SEQUENCE LISTING

<110> Immatics biotechnologies

<120> Improved dual specificity polypeptide molecule

<130> I33034WO01

<150> US 62/532,713
<151> 2017-07-14

<150> DE 10 2017 115 966.5
<151> 2017-07-14

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<150> DE 10 2018 108 995.3
<151> 2018-04-16

<150> US 62/658,318
<151> 2018-04-16

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<170> PatentIn version 3.5

<210> 1
<211> 21
<212> PRT
<213> Homo sapiens

<400> 1

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1 5 10 15

Pro Glu Leu Leu Gly
20

<210> 2
<211> 19
<212> PRT
<213> Homo sapiens

<400> 2

Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val
1 5 10 15

Ala Gly Pro

<210> 3
<211> 53
<212> PRT
<213> Homo sapiens

<400> 3

Glu Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro Arg Cys
1   5   10   15

Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
            20   25   30

Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala
        35   40   45

Pro Glu Leu Leu Gly
    50

<210> 4
<211> 18
<212> PRT
<213> Homo sapiens

<400> 4

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe
1   5   10   15

Leu Gly

<210> 5
<211> 103
<212> PRT
<213> Homo sapiens

<400> 5

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
1   5   10   15

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            20   25   30

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val

```
        35                  40                  45

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    50                  55                  60

Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
65                  70                  75                  80

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                85                  90                  95

Leu Pro Ala Ser Ile Glu Lys
            100
```

<210> 6
<211> 103
<212> PRT
<213> Homo sapiens

<400> 6

```
Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
1               5                   10                  15

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            20                  25                  30

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
        35                  40                  45

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    50                  55                  60

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
65                  70                  75                  80

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                85                  90                  95

Leu Pro Ala Ser Ile Glu Lys
            100
```

<210> 7
<211> 9

<212> PRT
<213> Homo sapiens

<400> 7

Ser Leu Tyr Asn Thr Val Ala Thr Leu
1 5

<210> 8
<211> 480
<212> PRT
<213> Homo sapiens

<400> 8

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
130 135 140

Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
145 150 155 160

```
Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile
                165                 170                 175

Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
            180                 185                 190

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
        195                 200                 205

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

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

Val Thr Glu Asp Leu Lys Asn Gly Glu Pro Lys Ser Ser Asp Lys Thr
                245                 250                 255

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser
            260                 265                 270

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
        275                 280                 285

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro
    290                 295                 300

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
305                 310                 315                 320

Lys Thr Lys Pro Arg Glu Glu Gln Phe Gln Ser Thr Tyr Arg Val Val
                325                 330                 335

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
            340                 345                 350

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr
        355                 360                 365

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

```
Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys
385                 390                 395                 400


Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
                405                 410                 415


Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
            420                 425                 430


Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
        435                 440                 445


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


Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
465                 470                 475                 480


<210>  9
<211>  461
<212>  PRT
<213>  Homo sapiens

<400>  9

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1               5                   10                  15


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


Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45


Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60


Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80


Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95


Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
```

```
            100                 105                 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln Met Thr Gln Ser
        115                 120                 125

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

Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
145                 150                 155                 160

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

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
            180                 185                 190

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
        195                 200                 205

Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys
    210                 215                 220

Val Glu Ile Lys Gly Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys
225                 230                 235                 240

Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu
                245                 250                 255

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

Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln
        275                 280                 285

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
    290                 295                 300

Pro Arg Glu Glu Gln Phe Gln Ser Thr Tyr Arg Val Val Ser Val Leu
305                 310                 315                 320

Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
```

```
                325                 330                 335

Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys
            340                 345                 350

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
        355                 360                 365

Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys
    370                 375                 380

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
385                 390                 395                 400

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

Ser Phe Phe Leu Val Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln
            420                 425                 430

Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
        435                 440                 445

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


<210>  10
<211>  478
<212>  PRT
<213>  Homo sapiens

<400>  10

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60
```

```
Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
    130                 135                 140

Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
145                 150                 155                 160

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

Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
            180                 185                 190

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
        195                 200                 205

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

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

Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr His
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285
```

```
Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
    370                 375                 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470                 475
```

<210> 11
<211> 459
<212> PRT
<213> Homo sapiens

<400> 11

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

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln Met Thr Gln Ser
        115                 120                 125

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

Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
145                 150                 155                 160

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

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
            180                 185                 190

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
        195                 200                 205

Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys
    210                 215                 220
```

```
Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro
225                 230                 235                 240

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp
        355                 360                 365

Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445
```

```
Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455


<210>  12
<211>  478
<212>  PRT
<213>  Homo sapiens

<400>  12

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15


Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30


Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60


Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80


Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110


Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115                 120                 125


Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
    130                 135                 140


Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
145                 150                 155                 160


Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile
                165                 170                 175
```

```
Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
            180                 185                 190

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
        195                 200                 205

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

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

Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr His
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

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

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
    370                 375                 380

Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400
```

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 13
<211> 459
<212> PRT
<213> Homo sapiens

<400> 13

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1 5 10 15

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
35 40 45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
50 55 60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65 70 75 80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
85 90 95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
100 105 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln Met Thr Gln Ser

```
        115                 120                 125

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

Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
145                 150                 155                 160

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

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
            180                 185                 190

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
        195                 200                 205

Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys
    210                 215                 220

Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro
225                 230                 235                 240

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
```

```
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp
        355                 360                 365

Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455


<210>  14
<211>  478
<212>  PRT
<213>  Homo sapiens

<400>  14

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Trp Val
        35                  40                  45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80
```

```
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
    130                 135                 140

Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
145                 150                 155                 160

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

Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
            180                 185                 190

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
        195                 200                 205

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

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

Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr His
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

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

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300
```

```
Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
    370                 375                 380

Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470                 475


<210>  15
<211>  459
<212>  PRT
<213>  Homo sapiens

<400>  15

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

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln Met Thr Gln Ser
        115                 120                 125

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

Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
145                 150                 155                 160

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

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
            180                 185                 190

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
        195                 200                 205

Cys Gln Gln Gly Asn Thr Leu Pro Trp Thr Phe Gly Cys Gly Thr Lys
    210                 215                 220

Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro
225                 230                 235                 240
```

```
Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp
        355                 360                 365

Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455
```

