SEQUENCE LISTING

<110> Probiodrug AG

<120> Glutaminyl cyclase as a diagnostic/prognostic indicator for neurodegenerative diseases

<130> PBD 00072/WO

<150> US 61/085,154
<151> 2008-07-31

<160> 22

<170> PatentIn version 3.5

<210> 1
<211> 361
<212> PRT
<213> Homo sapiens

<400> 1

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Met Ala Gly Gly Arg His Arg Arg Val Val Gly Thr Leu His Leu Leu
1               5                  10                  15

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

Ala Ser Ala Trp Pro Glu Glu Lys Asn Tyr His Gln Pro Ala Ile Leu
        35                  40                  45

Asn Ser Ser Ala Leu Arg Gln Ile Ala Glu Gly Thr Ser Ile Ser Glu
    50                  55                  60

Met Trp Gln Asn Asp Leu Gln Pro Leu Leu Ile Glu Arg Tyr Pro Gly
65                  70                  75                  80

Ser Pro Gly Ser Tyr Ala Ala Arg Gln His Ile Met Gln Arg Ile Gln
                85                  90                  95

Arg Leu Gln Ala Asp Trp Val Leu Glu Ile Asp Thr Phe Leu Ser Gln
            100                 105                 110

Thr Pro Tyr Gly Tyr Arg Ser Phe Ser Asn Ile Ile Ser Thr Leu Asn
        115                 120                 125

Pro Thr Ala Lys Arg His Leu Val Leu Ala Cys His Tyr Asp Ser Lys
    130                 135                 140

Tyr Phe Ser His Trp Asn Asn Arg Val Phe Val Gly Ala Thr Asp Ser
145                 150                 155                 160

Ala Val Pro Cys Ala Met Met Leu Glu Leu Ala Arg Ala Leu Asp Lys
                165                 170                 175

Lys Leu Leu Ser Leu Lys Thr Val Ser Asp Ser Lys Pro Asp Leu Ser
            180                 185                 190
```

```
Leu Gln Leu Ile Phe Phe Asp Gly Glu Glu Ala Phe Leu His Trp Ser
        195                 200                 205

Pro Gln Asp Ser Leu Tyr Gly Ser Arg His Leu Ala Ala Lys Met Ala
    210                 215                 220

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

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

Phe Pro Asn Phe Phe Pro Asn Ser Ala Arg Trp Phe Glu Arg Leu Gln
            260                 265                 270

Ala Ile Glu His Glu Leu His Glu Leu Gly Leu Leu Lys Asp His Ser
        275                 280                 285

Leu Glu Gly Arg Tyr Phe Gln Asn Tyr Ser Tyr Gly Gly Val Ile Gln
    290                 295                 300

Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val Leu His Leu
305                 310                 315                 320

Ile Pro Ser Pro Phe Pro Glu Val Trp His Thr Met Asp Asp Asn Glu
                325                 330                 335

Glu Asn Leu Asp Glu Ser Thr Ile Asp Asn Leu Asn Lys Ile Leu Gln
            340                 345                 350

Val Phe Val Leu Glu Tyr Leu His Leu
        355                 360


<210>  2
<211>  382
<212>  PRT
<213>  Homo sapiens

<400>  2

Met Arg Ser Gly Gly Arg Gly Arg Pro Arg Leu Arg Leu Gly Glu Arg
1               5                   10                  15

Gly Leu Met Glu Pro Leu Leu Pro Pro Lys Arg Arg Leu Leu Pro Arg
            20                  25                  30

Val Arg Leu Leu Pro Leu Leu Leu Ala Leu Ala Val Gly Ser Ala Phe
        35                  40                  45

Tyr Thr Ile Trp Ser Gly Trp His Arg Arg Thr Glu Glu Leu Pro Leu
    50                  55                  60
```

```
Gly Arg Glu Leu Arg Val Pro Leu Ile Gly Ser Leu Pro Glu Ala Arg
65                  70                  75                  80

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

Tyr Leu Arg Pro Leu Leu Val Val Arg Thr Pro Gly Ser Pro Gly Asn
            100                 105                 110

Leu Gln Val Arg Lys Phe Leu Glu Ala Thr Leu Arg Ser Leu Thr Ala
        115                 120                 125

Gly Trp His Val Glu Leu Asp Pro Phe Thr Ala Ser Thr Pro Leu Gly
    130                 135                 140

