gly  Val Leu Ser Ser Ile  Glu Thr Gly
    1640                1645                1650

Val Ser  Ile Ile Ile Pro Gln  Gly Ala Ile Pro Glu  Gly Val Glu
    1655                1660                1665

Gln Glu  Ile Tyr Phe Lys Val  Cys Arg Asp Asn Ser  Ile Leu Pro
    1670                1675                1680

Pro Leu  Asp Lys Glu Lys Gly  Glu Thr Leu Leu Ser  Pro Leu Val
    1685                1690                1695

Met Cys  Gly Pro His Gly Leu  Lys Phe Leu Lys Pro  Val Glu Leu
    1700                1705                1710

Arg Leu  Pro His Cys Asp Pro  Lys Thr Trp Gln Asn  Lys Cys Leu
    1715                1720                1725

Pro Gly  Asp Pro Asn Tyr Leu  Val Gly Ala Asn Cys  Val Ser Val
    1730                1735                1740
```

Leu Ile Asp His Phe
1745

<210> 18
<211> 490
<212> PRT
<213> Homo sapiens

<400> 18

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> 19
<211> 503
<212> PRT
<213> Homo sapiens

<400> 19

WT20162112-seql-000001

```
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>  20
<211>  491
<212>  PRT
<213>  Homo sapiens

<400>  20

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> 21
<211> 515
<212> PRT
<213> Homo sapiens

<400> 21

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 Cys Val Phe Val Asn Gln Trp Gln Val Asn His
                405                 410                 415

Asp Pro Glu Leu Trp Glu Asp Pro Ser Glu Phe Arg Pro Glu Arg Phe
            420                 425                 430

Leu Thr Ala Asp Gly Thr Ala Ile Asn Lys Pro Leu Ser Glu Lys Met
        435                 440                 445

Met Leu Phe Gly Met Gly Lys Arg Arg Cys Ile Gly Glu Val Leu Ala
    450                 455                 460

Lys Trp Glu Ile Phe Leu Phe Leu Ala Ile Leu Leu Gln Gln Leu Glu
465                 470                 475                 480
```

```
Phe Ser Val Pro Pro Gly Val Lys Val Asp Leu Thr Pro Ile Tyr Gly
                485                 490                 495


Leu Thr Met Lys His Ala Arg Cys Glu His Val Gln Ala Arg Arg Phe
            500                 505                 510


Ser Ile Asn
        515


<210>  22
<211>  497
<212>  PRT
<213>  Homo sapiens

<400>  22

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 Pro 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 Ser Pro Ser Pro Tyr Glu Leu Cys Ala Val Pro
                485                 490                 495
```

Arg

<210> 23
<211> 503
<212> PRT
<213> Homo sapiens

<400> 23

```
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 Arg 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> 24
<211> 493
<212> PRT
<213> Homo sapiens

<400> 24

```
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 Thr 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 Met 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> 25
<211> 512
<212> PRT
<213> Homo sapiens

<400> 25

Met Leu Phe Pro Ile Ser Met Ser Ala Thr Glu Phe Leu Leu Ala Ser
1 5 10 15

Val Ile Phe Cys Leu Val Phe Trp Val Ile Arg Ala Ser Arg Pro Gln
20 25 30

Val Pro Lys Gly Leu Lys Asn Pro Pro Gly Pro Trp Gly Trp Pro Leu
35 40 45

```
Ile Gly His Met Leu Thr Leu Gly Lys Asn Pro His Leu Ala Leu Ser
    50                  55                  60

Arg Met Ser Gln Gln Tyr Gly Asp Val Leu Gln Ile Arg Ile Gly Ser
65                  70                  75                  80

Thr Pro Val Val Val Leu Ser Gly Leu Asp Thr Ile Arg Gln Ala Leu
                85                  90                  95

Val Arg Gln Gly Asp Asp Phe Lys Gly Arg Pro Asp Leu Tyr Thr Phe
            100                 105                 110

Thr Leu Ile Ser Asn Gly Gln Ser Met Ser Phe Ser Pro Asp Ser Gly
        115                 120                 125

Pro Val Trp Ala Ala Arg Arg Arg Leu Ala Gln Asn Gly Leu Lys Ser
    130                 135                 140

Phe Ser Ile Ala Ser Asp Pro Ala Ser Ser Thr Ser Cys Tyr Leu Glu
145                 150                 155                 160

Glu His Val Ser Lys Glu Ala Glu Val Leu Ile Ser Thr Leu Gln Glu
                165                 170                 175

Leu Met Ala Gly Pro Gly His Phe Asn Pro Tyr Arg Tyr Val Val Val
            180                 185                 190

Ser Val Thr Asn Val Ile Cys Ala Ile Cys Phe Gly Arg Arg Tyr Asp
        195                 200                 205

His Asn His Gln Glu Leu Leu Ser Leu Val Asn Leu Asn Asn Asn Phe
    210                 215                 220

Gly Glu Val Val Gly Ser Gly Asn Pro Ala Asp Phe Ile Pro Ile Leu
225                 230                 235                 240
```

```
Arg Tyr Leu Pro Asn Pro Ser Leu Asn Ala Phe Lys Asp Leu Asn Glu
                245                 250                 255

Lys Phe Tyr Ser Phe Met Gln Lys Met Val Lys Glu His Tyr Lys Thr
            260                 265                 270

Phe Glu Lys Gly His Ile Arg Asp Ile Thr Asp Ser Leu Ile Glu His
        275                 280                 285

Cys Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu Ser Asp
    290                 295                 300

Glu Lys Ile Ile Asn Ile Val Leu Asp Leu Phe Gly Ala Gly Phe Asp
305                 310                 315                 320

Thr Val Thr Thr Ala Ile Ser Trp Ser Leu Met Tyr Leu Val Met Asn
                325                 330                 335

Pro Arg Val Gln Arg Lys Ile Gln Glu Glu Leu Asp Thr Val Ile Gly
            340                 345                 350

Arg Ser Arg Arg Pro Arg Leu Ser Asp Arg Ser His Leu Pro Tyr Met
        355                 360                 365

Glu Ala Phe Ile Leu Glu Thr Phe Arg His Ser Ser Phe Val Pro Phe
    370                 375                 380

Thr Ile Pro His Ser Thr Thr Arg Asp Thr Ser Leu Lys Gly Phe Tyr
385                 390                 395                 400

Ile Pro Lys Gly Arg Cys Val Phe Val Asn Gln Trp Gln Ile Asn His
                405                 410                 415

Asp Gln Lys Leu Trp Val Asn Pro Ser Glu Phe Leu Pro Glu Arg Phe
            420                 425                 430
```

```
Leu Thr Pro Asp Gly Ala Ile Asp Lys Val Leu Ser Glu Lys Val Ile
        435                 440                 445

Ile Phe Gly Met Gly Lys Arg Lys Cys Ile Gly Glu Thr Ile Ala Arg
    450                 455                 460

Trp Glu Val Phe Leu Phe Leu Ala Ile Leu Leu Gln Arg Val Glu Phe
465                 470                 475                 480

Ser Val Pro Leu Gly Val Lys Val Asp Met Thr Pro Ile Tyr Gly Leu
                485                 490                 495

