<110> AMGEN INC.

<120> STABILIZATION OF FC-CONTAINING POLYPEPTIDES

<130> A-1852-WO-PCT

<140>
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<150> 61/860,800
<151> 2013-07-31

<160> 58

<170> PatentIn version 3.5

<210> 1
<211> 330
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<213> Homo sapiens

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

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
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Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

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

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

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Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

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

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330


<210> 2
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Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1               5                   10                  15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

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

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
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Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110

Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115                 120                 125

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130                 135                 140

Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145                 150                 155                 160

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
                165                 170                 175

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180                 185                 190

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195                 200                 205

Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210                 215                 220

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225                 230                 235                 240

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245                 250                 255

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275                 280                 285

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290                 295                 300

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305                 310                 315                 320

Ser Leu Ser Pro Gly Lys
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<210> 3
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<400> 3

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

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

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

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Arg Val Glu Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro
            100                 105                 110

Arg Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg
        115                 120                 125

Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys
    130                 135                 140

Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
145                 150                 155                 160

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
                165                 170                 175

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            180                 185                 190

Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Lys Trp Tyr
        195                 200                 205

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    210                 215                 220

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His
225                 230                 235                 240

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                245                 250                 255

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
            260                 265                 270
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Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
275 280 285

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
290 295 300

Ser Asp Ile Ala Val Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn
305 310 315 320

Tyr Asn Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
325 330 335

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile
340 345 350

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln
355 360 365

Lys Ser Leu Ser Leu Ser Pro Gly Lys
370 375

<210> 4
<211> 327
<212> PRT
<213> Homo sapiens

<400> 4
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1 5 10 15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

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

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
100 105 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
115 120 125

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
130 135 140

```
Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320

Leu Ser Leu Ser Leu Gly Lys
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<210> 5
<211> 353
<212> PRT
<213> Homo sapiens

<400> 5
Ala Ser Pro Thr Ser Pro Lys Val Phe Pro Leu Ser Leu Cys Ser Thr
1               5                   10                  15

Gln Pro Asp Gly Asn Val Val Ile Ala Cys Leu Val Gln Gly Phe Phe
            20                  25                  30

Pro Gln Glu Pro Leu Ser Val Thr Trp Ser Glu Ser Gly Gln Gly Val
        35                  40                  45
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Thr Ala Arg Asn Phe Pro Pro Ser Gln Asp Ala Ser Gly Asp Leu Tyr
    50                  55                  60

Thr Thr Ser Ser Gln Leu Thr Leu Pro Ala Thr Gln Cys Leu Ala Gly
65                  70                  75                  80

Lys Ser Val Thr Cys His Val Lys His Tyr Thr Asn Pro Ser Gln Asp
                85                  90                  95

Val Thr Val Pro Cys Pro Val Pro Ser Thr Pro Pro Thr Pro Ser Pro
            100                 105                 110

Ser Thr Pro Pro Thr Pro Ser Pro Ser Cys Cys His Pro Arg Leu Ser
        115                 120                 125

Leu His Arg Pro Ala Leu Glu Asp Leu Leu Leu Gly Ser Glu Ala Asn
    130                 135                 140

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

Thr Trp Thr Pro Ser Ser Gly Lys Ser Ala Val Gln Gly Pro Pro Glu
                165                 170                 175

Arg Asp Leu Cys Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly Cys
            180                 185                 190

Ala Glu Pro Trp Asn His Gly Lys Thr Phe Thr Cys Thr Ala Ala Tyr
        195                 200                 205

Pro Glu Ser Lys Thr Pro Leu Thr Ala Thr Leu Ser Lys Ser Gly Asn
    210                 215                 220

Thr Phe Arg Pro Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu Leu
225                 230                 235                 240

Ala Leu Asn Glu Leu Val Thr Leu Thr Cys Leu Ala Arg Gly Phe Ser
                245                 250                 255

Pro Lys Asp Val Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu Pro
            260                 265                 270

Arg Glu Lys Tyr Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln Gly
        275                 280                 285

Thr Thr Thr Phe Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu Asp
    290                 295                 300

Trp Lys Lys Gly Asp Thr Phe Ser Cys Met Val Gly His Glu Ala Leu
305                 310                 315                 320
```

Pro Leu Ala Phe Thr Gln Lys Thr Ile Asp Arg Leu Ala Gly Lys Pro
325 330 335

Thr His Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys
340 345 350

Tyr

<210> 6
<211> 384
<212> PRT
<213> Homo sapiens

<400> 6
Ala Pro Thr Lys Ala Pro Asp Val Phe Pro Ile Ile Ser Gly Cys Arg
1 5 10 15

His Pro Lys Asp Asn Ser Pro Val Val Leu Ala Cys Leu Ile Thr Gly
20 25 30

Tyr His Pro Thr Ser Val Thr Val Thr Trp Tyr Met Gly Thr Gln Ser
35 40 45

Gln Pro Gln Arg Thr Phe Pro Glu Ile Gln Arg Arg Asp Ser Tyr Tyr
50 55 60

Met Thr Ser Ser Gln Leu Ser Thr Pro Leu Gln Gln Trp Arg Gln Gly
65 70 75 80

Glu Tyr Lys Cys Val Val Gln His Thr Ala Ser Lys Ser Lys Lys Glu
85 90 95

Ile Phe Arg Trp Pro Glu Ser Pro Lys Ala Gln Ala Ser Ser Val Pro
100 105 110

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

Pro Ala Thr Thr Arg Asn Thr Gly Arg Gly Gly Glu Glu Lys Lys Lys
130 135 140

Glu Lys Glu Lys Glu Glu Gln Glu Glu Arg Glu Thr Lys Thr Pro Glu
145 150 155 160

Cys Pro Ser His Thr Gln Pro Leu Gly Val Tyr Leu Leu Thr Pro Ala
165 170 175

Val Gln Asp Leu Trp Leu Arg Asp Lys Ala Thr Phe Thr Cys Phe Val
180 185 190

Val Gly Ser Asp Leu Lys Asp Ala His Leu Thr Trp Glu Val Ala Gly
195 200 205

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

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

Trp Asn Ala Gly Thr Ser Val Thr Cys Thr Leu Asn His Pro Ser Leu
                245                 250                 255

Pro Pro Gln Arg Leu Met Ala Leu Arg Glu Pro Ala Ala Gln Ala Pro
            260                 265                 270

Val Lys Leu Ser Leu Asn Leu Leu Ala Ser Ser Asp Pro Pro Glu Ala
        275                 280                 285