Pro Val Asp Phe Gly Asn Val Val Ala Thr Leu Asp Pro Arg Ala Ala
145                 150                 155                 160

Arg His Leu Thr Leu Ala Cys His Tyr Asp Ser Lys Leu Phe Pro Pro
                165                 170                 175

Gly Ser Thr Pro Phe Val Gly Ala Thr Asp Ser Ala Val Pro Cys Ala
            180                 185                 190

Leu Leu Leu Glu Leu Ala Gln Ala Leu Asp Leu Glu Leu Ser Arg Ala
        195                 200                 205

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

Glu Glu Ala Leu Lys Glu Trp Gly Pro Lys Asp Ser Leu Tyr Gly Ser
225                 230                 235                 240

Arg His Leu Ala Gln Leu Met Glu Ser Ile Pro His Ser Pro Gly Pro
                245                 250                 255

Thr Arg Ile Gln Ala Ile Glu Leu Phe Met Leu Leu Asp Leu Leu Gly
            260                 265                 270

Ala Pro Asn Pro Thr Phe Tyr Ser His Phe Pro Arg Thr Val Arg Trp
        275                 280                 285

Phe His Arg Leu Arg Ser Ile Glu Lys Arg Leu His Arg Leu Asn Leu
    290                 295                 300

Leu Gln Ser His Pro Gln Glu Val Met Tyr Phe Gln Pro Gly Glu Pro
305                 310                 315                 320

Phe Gly Ser Val Glu Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val
                325                 330                 335

Pro Val Leu His Leu Ile Ser Thr Pro Phe Pro Ala Val Trp His Thr
```

340 345 350

Pro Ala Asp Thr Glu Val Asn Leu His Pro Pro Thr Val His Asn Leu
355 360 365

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

<210> 3
<211> 364
<212> PRT
<213> Homo sapiens

<400> 3

Met Glu Pro Leu Leu Pro Pro Lys Arg Arg Leu Leu Pro Arg Val Arg
1 5 10 15

Leu Leu Pro Leu Leu Leu Ala Leu Ala Val Gly Ser Ala Phe Tyr Thr
20 25 30

Ile Trp Ser Gly Trp His Arg Arg Thr Glu Glu Leu Pro Leu Gly Arg
35 40 45

Glu Leu Arg Val Pro Leu Ile Gly Ser Leu Pro Glu Ala Arg Leu Arg
50 55 60

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

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

Val Arg Lys Phe Leu Glu Ala Thr Leu Arg Ser Leu Thr Ala Gly Trp
100 105 110

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

Asp Phe Gly Asn Val Val Ala Thr Leu Asp Pro Arg Ala Ala Arg His
130 135 140

Leu Thr Leu Ala Cys His Tyr Asp Ser Lys Leu Phe Pro Pro Gly Ser
145 150 155 160

Thr Pro Phe Val Gly Ala Thr Asp Ser Ala Val Pro Cys Ala Leu Leu
165 170 175

Leu Glu Leu Ala Gln Ala Leu Asp Leu Glu Leu Ser Arg Ala Lys Lys
180 185 190

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

```
Ala Leu Lys Glu Trp Gly Pro Lys Asp Ser Leu Tyr Gly Ser Arg His
    210                 215                 220

Leu Ala Gln Leu Met Glu Ser Ile Pro His Ser Pro Gly Pro Thr Arg
225                 230                 235                 240

Ile Gln Ala Ile Glu Leu Phe Met Leu Leu Asp Leu Leu Gly Ala Pro
                245                 250                 255

Asn Pro Thr Phe Tyr Ser His Phe Pro Arg Thr Val Arg Trp Phe His
            260                 265                 270

Arg Leu Arg Ser Ile Glu Lys Arg Leu His Arg Leu Asn Leu Leu Gln
        275                 280                 285

Ser His Pro Gln Glu Val Met Tyr Phe Gln Pro Gly Glu Pro Phe Gly
    290                 295                 300

Ser Val Glu Asp Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val
305                 310                 315                 320

Leu His Leu Ile Ser Thr Pro Phe Pro Ala Val Trp His Thr Pro Ala
                325                 330                 335

Asp Thr Glu Val Asn Leu His Pro Pro Thr Val His Asn Leu Cys Arg
            340                 345                 350