<210> 16
<211> 474
<212> PRT
<213> Homo sapiens

<400> 16

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1 5 10 15

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
35 40 45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
50 55 60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65 70 75 80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
85 90 95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
100 105 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Glu Ser
115 120 125

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

Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn Trp Val Arg Gln
145 150 155 160

Ala Pro Gly Lys Cys Leu Glu Trp Val Ala Leu Ile Asn Pro Tyr Lys
165 170 175

Gly Val Ser Thr Tyr Asn Gln Lys Phe Lys Asp Arg Phe Thr Ile Ser
180 185 190

```
Val Asp Lys Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg
        195                 200                 205

Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly
    210                 215                 220

Asp Ser Asp Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
225                 230                 235                 240

Val Ser Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro
                245                 250                 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
            260                 265                 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
        275                 280                 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
    290                 295                 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305                 310                 315                 320

Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
                325                 330                 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
            340                 345                 350

Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
        355                 360                 365

Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu
    370                 375                 380

Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr
385                 390                 395                 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
                405                 410                 415
```

```
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
            420                 425                 430

Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
        435                 440                 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
    450                 455                 460

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
```

<210> 17
<211> 463
<212> PRT
<213> Homo sapiens

<400> 17

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
                85                  90                  95

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

Gly Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys
        115                 120                 125

Thr Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His
```

```
    130                 135                 140

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

Ile Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro
                165                 170                 175

Asp Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn
            180                 185                 190

Ile Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser
        195                 200                 205

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

Thr Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
            340                 345                 350

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
```

```
        355                 360                 365

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
                405                 410                 415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
            420                 425                 430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
        435                 440                 445

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460
```

<210> 18
<211> 462
<212> PRT
<213> Homo sapiens

<400> 18

```
Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1               5                   10                  15

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

Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
        35                  40                  45

Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
    50                  55                  60

Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65                  70                  75                  80

Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
                85                  90                  95
```

```
Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
            100                 105                 110

Glu Asp Leu Lys Asn Gly Gly Gly Ser Gly Gly Gly Gly Gln Ile Gln
        115                 120                 125

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
    130                 135                 140

Thr Ile Thr Cys Ser Ala Thr Ser Ser Val Ser Tyr Met His Trp Tyr
145                 150                 155                 160

Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser
                165                 170                 175

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

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

Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr Phe Gly Gly
    210                 215                 220

Gly Thr Lys Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr His
225                 230                 235                 240

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

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
            260                 265                 270

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
        275                 280                 285

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
    290                 295                 300

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
305                 310                 315                 320
```

```
Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
                325                 330                 335

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
            340                 345                 350

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
        355                 360                 365

Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
    370                 375                 380

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
385                 390                 395                 400

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
                405                 410                 415

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
            420                 425                 430

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
        435                 440                 445

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460
```

<210> 19
<211> 472
<212> PRT
<213> Homo sapiens

<400> 19

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Lys Phe Thr Ser Tyr
            20                  25                  30

Val Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
```

```
Gly Tyr Ile Asn Pro Tyr Asn Asp Val Thr Lys Tyr Ala Glu Lys Phe
    50                  55                  60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val His Tyr Cys
                85                  90                  95

Ala Arg Gly Ser Tyr Tyr Asp Tyr Asp Gly Phe Val Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
    130                 135                 140

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
                165                 170                 175

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
            180                 185                 190

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
        195                 200                 205

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
    210                 215                 220

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

Ile Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            260                 265                 270
```

```
Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        275                 280                 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    290                 295                 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305                 310                 315                 320

Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                325                 330                 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            340                 345                 350

Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        355                 360                 365

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    370                 375                 380

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
385                 390                 395                 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                405                 410                 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
            420                 425                 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        435                 440                 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    450                 455                 460

Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
```

<210> 20
<211> 467
<212> PRT

<213> Homo sapiens

<400> 20

```
Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1               5                  10                  15


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


Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
        35                  40                  45


Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
    50                  55                  60


Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65                  70                  75                  80


Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
                85                  90                  95


Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
            100                 105                 110


Glu Asp Leu Lys Asn Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
        115                 120                 125


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


Val Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Val Ser
145                 150                 155                 160


Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp
                165                 170                 175


Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
            180                 185                 190


Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205
```

```
Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro
    210                 215                 220

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

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
                245                 250                 255

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

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
        275                 280                 285

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
    290                 295                 300

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr
305                 310                 315                 320

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
                325                 330                 335

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
            340                 345                 350

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
        355                 360                 365

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

Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
385                 390                 395                 400

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
                405                 410                 415

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
            420                 425                 430
```

```
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
        435                 440                 445


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


Pro Gly Lys
465
```

<210> 21
<211> 472
<212> PRT
<213> Homo sapiens

<400> 21

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


Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Lys Phe Thr Ser Tyr
            20                  25                  30


Val Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45


Gly Tyr Ile Asn Pro Tyr Asn Asp Val Thr Lys Tyr Ala Glu Lys Phe
    50                  55                  60


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


Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val His Tyr Cys
                85                  90                  95