Thr Met Lys His Ala Cys Cys Glu His Phe Gln Met Gln Leu Arg Ser
            500                 505                 510
```

<210> 26
<211> 622
<212> PRT
<213> Homo sapiens

<400> 26

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

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

Asn Asn Ala Glu Leu Cys Gln Pro Asp His Ile His Ile Cys Asp Gly
        35                  40                  45

Ser Glu Glu Glu Asn Gly Arg Leu Leu Gly Gln Met Glu Glu Glu Gly
    50                  55                  60

Ile Leu Arg Arg Leu Lys Lys Tyr Asp Asn Cys Trp Leu Ala Leu Thr
65                  70                  75                  80
```

```
Asp Pro Arg Asp Val Ala Arg Ile Glu Ser Lys Thr Val Ile Val Thr
                85                  90                  95

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

Leu Gly Arg Trp Met Ser Glu Glu Asp Phe Glu Lys Ala Phe Asn Ala
        115                 120                 125

Arg Phe Pro Gly Cys Met Lys Gly Arg Thr Met Tyr Val Ile Pro Phe
    130                 135                 140

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

Thr Asp Ser Pro Tyr Val Val Ala Ser Met Arg Ile Met Thr Arg Met
                165                 170                 175

Gly Thr Pro Val Leu Glu Ala Val Gly Asp Gly Glu Phe Val Lys Cys
            180                 185                 190

Leu His Ser Val Gly Cys Pro Leu Pro Leu Gln Lys Pro Leu Val Asn
        195                 200                 205

Asn Trp Pro Cys Asn Pro Glu Leu Thr Leu Ile Ala His Leu Pro Asp
    210                 215                 220

Arg Arg Glu Ile Ile Ser Phe Gly Ser Gly Tyr Gly Gly Asn Ser Leu
225                 230                 235                 240

Leu Gly Lys Lys Cys Phe Ala Leu Arg Met Ala Ser Arg Leu Ala Lys
                245                 250                 255

Glu Glu Gly Trp Leu Ala Glu His Met Leu Ile Leu Gly Ile Thr Asn
            260                 265                 270
```

```
Pro Glu Gly Glu Lys Lys Tyr Leu Ala Ala Ala Phe Pro Ser Ala Cys
        275                 280                 285

Gly Lys Thr Asn Leu Ala Met Met Asn Pro Ser Leu Pro Gly Trp Lys
    290                 295                 300

Val Glu Cys Val Gly Asp Asp Ile Ala Trp Met Lys Phe Asp Ala Gln
305                 310                 315                 320

Gly His Leu Arg Ala Ile Asn Pro Glu Asn Gly Phe Phe Gly Val Ala
                325                 330                 335

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

Lys Asn Thr Ile Phe Thr Asn Val Ala Glu Thr Ser Asp Gly Gly Val
        355                 360                 365

Tyr Trp Glu Gly Ile Asp Glu Pro Leu Ala Ser Gly Val Thr Ile Thr
    370                 375                 380

Ser Trp Lys Asn Lys Glu Trp Ser Ser Glu Asp Gly Glu Pro Cys Ala
385                 390                 395                 400

His Pro Asn Ser Arg Phe Cys Thr Pro Ala Ser Gln Cys Pro Ile Ile
                405                 410                 415

Asp Ala Ala Trp Glu Ser Pro Glu Gly Val Pro Ile Glu Gly Ile Ile
            420                 425                 430

Phe Gly Gly Arg Arg Pro Ala Gly Val Pro Leu Val Tyr Glu Ala Leu
        435                 440                 445

Ser Trp Gln His Gly Val Phe Val Gly Ala Ala Met Arg Ser Glu Ala
    450                 455                 460
```

```
Thr Ala Ala Ala Glu His Lys Gly Lys Ile Ile Met His Asp Pro Phe
465                 470                 475                 480


Ala Met Arg Pro Phe Phe Gly Tyr Asn Phe Gly Lys Tyr Leu Ala His
                485                 490                 495


Trp Leu Ser Met Ala Gln His Pro Ala Ala Lys Leu Pro Lys Ile Phe
            500                 505                 510


His Val Asn Trp Phe Arg Lys Asp Lys Glu Gly Lys Phe Leu Trp Pro
        515                 520                 525


Gly Phe Gly Glu Asn Ser Arg Val Leu Glu Trp Met Phe Asn Arg Ile
    530                 535                 540


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


Glu Asp Ala Leu Asn Leu Lys Gly Leu Gly His Ile Asn Met Met Glu
                565                 570                 575


Leu Phe Ser Ile Ser Lys Glu Phe Trp Glu Lys Glu Val Glu Asp Ile
            580                 585                 590


Glu Lys Tyr Leu Glu Asp Gln Val Asn Ala Asp Leu Pro Cys Glu Ile
        595                 600                 605


Glu Arg Glu Ile Leu Ala Leu Lys Gln Arg Ile Ser Gln Met
    610                 615                 620


<210>  27
<211>  454
<212>  PRT
<213>  Homo sapiens

<400>  27
```

```
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>  28
<211>  1207
<212>  PRT
<213>  Homo sapiens

<400>  28

Met Leu Leu Thr Leu Ile Ile Leu Leu Pro Val Val Ser Lys Phe Ser
1               5                   10                  15


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


Leu Ala Gly Asn Gly Asn Ser Thr Cys Val Gly Pro Ala Pro Phe Leu
        35                  40                  45


Ile Phe Ser His Gly Asn Ser Ile Phe Arg Ile Asp Thr Glu Gly Thr
    50                  55                  60


Asn Tyr Glu Gln Leu Val Val Asp Ala Gly Val Ser Val Ile Met Asp
65                  70                  75                  80


Phe His Tyr Asn Glu Lys Arg Ile Tyr Trp Val Asp Leu Glu Arg Gln
```

```
                85                  90                  95

Leu Leu Gln Arg Val Phe Leu Asn Gly Ser Arg Gln Glu Arg Val Cys
            100                 105                 110

Asn Ile Glu Lys Asn Val Ser Gly Met Ala Ile Asn Trp Ile Asn Glu
        115                 120                 125

Glu Val Ile Trp Ser Asn Gln Gln Glu Gly Ile Ile Thr Val Thr Asp
    130                 135                 140

Met Lys Gly Asn Asn Ser His Ile Leu Leu Ser Ala Leu Lys Tyr Pro
145                 150                 155                 160

Ala Asn Val Ala Val Asp Pro Val Glu Arg Phe Ile Phe Trp Ser Ser
                165                 170                 175

Glu Val Ala Gly Ser Leu Tyr Arg Ala Asp Leu Asp Gly Val Gly Val
            180                 185                 190

Lys Ala Leu Leu Glu Thr Ser Glu Lys Ile Thr Ala Val Ser Leu Asp
        195                 200                 205

Val Leu Asp Lys Arg Leu Phe Trp Ile Gln Tyr Asn Arg Glu Gly Ser
    210                 215                 220

Asn Ser Leu Ile Cys Ser Cys Asp Tyr Asp Gly Gly Ser Val His Ile
225                 230                 235                 240

Ser Lys His Pro Thr Gln His Asn Leu Phe Ala Met Ser Leu Phe Gly
                245                 250                 255

Asp Arg Ile Phe Tyr Ser Thr Trp Lys Met Lys Thr Ile Trp Ile Ala
            260                 265                 270

Asn Lys His Thr Gly Lys Asp Met Val Arg Ile Asn Leu His Ser Ser
```

```
        275                 280                 285

Phe Val Pro Leu Gly Glu Leu Lys Val Val His Pro Leu Ala Gln Pro
    290                 295                 300

Lys Ala Glu Asp Asp Thr Trp Glu Pro Glu Gln Lys Leu Cys Lys Leu
305                 310                 315                 320

Arg Lys Gly Asn Cys Ser Ser Thr Val Cys Gly Gln Asp Leu Gln Ser
                325                 330                 335

His Leu Cys Met Cys Ala Glu Gly Tyr Ala Leu Ser Arg Asp Arg Lys
            340                 345                 350

Tyr Cys Glu Asp Val Asn Glu Cys Ala Phe Trp Asn His Gly Cys Thr
        355                 360                 365

Leu Gly Cys Lys Asn Thr Pro Gly Ser Tyr Tyr Cys Thr Cys Pro Val
    370                 375                 380

Gly Phe Val Leu Leu Pro Asp Gly Lys Arg Cys His Gln Leu Val Ser
385                 390                 395                 400

Cys Pro Arg Asn Val Ser Glu Cys Ser His Asp Cys Val Leu Thr Ser
                405                 410                 415

Glu Gly Pro Leu Cys Phe Cys Pro Glu Gly Ser Val Leu Glu Arg Asp
            420                 425                 430

Gly Lys Thr Cys Ser Gly Cys Ser Ser Pro Asp Asn Gly Gly Cys Ser
        435                 440                 445

Gln Leu Cys Val Pro Leu Ser Pro Val Ser Trp Glu Cys Asp Cys Phe
    450                 455                 460

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

```
465                 470                 475                 480

Pro Gln Pro Phe Leu Leu Phe Ala Asn Ser Gln Asp Ile Arg His Met
                485                 490                 495

His Phe Asp Gly Thr Asp Tyr Gly Thr Leu Leu Ser Gln Gln Met Gly
            500                 505                 510

Met Val Tyr Ala Leu Asp His Asp Pro Val Glu Asn Lys Ile Tyr Phe
        515                 520                 525

Ala His Thr Ala Leu Lys Trp Ile Glu Arg Ala Asn Met Asp Gly Ser
    530                 535                 540

Gln Arg Glu Arg Leu Ile Glu Glu Gly Val Asp Val Pro Glu Gly Leu
545                 550                 555                 560

Ala Val Asp Trp Ile Gly Arg Arg Phe Tyr Trp Thr Asp Arg Gly Lys
                565                 570                 575

Ser Leu Ile Gly Arg Ser Asp Leu Asn Gly Lys Arg Ser Lys Ile Ile
            580                 585                 590

Thr Lys Glu Asn Ile Ser Gln Pro Arg Gly Ile Ala Val His Pro Met
        595                 600                 605

Ala Lys Arg Leu Phe Trp Thr Asp Thr Gly Ile Asn Pro Arg Ile Glu
    610                 615                 620

Ser Ser Ser Leu Gln Gly Leu Gly Arg Leu Val Ile Ala Ser Ser Asp
625                 630                 635                 640

Leu Ile Trp Pro Ser Gly Ile Thr Ile Asp Phe Leu Thr Asp Lys Leu
                645                 650                 655

Tyr Trp Cys Asp Ala Lys Gln Ser Val Ile Glu Met Ala Asn Leu Asp
```

660 665 670

Gly Ser Lys Arg Arg Arg Leu Thr Gln Asn Asp Val Gly His Pro Phe
675 680 685

Ala Val Ala Val Phe Glu Asp Tyr Val Trp Phe Ser Asp Trp Ala Met
690 695 700

Pro Ser Val Met Arg Val Asn Lys Arg Thr Gly Lys Asp Arg Val Arg
705 710 715 720

Leu Gln Gly Ser Met Leu Lys Pro Ser Ser Leu Val Val Val His Pro
725 730 735

Leu Ala Lys Pro Gly Ala Asp Pro Cys Leu Tyr Gln Asn Gly Gly Cys
740 745 750

Glu His Ile Cys Lys Lys Arg Leu Gly Thr Ala Trp Cys Ser Cys Arg
755 760 765

Glu Gly Phe Met Lys Ala Ser Asp Gly Lys Thr Cys Leu Ala Leu Asp
770 775 780

Gly His Gln Leu Leu Ala Gly Gly Glu Val Asp Leu Lys Asn Gln Val
785 790 795 800

Thr Pro Leu Asp Ile Leu Ser Lys Thr Arg Val Ser Glu Asp Asn Ile
805 810 815

Thr Glu Ser Gln His Met Leu Val Ala Glu Ile Met Val Ser Asp Gln
820 825 830

Asp Asp Cys Ala Pro Val Gly Cys Ser Met Tyr Ala Arg Cys Ile Ser
835 840 845

Glu Gly Glu Asp Ala Thr Cys Gln Cys Leu Lys Gly Phe Ala Gly Asp