Ile Leu Ala Val Phe Leu Ala Glu Tyr Leu Gly Leu
        355                 360

<210>  4
<211>  481
<212>  PRT
<213>  Homo sapiens

<400>  4

Val Trp Tyr Arg Phe Gln Gly Lys Ala Ala Met Arg Ser Gly Gly Arg
1                5                  10                  15

Gly Arg Pro Arg Leu Arg Leu Gly Glu Arg Gly Leu Met Glu Pro Leu
            20                  25                  30

Leu Pro Pro Lys Arg Arg Leu Leu Pro Arg Val Arg Leu Leu Pro Leu
        35                  40                  45

Leu Leu Ala Leu Ala Val Gly Ser Ala Phe Tyr Thr Ile Trp Ser Gly
    50                  55                  60

Trp His Arg Arg Thr Glu Glu Leu Pro Leu Gly Arg Glu Leu Arg Val
65                  70                  75                  80

Pro Leu Ile Gly Ser Leu Pro Glu Ala Arg Leu Arg Arg Val Val Gly
```

85 90 95

Gln Leu Asp Pro Gln Arg Leu Trp Ser Thr Tyr Leu Arg Pro Leu Leu
100 105 110

Val Val Arg Thr Pro Gly Ser Pro Gly Asn Leu Gln Val Arg Lys Phe
115 120 125

Leu Glu Ala Thr Leu Arg Ser Leu Thr Ala Gly Trp His Val Glu Leu
130 135 140

Asp Pro Phe Thr Ala Ser Thr Pro Leu Gly Pro Val Asp Phe Gly Asn
145 150 155 160

Val Val Ala Thr Leu Asp Pro Arg Ala Ala Arg His Leu Thr Leu Ala
165 170 175

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

Gly Ala Thr Asp Ser Ala Val Pro Cys Ala Leu Leu Leu Glu Leu Ala
195 200 205

Gln Ala Leu Asp Leu Glu Leu Ser Arg Ala Lys Lys Gln Ala Ala Pro
210 215 220

Val Thr Leu Gln Leu Leu Phe Leu Asp Gly Glu Glu Ala Leu Lys Glu
225 230 235 240

Trp Gly Pro Lys Asp Ser Leu Tyr Gly Ser Arg His Leu Ala Gln Leu
245 250 255

Met Glu Ser Ile Pro His Ser Pro Gly Pro Thr Arg Ile Gln Ala Ile
260 265 270

Glu Leu Phe Met Leu Leu Asp Leu Leu Gly Ala Pro Asn Pro Thr Phe
275 280 285

Tyr Ser His Phe Pro Arg Thr Val Arg Trp Phe His Arg Leu Arg Ser
290 295 300

Ile Glu Lys Arg Leu His Arg Leu Asn Leu Leu Gln Ser His Pro Gln
305 310 315 320

Glu Val Met Tyr Phe Gln Pro Gly Glu Pro Phe Gly Ser Val Glu Asp
325 330 335

Asp His Ile Pro Phe Leu Arg Arg Gly Val Pro Val Leu His Leu Ile
340 345 350

Ser Thr Pro Phe Pro Ala Val Trp His Thr Pro Ala Asp Thr Glu Val
355 360 365

```
Asn Leu His Pro Pro Thr Val His Asn Leu Cys Arg Ile Leu Ala Val
    370                 375                 380

Phe Leu Ala Glu Tyr Leu Gly Leu Arg Ala Trp Pro Met Thr Val Glu
385                 390                 395                 400

Arg Thr Val Arg Glu Lys Val Pro Ala Gly Ala Ser Glu Ala Gln Ala
                405                 410                 415

Gly Ser Ala Gly Val Leu Val Cys Pro Phe His Thr Phe Val Ser Leu
            420                 425                 430

Cys Tyr Asn Trp Lys Thr Phe Phe Leu Leu Ile Val Ser Ser Cys His
        435                 440                 445

Pro Ser Arg Thr Gly Lys Arg Pro Leu Trp Asp Asp Ser Gln Arg Asn
    450                 455                 460