Ala Arg Gly Ser Tyr Tyr Asp Tyr Asp Gly Phe Val Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125


Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
    130                 135                 140


Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser Asp Arg Gly Ser Gln Ser
```

```
145                 150                 155                 160

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
                165                 170                 175

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
            180                 185                 190

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
        195                 200                 205

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
    210                 215                 220

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

Ile Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            260                 265                 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        275                 280                 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    290                 295                 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305                 310                 315                 320

Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                325                 330                 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            340                 345                 350

Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        355                 360                 365

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
```

370 375 380

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 22
<211> 462
<212> PRT
<213> Homo sapiens

<400> 22

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

Asp Arg Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr
35 40 45

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

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr
85 90 95

```
Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Ser Gly Gly
            100                 105                 110

Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
        115                 120                 125

Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
    130                 135                 140

Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile
145                 150                 155                 160

Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
                165                 170                 175

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
            180                 185                 190

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
        195                 200                 205

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

Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr His
225                 230                 235                 240

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

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
            260                 265                 270

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
        275                 280                 285

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
    290                 295                 300

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
305                 310                 315                 320
```

```
Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
                325                 330                 335


Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
            340                 345                 350


Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
        355                 360                 365


Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
    370                 375                 380


Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
385                 390                 395                 400


Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
                405                 410                 415


Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
            420                 425                 430


Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
        435                 440                 445


Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460


<210>  23
<211>  472
<212>  PRT
<213>  Homo sapiens

<400>  23

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1               5                   10                  15


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


Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45
```

```
Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Gln Ser
        115                 120                 125

Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys
    130                 135                 140

Ala Ser Gly Tyr Lys Phe Thr Ser Tyr Val Met His Trp Val Arg Gln
145                 150                 155                 160

Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Asn Pro Tyr Asn
                165                 170                 175

Asp Val Thr Lys Tyr Ala Glu Lys Phe Gln Gly Arg Val Thr Leu Thr
            180                 185                 190

Ser Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg
        195                 200                 205

Ser Glu Asp Thr Ala Val His Tyr Cys Ala Arg Gly Ser Tyr Tyr Asp
    210                 215                 220

Tyr Asp Gly Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
225                 230                 235                 240

Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            260                 265                 270
```

```
Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        275                 280                 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    290                 295                 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305                 310                 315                 320

Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                325                 330                 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            340                 345                 350

Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        355                 360                 365

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    370                 375                 380

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
385                 390                 395                 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                405                 410                 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
            420                 425                 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        435                 440                 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    450                 455                 460

Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
```

<210> 24
<211> 468
<212> PRT

<213> Homo sapiens

<400> 24

```
Gln Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                  10                  15

Asp Arg Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr
        35                  40                  45

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

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
65                  70                  75                  80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr
                85                  90                  95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser Gly
            100                 105                 110

Gly Gly Gly Ser Gly Gly Gly Gly Glu Ala Gly Val Thr Gln Ser Pro
        115                 120                 125

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

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

Gln Gly Pro Gln Phe Ile Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln
                165                 170                 175

Arg Gly Asn Phe Pro Asp Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr
            180                 185                 190

Ser Ser Glu Leu Asn Ile Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu
        195                 200                 205
```

```
Tyr Leu Cys Ala Ser Ser Asp Thr Val Ser Tyr Glu Gln Tyr Phe Gly
    210                 215                 220

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

Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val
                245                 250                 255

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

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
        275                 280                 285

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
    290                 295                 300

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr
305                 310                 315                 320

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
                325                 330                 335

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser
            340                 345                 350

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
        355                 360                 365

Val Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val
    370                 375                 380

Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
385                 390                 395                 400

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                405                 410                 415

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
            420                 425                 430
```

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
        435   440   445

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
    450   455   460

Ser Pro Gly Lys
465

<210> 25
<211> 472
<212> PRT
<213> Homo sapiens

<400> 25

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1   5   10   15

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35   40   45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50   55   60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65   70   75   80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85   90   95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100   105   110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Gln Ser
        115   120   125

Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys
    130   135   140

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

```
145                 150                 155                 160

Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Asn Pro Tyr Asn
                165                 170                 175

Asp Val Thr Lys Tyr Ala Glu Lys Phe Gln Gly Arg Val Thr Leu Thr
            180                 185                 190

Ser Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg
        195                 200                 205

Ser Glu Asp Thr Ala Val His Tyr Cys Ala Arg Gly Ser Tyr Tyr Asp
    210                 215                 220

Tyr Asp Gly Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
225                 230                 235                 240

Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            260                 265                 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        275                 280                 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    290                 295                 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305                 310                 315                 320

Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                325                 330                 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            340                 345                 350

Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        355                 360                 365

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
```

370 375 380

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 26
<211> 231
<212> PRT
<213> Homo sapiens

<400> 26

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1 5 10 15

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

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
35 40 45

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
50 55 60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
65 70 75 80

Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
85 90 95

```
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
            100                 105                 110

Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125

Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val Ser
            180                 185                 190

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205

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

Leu Ser Leu Ser Pro Gly Lys
225                 230
```

<210> 27
<211> 231
<212> PRT
<213> Homo sapiens

<400> 27

```
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15

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

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45
```

```
Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
    50                  55                  60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
65                  70                  75                  80

Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
            100                 105                 110

Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125

Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
            180                 185                 190

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205

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

Leu Ser Leu Ser Pro Gly Lys
225                 230
```

<210> 28
<211> 113
<212> PRT
<213> Homo sapiens

<400> 28

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

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80

Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110

Ile
```

<210> 29
<211> 122
<212> PRT
<213> Homo sapiens

<400> 29

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Cys Leu Glu Trp Val
        35                  40                  45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60