Ala Ser Trp Leu Leu Cys Glu Val Ser Gly Phe Ser Pro Pro Asn Ile
    290                 295                 300

Leu Leu Met Trp Leu Glu Asp Gln Arg Glu Val Asn Thr Ser Gly Phe
305                 310                 315                 320

Ala Pro Ala Arg Pro Pro Pro Gln Pro Gly Ser Thr Thr Phe Trp Ala
                325                 330                 335

Trp Ser Val Leu Arg Val Pro Ala Pro Pro Ser Pro Gln Pro Ala Thr
            340                 345                 350

Tyr Thr Cys Val Val Ser His Glu Asp Ser Arg Thr Leu Leu Asn Ala
        355                 360                 365

Ser Arg Ser Leu Glu Val Ser Tyr Val Thr Asp His Gly Pro Met Lys
    370                 375                 380


<210> 7
<211> 428
<212> PRT
<213> Homo sapiens

<400> 7
Ala Ser Thr Gln Ser Pro Ser Val Phe Pro Leu Thr Arg Cys Cys Lys
1               5                   10                  15

Asn Ile Pro Ser Asn Ala Thr Ser Val Thr Leu Gly Cys Leu Ala Thr
            20                  25                  30

Gly Tyr Phe Pro Glu Pro Val Met Val Thr Trp Asp Thr Gly Ser Leu
        35                  40                  45

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

```
His Tyr Ala Thr Ile Ser Leu Leu Thr Val Ser Gly Ala Trp Ala Lys
65                  70                  75                  80

Gln Met Phe Thr Cys Arg Val Ala His Thr Pro Ser Ser Thr Asp Trp
                85                  90                  95

Val Asp Asn Lys Thr Phe Ser Val Cys Ser Arg Asp Phe Thr Pro Pro
            100                 105                 110

Thr Val Lys Ile Leu Gln Ser Ser Cys Asp Gly Gly Gly His Phe Pro
        115                 120                 125

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

Ile Asn Ile Thr Trp Leu Glu Asp Gly Gln Val Met Asp Val Asp Leu
145                 150                 155                 160

Ser Thr Ala Ser Thr Thr Gln Glu Gly Glu Leu Ala Ser Thr Gln Ser
                165                 170                 175

Glu Leu Thr Leu Ser Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr
            180                 185                 190

Cys Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser Thr Lys Lys
        195                 200                 205

Cys Ala Asp Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser Arg Pro
    210                 215                 220

Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile Thr Cys Leu
225                 230                 235                 240

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

Arg Ala Ser Gly Lys Pro Val Asn His Ser Thr Arg Lys Glu Glu Lys
            260                 265                 270

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

Arg Asp Trp Ile Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr His Pro
    290                 295                 300

His Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Thr Ser Gly Pro
305                 310                 315                 320

Arg Ala Ala Pro Glu Val Tyr Ala Phe Ala Thr Pro Glu Trp Pro Gly
                325                 330                 335
```

Ser Arg Asp Lys Arg Thr Leu Ala Cys Leu Ile Gln Asn Phe Met Pro
340 345 350

Glu Asp Ile Ser Val Gln Trp Leu His Asn Glu Val Gln Leu Pro Asp
355 360 365

Ala Arg His Ser Thr Thr Gln Pro Arg Lys Thr Lys Gly Ser Gly Phe
370 375 380

Phe Val Phe Ser Arg Leu Glu Val Thr Arg Ala Glu Trp Glu Gln Lys
385 390 395 400

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

Thr Val Gln Arg Ala Val Ser Val Asn Pro Gly Lys
420 425

<210> 8
<211> 452
<212> PRT
<213> Homo sapiens

<400> 8
Gly Ser Ala Ser Ala Pro Thr Leu Phe Pro Leu Val Ser Cys Glu Asn
1 5 10 15