```
    850                 855                 860

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

Cys Pro Pro Ala Ser Ser Lys Cys Ile Asn Thr Glu Gly Gly Tyr Val
                885                 890                 895

Cys Arg Cys Ser Glu Gly Tyr Gln Gly Asp Gly Ile His Cys Leu Asp
            900                 905                 910

Ile Asp Glu Cys Gln Leu Gly Glu His Ser Cys Gly Glu Asn Ala Ser
        915                 920                 925

Cys Thr Asn Thr Glu Gly Gly Tyr Thr Cys Met Cys Ala Gly Arg Leu
    930                 935                 940

Ser Glu Pro Gly Leu Ile Cys Pro Asp Ser Thr Pro Pro Pro His Leu
945                 950                 955                 960

Arg Glu Asp Asp His His Tyr Ser Val Arg Asn Ser Asp Ser Glu Cys
                965                 970                 975

Pro Leu Ser His Asp Gly Tyr Cys Leu His Asp Gly Val Cys Met Tyr
            980                 985                 990

Ile Glu Ala Leu Asp Lys Tyr Ala  Cys Asn Cys Val Val  Gly Tyr Ile
        995                 1000                1005

Gly Glu  Arg Cys Gln Tyr Arg  Asp Leu Lys Trp Trp  Glu Leu Arg
    1010                1015                1020

His Ala  Gly His Gly Gln Gln  Gln Lys Val Ile Val  Val Ala Val
    1025                1030                1035

Cys Val  Val Val Leu Val Met  Leu Leu Leu Leu Ser  Leu Trp Gly
```

```
    1040                1045                1050

Ala His  Tyr Tyr Arg Thr Gln  Lys Leu Leu Ser Lys  Asn Pro Lys
    1055                1060                1065

Asn Pro  Tyr Glu Glu Ser Ser  Arg Asp Val Arg Ser  Arg Arg Pro
    1070                1075                1080

Ala Asp  Thr Glu Asp Gly Met  Ser Ser Cys Pro Gln  Pro Trp Phe
    1085                1090                1095

Val Val  Ile Lys Glu His Gln  Asp Leu Lys Asn Gly  Gly Gln Pro
    1100                1105                1110

Val Ala  Gly Glu Asp Gly Gln  Ala Ala Asp Gly Ser  Met Gln Pro
    1115                1120                1125

Thr Ser  Trp Arg Gln Glu Pro  Gln Leu Cys Gly Met  Gly Thr Glu
    1130                1135                1140

Gln Gly  Cys Trp Ile Pro Val  Ser Ser Asp Lys Gly  Ser Cys Pro
    1145                1150                1155

Gln Val  Met Glu Arg Ser Phe  His Met Pro Ser Tyr  Gly Thr Gln
    1160                1165                1170

Thr Leu  Glu Gly Gly Val Glu  Lys Pro His Ser Leu  Leu Ser Ala
    1175                1180                1185

Asn Pro  Leu Trp Gln Gln Arg  Ala Leu Asp Pro Pro  His Gln Met
    1190                1195                1200

Glu Leu  Thr Gln
    1205
```

<210> 29

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

<400> 29

```
Met Arg Leu Gly Leu Cys Val Val Ala Leu Val Leu Ser Trp Thr His
1               5                  10                  15

Leu Thr Ile Ser Ser Arg Gly Ile Lys Gly Lys Arg Gln Arg Arg Ile
            20                  25                  30

Ser Ala Glu Gly Ser Gln Ala Cys Ala Lys Gly Cys Glu Leu Cys Ser
        35                  40                  45

Glu Val Asn Gly Cys Leu Lys Cys Ser Pro Lys Leu Phe Ile Leu Leu
    50                  55                  60

Glu Arg Asn Asp Ile Arg Gln Val Gly Val Cys Leu Pro Ser Cys Pro
65                  70                  75                  80

Pro Gly Tyr Phe Asp Ala Arg Asn Pro Asp Met Asn Lys Cys Ile Lys
                85                  90                  95

Cys Lys Ile Glu His Cys Glu Ala Cys Phe Ser His Asn Phe Cys Thr
            100                 105                 110

Lys Cys Lys Glu Gly Leu Tyr Leu His Lys Gly Arg Cys Tyr Pro Ala
        115                 120                 125

Cys Pro Glu Gly Ser Ser Ala Ala Asn Gly Thr Met Glu Cys Ser Ser
    130                 135                 140

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

Lys Lys Gln Gln Leu Cys Gly Phe Arg Arg Gly Ser Glu Glu Arg Thr
                165                 170                 175
```

```
Arg Arg Val Leu His Ala Pro Val Gly Asp His Ala Ala Cys Ser Asp
            180                 185                 190

Thr Lys Glu Thr Arg Arg Cys Thr Val Arg Arg Val Pro Cys Pro Glu
        195                 200                 205

Gly Gln Lys Arg Arg Lys Gly Gly Gln Gly Arg Arg Glu Asn Ala Asn
    210                 215                 220

Arg Asn Leu Ala Arg Lys Glu Ser Lys Glu Ala Gly Ala Gly Ser Arg
225                 230                 235                 240

Arg Arg Lys Gly Gln Gln Gln Gln Gln Gln Gln Gly Thr Val Gly Pro
                245                 250                 255

Leu Thr Ser Ala Gly Pro Ala
            260
```

<210> 30
<211> 728
<212> PRT
<213> Homo sapiens

<400> 30

```
Met Trp Val Thr Lys Leu Leu Pro Ala Leu Leu Leu Gln His Val Leu
1               5                   10                  15

Leu His Leu Leu Leu Leu Pro Ile Ala Ile Pro Tyr Ala Glu Gly Gln
            20                  25                  30

Arg Lys Arg Arg Asn Thr Ile His Glu Phe Lys Lys Ser Ala Lys Thr
        35                  40                  45

Thr Leu Ile Lys Ile Asp Pro Ala Leu Lys Ile Lys Thr Lys Lys Val
    50                  55                  60
```

```
Asn Thr Ala Asp Gln Cys Ala Asn Arg Cys Thr Arg Asn Lys Gly Leu
65                  70                  75                  80

Pro Phe Thr Cys Lys Ala Phe Val Phe Asp Lys Ala Arg Lys Gln Cys
                85                  90                  95

Leu Trp Phe Pro Phe Asn Ser Met Ser Ser Gly Val Lys Lys Glu Phe
            100                 105                 110

Gly His Glu Phe Asp Leu Tyr Glu Asn Lys Asp Tyr Ile Arg Asn Cys
        115                 120                 125

Ile Ile Gly Lys Gly Arg Ser Tyr Lys Gly Thr Val Ser Ile Thr Lys
    130                 135                 140

Ser Gly Ile Lys Cys Gln Pro Trp Ser Ser Met Ile Pro His Glu His
145                 150                 155                 160

Ser Phe Leu Pro Ser Ser Tyr Arg Gly Lys Asp Leu Gln Glu Asn Tyr
                165                 170                 175

Cys Arg Asn Pro Arg Gly Glu Glu Gly Gly Pro Trp Cys Phe Thr Ser
            180                 185                 190

Asn Pro Glu Val Arg Tyr Glu Val Cys Asp Ile Pro Gln Cys Ser Glu
        195                 200                 205

Val Glu Cys Met Thr Cys Asn Gly Glu Ser Tyr Arg Gly Leu Met Asp
    210                 215                 220

His Thr Glu Ser Gly Lys Ile Cys Gln Arg Trp Asp His Gln Thr Pro
225                 230                 235                 240

His Arg His Lys Phe Leu Pro Glu Arg Tyr Pro Asp Lys Gly Phe Asp
                245                 250                 255
```

```
Asp Asn Tyr Cys Arg Asn Pro Asp Gly Gln Pro Arg Pro Trp Cys Tyr
            260                 265                 270

Thr Leu Asp Pro His Thr Arg Trp Glu Tyr Cys Ala Ile Lys Thr Cys
        275                 280                 285

Ala Asp Asn Thr Met Asn Asp Thr Asp Val Pro Leu Glu Thr Thr Glu
    290                 295                 300

Cys Ile Gln Gly Gln Gly Glu Gly Tyr Arg Gly Thr Val Asn Thr Ile
305                 310                 315                 320

Trp Asn Gly Ile Pro Cys Gln Arg Trp Asp Ser Gln Tyr Pro His Glu
                325                 330                 335

His Asp Met Thr Pro Glu Asn Phe Lys Cys Lys Asp Leu Arg Glu Asn
            340                 345                 350

Tyr Cys Arg Asn Pro Asp Gly Ser Glu Ser Pro Trp Cys Phe Thr Thr
        355                 360                 365

Asp Pro Asn Ile Arg Val Gly Tyr Cys Ser Gln Ile Pro Asn Cys Asp
    370                 375                 380

Met Ser His Gly Gln Asp Cys Tyr Arg Gly Asn Gly Lys Asn Tyr Met
385                 390                 395                 400

Gly Asn Leu Ser Gln Thr Arg Ser Gly Leu Thr Cys Ser Met Trp Asp
                405                 410                 415

Lys Asn Met Glu Asp Leu His Arg His Ile Phe Trp Glu Pro Asp Ala
            420                 425                 430