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

65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 30
<211> 8
<212> PRT
<213> Homo sapiens

<400> 30

Gly Gly Gly Ser Gly Gly Gly Gly
1 5

<210> 31
<211> 117
<212> PRT
<213> Homo sapiens

<400> 31

Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1 5 10 15

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

Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
35 40 45

Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
50 55 60

Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65 70 75 80

Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
85 90 95

Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
100 105 110

Glu Asp Leu Lys Asn
115

<210> 32
<211> 107
<212> PRT
<213> Homo sapiens

<400> 32

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys
100 105

<210> 33
<211> 478
<212> PRT
<213> Homo sapiens

<400> 33

Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1 5 10 15

Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp Thr Val

```
            20                  25                  30

Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
        35                  40                  45

Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
    50                  55                  60

Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65                  70                  75                  80

Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
                85                  90                  95

Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
            100                 105                 110

Glu Asp Leu Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys Asp Ala Ala
        115                 120                 125

Lys Lys Asp Gly Lys Ser Gln Lys Glu Val Glu Gln Asn Ser Gly Pro
    130                 135                 140

Leu Ser Val Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser
145                 150                 155                 160

Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys
                165                 170                 175

Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp
            180                 185                 190

Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu
        195                 200                 205

Leu Ile Arg Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala
    210                 215                 220

Val Arg Gly Ala His Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser
225                 230                 235                 240

Leu Leu Val Thr Pro His Ile Glu Pro Lys Ser Ser Asp Lys Thr His
```

```
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

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

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
    370                 375                 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
```

465 470 475

<210> 34
<211> 451
<212> PRT
<213> Homo sapiens

<400> 34

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
115 120 125

Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
130 135 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145 150 155 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
165 170 175

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

```
Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser
    210                 215                 220

Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
                325                 330                 335

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

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

Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
```

```
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430


His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445


Pro Gly Lys
    450
```

<210> 35
<211> 698
<212> PRT
<213> Homo sapiens

<400> 35

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15


Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30


Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60


Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80


Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110


Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125


Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
    130                 135                 140
```

```
Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

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

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser
    210                 215                 220

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
                325                 330                 335

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

Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
```

```
Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

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

Thr Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His
465                 470                 475                 480

Asp Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe
                485                 490                 495

Ile Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro
            500                 505                 510

Asp Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn
        515                 520                 525

Ile Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser
    530                 535                 540

Ser Asp Thr Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu
545                 550                 555                 560

Thr Val Thr Glu Asp Leu Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys
                565                 570                 575

Asp Ala Ala Lys Lys Asp Gly Lys Ser Gln Lys Glu Val Glu Gln Asn
            580                 585                 590
```

```
Ser Gly Pro Leu Ser Val Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys
        595                 600                 605

Thr Tyr Ser Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr
    610                 615                 620

Ser Gly Lys Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp
625                 630                 635                 640

Lys Glu Asp Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr
                645                 650                 655

Ile Ser Leu Leu Ile Arg Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr
            660                 665                 670

Leu Cys Ala Val Arg Gly Ala His Asp Tyr Ala Leu Asn Phe Gly Lys
        675                 680                 685

Gly Thr Ser Leu Leu Val Thr Pro His Ile
    690                 695


<210>  36
<211>  692
<212>  PRT
<213>  Homo sapiens

<400>  36

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
```

```
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys Glu Pro Lys Ser Ser Asp Lys Thr His Thr
    210                 215                 220

Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu
225                 230                 235                 240

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260                 265                 270

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285

Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
```

```
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320

Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350

Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys
        355                 360                 365

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400

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

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Glu Ala Gly
        435                 440                 445

Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly Gln Gln Val
    450                 455                 460

Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp Thr Val Ser Trp Tyr
465                 470                 475                 480

Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln Tyr Val Arg
                485                 490                 495

Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe Ser Gly His
            500                 505                 510

Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala Leu Leu Leu
        515                 520                 525
```

```
Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr Val Ser Tyr
    530                 535                 540

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

Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys Asp Ala Ala Lys Lys Asp
                565                 570                 575

Gly Lys Ser Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val
            580                 585                 590

Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser Asp Arg Gly
        595                 600                 605

Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu
    610                 615                 620

Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe
625                 630                 635                 640

Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg
                645                 650                 655

Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly
            660                 665                 670

Ala His Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val
        675                 680                 685

Thr Pro His Ile
    690
```

<210> 37
<211> 698
<212> PRT
<213> Homo sapiens

<400> 37

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
```

```
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125

Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
    130                 135                 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

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

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser
    210                 215                 220

Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
```

```
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
                325                 330                 335

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

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

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

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

Thr Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His
```

```
465                 470                 475                 480

Asp Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe
                485                 490                 495

Ile Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro
            500                 505                 510

Asp Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn
        515                 520                 525

Ile Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser
    530                 535                 540

Ser Asp Thr Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu
545                 550                 555                 560

Thr Val Thr Glu Asp Leu Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys
                565                 570                 575

Asp Ala Ala Lys Lys Asp Gly Lys Ser Gln Lys Glu Val Glu Gln Asn
            580                 585                 590

Ser Gly Pro Leu Ser Val Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys
        595                 600                 605

Thr Tyr Ser Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr
    610                 615                 620

Ser Gly Lys Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp
625                 630                 635                 640

Lys Glu Asp Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr
                645                 650                 655

Ile Ser Leu Leu Ile Arg Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr
            660                 665                 670

Leu Cys Ala Val Arg Gly Ala His Asp Tyr Ala Leu Asn Phe Gly Lys
        675                 680                 685

Gly Thr Ser Leu Leu Val Thr Pro His Ile
```