Ser Pro Ser Asp Thr Ser Ser Val Ala Val Gly Cys Leu Ala Gln Asp
20 25 30

Phe Leu Pro Asp Ser Ile Thr Leu Ser Trp Lys Tyr Lys Asn Asn Ser
35 40 45

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

Tyr Ala Ala Thr Ser Gln Val Leu Leu Pro Ser Lys Asp Val Met Gln
65 70 75 80

Gly Thr Asp Glu His Val Val Cys Lys Val Gln His Pro Asn Gly Asn
85 90 95

Lys Glu Lys Asn Val Pro Leu Pro Val Ile Ala Glu Leu Pro Pro Lys
100 105 110

Val Ser Val Phe Val Pro Pro Arg Asp Gly Phe Phe Gly Asn Pro Arg
115 120 125

Lys Ser Lys Leu Ile Cys Gln Ala Thr Gly Phe Ser Pro Arg Gln Ile
130 135 140

Gln Val Ser Trp Leu Arg Glu Gly Lys Gln Val Gly Ser Gly Val Thr
145 150 155 160

```
Thr Asp Gln Val Gln Ala Glu Ala Lys Glu Ser Gly Pro Thr Thr Tyr
                165                 170                 175

Lys Val Thr Ser Thr Leu Thr Ile Lys Glu Ser Asp Trp Leu Gly Gln
            180                 185                 190

Ser Met Phe Thr Cys Arg Val Asp His Arg Gly Leu Thr Phe Gln Gln
        195                 200                 205

Asn Ala Ser Ser Met Cys Val Pro Asp Gln Asp Thr Ala Ile Arg Val
    210                 215                 220

Phe Ala Ile Pro Pro Ser Phe Ala Ser Ile Phe Leu Thr Lys Ser Thr
225                 230                 235                 240

Lys Leu Thr Cys Leu Val Thr Asp Leu Thr Thr Tyr Asp Ser Val Thr
                245                 250                 255

Ile Ser Trp Thr Arg Gln Asn Gly Glu Ala Val Lys Thr His Thr Asn
            260                 265                 270

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

Ser Ile Cys Glu Asp Asp Trp Asn Ser Gly Glu Arg Phe Thr Cys Thr
    290                 295                 300

Val Thr His Thr Asp Leu Pro Ser Pro Leu Lys Gln Thr Ile Ser Arg
305                 310                 315                 320

Pro Lys Gly Val Ala Leu His Arg Pro Asp Val Tyr Leu Leu Pro Pro
                325                 330                 335

Ala Arg Glu Gln Leu Asn Leu Arg Glu Ser Ala Thr Ile Thr Cys Leu
            340                 345                 350

Val Thr Gly Phe Ser Pro Ala Asp Val Phe Val Gln Trp Met Gln Arg
        355                 360                 365

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

Glu Pro Gln Ala Pro Gly Arg Tyr Phe Ala His Ser Ile Leu Thr Val
385                 390                 395                 400

Ser Glu Glu Glu Trp Asn Thr Gly Glu Thr Tyr Thr Cys Val Ala His
                405                 410                 415

Glu Ala Leu Pro Asn Arg Val Thr Glu Arg Thr Val Asp Lys Ser Thr
            420                 425                 430
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Gly Lys Pro Thr Leu Tyr Asn Val Ser Leu Val Met Ser Asp Thr Ala
        435                 440                 445


Gly Thr Cys Tyr
    450


<210> 9
<211> 227
<212> PRT
<213> Homo sapiens

<400> 9
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
1               5                   10                  15


Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
            20                  25                  30


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


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


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


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


Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
            100                 105                 110


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


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


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


Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
                165                 170                 175


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


Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
        195                 200                 205
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His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
210 215 220

Pro Gly Lys
225

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<213> Homo sapiens

<400> 10
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
1 5 10 15

Gly

<210> 11
<211> 231
<212> PRT
<213> Homo sapiens

<400> 11
Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
1 5 10 15

Glu Leu Leu Gly 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

Asn 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 Pro 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 Ser Arg Asp Glu Leu Thr Lys
130 135 140

Asn Gln Val Ser Leu Thr 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> 12
<211> 227
<212> PRT
<213> Homo sapiens

<400> 12
Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
1               5                   10                  15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
            20                  25                  30

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

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

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
65                  70                  75                  80

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

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

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

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
    130                 135                 140

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

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
                165                 170                 175
```

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
195 200 205

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

Pro Gly Lys
225

<210> 13
<211> 233
<212> PRT
<213> Homo sapiens

<400> 13
Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro Arg Cys Pro
1 5 10 15

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

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

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

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

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His
85 90 95

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

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

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
130 135 140

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

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

Tyr Asn Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
180 185 190

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

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

Lys Ser Leu Ser Leu Ser Pro Gly Lys
225 230

<210> 14
<211> 228
<212> PRT
<213> Homo sapiens

<400> 14
Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe Leu
1 5 10 15

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
20 25 30

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

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

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

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

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

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

Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val
130 135 140

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

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
165 170 175

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

Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val
195 200 205

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

Ser Leu Gly Lys
225

<210> 15
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<212> PRT
<213> Mus sp.

<400> 15
Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys Thr Val Pro Glu
1 5 10 15

Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Thr
20 25 30

Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile Ser Lys
35 40 45

Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu Val
50 55 60

His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
65 70 75 80

Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn Gly
85 90 95

Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro Ile
100 105 110

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

Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser
130 135 140

Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu
145 150 155 160

Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro
165 170 175

Ile Met Asn Thr Asn Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val
180 185 190

Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val Leu
195 200 205

His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His Ser
210 215 220

Pro Gly Lys
225

<210> 16
<211> 237
<212> PRT
<213> Mus sp.

<400> 16
Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro Pro
1 5 10 15

Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val Phe Ile
20 25 30

Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile
35 40 45

Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln
50 55 60

Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln
65 70 75 80

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

Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys
100 105 110

Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser Lys
115 120 125

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

Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val Thr
145 150 155 160

Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly Lys
165 170 175

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

Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp Val
195 200 205

Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His Asn
210 215 220

His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
225 230 235

<210> 17
<211> 239
<212> PRT
<213> Mus sp.

<400> 17
Glu Pro Ser Gly Pro Ile Ser Thr Ile Asn Pro Cys Pro Pro Cys Lys
1 5 10 15

Glu Cys His Lys Cys Pro Ala Pro Asn Leu Glu Gly Gly Pro Ser Val
20 25 30

Phe Ile Phe Pro Pro Asn Ile Lys Asp Val Leu Met Ile Ser Leu Thr
35 40 45

Pro Lys Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
50 55 60

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
65 70 75 80

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Ile Arg Val Val Ser
85 90 95

Thr Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
100 105 110

Cys Lys Val Asn Asn Lys Asp Leu Pro Ser Pro Ile Glu Arg Thr Ile
115 120 125

Ser Lys Ile Lys Gly Leu Val Arg Ala Pro Gln Val Tyr Thr Leu Pro
130 135 140

Pro Pro Ala Glu Gln Leu Ser Arg Lys Asp Val Ser Leu Thr Cys Leu
145 150 155 160

Val Val Gly Phe Asn Pro Gly Asp Ile Ser Val Glu Trp Thr Ser Asn
165 170 175

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

Asp Gly Ser Tyr Phe Ile Tyr Ser Lys Leu Asn Met Lys Thr Ser Lys
195 200 205

Trp Glu Lys Thr Asp Ser Phe Ser Cys Asn Val Arg His Glu Gly Leu
210 215 220

Lys Asn Tyr Tyr Leu Lys Lys Thr Ile Ser Arg Ser Pro Gly Lys
225 230 235

<210> 18
<211> 238
<212> PRT
<213> Mus sp.

<400> 18
Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys Pro Pro Leu Lys Glu
1 5 10 15

Cys Pro Pro Cys Ala Ala Pro Asp Leu Leu Gly Gly Pro Ser Val Phe
20 25 30

Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro
35 40 45

Met Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val
50 55 60

Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
65 70 75 80

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

Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys
100 105 110

Lys Val Asn Asn Arg Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile Ser
115 120 125

Lys Pro Arg Gly Pro Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro
130 135 140

Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser Leu Thr Cys Met Ile
145 150 155 160

Thr Gly Phe Leu Pro Ala Glu Ile Ala Val Asp Trp Thr Ser Asn Gly
165 170 175

Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr Val Leu Asp Ser Asp
180 185 190

Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Gln Lys Ser Thr Trp
195 200 205

Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val His Glu Val Leu His
210 215 220

Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser Leu Gly Lys
225 230 235

<210> 19
<211> 233
<212> PRT
<213> Mus sp.