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

Asp
```

<210> 5
<211> 359
<212> PRT
<213> Homo sapiens

<400> 5

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

Glu Arg Gly Leu Met Glu Pro Leu Leu Pro Pro Lys Arg Arg Leu Leu
            20                  25                  30

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

Ala Phe Tyr Thr Ile Trp Ser Gly Trp His Arg Arg Thr Glu Glu Leu
    50                  55                  60

Pro Leu Gly Arg Glu Leu Arg Val Pro Leu Ile Gly Ser Leu Pro Glu
65                  70                  75                  80

Ala Arg Leu Arg Arg Val Val Gly Gln Leu Asp Pro Gln Arg Leu Trp
                85                  90                  95

Ser Thr Tyr Leu Arg Pro Leu Leu Val Val Arg Thr Pro Gly Ser Pro
            100                 105                 110
```

```
Gly Asn Leu Gln Val Arg Lys Ala Ala Pro Val Thr Leu Gln Leu Leu
        115                 120                 125

Phe Leu Asp Gly Glu Glu Ala Leu Lys Glu Trp Gly Pro Lys Asp Ser
    130                 135                 140

Leu Tyr Gly Ser Arg His Leu Ala Gln Leu Met Glu Ser Ile Pro His
145                 150                 155                 160

Ser Pro Gly Pro Thr Arg Ile Gln Ala Ile Glu Leu Phe Met Leu Leu
                165                 170                 175

Asp Leu Leu Gly Ala Pro Asn Pro Thr Phe Tyr Ser His Phe Pro Arg
            180                 185                 190

Thr Val Arg Trp Phe His Arg Leu Arg Ser Ile Glu Lys Arg Leu His
        195                 200                 205

Arg Leu Asn Leu Leu Gln Ser His Pro Gln Glu Val Met Tyr Phe Gln
    210                 215                 220

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

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

Val Trp His Thr Pro Ala Asp Thr Glu Val Asn Leu His Pro Pro Thr
            260                 265                 270

Val His Asn Leu Cys Arg Ile Leu Ala Val Phe Leu Ala Glu Tyr Leu
        275                 280                 285

Gly Leu Arg Ala Trp Pro Met Thr Val Glu Arg Thr Val Arg Glu Lys
    290                 295                 300

Val Pro Ala Gly Ala Ser Glu Ala Gln Ala Gly Ser Ala Gly Val Leu
305                 310                 315                 320

Val Cys Pro Phe His Thr Phe Val Ser Leu Cys Tyr Asn Trp Lys Thr
                325                 330                 335

Phe Phe Leu Leu Ile Val Ser Ser Cys His Pro Ser Arg Thr Gly Lys
            340                 345                 350

Arg Pro Leu Trp Asp Asp Ser
        355
```

<210> 6
<211> 42
<212> PRT
<213> Homo sapiens

<400> 6

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 7
<211> 40
<212> PRT
<213> Homo sapiens

<400> 7

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val
35 40

<210> 8
<211> 40
<212> PRT
<213> Homo sapiens

<400> 8

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu
20 25 30

Met Val Gly Gly Val Val Ile Ala
35 40

<210> 9
<211> 38
<212> PRT
<213> Homo sapiens

<400> 9

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu
20 25 30

Met Val Gly Gly Val Val
35

<210> 10
<211> 38
<212> PRT
<213> Homo sapiens

<400> 10

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly
35

<210> 11
<211> 36
<212> PRT
<213> Homo sapiens

<400> 11

Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu
20 25 30

Met Val Gly Gly
35

<210> 12
<211> 34
<212> PRT
<213> Homo sapiens

<400> 12

Glu Ala Ser Asn Cys Phe Ala Ile Arg His Phe Glu Asn Lys Phe Ala
1 5 10 15

Val Glu Thr Leu Ile Cys Ser Arg Thr Val Lys Lys Asn Ile Ile Glu
20 25 30

Glu Asn

<210> 13
<211> 34
<212> PRT
<213> Homo sapiens

<400> 13

Glu Ala Ser Asn Cys Phe Ala Ile Arg His Phe Glu Asn Lys Phe Ala
1 5 10 15

Val Glu Thr Leu Ile Cys Phe Asn Leu Phe Leu Asn Ser Gln Glu Lys
20 25 30

His Tyr

<210> 14
<211> 76
<212> PRT
<213> Homo sapiens

<400> 14

Gln Pro Asp Ala Ile Asn Ala Pro Val Thr Cys Cys Tyr Asn Phe Thr
1 5 10 15

Asn Arg Lys Ile Ser Val Gln Arg Leu Ala Ser Tyr Arg Arg Ile Thr
20 25 30

Ser Ser Lys Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Ile Val Ala
35 40 45