690 695

<210> 38
<211> 696
<212> PRT
<213> Homo sapiens

<400> 38

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
50 55 60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
115 120 125

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
130 135 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145 150 155 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
165 170 175

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

```
Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr
    210                 215                 220

Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp
            260                 265                 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Gln Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Ser
        355                 360                 365

Cys Ala Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Val Ser Arg Leu Thr Val Asp Lys
                405                 410                 415
```

```
Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly
        435                 440                 445

Lys Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg
    450                 455                 460

Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp Thr
465                 470                 475                 480

Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe
                485                 490                 495

Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg
            500                 505                 510

Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn
        515                 520                 525

Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp
    530                 535                 540

Thr Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val
545                 550                 555                 560

Thr Glu Asp Leu Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys Asp Ala
                565                 570                 575

Ala Lys Lys Asp Gly Lys Ser Gln Lys Glu Val Glu Gln Asn Ser Gly
            580                 585                 590

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

Ser Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly
    610                 615                 620

Lys Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu
625                 630                 635                 640
```

Asp Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser
645 650 655

Leu Leu Ile Arg Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys
660 665 670

Ala Val Arg Gly Ala His Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr
675 680 685

Ser Leu Leu Val Thr Pro His Ile
690 695

<210> 39
<211> 690
<212> PRT
<213> Homo sapiens

<400> 39

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

```
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Asn Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro
    210                 215                 220

Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
225                 230                 235                 240

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
                245                 250                 255

Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn
            260                 265                 270

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
        275                 280                 285

Glu Glu Gln Phe Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
    290                 295                 300

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
305                 310                 315                 320

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

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu
            340                 345                 350
```

```
Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe
        355                 360                 365

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
    370                 375                 380

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
385                 390                 395                 400

Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly
                405                 410                 415

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
            420                 425                 430

Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys Glu Ala Gly Val Thr
        435                 440                 445

Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly Gln Gln Val Thr Leu
    450                 455                 460

Arg Cys Ser Pro Lys Ser Gly His Asp Thr Val Ser Trp Tyr Gln Gln
465                 470                 475                 480

Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln Tyr Val Arg Gly Glu
                485                 490                 495

Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe Ser Gly His Gln Tyr
            500                 505                 510

Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala Leu Leu Leu Gly Asp
        515                 520                 525

Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr Val Ser Tyr Glu Gln
    530                 535                 540

Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr Glu Asp Leu Lys Asn
545                 550                 555                 560

Gly Ser Ala Asp Asp Ala Lys Lys Asp Ala Ala Lys Lys Asp Gly Lys
                565                 570                 575
```

Ser Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu
580 585 590

Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser Asp Arg Gly Ser Gln
595 600 605

Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile
610 615 620

Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala
625 630 635 640

Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser
645 650 655

Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His
660 665 670

Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro
675 680 685

His Ile
690

<210> 40
<211> 428
<212> PRT
<213> Homo sapiens

<400> 40

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

```
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Asn Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
    210                 215                 220

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
225                 230                 235                 240

Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
                245                 250                 255

Ala Pro Lys Leu Leu Ile Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val
            260                 265                 270

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr
        275                 280                 285
```

```
Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
    290                 295                 300

Gly Asn Thr Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
305                 310                 315                 320

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
                325                 330                 335

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
            340                 345                 350

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
        355                 360                 365

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
    370                 375                 380

Ser Thr Tyr Ser Leu Ser Asn Thr Leu Thr Leu Ser Lys Ala Asp Tyr
385                 390                 395                 400

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
                405                 410                 415

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            420                 425


<210>  41
<211>  1392
<212>  PRT
<213>  Homo sapiens

<400>  41

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe
```

```
    50                  55                  60

Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
    130                 135                 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

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

Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr
    210                 215                 220

Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp
            260                 265                 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
```

```
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Gln Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly
        435                 440                 445

Lys Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg
    450                 455                 460

Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp Thr
465                 470                 475                 480

Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe
                485                 490                 495

Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg
```

```
            500                 505                 510

Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn
        515                 520                 525

Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp
    530                 535                 540

Thr Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val
545                 550                 555                 560

Thr Glu Asp Leu Lys Asn Gly Ser Ala Asp Asp Ala Lys Lys Asp Ala
                565                 570                 575

Ala Lys Lys Asp Gly Lys Ser Gln Lys Glu Val Glu Gln Asn Ser Gly
            580                 585                 590

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

Ser Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly
    610                 615                 620

Lys Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu
625                 630                 635                 640

Asp Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser
                645                 650                 655

Leu Leu Ile Arg Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys
            660                 665                 670

Ala Val Arg Gly Ala His Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr
        675                 680                 685

Ser Leu Leu Val Thr Pro His Ile Glu Val Gln Leu Val Glu Ser Gly
    690                 695                 700

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
705                 710                 715                 720

Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn Trp Val Arg Gln Ala
```

```
                725                 730                 735

Pro Gly Lys Gly Leu Glu Trp Val Ala Leu Ile Asn Pro Tyr Lys Gly
            740                 745                 750

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

Asp Lys Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
    770                 775                 780

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp
785                 790                 795                 800

Ser Asp Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val
                805                 810                 815

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys
            820                 825                 830

Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys
        835                 840                 845

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
    850                 855                 860

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
865                 870                 875                 880

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
                885                 890                 895

Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val
            900                 905                 910

Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro
        915                 920                 925

Ala Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
    930                 935                 940

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
```