<400> 19
Glu Pro Arg Ile Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Cys Pro
1 5 10 15

Pro Gly Asn Ile Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys
20 25 30

Pro Lys Asp Ala Leu Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val
35 40 45

Val Val Asp Val Ser Glu Asp Asp Pro Asp Val His Val Ser Trp Phe
50 55 60

Val Asp Asn Lys Glu Val His Thr Ala Trp Thr Gln Pro Arg Glu Ala
65 70 75 80

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Ala Leu Pro Ile Gln His
85 90 95

Gln Asp Trp Met Arg Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys
100 105 110

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

Ala Gln Thr Pro Gln Val Tyr Thr Ile Pro Pro Pro Arg Glu Gln Met
130 135 140

Ser Lys Lys Lys Val Ser Leu Thr Cys Leu Val Thr Asn Phe Phe Ser
145 150 155 160

Glu Ala Ile Ser Val Glu Trp Glu Arg Asn Gly Glu Leu Glu Gln Asp
165 170 175

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

Tyr Ser Lys Leu Thr Val Asp Thr Asp Ser Trp Leu Gln Gly Glu Ile
195 200 205

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

Lys Asn Leu Ser Arg Ser Pro Gly Lys
225 230

<210> 20
<211> 233
<212> PRT
<213> Ovis aries

<400> 20
Glu Pro Gly Cys Pro Asp Pro Cys Lys His Cys Arg Cys Pro Pro Pro
1 5 10 15

Glu Leu Pro Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys
20 25 30

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

Asp Val Gly Gln Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp
50 55 60

Asn Val Glu Val Arg Thr Ala Arg Thr Lys Pro Arg Glu Glu Gln Phe
65 70 75 80

Asn Ser Thr Phe Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp
85 90 95

Trp Thr Gly Gly Lys Glu Phe Lys Cys Lys Val His Asn Glu Ala Leu
100 105 110

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

Glu Pro Gln Val Tyr Val Leu Ala Pro Pro Gln Glu Glu Leu Ser Lys
130 135 140

Ser Thr Leu Ser Val Thr Cys Leu Val Thr Gly Phe Tyr Pro Asp Tyr
145 150 155 160

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

Tyr Gly Thr Thr Thr Ser Gln Leu Asp Ala Asp Gly Ser Tyr Phe Leu
180 185 190

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

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

Lys Ser Ile Ser Lys Pro Pro Gly Lys
225 230

<210> 21
<211> 228
<212> PRT
<213> Ovis aries

<400> 21
Gly Ile Ser Ser Asp Tyr Ser Lys Cys Ser Lys Pro Pro Cys Val Ser
1 5 10 15

Arg Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Ser Leu Met
20 25 30

Ile Thr Gly Thr Pro Glu Val Thr Cys Val Val Val Asp Val Gln Gly
35 40 45

Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asn Val Glu Val Arg
50 55 60

Thr Ala Arg Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
65 70 75 80

Val Val Ser Ala Leu Pro Ile Gln His Asp His Trp Thr Gly Gly Lys
85 90 95

Glu Phe Lys Cys Lys Val His Ser Lys Gly Leu Pro Ala Pro Ile Val
100 105 110

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

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

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

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

Ser Gln Leu Asp Ala Asp Gly Ser Tyr Phe Leu Tyr Ser Arg Leu Arg
180 185 190

Val Asp Lys Ser Ser Trp Gln Arg Gly Asp Thr Tyr Ala Cys Val Val
195 200 205

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

Pro Pro Gly Lys
225

<210> 22
<211> 232
<212> PRT
<213> Bos taurus

<400> 22
Asp Pro Thr Cys Lys Pro Ser Pro Cys Asp Cys Cys Pro Pro Pro Glu
1 5 10 15

Leu Pro Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp
20 25 30

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

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

Val Glu Val Asn Thr Ala Thr Thr Lys Pro Arg Glu Glu Gln Phe Asn
65 70 75 80

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

Thr Gly Gly Lys Glu Phe Lys Cys Lys Val His Asn Glu Gly Leu Pro
100 105 110

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

Pro Gln Val Tyr Val Leu Ala Pro Pro Gln Glu Glu Leu Ser Lys Ser
130 135 140

Thr Val Ser Leu Thr Cys Met Val Thr Ser Phe Tyr Pro Asp Tyr Ile
145 150 155 160

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

Gly Thr Thr Pro Pro Gln Leu Asp Ala Asp Ser Ser Tyr Phe Leu Tyr
180 185 190

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

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

Ser Thr Ser Lys Ser Ala Gly Lys
225 230

<210> 23
<211> 230

<212> PRT
<213> Bos taurus

<400> 23
Gly Val Ser Ser Asp Cys Ser Lys Pro Asn Asn Gln His Cys Cys Val
1 5 10 15

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

Met Ile Thr Gly Thr Pro Glu Val Thr Cys Val Val Val Asn Val Gly
35 40 45

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

Val His Thr Ala Arg Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

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

Gly Lys Glu Phe Lys Cys Lys Val Asn Ile Lys Gly Leu Ser Ala Ser
100 105 110

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

Val Tyr Val Leu Asp Pro Pro Lys Glu Glu Leu Ser Lys Ser Thr Val
130 135 140

Ser Val Thr Cys Met Val Ile Gly Phe Tyr Pro Glu Asp Val Asp Val
145 150 155 160

Glu Trp Gln Arg Asp Arg Gln Thr Glu Ser Glu Asp Lys Tyr Arg Thr
165 170 175

Thr Pro Pro Gln Leu Asp Ala Asp Arg Ser Tyr Phe Leu Tyr Ser Lys
180 185 190

Leu Arg Val Asp Arg Asn Ser Trp Gln Arg Gly Asp Thr Tyr Thr Cys
195 200 205

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

Ser Lys Ser Ala Gly Lys
225 230

<210> 24
<211> 232
<212> PRT
<213> Bos taurus

<400> 24
Lys Ser Glu Val Glu Lys Thr Pro Cys Gln Cys Ser Lys Cys Pro Glu
1 5 10 15

Pro Leu Gly Gly Leu Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp
20 25 30

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

Val Gly Gln Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp
50 55 60

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

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

Leu Gln Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Gly Leu Pro
100 105 110

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

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

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

Asp Val Glu Trp Gln Arg Asn Gly Gln Pro Glu Ser Glu Asp Lys Tyr
165 170 175

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

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

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

Ser Ile Ser Arg Ser Pro Gly Lys
225 230

<210> 25
<211> 229
<212> PRT
<213> Rattus sp.