Ser Lys Leu Asn Glu Asn Tyr Cys Arg Asn Pro Asp Asp Asp Ala His
        435                 440                 445
```

```
Gly Pro Trp Cys Tyr Thr Gly Asn Pro Leu Ile Pro Trp Asp Tyr Cys
    450                 455                 460

Pro Ile Ser Arg Cys Glu Gly Asp Thr Thr Pro Thr Ile Val Asn Leu
465                 470                 475                 480

Asp His Pro Val Ile Ser Cys Ala Lys Thr Lys Gln Leu Arg Val Val
                485                 490                 495

Asn Gly Ile Pro Thr Arg Thr Asn Ile Gly Trp Met Val Ser Leu Arg
            500                 505                 510

Tyr Arg Asn Lys His Ile Cys Gly Gly Ser Leu Ile Lys Glu Ser Trp
        515                 520                 525

Val Leu Thr Ala Arg Gln Cys Phe Pro Ser Arg Asp Leu Lys Asp Tyr
    530                 535                 540

Glu Ala Trp Leu Gly Ile His Asp Val His Gly Arg Gly Asp Glu Lys
545                 550                 555                 560

Cys Lys Gln Val Leu Asn Val Ser Gln Leu Val Tyr Gly Pro Glu Gly
                565                 570                 575

Ser Asp Leu Val Leu Met Lys Leu Ala Arg Pro Ala Val Leu Asp Asp
            580                 585                 590

Phe Val Ser Thr Ile Asp Leu Pro Asn Tyr Gly Cys Thr Ile Pro Glu
        595                 600                 605

Lys Thr Ser Cys Ser Val Tyr Gly Trp Gly Tyr Thr Gly Leu Ile Asn
    610                 615                 620

Tyr Asp Gly Leu Leu Arg Val Ala His Leu Tyr Ile Met Gly Asn Glu
625                 630                 635                 640
```

```
Lys Cys Ser Gln His His Arg Gly Lys Val Thr Leu Asn Glu Ser Glu
                645                 650                 655


Ile Cys Ala Gly Ala Glu Lys Ile Gly Ser Gly Pro Cys Glu Gly Asp
            660                 665                 670


Tyr Gly Gly Pro Leu Val Cys Glu Gln His Lys Met Arg Met Val Leu
        675                 680                 685


Gly Val Ile Val Pro Gly Arg Gly Cys Ala Ile Pro Asn Arg Pro Gly
    690                 695                 700


Ile Phe Val Arg Val Ala Tyr Tyr Ala Lys Trp Ile His Lys Ile Ile
705                 710                 715                 720


Leu Thr Tyr Lys Val Pro Gln Ser
                725


<210>  31
<211>  252
<212>  PRT
<213>  Homo sapiens

<400>  31

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


Leu Leu Phe Pro Ser Met Ala Ser Met Ala Ala Ile Gly Ser Cys Ser
            20                  25                  30


Lys Glu Tyr Arg Val Leu Leu Gly Gln Leu Gln Lys Gln Thr Asp Leu
        35                  40                  45


Met Gln Asp Thr Ser Arg Leu Leu Asp Pro Tyr Ile Arg Ile Gln Gly
    50                  55                  60
```

```
Leu Asp Val Pro Lys Leu Arg Glu His Cys Arg Glu Arg Pro Gly Ala
65                  70                  75                  80

Phe Pro Ser Glu Glu Thr Leu Arg Gly Leu Gly Arg Arg Gly Phe Leu
                85                  90                  95

Gln Thr Leu Asn Ala Thr Leu Gly Cys Val Leu His Arg Leu Ala Asp
            100                 105                 110

Leu Glu Gln Arg Leu Pro Lys Ala Gln Asp Leu Glu Arg Ser Gly Leu
        115                 120                 125

Asn Ile Glu Asp Leu Glu Lys Leu Gln Met Ala Arg Pro Asn Ile Leu
    130                 135                 140

Gly Leu Arg Asn Asn Ile Tyr Cys Met Ala Gln Leu Leu Asp Asn Ser
145                 150                 155                 160

Asp Thr Ala Glu Pro Thr Lys Ala Gly Arg Gly Ala Ser Gln Pro Pro
                165                 170                 175

Thr Pro Thr Pro Ala Ser Asp Ala Phe Gln Arg Lys Leu Glu Gly Cys
            180                 185                 190

Arg Phe Leu His Gly Tyr His Arg Phe Met His Ser Val Gly Arg Val
        195                 200                 205

Phe Ser Lys Trp Gly Glu Ser Pro Asn Arg Ser Arg Arg His Ser Pro
    210                 215                 220

His Gln Ala Leu Arg Lys Gly Val Arg Arg Thr Arg Pro Ser Arg Lys
225                 230                 235                 240

Gly Lys Arg Leu Met Thr Arg Gly Gln Leu Pro Arg
                245                 250
```

<210> 32
<211> 431
<212> PRT
<213> Homo sapiens

<400> 32

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


Leu Trp Ala Pro Leu Phe Leu Leu Arg Ser Ala Leu Ala Asp Phe Ser
            20                  25                  30


Leu Asp Asn Glu Val His Ser Ser Phe Ile His Arg Arg Leu Arg Ser
        35                  40                  45


Gln Glu Arg Arg Glu Met Gln Arg Glu Ile Leu Ser Ile Leu Gly Leu
    50                  55                  60


Pro His Arg Pro Arg Pro His Leu Gln Gly Lys His Asn Ser Ala Pro
65                  70                  75                  80


Met Phe Met Leu Asp Leu Tyr Asn Ala Met Ala Val Glu Glu Gly Gly
                85                  90                  95


Gly Pro Gly Gly Gln Gly Phe Ser Tyr Pro Tyr Lys Ala Val Phe Ser
            100                 105                 110


Thr Gln Gly Pro Pro Leu Ala Ser Leu Gln Asp Ser His Phe Leu Thr
        115                 120                 125


Asp Ala Asp Met Val Met Ser Phe Val Asn Leu Val Glu His Asp Lys
    130                 135                 140


Glu Phe Phe His Pro Arg Tyr His His Arg Glu Phe Arg Phe Asp Leu
145                 150                 155                 160


Ser Lys Ile Pro Glu Gly Glu Ala Val Thr Ala Ala Glu Phe Arg Ile
```

```
                165                 170                 175

Tyr Lys Asp Tyr Ile Arg Glu Arg Phe Asp Asn Glu Thr Phe Arg Ile
            180                 185                 190

Ser Val Tyr Gln Val Leu Gln Glu His Leu Gly Arg Glu Ser Asp Leu
        195                 200                 205

Phe Leu Leu Asp Ser Arg Thr Leu Trp Ala Ser Glu Glu Gly Trp Leu
    210                 215                 220

Val Phe Asp Ile Thr Ala Thr Ser Asn His Trp Val Val Asn Pro Arg
225                 230                 235                 240

His Asn Leu Gly Leu Gln Leu Ser Val Glu Thr Leu Asp Gly Gln Ser
                245                 250                 255

Ile Asn Pro Lys Leu Ala Gly Leu Ile Gly Arg His Gly Pro Gln Asn
            260                 265                 270

Lys Gln Pro Phe Met Val Ala Phe Phe Lys Ala Thr Glu Val His Phe
        275                 280                 285

Arg Ser Ile Arg Ser Thr Gly Ser Lys Gln Arg Ser Gln Asn Arg Ser
    290                 295                 300

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

Asn Ser Ser Ser Asp Gln Arg Gln Ala Cys Lys Lys His Glu Leu Tyr
                325                 330                 335

Val Ser Phe Arg Asp Leu Gly Trp Gln Asp Trp Ile Ile Ala Pro Glu
            340                 345                 350

Gly Tyr Ala Ala Tyr Tyr Cys Glu Gly Glu Cys Ala Phe Pro Leu Asn
```

355 360 365

Ser Tyr Met Asn Ala Thr Asn His Ala Ile Val Gln Thr Leu Val His
370 375 380

Phe Ile Asn Pro Glu Thr Val Pro Lys Pro Cys Cys Ala Pro Thr Gln
385 390 395 400

Leu Asn Ala Ile Ser Val Leu Tyr Phe Asp Asp Ser Ser Asn Val Ile
405 410 415

Leu Lys Lys Tyr Arg Asn Met Val Val Arg Ala Cys Gly Cys His
420 425 430

<210> 33
<211> 216
<212> PRT
<213> Homo sapiens

<400> 33

Met Arg Ser Gly Cys Val Val Val His Val Trp Ile Leu Ala Gly Leu
1 5 10 15

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

His Val His Tyr Gly Trp Gly Asp Pro Ile Arg Leu Arg His Leu Tyr
35 40 45

Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu Arg Ile Arg Ala
50 55 60

Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser Ala His Ser Leu Leu
65 70 75 80

Glu Ile Lys Ala Val Ala Leu Arg Thr Val Ala Ile Lys Gly Val His
85 90 95

```
Ser Val Arg Tyr Leu Cys Met Gly Ala Asp Gly Lys Met Gln Gly Leu
            100                 105                 110

Leu Gln Tyr Ser Glu Glu Asp Cys Ala Phe Glu Glu Glu Ile Arg Pro
        115                 120                 125

Asp Gly Tyr Asn Val Tyr Arg Ser Glu Lys His Arg Leu Pro Val Ser
    130                 135                 140

Leu Ser Ser Ala Lys Gln Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu
145                 150                 155                 160

Pro Leu Ser His Phe Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro
                165                 170                 175

Glu Asp Leu Arg Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu
            180                 185                 190

Glu Thr Asp Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala
        195                 200                 205

Val Arg Ser Pro Ser Phe Glu Lys
    210                 215
```