945 950 955 960

Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
965 970 975

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
980 985 990

Gln Phe Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
995 1000 1005

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
1010 1015 1020

Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
1025 1030 1035

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln
1040 1045 1050

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
1055 1060 1065

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
1070 1075 1080

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
1085 1090 1095

Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser
1100 1105 1110

Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu
1115 1120 1125

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu
1130 1135 1140

Gly Lys Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys
1145 1150 1155

Thr Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly

```
    1160                1165                1170

His Asp  Thr Val Ser Trp Tyr  Gln Gln Ala Leu Gly  Gln Gly Pro
    1175                1180                1185

Gln Phe  Ile Phe Gln Tyr Val  Arg Gly Glu Glu Arg  Gln Arg Gly
    1190                1195                1200

Asn Phe  Pro Asp Arg Phe Ser  Gly His Gln Tyr Pro  Asn Tyr Ser
    1205                1210                1215

Ser Glu  Leu Asn Ile Asn Ala  Leu Leu Leu Gly Asp  Ser Ala Leu
    1220                1225                1230

Tyr Leu  Cys Ala Ser Ser Asp  Thr Val Ser Tyr Glu  Gln Tyr Phe
    1235                1240                1245

Gly Pro  Gly Ile Arg Leu Thr  Val Thr Glu Asp Leu  Lys Asn Gly
    1250                1255                1260

Ser Ala  Asp Asp Ala Lys Lys  Asp Ala Ala Lys Lys  Asp Gly Lys
    1265                1270                1275

Ser Gln  Lys Glu Val Glu Gln  Asn Ser Gly Pro Leu  Ser Val Pro
    1280                1285                1290

Glu Gly  Ala Ile Ala Ser Leu  Asn Cys Thr Tyr Ser  Asp Arg Gly
    1295                1300                1305

Ser Gln  Ser Phe Phe Trp Tyr  Arg Gln Tyr Ser Gly  Lys Ser Pro
    1310                1315                1320

Glu Leu  Ile Met Ser Ile Tyr  Ser Asn Gly Asp Lys  Glu Asp Gly
    1325                1330                1335

Arg Phe  Thr Ala Gln Leu Asn  Lys Ala Ser Gln Tyr  Ile Ser Leu
    1340                1345                1350

Leu Ile  Arg Asp Ser Lys Leu  Ser Asp Ser Ala Thr  Tyr Leu Cys
    1355                1360                1365

Ala Val  Arg Gly Ala His Asp  Tyr Ala Leu Asn Phe  Gly Lys Gly
```

1370 1375 1380

Thr Ser Leu Leu Val Thr Pro His Ile
1385 1390

<210> 42
<211> 214
<212> PRT
<213> Homo sapiens

<400> 42

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180   185   190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195   200   205

Phe Asn Arg Gly Glu Cys
    210

<210> 43
<211> 461
<212> PRT
<213> Homo sapiens

<400> 43

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1   5   10   15

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35   40   45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50   55   60

Leu Asn Lys Ala Ser Gln Tyr Phe Ser Leu Leu Ile Arg Asp Ser Gln
65   70   75   80

Pro Ser Asp Ser Ala Thr Tyr Leu Cys Ala Ala Val Ile Asp Asn Ser
                85   90   95

Asn Gly Gly Ile Leu Thr Phe Gly Thr Gly Thr Arg Leu Thr Ile Ile
            100   105   110

Pro Asn Ile Gln Asn Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln
        115   120   125

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
    130   135   140

```
Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp
145                 150                 155                 160

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Tyr Thr
                165                 170                 175

Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
            180                 185                 190

Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
        195                 200                 205

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

Gln Gly Thr Lys Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
            340                 345                 350

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
        355                 360                 365
```

```
Pro Cys Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu
    370                 375                 380

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
                405                 410                 415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
            420                 425                 430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
        435                 440                 445

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
    450                 455                 460
```

<210> 44
<211> 477
<212> PRT
<213> Homo sapiens

<400> 44

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Ala Gln Lys Phe
    50                  55                  60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
```

```
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Lys Ala Gly Val Thr Gln Thr Pro Arg Tyr Leu Ile Lys Thr
    130                 135                 140

Arg Gly Gln Gln Val Thr Leu Ser Cys Ser Pro Ile Pro Gly His Arg
145                 150                 155                 160

Ser Val Ser Trp Tyr Gln Gln Thr Pro Gly Gln Gly Leu Gln Phe Leu
                165                 170                 175

Phe Glu Tyr Val His Gly Ala Glu Arg Asn Lys Gly Asn Phe Pro Gly
            180                 185                 190

Arg Phe Ser Gly Arg Gln Phe Ser Asn Ser Ser Ser Glu Met Asn Ile
        195                 200                 205

Ser Asn Leu Glu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

Pro Trp Asp Ser Pro Asn Glu Gln Tyr Phe Gly Pro Gly Thr Arg Leu
225                 230                 235                 240

Thr Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr
                245                 250                 255

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
            260                 265                 270

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

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
    290                 295                 300

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
305                 310                 315                 320

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
```

```
                325                 330                 335

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
            340                 345                 350

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
        355                 360                 365

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro
    370                 375                 380

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
                405                 410                 415

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
            420                 425                 430

Asp Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg
        435                 440                 445

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
    450                 455                 460

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465                 470                 475


<210>  45
<211>  463
<212>  PRT
<213>  Homo sapiens

<400>  45

Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro Glu Gly
1               5                   10                  15

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45
```

```
Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Val Ser Leu Leu Ile Arg Asp Ser Gln
65                  70                  75                  80

Pro Ser Asp Ser Ala Thr Tyr Leu Cys Ala Ala Val Ile Asp Asn Asp
                85                  90                  95

Gln Gly Gly Ile Leu Thr Phe Gly Thr Gly Thr Arg Leu Thr Ile Ile
            100                 105                 110