<400> 25

Val Pro Arg Asn Cys Gly Gly Asp Cys Lys Pro Cys Ile Cys Thr Gly
1 5 10 15

Ser Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val
20 25 30

Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile
35 40 45

Ser Gln Asp Asp Pro Glu Val His Phe Ser Trp Phe Val Asp Asp Val
50 55 60

Glu Val His Thr Ala Gln Thr Arg Pro Pro Glu Glu Gln Phe Asn Ser
65 70 75 80

Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Leu His Gln Asp Trp Leu
85 90 95

Asn Gly Arg Thr Phe Arg Cys Lys Val Thr Ser Ala Ala Phe Pro Ser
100 105 110

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

His Val Tyr Thr Met Ser Pro Thr Lys Glu Glu Met Thr Gln Asn Glu
130 135 140

Val Ser Ile Thr Cys Met Val Lys Gly Phe Tyr Pro Pro Asp Ile Tyr
145 150 155 160

Val Glu Trp Gln Met Asn Gly Gln Pro Gln Glu Asn Tyr Lys Asn Thr
165 170 175

Pro Pro Thr Met Asp Thr Asp Gly Ser Tyr Phe Leu Tyr Ser Lys Leu
180 185 190

Asn Val Lys Lys Glu Lys Trp Gln Gln Gly Asn Thr Phe Thr Cys Ser
195 200 205

Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser
210 215 220

His Ser Pro Gly Lys
225

<210> 26
<211> 225
<212> PRT
<213> Rattus sp.

<400> 26
Val Pro Arg Glu Cys Asn Pro Cys Gly Cys Thr Gly Ser Glu Val Ser
1 5 10 15

```
Ser Val Phe Ile Phe Pro Pro Lys Thr Lys Asp Val Leu Thr Ile Thr
            20                  25                  30

Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile Ser Gln Asn Asp
        35                  40                  45

Pro Glu Val Arg Phe Ser Trp Phe Ile Asp Asp Val Glu Val His Thr
    50                  55                  60

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

Val Ser Glu Leu Pro Ile Val His Arg Asp Trp Leu Asn Gly Lys Thr
                85                  90                  95

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

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

Met Ala Pro Pro Lys Glu Glu Met Thr Gln Ser Gln Val Ser Ile Thr
    130                 135                 140

Cys Met Val Lys Gly Phe Tyr Pro Pro Asp Ile Tyr Thr Glu Trp Lys
145                 150                 155                 160

Met Asn Gly Gln Pro Gln Glu Asn Tyr Lys Asn Thr Pro Pro Thr Met
                165                 170                 175

Asp Thr Asp Gly Ser Tyr Phe Leu Tyr Ser Lys Leu Asn Val Lys Lys
            180                 185                 190

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

Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly
    210                 215                 220

Lys
225
```

<210> 27
<211> 238
<212> PRT
<213> Rattus sp.

<400> 27

```
Glu Arg Arg Asn Gly Gly Ile Gly His Lys Cys Pro Thr Cys Pro Thr
1               5                   10                  15
```

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

Ile Phe Pro Pro Lys Pro Lys Asp Ile Leu Leu Ile Ser Gln Asn Ala
35 40 45

Lys Val Thr Cys Val Val Val Asp Val Ser Glu Glu Glu Pro Asp Val
50 55 60

Gln Phe Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
65 70 75 80

Gln Pro Arg Glu Glu Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Ala
85 90 95

Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys
100 105 110

Lys Val Asn Asn Lys Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile Ser
115 120 125

Lys Pro Lys Gly Leu Val Arg Lys Pro Gln Val Tyr Val Met Gly Pro
130 135 140

Pro Thr Glu Gln Leu Thr Glu Gln Thr Val Ser Leu Thr Cys Leu Thr
145 150 155 160

Ser Gly Phe Leu Pro Asn Asp Ile Gly Val Glu Trp Thr Ser Asn Gly
165 170 175

His Ile Glu Lys Asn Tyr Lys Asn Thr Glu Pro Val Met Asp Ser Asp
180 185 190

Gly Ser Phe Phe Met Tyr Ser Lys Leu Asn Val Glu Arg Ser Arg Trp
195 200 205

Asp Ser Arg Ala Pro Phe Val Cys Ser Val Val His Glu Gly Leu His
210 215 220

Asn His His Val Glu Lys Ser Ile Ser Arg Pro Pro Gly Lys
225 230 235

<210> 28
<211> 228
<212> PRT
<213> Oryctolagus cuniculus

<400> 28
Ala Pro Ser Thr Cys Ser Lys Pro Thr Cys Pro Pro Pro Glu Leu Leu
1 5 10 15

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

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

Glu Asp Asp Pro Glu Val Gln Phe Thr Trp Tyr Ile Asn Asn Glu Gln
    50                  55                  60

Val Arg Thr Ala Arg Pro Pro Leu Arg Glu Gln Gln Phe Asn Ser Thr
65                  70                  75                  80

Ile Arg Val Val Ser Thr Leu Pro Ile Ala His Glu Asp Trp Leu Arg
                85                  90                  95

Gly Lys Glu Phe Lys Cys Lys Val His Asn Lys Ala Leu Pro Ala Pro
            100                 105                 110

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

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

Ser Leu Thr Cys Met Ile Asn Gly Phe Tyr Pro Ser Asp Ile Ser Val
145                 150                 155                 160

Glu Trp Glu Lys Asn Gly Lys Ala Glu Asp Asn Tyr Lys Thr Thr Pro
                165                 170                 175

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

Val Pro Thr Ser Glu Trp Gln Arg Gly Asp Val Phe Thr Cys Ser Val
        195                 200                 205

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

Ser Pro Gly Lys
225


<210> 29
<211> 239
<212> PRT
<213> Equus caballus

<400> 29
Glu Pro Ile Pro Asp Asn His Gln Lys Val Cys Asp Met Ser Lys Cys
1               5                   10                  15

Pro Lys Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Ile
            20                  25                  30
```

```
Phe Pro Pro Asn Pro Lys Asp Thr Leu Met Ile Thr Arg Thr Pro Glu
        35                  40                  45

Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asn Pro Asp Val Lys
    50                  55                  60

Phe Asn Trp Tyr Met Asp Gly Val Glu Val Arg Thr Ala Thr Thr Arg
65                  70                  75                  80

Pro Lys Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu
                85                  90                  95

Arg Ile Gln His Gln Asp Trp Leu Ser Gly Lys Glu Phe Lys Cys Lys
            100                 105                 110

Val Asn Asn Gln Ala Leu Pro Gln Pro Ile Glu Arg Thr Ile Thr Lys
        115                 120                 125