<210> 34
<211> 407
<212> PRT
<213> Homo sapiens

<400> 34

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

Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala
            20                  25                  30
```

```
Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser
        35                  40                  45

Ser Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro Val
    50                  55                  60

Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys
65                  70                  75                  80

Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser
                85                  90                  95

Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln
            100                 105                 110

Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp
        115                 120                 125

Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser
    130                 135                 140

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

Cys Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val Leu
                165                 170                 175

Lys Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr
            180                 185                 190

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

Ala Gly Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu
    210                 215                 220
```

```
Lys Ile Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe
225                 230                 235                 240

Lys Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly
                245                 250                 255

Ile Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr
            260                 265                 270

Ser Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg
        275                 280                 285

Val Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys
    290                 295                 300

Asp Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
305                 310                 315                 320

Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
                325                 330                 335

Lys Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys
            340                 345                 350

Tyr Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala
        355                 360                 365

Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
    370                 375                 380

Phe Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val
385                 390                 395                 400

Val Asp Arg Cys Gly Cys Ser
                405
```

<210> 35
<211> 1218
<212> PRT
<213> Homo sapiens

<400> 35

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


Leu Leu Ala Leu Leu Cys Ala Leu Arg Ala Lys Val Cys Gly Ala Ser
            20                  25                  30


Gly Gln Phe Glu Leu Glu Ile Leu Ser Met Gln Asn Val Asn Gly Glu
        35                  40                  45


Leu Gln Asn Gly Asn Cys Cys Gly Gly Ala Arg Asn Pro Gly Asp Arg
    50                  55                  60


Lys Cys Thr Arg Asp Glu Cys Asp Thr Tyr Phe Lys Val Cys Leu Lys
65                  70                  75                  80


Glu Tyr Gln Ser Arg Val Thr Ala Gly Gly Pro Cys Ser Phe Gly Ser
                85                  90                  95


Gly Ser Thr Pro Val Ile Gly Gly Asn Thr Phe Asn Leu Lys Ala Ser
            100                 105                 110


Arg Gly Asn Asp Arg Asn Arg Ile Val Leu Pro Phe Ser Phe Ala Trp
        115                 120                 125


Pro Arg Ser Tyr Thr Leu Leu Val Glu Ala Trp Asp Ser Ser Asn Asp
    130                 135                 140


Thr Val Gln Pro Asp Ser Ile Ile Glu Lys Ala Ser His Ser Gly Met
145                 150                 155                 160
```

```
Ile Asn Pro Ser Arg Gln Trp Gln Thr Leu Lys Gln Asn Thr Gly Val
                165                 170                 175

Ala His Phe Glu Tyr Gln Ile Arg Val Thr Cys Asp Asp Tyr Tyr Tyr
            180                 185                 190

Gly Phe Gly Cys Asn Lys Phe Cys Arg Pro Arg Asp Asp Phe Phe Gly
        195                 200                 205

His Tyr Ala Cys Asp Gln Asn Gly Asn Lys Thr Cys Met Glu Gly Trp
    210                 215                 220

Met Gly Pro Glu Cys Asn Arg Ala Ile Cys Arg Gln Gly Cys Ser Pro
225                 230                 235                 240

Lys His Gly Ser Cys Lys Leu Pro Gly Asp Cys Arg Cys Gln Tyr Gly
                245                 250                 255

Trp Gln Gly Leu Tyr Cys Asp Lys Cys Ile Pro His Pro Gly Cys Val
            260                 265                 270

His Gly Ile Cys Asn Glu Pro Trp Gln Cys Leu Cys Glu Thr Asn Trp
        275                 280                 285

Gly Gly Gln Leu Cys Asp Lys Asp Leu Asn Tyr Cys Gly Thr His Gln
    290                 295                 300

Pro Cys Leu Asn Gly Gly Thr Cys Ser Asn Thr Gly Pro Asp Lys Tyr
305                 310                 315                 320

Gln Cys Ser Cys Pro Glu Gly Tyr Ser Gly Pro Asn Cys Glu Ile Ala
                325                 330                 335

Glu His Ala Cys Leu Ser Asp Pro Cys His Asn Arg Gly Ser Cys Lys
            340                 345                 350
```

```
Glu Thr Ser Leu Gly Phe Glu Cys Glu Cys Ser Pro Gly Trp Thr Gly
        355                 360                 365

Pro Thr Cys Ser Thr Asn Ile Asp Asp Cys Ser Pro Asn Asn Cys Ser
    370                 375                 380

His Gly Gly Thr Cys Gln Asp Leu Val Asn Gly Phe Lys Cys Val Cys
385                 390                 395                 400

Pro Pro Gln Trp Thr Gly Lys Thr Cys Gln Leu Asp Ala Asn Glu Cys
                405                 410                 415

Glu Ala Lys Pro Cys Val Asn Ala Lys Ser Cys Lys Asn Leu Ile Ala
            420                 425                 430

Ser Tyr Tyr Cys Asp Cys Leu Pro Gly Trp Met Gly Gln Asn Cys Asp
        435                 440                 445

Ile Asn Ile Asn Asp Cys Leu Gly Gln Cys Gln Asn Asp Ala Ser Cys
    450                 455                 460

Arg Asp Leu Val Asn Gly Tyr Arg Cys Ile Cys Pro Pro Gly Tyr Ala
465                 470                 475                 480

Gly Asp His Cys Glu Arg Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys
                485                 490                 495

Leu Asn Gly Gly His Cys Gln Asn Glu Ile Asn Arg Phe Gln Cys Leu
            500                 505                 510

Cys Pro Thr Gly Phe Ser Gly Asn Leu Cys Gln Leu Asp Ile Asp Tyr
        515                 520                 525

Cys Glu Pro Asn Pro Cys Gln Asn Gly Ala Gln Cys Tyr Asn Arg Ala
    530                 535                 540
```

```
Ser Asp Tyr Phe Cys Lys Cys Pro Glu Asp Tyr Glu Gly Lys Asn Cys
545                 550                 555                 560


Ser His Leu Lys Asp His Cys Arg Thr Thr Pro Cys Glu Val Ile Asp
                565                 570                 575


Ser Cys Thr Val Ala Met Ala Ser Asn Asp Thr Pro Glu Gly Val Arg
            580                 585                 590


Tyr Ile Ser Ser Asn Val Cys Gly Pro His Gly Lys Cys Lys Ser Gln
        595                 600                 605


Ser Gly Gly Lys Phe Thr Cys Asp Cys Asn Lys Gly Phe Thr Gly Thr
    610                 615                 620


Tyr Cys His Glu Asn Ile Asn Asp Cys Glu Ser Asn Pro Cys Arg Asn
625                 630                 635                 640


Gly Gly Thr Cys Ile Asp Gly Val Asn Ser Tyr Lys Cys Ile Cys Ser
                645                 650                 655


Asp Gly Trp Glu Gly Ala Tyr Cys Glu Thr Asn Ile Asn Asp Cys Ser
            660                 665                 670


Gln Asn Pro Cys His Asn Gly Gly Thr Cys Arg Asp Leu Val Asn Asp
        675                 680                 685


Phe Tyr Cys Asp Cys Lys Asn Gly Trp Lys Gly Lys Thr Cys His Ser
    690                 695                 700


Arg Asp Ser Gln Cys Asp Glu Ala Thr Cys Asn Asn Gly Gly Thr Cys
705                 710                 715                 720


Tyr Asp Glu Gly Asp Ala Phe Lys Cys Met Cys Pro Gly Gly Trp Glu
                725                 730                 735
```

```
Gly Thr Thr Cys Asn Ile Ala Arg Asn Ser Ser Cys Leu Pro Asn Pro
            740                 745                 750

Cys His Asn Gly Gly Thr Cys Val Val Asn Gly Glu Ser Phe Thr Cys
        755                 760                 765

Val Cys Lys Glu Gly Trp Glu Gly Pro Ile Cys Ala Gln Asn Thr Asn
    770                 775                 780

Asp Cys Ser Pro His Pro Cys Tyr Asn Ser Gly Thr Cys Val Asp Gly
785                 790                 795                 800

Asp Asn Trp Tyr Arg Cys Glu Cys Ala Pro Gly Phe Ala Gly Pro Asp
                805                 810                 815

Cys Arg Ile Asn Ile Asn Glu Cys Gln Ser Ser Pro Cys Ala Phe Gly
            820                 825                 830

Ala Thr Cys Val Asp Glu Ile Asn Gly Tyr Arg Cys Val Cys Pro Pro
        835                 840                 845

Gly His Ser Gly Ala Lys Cys Gln Glu Val Ser Gly Arg Pro Cys Ile
    850                 855                 860

Thr Met Gly Ser Val Ile Pro Asp Gly Ala Lys Trp Asp Asp Asp Cys
865                 870                 875                 880

Asn Thr Cys Gln Cys Leu Asn Gly Arg Ile Ala Cys Ser Lys Val Trp
                885                 890                 895

Cys Gly Pro Arg Pro Cys Leu Leu His Lys Gly His Ser Glu Cys Pro
            900                 905                 910

Ser Gly Gln Ser Cys Ile Pro Ile Leu Asp Asp Gln Cys Phe Val His
        915                 920                 925
```

```
Pro Cys Thr Gly Val Gly Glu Cys Arg Ser Ser Ser Leu Gln Pro Val
    930                 935                 940

Lys Thr Lys Cys Thr Ser Asp Ser Tyr Tyr Gln Asp Asn Cys Ala Asn
945                 950                 955                 960

Ile Thr Phe Thr Phe Asn Lys Glu Met Met Ser Pro Gly Leu Thr Thr
                965                 970                 975

Glu His Ile Cys Ser Glu Leu Arg Asn Leu Asn Ile Leu Lys Asn Val
            980                 985                 990

Ser Ala Glu Tyr Ser Ile Tyr Ile  Ala Cys Glu Pro Ser  Pro Ser Ala
        995                 1000                1005

Asn Asn  Glu Ile His Val Ala  Ile Ser Ala Glu Asp  Ile Arg Asp
    1010                1015                1020

Asp Gly  Asn Pro Ile Lys Glu  Ile Thr Asp Lys Ile  Ile Asp Leu
    1025                1030                1035

Val Ser  Lys Arg Asp Gly Asn  Ser Ser Leu Ile Ala  Ala Val Ala
    1040                1045                1050

Glu Val  Arg Val Gln Arg Arg  Pro Leu Lys Asn Arg  Thr Asp Phe
    1055                1060                1065

Leu Val  Pro Leu Leu Ser Ser  Val Leu Thr Val Ala  Trp Ile Cys
    1070                1075                1080

Cys Leu  Val Thr Ala Phe Tyr  Trp Cys Leu Arg Lys  Arg Arg Lys
    1085                1090                1095

Pro Gly  Ser His Thr His Ser  Ala Ser Glu Asp Asn  Thr Thr Asn
    1100                1105                1110
```

```
Asn Val  Arg Glu Gln Leu Asn  Gln Ile Lys Asn Pro  Ile Glu Lys
    1115                1120                1125


His Gly  Ala Asn Thr Val Pro  Ile Lys Asp Tyr Glu  Asn Lys Asn
    1130                1135                1140


Ser Lys  Met Ser Lys Ile Arg  Thr His Asn Ser Glu  Val Glu Glu
    1145                1150                1155


Asp Asp  Met Asp Lys His Gln  Gln Lys Ala Arg Phe  Ala Lys Gln
    1160                1165                1170


Pro Ala  Tyr Thr Leu Val Asp  Arg Glu Glu Lys Pro  Pro Asn Gly
    1175                1180                1185


Thr Pro  Thr Lys His Pro Asn  Trp Thr Asn Lys Gln  Asp Asn Arg
    1190                1195                1200


Asp Leu  Glu Ser Ala Gln Ser  Leu Asn Arg Met Glu  Tyr Ile Val
    1205                1210                1215
```