Pro Asn Ile Gln Asn Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln
        115                 120                 125

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
    130                 135                 140

Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp
145                 150                 155                 160

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Tyr Thr
                165                 170                 175

Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
            180                 185                 190

Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
        195                 200                 205

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

Gln Gly Thr Lys Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270
```

```
Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
            340                 345                 350

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
        355                 360                 365

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
                405                 410                 415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
            420                 425                 430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
        435                 440                 445

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460
```

<210> 46
<211> 479
<212> PRT
<213> Homo sapiens

<400> 46

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20                  25                  30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Ala Gln Lys Phe
    50                  55                  60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115                 120                 125

Gly Gly Lys Ala Gly Val Thr Gln Thr Pro Arg Tyr Leu Ile Lys Thr
    130                 135                 140

Arg Gly Gln Gln Val Thr Leu Ser Cys Ser Pro Ile Pro Gly His Arg
145                 150                 155                 160

Ala Val Ser Trp Tyr Gln Gln Thr Pro Gly Gln Gly Leu Gln Phe Leu
                165                 170                 175

Phe Glu Tyr Val His Gly Glu Glu Arg Asn Lys Gly Asn Phe Pro Gly
            180                 185                 190

Arg Phe Ser Gly Arg Gln Phe Ser Asn Ser Ser Ser Glu Met Asn Ile
        195                 200                 205

Ser Asn Leu Glu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220
```

```
Pro Trp Asp Ser Pro Asn Val Gln Tyr Phe Gly Pro Gly Thr Arg Leu
225                 230                 235                 240

Thr Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr
                245                 250                 255

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
            260                 265                 270

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

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
    290                 295                 300

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
305                 310                 315                 320

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
                325                 330                 335

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
            340                 345                 350

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
        355                 360                 365

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro
    370                 375                 380

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
                405                 410                 415

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
            420                 425                 430

Asp Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg
        435                 440                 445
```

```
Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
    450                 455                 460

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470                 475
```

<210> 47
<211> 229
<212> PRT
<213> Homo sapiens

<400> 47

```
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15

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

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
    50                  55                  60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
65                  70                  75                  80

Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
            100                 105                 110

Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125

Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160
```

```
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val Ser
            180                 185                 190

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205

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

Leu Ser Leu Ser Pro
225
```

<210> 48
<211> 229
<212> PRT
<213> Homo sapiens

<400> 48

```
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15

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

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
    50                  55                  60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
65                  70                  75                  80

Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
            100                 105                 110

Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
```

```
        115                 120                 125

Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
            180                 185                 190

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205

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

Leu Ser Leu Ser Pro
225
```

<210> 49
<211> 9
<212> PRT
<213> Homo sapiens

<400> 49

```
Ser Leu Leu Gln His Leu Ile Gly Leu
1               5
```

<210> 50
<211> 6
<212> PRT
<213> Homo sapiens

<400> 50

```
Glu Leu Leu Gly Gly Pro
1               5
```

<210> 51
<211> 457
<212> PRT

<213> Homo sapiens

<400> 51

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


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


Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45


Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60


Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80


Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95


Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110


Ile Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln Met Thr Gln Ser
        115                 120                 125


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


Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp Tyr Gln Gln Lys
145                 150                 155                 160


Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Tyr Thr Ser Arg Leu His
                165                 170                 175


Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
            180                 185                 190


Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Phe
        195                 200                 205
```

```
Cys Gln Gln Gly Gln Thr Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys
    210                 215                 220

Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro
225                 230                 235                 240

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Asp
        355                 360                 365

Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430
```

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435   440   445

Thr Gln Lys Ser Leu Ser Leu Ser Pro
    450   455

<210> 52
<211> 476
<212> PRT
<213> Homo sapiens

<400> 52

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1   5   10   15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20   25   30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45

Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Ala Gln Lys Phe
    50   55   60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100   105   110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115   120   125

Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr
    130   135   140

Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly His Asp
145   150   155   160

Thr Val Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile

```
                165                 170                 175

Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp
            180                 185                 190

Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile
        195                 200                 205

Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser
    210                 215                 220

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

Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys Thr His
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

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

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
    370                 375                 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
```

385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465 470 475

<210> 53
<211> 457
<212> PRT
<213> Homo sapiens

<400> 53

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Gln Thr Leu Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Ser Gly
100 105 110

```
Gly Gly Gly Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val
        115                 120                 125

Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser Asp Arg Gly
    130                 135                 140

Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu
145                 150                 155                 160

Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe
                165                 170                 175

Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg
            180                 185                 190

Asp Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly
        195                 200                 205

Ala His Asp Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val
    210                 215                 220

Thr Pro His Ile Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro
225                 230                 235                 240

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335
```

```
Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Asp
        355                 360                 365

Glu Leu Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445

Thr Gln Lys Ser Leu Ser Leu Ser Pro
    450                 455


<210>  54
<211>  476
<212>  PRT
<213>  Homo sapiens

<400>  54

Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1               5                   10                  15

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

Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
        35                  40                  45

Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
    50                  55                  60
```

```
Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65                  70                  75                  80

Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
                85                  90                  95

Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
            100                 105                 110

Glu Asp Leu Lys Asn Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln
        115                 120                 125

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

Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn
145                 150                 155                 160

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Leu Ile
                165                 170                 175

Asn Pro Tyr Lys Gly Val Ser Thr Tyr Ala Gln Lys Phe Gln Asp Arg
            180                 185                 190

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

Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser
    210                 215                 220

Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp Gly Gln Gly
225                 230                 235                 240

Thr Leu Val Thr Val Ser Ser Glu Pro Lys Ser Ser Asp Lys Thr His
                245                 250                 255