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

Pro Asp Glu Asp Ser Lys Ser Lys Val Ser Val Thr Cys Leu Val Lys
145                 150                 155                 160

Asp Phe Tyr Pro Pro Glu Ile Asn Ile Glu Trp Gln Ser Asn Gly Gln
                165                 170                 175

Pro Glu Leu Glu Thr Lys Tyr Ser Thr Thr Gln Ala Gln Gln Asp Ser
            180                 185                 190

Asp Gly Ser Tyr Phe Leu Tyr Ser Lys Leu Ser Val Asp Arg Asn Arg
        195                 200                 205

Trp Gln Gln Gly Thr Thr Phe Thr Cys Gly Val Met His Glu Ala Leu
    210                 215                 220

His Asn His Tyr Thr Gln Lys Asn Val Ser Lys Asn Pro Gly Lys
225                 230                 235


<210> 30
<211> 232
<212> PRT
<213> Equus caballus

<400> 30
Ala Arg Val Thr Pro Val Cys Ser Leu Cys Arg Gly Arg Tyr Pro His
1               5                   10                  15

Pro Ile Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Pro Lys Asp
            20                  25                  30

Ala Leu Met Ile Ser Arg Thr Pro Val Val Thr Cys Val Val Val Asn
        35                  40                  45
```

```
Leu Ser Asp Gln Tyr Pro Asp Val Gln Phe Ser Trp Tyr Val Asp Asn
    50                  55                  60

Thr Glu Val His Ser Ala Ile Thr Lys Gln Arg Glu Ala Gln Phe Asn
65                  70                  75                  80

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

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

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

Pro Gln Val Tyr Val Leu Pro Pro His Pro Asp Glu Leu Ala Lys Ser
    130                 135                 140

Lys Val Ser Val Thr Cys Leu Val Lys Asp Phe Tyr Pro Pro Asp Ile
145                 150                 155                 160

Ser Val Glu Trp Gln Ser Asn Arg Trp Pro Glu Leu Glu Gly Lys Tyr
                165                 170                 175

Ser Thr Thr Pro Ala Gln Leu Asp Gly Asp Gly Ser Tyr Phe Leu Tyr
            180                 185                 190

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

Thr Cys Ala Val Met His Glu Ala Leu His Asn His Phe Thr Lys Thr
    210                 215                 220

Asp Ile Ser Glu Ser Leu Gly Lys
225                 230


<210> 31
<211> 256
<212> PRT
<213> Equus caballus

<400> 31
Glu Pro Val Leu Pro Lys Pro Thr Thr Pro Ala Pro Thr Val Pro Leu
1               5                   10                  15

Thr Thr Thr Val Pro Val Glu Thr Thr Thr Pro Pro Cys Pro Cys Glu
            20                  25                  30

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

```
Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Met Ile Thr Arg Thr Pro
    50                  55                  60

Glu Val Thr Cys Leu Val Val Asp Val Ser His Asp Ser Ser Asp Val
65                  70                  75                  80

Leu Phe Thr Trp Tyr Val Asp Gly Thr Glu Val Lys Thr Ala Lys Thr
                85                  90                  95

Met Pro Asn Glu Glu Gln Asn Asn Ser Thr Tyr Arg Val Val Ser Val
            100                 105                 110

Leu Arg Ile Gln His Gln Asp Trp Leu Asn Gly Lys Lys Phe Lys Cys
        115                 120                 125

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

Lys Ala Thr Gly Gln Thr Arg Val Pro Gln Val Tyr Val Leu Ala Pro
145                 150                 155                 160

His Pro Asp Glu Leu Ser Lys Asn Lys Val Ser Val Thr Cys Leu Val
                165                 170                 175

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

His Pro Glu Pro Glu Gly Lys Tyr Arg Thr Thr Glu Ala Gln Lys Asp
        195                 200                 205

Ser Asp Gly Ser Tyr Phe Leu Tyr Ser Lys Leu Thr Val Glu Thr Asp
    210                 215                 220

Arg Trp Gln Gln Gly Thr Thr Phe Thr Cys Val Val Met His Glu Ala
225                 230                 235                 240

Leu His Asn His Val Met Gln Lys Asn Val Ser His Ser Pro Gly Lys
                245                 250                 255


<210> 32
<211> 230
<212> PRT
<213> Equus caballus

<400> 32
Val Ile Lys Glu Cys Gly Gly Cys Pro Thr Cys Pro Glu Cys Leu Ser
1               5                   10                  15

Val Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu
            20                  25                  30

Met Ile Ser Arg Thr Pro Thr Val Thr Cys Val Val Val Asp Val Gly
        35                  40                  45
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```
His Asp Phe Pro Asp Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
    50                  55                  60

Thr His Thr Ala Thr Thr Glu Pro Lys Gln Glu Gln Asn Asn Ser Thr
65                  70                  75                  80

Tyr Arg Val Val Ser Ile Leu Ala Ile Gln His Lys Asp Trp Leu Ser
                85                  90                  95

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

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

Val Tyr Val Leu Ala Pro His Arg Ala Glu Leu Ser Lys Asn Lys Val
    130                 135                 140

Ser Val Thr Cys Leu Val Lys Asp Phe Tyr Pro Thr Asp Ile Asp Ile
145                 150                 155                 160

Glu Trp Lys Ser Asn Gly Gln Pro Glu Pro Glu Thr Lys Tyr Ser Thr
                165                 170                 175

Thr Pro Ala Gln Leu Asp Ser Asp Gly Ser Tyr Phe Leu Tyr Ser Lys
            180                 185                 190

Leu Thr Val Glu Thr Asn Arg Trp Gln Gln Gly Thr Thr Phe Thr Cys
        195                 200                 205

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

Ser Lys Ser Pro Gly Lys
225                 230


<210> 33
<211> 230
<212> PRT
<213> Equus caballus

<400> 33
Val Val Lys Gly Ser Pro Cys Pro Lys Cys Pro Ala Pro Glu Leu Pro
1               5                   10                  15

Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu
            20                  25                  30

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

His Asp Asp Pro Asp Val Gln Phe Thr Trp Phe Val Asp Gly Val Glu
50 55 60

Thr His Thr Ala Thr Thr Glu Pro Lys Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Ser
85 90 95

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

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

Val Tyr Val Leu Ala Pro His Pro Asp Glu Leu Ala Lys Asn Thr Val
130 135 140

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

Glu Trp Gln Ser Asn Glu His Pro Glu Pro Glu Gly Lys Tyr Ser Thr
165 170 175

Thr Pro Ala Gln Leu Asn Ser Asp Gly Ser Tyr Phe Leu Tyr Ser Lys
180 185 190

Leu Ser Val Glu Thr Ser Arg Trp Lys Gln Gly Glu Ser Phe Thr Cys
195 200 205

Gly Val Met His Glu Ala Val Glu Asn His Tyr Thr Gln Lys Asn Val
210 215 220

Ser His Ser Pro Gly Lys
225 230

<210> 34
<211> 231
<212> PRT
<213> Equus caballus

<400> 34
Val Ile Lys Glu Pro Cys Cys Cys Pro Lys Cys Pro Asp Ser Lys Phe
1 5 10 15

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

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

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