<210> 36
<211> 1238
<212> PRT
<213> Homo sapiens

<400> 36

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


Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu
            20                  25                  30


Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala
        35                  40                  45


Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His
```

```
    50                  55                  60

Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala
65                  70                  75                  80

Lys Val Thr Pro Thr Gly Pro Cys Ser Tyr Gly His Gly Ala Thr Pro
                85                  90                  95

Val Leu Gly Gly Asn Ser Phe Tyr Leu Pro Pro Ala Gly Ala Ala Gly
            100                 105                 110

Asp Arg Ala Arg Ala Arg Ala Arg Ala Gly Gly Asp Gln Asp Pro Gly
        115                 120                 125

Leu Val Val Ile Pro Phe Gln Phe Ala Trp Pro Arg Ser Phe Thr Leu
    130                 135                 140

Ile Val Glu Ala Trp Asp Trp Asp Asn Asp Thr Thr Pro Asn Glu Glu
145                 150                 155                 160

Leu Leu Ile Glu Arg Val Ser His Ala Gly Met Ile Asn Pro Glu Asp
                165                 170                 175

Arg Trp Lys Ser Leu His Phe Ser Gly His Val Ala His Leu Glu Leu
            180                 185                 190

Gln Ile Arg Val Arg Cys Asp Glu Asn Tyr Tyr Ser Ala Thr Cys Asn
        195                 200                 205

Lys Phe Cys Arg Pro Arg Asn Asp Phe Phe Gly His Tyr Thr Cys Asp
    210                 215                 220

Gln Tyr Gly Asn Lys Ala Cys Met Asp Gly Trp Met Gly Lys Glu Cys
225                 230                 235                 240

Lys Glu Ala Val Cys Lys Gln Gly Cys Asn Leu Leu His Gly Gly Cys
```

```
               245                 250                 255

Thr Val Pro Gly Glu Cys Arg Cys Ser Tyr Gly Trp Gln Gly Arg Phe
            260                 265                 270

Cys Asp Glu Cys Val Pro Tyr Pro Gly Cys Val His Gly Ser Cys Val
        275                 280                 285

Glu Pro Trp Gln Cys Asn Cys Glu Thr Asn Trp Gly Gly Leu Leu Cys
    290                 295                 300

Asp Lys Asp Leu Asn Tyr Cys Gly Ser His His Pro Cys Thr Asn Gly
305                 310                 315                 320

Gly Thr Cys Ile Asn Ala Glu Pro Asp Gln Tyr Arg Cys Thr Cys Pro
                325                 330                 335

Asp Gly Tyr Ser Gly Arg Asn Cys Glu Lys Ala Glu His Ala Cys Thr
            340                 345                 350

Ser Asn Pro Cys Ala Asn Gly Gly Ser Cys His Glu Val Pro Ser Gly
        355                 360                 365

Phe Glu Cys His Cys Pro Ser Gly Trp Ser Gly Pro Thr Cys Ala Leu
    370                 375                 380

Asp Ile Asp Glu Cys Ala Ser Asn Pro Cys Ala Ala Gly Gly Thr Cys
385                 390                 395                 400

Val Asp Gln Val Asp Gly Phe Glu Cys Ile Cys Pro Glu Gln Trp Val
                405                 410                 415

Gly Ala Thr Cys Gln Leu Asp Ala Asn Glu Cys Glu Gly Lys Pro Cys
            420                 425                 430

Leu Asn Ala Phe Ser Cys Lys Asn Leu Ile Gly Gly Tyr Tyr Cys Asp
```

```
        435                 440                 445

Cys Ile Pro Gly Trp Lys Gly Ile Asn Cys His Ile Asn Val Asn Asp
    450                 455                 460

Cys Arg Gly Gln Cys Gln His Gly Gly Thr Cys Lys Asp Leu Val Asn
465                 470                 475                 480

Gly Tyr Gln Cys Val Cys Pro Arg Gly Phe Gly Gly Arg His Cys Glu
                485                 490                 495

Leu Glu Arg Asp Glu Cys Ala Ser Ser Pro Cys His Ser Gly Gly Leu
            500                 505                 510

Cys Glu Asp Leu Ala Asp Gly Phe His Cys His Cys Pro Gln Gly Phe
        515                 520                 525

Ser Gly Pro Leu Cys Glu Val Asp Val Asp Leu Cys Glu Pro Ser Pro
    530                 535                 540

Cys Arg Asn Gly Ala Arg Cys Tyr Asn Leu Glu Gly Asp Tyr Tyr Cys
545                 550                 555                 560

Ala Cys Pro Asp Asp Phe Gly Gly Lys Asn Cys Ser Val Pro Arg Glu
                565                 570                 575

Pro Cys Pro Gly Gly Ala Cys Arg Val Ile Asp Gly Cys Gly Ser Asp
            580                 585                 590

Ala Gly Pro Gly Met Pro Gly Thr Ala Ala Ser Gly Val Cys Gly Pro
        595                 600                 605

His Gly Arg Cys Val Ser Gln Pro Gly Gly Asn Phe Ser Cys Ile Cys
    610                 615                 620

Asp Ser Gly Phe Thr Gly Thr Tyr Cys His Glu Asn Ile Asp Asp Cys
```

625 630 635 640

Leu Gly Gln Pro Cys Arg Asn Gly Gly Thr Cys Ile Asp Glu Val Asp
645 650 655

Ala Phe Arg Cys Phe Cys Pro Ser Gly Trp Glu Gly Glu Leu Cys Asp
660 665 670

Thr Asn Pro Asn Asp Cys Leu Pro Asp Pro Cys His Ser Arg Gly Arg
675 680 685

Cys Tyr Asp Leu Val Asn Asp Phe Tyr Cys Ala Cys Asp Asp Gly Trp
690 695 700

Lys Gly Lys Thr Cys His Ser Arg Glu Phe Gln Cys Asp Ala Tyr Thr
705 710 715 720

Cys Ser Asn Gly Gly Thr Cys Tyr Asp Ser Gly Asp Thr Phe Arg Cys
725 730 735

Ala Cys Pro Pro Gly Trp Lys Gly Ser Thr Cys Ala Val Ala Lys Asn
740 745 750

Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly
755 760 765

Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg
770 775 780

Thr Cys Thr His Asn Thr Asn Asp Cys Asn Pro Leu Pro Cys Tyr Asn
785 790 795 800

Gly Gly Ile Cys Val Asp Gly Val Asn Trp Phe Arg Cys Glu Cys Ala
805 810 815

Pro Gly Phe Ala Gly Pro Asp Cys Arg Ile Asn Ile Asp Glu Cys Gln

```
            820                 825                 830

Ser Ser Pro Cys Ala Tyr Gly Ala Thr Cys Val Asp Glu Ile Asn Gly
        835                 840                 845

Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu
    850                 855                 860

Val Ile Gly Phe Gly Arg Ser Cys Trp Ser Arg Gly Thr Pro Phe Pro
865                 870                 875                 880

His Gly Ser Ser Trp Val Glu Asp Cys Asn Ser Cys Arg Cys Leu Asp
                885                 890                 895