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285
```

```
Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
        355                 360                 365

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
    370                 375                 380

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465                 470                 475
```

<210> 55
<211> 461
<212> PRT
<213> Homo sapiens

<400> 55

```
Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile Lys Thr Arg Gly
1               5                  10                  15

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

Ser Trp Tyr Gln Gln Ala Leu Gly Gln Gly Pro Gln Phe Ile Phe Gln
        35                  40                  45

Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe Pro Asp Arg Phe
    50                  55                  60

Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu Asn Ile Asn Ala
65                  70                  75                  80

Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala Ser Ser Asp Thr
                85                  90                  95

Val Ser Tyr Glu Gln Tyr Phe Gly Pro Gly Ile Arg Leu Thr Val Thr
            100                 105                 110

Glu Asp Leu Lys Asn Gly Gly Gly Ser Gly Gly Gly Gly Asp Ile Gln
        115                 120                 125

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
    130                 135                 140

Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr Leu Asn Trp
145                 150                 155                 160

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Tyr Thr
                165                 170                 175

Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
            180                 185                 190

Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
        195                 200                 205

Ala Thr Tyr Phe Cys Gln Gln Gly Gln Thr Leu Pro Trp Thr Phe Gly
    210                 215                 220
```

```
Gln Gly Thr Lys Val Glu Ile Lys Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile
            340                 345                 350

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
        355                 360                 365

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

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
                405                 410                 415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
            420                 425                 430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
        435                 440                 445
```

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
    450   455   460

<210> 56
<211> 472
<212> PRT
<213> Homo sapiens

<400> 56

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1   5   10   15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20   25   30

Thr Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45

Gly Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Ala Gln Lys Phe
    50   55   60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95

Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp
            100   105   110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Gly Gly
        115   120   125

Gly Gly Gln Lys Glu Val Glu Gln Asn Ser Gly Pro Leu Ser Val Pro
    130   135   140

Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser Asp Arg Gly Ser
145   150   155   160

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

Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr

```
            180                 185                 190

Ala Gln Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp
        195                 200                 205

Ser Lys Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala
    210                 215                 220

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

Pro His Ile Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro
                245                 250                 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
            260                 265                 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
        275                 280                 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
    290                 295                 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305                 310                 315                 320

Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
                325                 330                 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
            340                 345                 350

Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
        355                 360                 365

Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu
    370                 375                 380

Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr
385                 390                 395                 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
```

405 410 415

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
420 425 430

Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
435 440 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
450 455 460

Gln Lys Ser Leu Ser Leu Ser Pro
465 470

<210> 57
<211> 462
<212> PRT
<213> Homo sapiens

<400> 57

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Gln Thr Leu Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Ser Gly
100 105 110

Gly Gly Gly Gly Glu Ala Gly Val Thr Gln Ser Pro Thr His Leu Ile
115 120 125

```
Lys Thr Arg Gly Gln Gln Val Thr Leu Arg Cys Ser Pro Lys Ser Gly
    130                 135                 140

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

Phe Ile Phe Gln Tyr Val Arg Gly Glu Glu Arg Gln Arg Gly Asn Phe
                165                 170                 175

Pro Asp Arg Phe Ser Gly His Gln Tyr Pro Asn Tyr Ser Ser Glu Leu
            180                 185                 190

Asn Ile Asn Ala Leu Leu Leu Gly Asp Ser Ala Leu Tyr Leu Cys Ala
        195                 200                 205

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

Leu Thr Val Thr Glu Asp Leu Lys Asn Glu Pro Lys Ser Ser Asp Lys
225                 230                 235                 240

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
                245                 250                 255

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

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
        275                 280                 285

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
    290                 295                 300

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val
305                 310                 315                 320

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
                325                 330                 335

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr
            340                 345                 350
```

```
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
        355                 360                 365

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

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
385                 390                 395                 400

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
                405                 410                 415

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
            420                 425                 430

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
        435                 440                 445

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
    450                 455                 460
```

<210> 58
<211> 472
<212> PRT
<213> Homo sapiens

<400> 58

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

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

Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys Ser Pro Glu Leu Ile Met
        35                  40                  45

Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp Gly Arg Phe Thr Ala Gln
    50                  55                  60

Leu Asn Lys Ala Ser Gln Tyr Ile Ser Leu Leu Ile Arg Asp Ser Lys
65                  70                  75                  80
```

```
Leu Ser Asp Ser Ala Thr Tyr Leu Cys Ala Val Arg Gly Ala His Asp
                85                  90                  95

Tyr Ala Leu Asn Phe Gly Lys Gly Thr Ser Leu Leu Val Thr Pro His
            100                 105                 110

Ile Gly Gly Gly Ser Gly Gly Gly Gly Glu Val Gln Leu Val Gln Ser
        115                 120                 125

Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys
    130                 135                 140

Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn Trp Val Arg Gln
145                 150                 155                 160

Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Leu Ile Asn Pro Tyr Lys
                165                 170                 175

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

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

Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly
    210                 215                 220

Asp Ser Asp Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr Leu Val Thr
225                 230                 235                 240

Val Ser Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro
                245                 250                 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
            260                 265                 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
        275                 280                 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
    290                 295                 300
```

```
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305                 310                 315                 320

Glu Gln Tyr Gln Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
                325                 330                 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
            340                 345                 350

Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
        355                 360                 365

Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Asp Glu
    370                 375                 380

Leu Thr Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr
385                 390                 395                 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
                405                 410                 415

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
            420                 425                 430

Leu Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
        435                 440                 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
    450                 455                 460

Gln Lys Ser Leu Ser Leu Ser Pro
465                 470
```