Lys Glu Ile Cys Ala Asp Pro Lys Gln Lys Trp Val Gln Asp Ser Met
50 55 60

Asp His Leu Asp Lys Gln Thr Gln Thr Pro Lys Thr
65 70 75

<210> 15
<211> 76
<212> PRT
<213> Homo sapiens

<400> 15

Gln Pro Val Gly Ile Asn Thr Ser Thr Thr Cys Cys Tyr Arg Phe Ile
1 5 10 15

Asn Lys Lys Ile Pro Lys Gln Arg Leu Glu Ser Tyr Arg Arg Thr Thr
20 25 30

Ser Ser His Cys Pro Arg Glu Ala Val Ile Phe Lys Thr Lys Leu Asp
35 40 45

Lys Glu Ile Cys Ala Asp Pro Thr Gln Lys Trp Val Gln Asp Phe Met
50 55 60

Lys His Leu Asp Lys Lys Thr Gln Thr Pro Lys Leu
65 70 75

<210> 16
<211> 76
<212> PRT
<213> Homo sapiens

<400> 16

```
Gln Pro Asp Ser Val Ser Ile Pro Ile Thr Cys Cys Phe Asn Val Ile
1               5                  10                  15

Asn Arg Lys Ile Pro Ile Gln Arg Leu Glu Ser Tyr Thr Arg Ile Thr
            20                  25                  30

Asn Ile Gln Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Lys Arg Gly
        35                  40                  45

Lys Glu Val Cys Ala Asp Pro Lys Glu Arg Trp Val Arg Asp Ser Met
    50                  55                  60

Lys His Leu Asp Gln Ile Phe Gln Asn Leu Lys Pro
65                  70                  75
```

<210> 17
<211> 101
<212> PRT
<213> Mus musculus

<400> 17

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

Ala Gln Gln Gly Leu Glu Ile Glu Met Phe His Met Gly Phe Gln Asp
            20                  25                  30

Ser Ser Asp Cys Cys Leu Ser Tyr Asn Ser Arg Ile Gln Cys Ser Arg
        35                  40                  45

Phe Ile Gly Tyr Phe Pro Thr Ser Gly Gly Cys Thr Arg Pro Gly Ile
    50                  55                  60

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

Arg Arg Val Gln Arg Cys Ile Glu Arg Leu Glu Gln Asn Ser Gln Pro
                85                  90                  95

Arg Thr Tyr Lys Gln
            100
```

<210> 18
<211> 75
<212> PRT
<213> Homo sapiens

<400> 18

```
Gln Pro Asp Ala Leu Asn Val Pro Ser Thr Cys Cys Phe Thr Phe Ser
1               5                  10                  15

Ser Lys Lys Ile Ser Leu Gln Arg Leu Lys Ser Tyr Val Ile Thr Thr
            20                  25                  30
```

Ser Arg Cys Pro Gln Lys Ala Val Ile Phe Arg Thr Lys Leu Gly Lys
35 40 45

Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln Asn Tyr Met Lys
50 55 60

His Leu Gly Arg Lys Ala His Thr Leu Lys Thr
65 70 75

<210> 19
<211> 92
<212> PRT
<213> Homo sapiens

<400> 19

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

Leu Glu Asn Pro Val Val Leu Asn Ser Phe His Phe Ala Ala Asp Cys
20 25 30

Cys Thr Ser Tyr Ile Ser Gln Ser Ile Pro Cys Ser Leu Met Lys Ser
35 40 45

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

Thr Lys Lys Gly Arg Gln Val Cys Ala Lys Pro Ser Gly Pro Gly Val
65 70 75 80

Gln Asp Cys Met Lys Lys Leu Lys Pro Tyr Ser Ile
85 90

<210> 20
<211> 97
<212> PRT
<213> Homo sapiens

<400> 20

Gln Pro Lys Val Pro Glu Trp Val Asn Thr Pro Ser Thr Cys Cys Leu
1 5 10 15

Lys Tyr Tyr Glu Lys Val Leu Pro Arg Arg Leu Val Val Gly Tyr Arg
20 25 30

Lys Ala Leu Asn Cys His Leu Pro Ala Ile Ile Phe Val Thr Lys Arg
35 40 45

Asn Arg Glu Val Cys Thr Asn Pro Asn Asp Asp Trp Val Gln Glu Tyr
50 55 60

Ile Lys Asp Pro Asn Leu Pro Leu Leu Pro Thr Arg Asn Leu Ser Thr

65 70 75 80

Val Lys Ile Ile Thr Ala Lys Asn Gly Gln Pro Gln Leu Leu Asn Ser
85 90 95

Gln

<210> 21
<211> 373
<212> PRT
<213> Homo sapiens

<400> 21

Gln His His Gly Val Thr Lys Cys Asn Ile Thr Cys Ser Lys Met Thr
1 5 10 15

Ser Lys Ile Pro Val Ala Leu Leu Ile His Tyr Gln Gln Asn Gln Ala
20 25 30

Ser Cys Gly Lys Arg Ala Ile Ile Leu Glu Thr Arg Gln His Arg Leu
35 40 45

Phe Cys Ala Asp Pro Lys Glu Gln Trp Val Lys Asp Ala Met Gln His
50 55 60

Leu Asp Arg Gln Ala Ala Ala Leu Thr Arg Asn Gly Gly Thr Phe Glu
65 70 75 80

Lys Gln Ile Gly Glu Val Lys Pro Arg Thr Thr Pro Ala Ala Gly Gly
85 90 95

Met Asp Glu Ser Val Val Leu Glu Pro Glu Ala Thr Gly Glu Ser Ser
100 105 110

Ser Leu Glu Pro Thr Pro Ser Ser Gln Glu Ala Gln Arg Ala Leu Gly
115 120 125

Thr Ser Pro Glu Leu Pro Thr Gly Val Thr Gly Ser Ser Gly Thr Arg
130 135 140

Leu Pro Pro Thr Pro Lys Ala Gln Asp Gly Gly Pro Val Gly Thr Glu
145 150 155 160

Leu Phe Arg Val Pro Pro Val Ser Thr Ala Ala Thr Trp Gln Ser Ser
165 170 175

Ala Pro His Gln Pro Gly Pro Ser Leu Trp Ala Glu Ala Lys Thr Ser
180 185 190

Glu Ala Pro Ser Thr Gln Asp Pro Ser Thr Gln Ala Ser Thr Ala Ser
195 200 205