Gly Arg Arg Asp Cys Ser Lys Val Trp Cys Gly Trp Lys Pro Cys Leu
            900                 905                 910

Leu Ala Gly Gln Pro Glu Ala Leu Ser Ala Gln Cys Pro Leu Gly Gln
        915                 920                 925

Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu
    930                 935                 940

Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu
945                 950                 955                 960

Pro Arg Ser Gly His Leu Asp Asn Asn Cys Ala Arg Leu Thr Leu His
                965                 970                 975

Phe Asn Arg Asp His Val Pro Gln Gly Thr Thr Val Gly Ala Ile Cys
            980                 985                 990

Ser Gly Ile Arg Ser Leu Pro Ala  Thr Arg Ala Val Ala  Arg Asp Arg
        995                 1000                1005

Leu Leu  Val Leu Leu Cys Asp  Arg Ala Ser Ser Gly  Ala Ser Ala
```

```
    1010                1015                1020

Val Glu  Val Ala Val Ser Phe  Ser Pro Ala Arg Asp  Leu Pro Asp
    1025                1030                1035

Ser Ser  Leu Ile Gln Gly Ala  Ala His Ala Ile Val  Ala Ala Ile
    1040                1045                1050

Thr Gln  Arg Gly Asn Ser Ser  Leu Leu Leu Ala Val  Thr Glu Val
    1055                1060                1065

Lys Val  Glu Thr Val Val Thr  Gly Gly Ser Ser Thr  Gly Leu Leu
    1070                1075                1080

Val Pro  Val Leu Cys Gly Ala  Phe Ser Val Leu Trp  Leu Ala Cys
    1085                1090                1095

Val Val  Leu Cys Val Trp Trp  Thr Arg Lys Arg Arg  Lys Glu Arg
    1100                1105                1110

Glu Arg  Ser Arg Leu Pro Arg  Glu Glu Ser Ala Asn  Asn Gln Trp
    1115                1120                1125

Ala Pro  Leu Asn Pro Ile Arg  Asn Pro Ile Glu Arg  Pro Gly Gly
    1130                1135                1140

His Lys  Asp Val Leu Tyr Gln  Cys Lys Asn Phe Thr  Pro Pro Pro
    1145                1150                1155

Arg Arg  Ala Asp Glu Ala Leu  Pro Gly Pro Ala Gly  His Ala Ala
    1160                1165                1170

Val Arg  Glu Asp Glu Glu Asp  Glu Asp Leu Gly Arg  Gly Glu Glu
    1175                1180                1185

Asp Ser  Leu Glu Ala Glu Lys  Phe Leu Ser His Lys  Phe Thr Lys
```

1190 1195 1200

Asp Pro Gly Arg Ser Pro Gly Arg Pro Ala His Trp Ala Ser Gly
1205 1210 1215

Pro Lys Val Asp Asn Arg Ala Val Arg Ser Ile Asn Glu Ala Arg
1220 1225 1230

Tyr Ala Gly Lys Glu
1235

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

<400> 37

Met Gly Ser Arg Cys Ala Leu Ala Leu Ala Val Leu Ser Ala Leu Leu
1 5 10 15

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

Val Asn Lys Lys Gly Leu Leu Gly Asn Arg Asn Cys Cys Arg Gly Gly
35 40 45

Ala Gly Pro Pro Pro Cys Ala Cys Arg Thr Phe Phe Arg Val Cys Leu
50 55 60

Lys His Tyr Gln Ala Ser Val Ser Pro Glu Pro Pro Cys Thr Tyr Gly
65 70 75 80

Ser Ala Val Thr Pro Val Leu Gly Val Asp Ser Phe Ser Leu Pro Asp
85 90 95

Gly Gly Gly Ala Asp Ser Ala Phe Ser Asn Pro Ile Arg Phe Pro Phe
100 105 110

```
Gly Phe Thr Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Ala Leu His
        115                 120                 125

Thr Asp Ser Pro Asp Asp Leu Ala Thr Glu Asn Pro Glu Arg Leu Ile
    130                 135                 140

Ser Arg Leu Ala Thr Gln Arg His Leu Thr Val Gly Glu Glu Trp Ser
145                 150                 155                 160

Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser Tyr Arg
                165                 170                 175

Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val Phe Cys
            180                 185                 190

Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu Arg Gly
        195                 200                 205

Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Tyr Cys Thr Glu Pro
    210                 215                 220

Ile Cys Leu Pro Gly Cys Asp Glu Gln His Gly Phe Cys Asp Lys Pro
225                 230                 235                 240

Gly Glu Cys Lys Cys Arg Val Gly Trp Gln Gly Arg Tyr Cys Asp Glu
                245                 250                 255

Cys Ile Arg Tyr Pro Gly Cys Leu His Gly Thr Cys Gln Gln Pro Trp
            260                 265                 270

Gln Cys Asn Cys Gln Glu Gly Trp Gly Gly Leu Phe Cys Asn Gln Asp
        275                 280                 285

Leu Asn Tyr Cys Thr His His Lys Pro Cys Lys Asn Gly Ala Thr Cys
    290                 295                 300
```

```
Thr Asn Thr Gly Gln Gly Ser Tyr Thr Cys Ser Cys Arg Pro Gly Tyr
305                 310                 315                 320

Thr Gly Ala Thr Cys Glu Leu Gly Ile Asp Glu Cys Asp Pro Ser Pro
                325                 330                 335

Cys Lys Asn Gly Gly Ser Cys Thr Asp Leu Glu Asn Ser Tyr Ser Cys
            340                 345                 350

Thr Cys Pro Pro Gly Phe Tyr Gly Lys Ile Cys Glu Leu Ser Ala Met
        355                 360                 365

Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Arg Cys Ser Asp Ser
    370                 375                 380

Pro Asp Gly Gly Tyr Ser Cys Arg Cys Pro Val Gly Tyr Ser Gly Phe
385                 390                 395                 400

Asn Cys Glu Lys Lys Ile Asp Tyr Cys Ser Ser Ser Pro Cys Ser Asn
                405                 410                 415

Gly Ala Lys Cys Val Asp Leu Gly Asp Ala Tyr Leu Cys Arg Cys Gln
            420                 425                 430

Ala Gly Phe Ser Gly Arg His Cys Asp Asp Asn Val Asp Asp Cys Ala
        435                 440                 445

Ser Ser Pro Cys Ala Asn Gly Gly Thr Cys Arg Asp Gly Val Asn Asp
    450                 455                 460

Phe Ser Cys Thr Cys Pro Pro Gly Tyr Thr Gly Arg Asn Cys Ser Ala
465                 470                 475                 480

Pro Val Ser Arg Cys Glu His Ala Pro Cys His Asn Gly Ala Thr Cys
                485                 490                 495
```

```
His Glu Arg Gly His Arg Tyr Val Cys Glu Cys Ala Arg Gly Tyr Gly
            500                 505                 510

Gly Pro Asn Cys Gln Phe Leu Leu Pro Glu Leu Pro Pro Gly Pro Ala
        515                 520                 525

Val Val Asp Leu Thr Glu Lys Leu Glu Gly Gln Gly Gly Pro Phe Pro
    530                 535                 540

Trp Val Ala Val Cys Ala Gly Val Ile Leu Val Leu Met Leu Leu Leu
545                 550                 555                 560

Gly Cys Ala Ala Val Val Val Cys Val Arg Leu Arg Leu Gln Lys His
                565                 570                 575

Arg Pro Pro Ala Asp Pro Cys Arg Gly Glu Thr Glu Thr Met Asn Asn
            580                 585                 590

Leu Ala Asn Cys Gln Arg Glu Lys Asp Ile Ser Val Ser Ile Ile Gly
        595                 600                 605

Ala Thr Gln Ile Lys Asn Thr Asn Lys Lys Ala Asp Phe His Gly Asp
    610                 615                 620

His Ser Ala Asp Lys Asn Gly Phe Lys Ala Arg Tyr Pro Ala Val Asp
625                 630                 635                 640

Tyr Asn Leu Val Gln Asp Leu Lys Gly Asp Asp Thr Ala Val Arg Asp
                645                 650                 655

Ala His Ser Lys Arg Asp Thr Lys Cys Gln Pro Gln Gly Ser Ser Gly
            660                 665                 670

Glu Glu Lys Gly Thr Pro Thr Thr Leu Arg Gly Gly Glu Ala Ser Glu
        675                 680                 685
```

```
Arg Lys Arg Pro Asp Ser Gly Cys Ser Thr Ser Lys Asp Thr Lys Tyr
    690                 695                 700

Gln Ser Val Tyr Val Ile Ser Glu Glu Lys Asp Glu Cys Val Ile Ala
705                 710                 715                 720

Thr Glu Val
```

<210> 38
<211> 618
<212> PRT
<213> Homo sapiens

<400> 38

```
Met Val Ser Pro Arg Met Ser Gly Leu Leu Ser Gln Thr Val Ile Leu
1               5                   10                  15

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu
            20                  25                  30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser
        35                  40                  45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu
    50                  55                  60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly
65                  70                  75                  80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe
            100                 105                 110
```

```
Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg
        115                 120                 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala
    130                 135                 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg
145                 150                 155                 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala
                165                 170                 175

Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg
            180                 185                 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala
        195                 200                 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys
    210                 215                 220

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu
225                 230                 235                 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser
                245                 250                 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val
            260                 265                 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser
        275                 280                 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe
    290                 295                 300
```

```
Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro
305                 310                 315                 320


Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala
                325                 330                 335


Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys
            340                 345                 350


Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys
        355                 360                 365


Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala
    370                 375                 380


Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys
385                 390                 395                 400


Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser
                405                 410                 415


Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro
            420                 425                 430


Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe
        435                 440                 445


Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys
    450                 455                 460


Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro
465                 470                 475                 480


Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala
                485                 490                 495
```

```
Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu
            500                 505                 510


Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu
        515                 520                 525


Leu Ala Gly Thr Pro Glu Pro Ser Val His Ala Leu Pro Asp Ala Leu
    530                 535                 540


Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser
545                 550                 555                 560


Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val
                565                 570                 575


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


Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe
        595                 600                 605


Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys
    610                 615


<210>  39
<211>  685
<212>  PRT
<213>  Homo sapiens

<400>  39

Met Ala Ala Ala Ser Arg Ser Ala Ser Gly Trp Ala Leu Leu Leu Leu
1               5                   10                  15


Val Ala Leu Trp Gln Gln Arg Ala Ala Gly Ser Gly Val Phe Gln Leu
            20                  25                  30
```

```
Gln Leu Gln Glu Phe Ile Asn Glu Arg Gly Val Leu Ala Ser Gly Arg
        35                  40                  45

Pro Cys Glu Pro Gly Cys Arg Thr Phe Phe Arg Val Cys Leu Lys His
    50                  55                  60

Phe Gln Ala Val Val Ser Pro Gly Pro Cys Thr Phe Gly Thr Val Ser
65                  70                  75                  80

Thr Pro Val Leu Gly Thr Asn Ser Phe Ala Val Arg Asp Asp Ser Ser
                85                  90                  95

Gly Gly Gly Arg Asn Pro Leu Gln Leu Pro Phe Asn Phe Thr Trp Pro
            100                 105                 110

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

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

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

Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser Tyr Arg Val Ile Cys Ser
                165                 170                 175

Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg Leu Cys Lys Lys Arg Asn
            180                 185                 190

Asp His Phe Gly His Tyr Val Cys Gln Pro Asp Gly Asn Leu Ser Cys
        195                 200                 205

Leu Pro Gly Trp Thr Gly Glu Tyr Cys Gln Gln Pro Ile Cys Leu Ser
    210                 215                 220
```

```
Gly Cys His Glu Gln Asn Gly Tyr Cys Ser Lys Pro Ala Glu Cys Leu
225                 230                 235                 240


Cys Arg Pro Gly Trp Gln Gly Arg Leu Cys Asn Glu Cys Ile Pro His
                245                 250                 255


Asn Gly Cys Arg His Gly Thr Cys Ser Thr Pro Trp Gln Cys Thr Cys
            260                 265                 270


Asp Glu Gly Trp Gly Gly Leu Phe Cys Asp Gln Asp Leu Asn Tyr Cys
        275                 280                 285


Thr His His Ser Pro Cys Lys Asn Gly Ala Thr Cys Ser Asn Ser Gly
    290                 295                 300


Gln Arg Ser Tyr Thr Cys Thr Cys Arg Pro Gly Tyr Thr Gly Val Asp
305                 310                 315                 320


Cys Glu Leu Glu Leu Ser Glu Cys Asp Ser Asn Pro Cys Arg Asn Gly
                325                 330                 335


Gly Ser Cys Lys Asp Gln Glu Asp Gly Tyr His Cys Leu Cys Pro Pro
            340                 345                 350


Gly Tyr Tyr Gly Leu His Cys Glu His Ser Thr Leu Ser Cys Ala Asp
        355                 360                 365


Ser Pro Cys Phe Asn Gly Gly Ser Cys Arg Glu Arg Asn Gln Gly Ala
    370                 375                 380


Asn Tyr Ala Cys Glu Cys Pro Pro Asn Phe Thr Gly Ser Asn Cys Glu
385                 390                 395                 400


Lys Lys Val Asp Arg Cys Thr Ser Asn Pro Cys Ala Asn Gly Gly Gln
                405                 410                 415
```

```
Cys Leu Asn Arg Gly Pro Ser Arg Met Cys Arg Cys Arg Pro Gly Phe
            420                 425                 430

Thr Gly Thr Tyr Cys Glu Leu His Val Ser Asp Cys Ala Arg Asn Pro
        435                 440                 445

Cys Ala His Gly Gly Thr Cys His Asp Leu Glu Asn Gly Leu Met Cys
    450                 455                 460

Thr Cys Pro Ala Gly Phe Ser Gly Arg Arg Cys Glu Val Arg Thr Ser
465                 470                 475                 480

Ile Asp Ala Cys Ala Ser Ser Pro Cys Phe Asn Arg Ala Thr Cys Tyr
                485                 490                 495

Thr Asp Leu Ser Thr Asp Thr Phe Val Cys Asn Cys Pro Tyr Gly Phe
            500                 505                 510

Val Gly Ser Arg Cys Glu Phe Pro Val Gly Leu Pro Pro Ser Phe Pro
        515                 520                 525

Trp Val Ala Val Ser Leu Gly Val Gly Leu Ala Val Leu Leu Val Leu
    530                 535                 540

Leu Gly Met Val Ala Val Ala Val Arg Gln Leu Arg Leu Arg Arg Pro
545                 550                 555                 560

Asp Asp Gly Ser Arg Glu Ala Met Asn Asn Leu Ser Asp Phe Gln Lys
                565                 570                 575

Asp Asn Leu Ile Pro Ala Ala Gln Leu Lys Asn Thr Asn Gln Lys Lys
            580                 585                 590

Glu Leu Glu Val Asp Cys Gly Leu Asp Lys Ser Asn Cys Gly Lys Gln
        595                 600                 605
```

```
Gln Asn His Thr Leu Asp Tyr Asn Leu Ala Pro Gly Pro Leu Gly Arg
    610                 615                 620

Gly Thr Met Pro Gly Lys Phe Pro His Ser Asp Lys Ser Leu Gly Glu
625                 630                 635                 640

Lys Ala Pro Leu Arg Leu His Ser Glu Lys Pro Glu Cys Arg Ile Ser
                645                 650                 655

Ala Ile Cys Ser Pro Arg Asp Ser Met Tyr Gln Ser Val Cys Leu Ile
            660                 665                 670

Ser Glu Glu Arg Asn Glu Cys Val Ile Ala Thr Glu Val
        675                 680                 685
```

<210> 40
<211> 390
<212> PRT
<213> Homo sapiens

<400> 40

```
Met Pro Pro Ser Gly Leu Arg Leu Leu Leu Leu Leu Leu Pro Leu Leu
1               5                   10                  15

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

Cys Lys Thr Ile Asp Met Glu Leu Val Lys Arg Lys Arg Ile Glu Ala
        35                  40                  45

Ile Arg Gly Gln Ile Leu Ser Lys Leu Arg Leu Ala Ser Pro Pro Ser
    50                  55                  60

Gln Gly Glu Val Pro Pro Gly Pro Leu Pro Glu Ala Val Leu Ala Leu
65                  70                  75                  80

Tyr Asn Ser Thr Arg Asp Arg Val Ala Gly Glu Ser Ala Glu Pro Glu
```

```
                85                  90                  95

Pro Glu Pro Glu Ala Asp Tyr Tyr Ala Lys Glu Val Thr Arg Val Leu
            100                 105                 110

Met Val Glu Thr His Asn Glu Ile Tyr Asp Lys Phe Lys Gln Ser Thr
        115                 120                 125

His Ser Ile Tyr Met Phe Phe Asn Thr Ser Glu Leu Arg Glu Ala Val
    130                 135                 140

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

Lys Leu Lys Val Glu Gln His Val Glu Leu Tyr Gln Lys Tyr Ser Asn
                165                 170                 175

Asn Ser Trp Arg Tyr Leu Ser Asn Arg Leu Leu Ala Pro Ser Asp Ser
            180                 185                 190

Pro Glu Trp Leu Ser Phe Asp Val Thr Gly Val Val Arg Gln Trp Leu
        195                 200                 205

Ser Arg Gly Gly Glu Ile Glu Gly Phe Arg Leu Ser Ala His Cys Ser
    210                 215                 220

Cys Asp Ser Arg Asp Asn Thr Leu Gln Val Asp Ile Asn Gly Phe Thr
225                 230                 235                 240

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

Phe Leu Leu Leu Met Ala Thr Pro Leu Glu Arg Ala Gln His Leu Gln
            260                 265                 270

Ser Ser Arg His Arg Arg Ala Leu Asp Thr Asn Tyr Cys Phe Ser Ser
```

275 280 285

Thr Glu Lys Asn Cys Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg Lys
290 295 300

Asp Leu Gly Trp Lys Trp Ile His Glu Pro Lys Gly Tyr His Ala Asn
305 310 315 320

Phe Cys Leu Gly Pro Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln Tyr
325 330 335

Ser Lys Val Leu Ala Leu Tyr Asn Gln His Asn Pro Gly Ala Ser Ala
340 345 350

Ala Pro Cys Cys Val Pro Gln Ala Leu Glu Pro Leu Pro Ile Val Tyr
355 360 365

Tyr Val Gly Arg Lys Pro Lys Val Glu Gln Leu Ser Asn Met Ile Val
370 375 380

Arg Ser Cys Lys Cys Ser
385 390

<210> 41
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide construct

<400> 41

Lys Glu Ala Pro Pro Ala Pro Pro Gln Ser Pro
1 5 10

<210> 42
<211> 12
<212> PRT

<213> Artificial Sequence

<220>
<223> synthetic peptide construct

<400> 42

Gly Lys Glu Ala Pro Pro Ala Pro Pro Gln Ser Pro
1 5 10