```
Glu Ala His Thr Ala Thr Thr Lys Ala Lys Glu Lys Gln Asp Asn Ser
65                  70                  75                  80

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

Arg Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Pro Ala
            100                 105                 110

Pro Val Glu Arg Thr Ile Thr Lys Ala Lys Gly Glu Leu Gln Asp Pro
        115                 120                 125

Lys Val Tyr Ile Leu Ala Pro His Arg Glu Glu Val Thr Lys Asn Thr
    130                 135                 140

Val Ser Val Thr Cys Leu Val Lys Asp Phe Tyr Pro Pro Asp Ile Asn
145                 150                 155                 160

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

Thr Thr Pro Ala Gln Leu Asp Gly Asp Gly Ser Tyr Phe Leu Tyr Ser
            180                 185                 190

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

Cys Val Val Met His Glu Ala Ile Arg His Thr Tyr Arg Gln Lys Ser
    210                 215                 220

Ile Thr Asn Phe Pro Gly Lys
225                 230


<210> 35
<211> 235
<212> PRT
<213> Macaca fascicularis

<400> 35
Glu Ile Lys Thr Cys Gly Gly Gly Ser Lys Pro Pro Thr Cys Pro Pro
1               5                   10                  15

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

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

Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Asp Val Lys Phe Asn
    50                  55                  60
```

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

Glu Thr Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
85 90 95

Thr His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Thr Cys Lys Val Ser
100 105 110

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

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

Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
145 150 155 160

Tyr Pro Ser Asp Ile Val Val Glu Trp Glu Ser Ser Gly Gln Pro Glu
165 170 175

Asn Thr Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Tyr
180 185 190

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

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
210 215 220

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
225 230 235

<210> 36
<211> 235
<212> PRT
<213> Macaca mulatta

<400> 36
Glu Ile Lys Thr Cys Gly Gly Gly Ser Lys Pro Pro Thr Cys Pro Pro
1 5 10 15

Cys Thr Ser Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
20 25 30

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

Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Asp Val Lys Phe Asn
50 55 60

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

```
Glu Thr Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
                85                  90                  95

Thr His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Thr Cys Lys Val Ser
            100                 105                 110

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

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

Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
145                 150                 155                 160

Tyr Pro Ser Asp Ile Val Val Glu Trp Glu Ser Ser Gly Gln Pro Glu
                165                 170                 175

Asn Thr Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Tyr
            180                 185                 190

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

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
    210                 215                 220

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
225                 230                 235


<210> 37
<211> 228
<212> PRT
<213> Macaca mulatta

<400> 37
Gly Leu Pro Cys Arg Ser Thr Cys Pro Pro Cys Pro Ala Glu Leu Leu
1               5                   10                  15

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30

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

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

Val His Asn Ala Gln Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80
```

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

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

Lys Gln Lys Thr Val Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln
115 120 125

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

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Val Val
145 150 155 160

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

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

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

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

Ser Pro Gly Lys
225

<210> 38
<211> 232
<212> PRT
<213> Macaca mulatta

<400> 38
Glu Phe Thr Pro Pro Cys Gly Asp Thr Thr Pro Pro Cys Pro Pro Cys
1 5 10 15

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

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

Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp
50 55 60

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

Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Thr
85 90 95

```
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Thr Cys Lys Val Ser Asn
            100                 105                 110

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

Gln Pro Arg Glu Pro Gln Val Tyr Ile Leu Pro Pro Pro Gln Glu Glu
    130                 135                 140

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Thr Gly Phe Tyr
145                 150                 155                 160

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

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

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

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

Gln Lys Ser Leu Ser Val Ser Pro
225                 230
```

<210> 39
<211> 230
<212> PRT
<213> Sus scrofa

<400> 39

```
Gly Ile His Gln Pro Gln Thr Cys Pro Ile Cys Pro Gly Cys Glu Val
1               5                   10                  15

Ala Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30

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

Lys Glu His Ala Glu Val Gln Phe Ser Trp Tyr Val Asp Gly Val Glu
    50                  55                  60