```
Ser Pro Ala Pro Glu Glu Asn Ala Pro Ser Glu Gly Gln Arg Val Trp
    210                 215                 220

Gly Gln Gly Gln Ser Pro Arg Pro Glu Asn Ser Leu Glu Arg Glu Glu
225                 230                 235                 240

Met Gly Pro Val Pro Ala His Thr Asp Ala Phe Gln Asp Trp Gly Pro
                245                 250                 255

Gly Ser Met Ala His Val Ser Val Val Pro Val Ser Ser Glu Gly Thr
            260                 265                 270

Pro Ser Arg Glu Pro Val Ala Ser Gly Ser Trp Thr Pro Lys Ala Glu
        275                 280                 285

Glu Pro Ile His Ala Thr Met Asp Pro Gln Arg Leu Gly Val Leu Ile
    290                 295                 300

Thr Pro Val Pro Asp Ala Gln Ala Ala Thr Arg Arg Gln Ala Val Gly
305                 310                 315                 320

Leu Leu Ala Phe Leu Gly Leu Leu Phe Cys Leu Gly Val Ala Met Phe
                325                 330                 335

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

Ala Glu Gly Leu Arg Tyr Ile Pro Arg Ser Cys Gly Ser Asn Ser Tyr
        355                 360                 365

Val Leu Val Pro Val
    370
```

<210> 22
<211> 127
<212> PRT
<213> Homo sapiens

<400> 22

```
Gln Gly Val Phe Glu Asp Cys Cys Leu Ala Tyr His Tyr Pro Ile Gly
1               5                   10                  15

Trp Ala Val Leu Arg Arg Ala Trp Thr Tyr Arg Ile Gln Glu Val Ser
            20                  25                  30

Gly Ser Cys Asn Leu Pro Ala Ala Ile Phe Tyr Leu Pro Lys Arg His
        35                  40                  45

Arg Lys Val Cys Gly Asn Pro Lys Ser Arg Glu Val Gln Arg Ala Met
    50                  55                  60

Lys Leu Leu Asp Ala Arg Asn Lys Val Phe Ala Lys Leu His His Asn
```

65 70 75 80

Thr Gln Thr Phe Gln Ala Gly Pro His Ala Val Lys Lys Leu Ser Ser
85 90 95

Gly Asn Ser Lys Leu Ser Ser Ser Lys Phe Ser Asn Pro Ile Ser Ser
100 105 110

Ser Lys Arg Asn Val Ser Leu Leu Ile Ser Ala Asn Ser Gly Leu
115 120 125