Val His Thr Ala Glu Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Lys
                85                  90                  95
```

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

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

Val Tyr Thr Leu Pro Pro Pro Ala Glu Glu Leu Ser Arg Ser Lys Val
130 135 140

Thr Leu Thr Cys Leu Val Ile Gly Phe Tyr Pro Pro Asp Ile His Val
145 150 155 160

Glu Trp Lys Ser Asn Gly Gln Pro Glu Pro Glu Asn Thr Tyr Arg Thr
165 170 175

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

Leu Ala Val Asp Lys Ala Arg Trp Asp His Gly Asp Lys Phe Glu Cys
195 200 205

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

Ser Lys Thr Gln Gly Lys
225 230

<210> 40
<211> 230
<212> PRT
<213> Sus scrofa

<400> 40
Gly Thr Lys Thr Lys Pro Pro Cys Pro Ile Cys Pro Ala Cys Glu Ser
1 5 10 15

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

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

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

Val His Thr Ala Gln Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Asn
85 90 95

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

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

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

Ser Ile Thr Cys Leu Val Ile Gly Phe Tyr Pro Pro Asp Ile Asp Val
145 150 155 160

Glu Trp Gln Arg Asn Gly Gln Pro Glu Pro Glu Gly Asn Tyr Arg Thr
165 170 175

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

Phe Ser Val Asp Lys Ala Ser Trp Gln Gly Gly Gly Ile Phe Gln Cys
195 200 205

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

Ser Lys Thr Pro Gly Lys
225 230

<210> 41
<211> 230
<212> PRT
<213> Sus scrofa

<400> 41
Gly Thr Lys Thr Lys Pro Pro Cys Pro Ile Cys Pro Ala Cys Glu Ser
1 5 10 15

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

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

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

Val His Thr Ala Gln Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Asn
85 90 95

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

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

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

Ser Ile Thr Cys Leu Val Ile Gly Phe Tyr Pro Pro Asp Ile Asp Val
145 150 155 160

Glu Trp Gln Arg Asn Gly Gln Pro Glu Pro Glu Gly Asn Tyr Arg Thr
165 170 175

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

Phe Ser Val Asp Lys Ala Ser Trp Gln Gly Gly Gly Ile Phe Gln Cys
195 200 205

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

Ser Lys Thr Pro Gly Lys
225 230

<210> 42
<211> 230
<212> PRT
<213> Sus scrofa

<400> 42
Gly Thr Lys Thr Lys Pro Pro Cys Pro Ile Cys Pro Gly Cys Glu Val
1 5 10 15

Ala Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Thr Leu
20 25 30

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

Lys Glu His Ala Glu Val Gln Phe Ser Trp Tyr Val Asp Gly Val Glu
50 55 60

Val His Thr Ala Glu Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Lys
85 90 95

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

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

Val Tyr Thr Leu Pro Pro Pro Ala Glu Glu Leu Ser Arg Ser Lys Val
130 135 140

Thr Val Thr Cys Leu Val Ile Gly Phe Tyr Pro Pro Asp Ile His Val
145 150 155 160

Glu Trp Lys Ser Asn Gly Gln Pro Glu Pro Glu Gly Asn Tyr Arg Thr
165 170 175

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

Leu Ala Val Asp Lys Ala Arg Trp Asp His Gly Glu Thr Phe Glu Cys
195 200 205

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

Ser Lys Thr Gln Gly Lys
225 230

<210> 43
<211> 230
<212> PRT
<213> Sus scrofa

<400> 43
Gly Thr Lys Thr Lys Pro Pro Cys Pro Ile Cys Pro Ala Cys Glu Gly
1 5 10 15

Pro Gly Pro Ser Ala Phe Ile Phe Pro Pro Lys Pro Lys Asp Thr Leu
20 25 30

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

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

Val His Thr Ala Gln Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr
65 70 75 80

Tyr Arg Val Val Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Asn
85 90 95

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

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

Val Tyr Thr Leu Pro Pro Pro Thr Glu Glu Leu Ser Arg Ser Lys Val
130 135 140

Thr Leu Thr Cys Leu Val Thr Gly Phe Tyr Pro Pro Asp Ile Asp Val
145 150 155 160

Glu Trp Gln Arg Asn Gly Gln Pro Glu Pro Glu Gly Asn Tyr Arg Thr
165 170 175

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

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

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

Phe Lys Thr Pro Gly Lys
225 230

<210> 44
<211> 226
<212> PRT
<213> Sus scrofa

<400> 44
Gly Arg Pro Cys Pro Ile Cys Pro Ala Cys Glu Gly Pro Gly Pro Ser
1 5 10 15

Ala Phe Ile Phe Pro Pro Lys Pro Lys Asp Thr Phe Met Ile Ser Arg
20 25 30

Thr Pro Lys Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asn Pro
35 40 45

Glu Val Gln Phe Ser Trp Tyr Val Asp Gly Val Glu Val His Thr Ala
50 55 60

Gln Thr Arg Pro Lys Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val
65 70 75 80

Ser Val Leu Pro Ile Gln His Gln Asp Trp Leu Asn Gly Lys Glu Phe
85 90 95

Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Thr Arg Ile
100 105 110

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

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

Leu Ile Thr Gly Phe Tyr Pro Pro Asp Ile Asp Val Glu Trp Gln Arg
145 150 155 160

Asn Gly Gln Pro Glu Pro Glu Gly Asn Tyr Arg Thr Thr Pro Pro Gln
165 170 175

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

Lys Ala Ser Trp Gln Arg Gly Asp Pro Phe Gln Cys Ala Val Met His
195 200 205

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

Gly Asn
225

<210> 45
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 45
Gly Gly Gly Gly Ser
1 5

<210> 46
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 46
Gly Gly Asn Gly Thr
1 5

<210> 47
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 47
Tyr Gly Asn Gly Thr
1 5

<210> 48
<211> 216
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 48

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

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

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
            100                 105                 110

Pro Arg Glu Pro Gln Val Tyr Thr Cys Pro Pro Ser Arg Lys Glu Met
        115                 120                 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

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

Tyr Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly
    210                 215
```

<210> 49
<211> 217

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 49

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

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

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
            100                 105                 110

Pro Arg Glu Pro Gln Val Tyr Thr Cys Pro Pro Ser Arg Glu Glu Met
        115                 120                 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

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

Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly Lys
    210                 215
```

<210> 50
<211> 332
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 50
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
1 5 10 15

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

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
100 105 110

Pro Arg Glu Pro Gln Val Tyr Thr Cys Pro Pro Ser Arg Lys Glu Met
115 120 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
130 135 140

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

Tyr Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu
165 170 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Gly Gly Gly Gly Ala Arg Asn Gly
210 215 220

Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr Val
225 230 235 240

Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser Pro
245 250 255

```
Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln Phe
            260                 265                 270

Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg Leu
        275                 280                 285

Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn
    290                 295                 300

Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln Thr
305                 310                 315                 320

Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
                325                 330


<210> 51
<211> 351
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<400> 51
Met Glu Trp Ser Trp Val Phe Leu Phe Phe Leu Ser Val Thr Thr Gly
1               5                   10                  15

Val His Ser Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
            20                  25                  30

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
    50                  55                  60

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
65                  70                  75                  80

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
                85                  90                  95

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
            100                 105                 110

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
        115                 120                 125

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Cys Pro Pro Ser Arg
    130                 135                 140
```

```
Lys Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
145                 150                 155                 160

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

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

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

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
    210                 215                 220

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Gly Gly Gly Gly Ala
225                 230                 235                 240

Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu
                245                 250                 255

His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val
            260                 265                 270

Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro
        275                 280                 285

Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu
    290                 295                 300

His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala
305                 310                 315                 320

Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser
                325                 330                 335

Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            340                 345                 350


<210> 52
<211> 236
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<400> 52
Met Glu Trp Ser Trp Val Phe Leu Phe Phe Leu Ser Val Thr Thr Gly
1               5                   10                  15

Val His Ser Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
            20                  25                  30
```

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
    50                  55                  60

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
65                  70                  75                  80

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
                85                  90                  95

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
            100                 105                 110

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
        115                 120                 125

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Cys Pro Pro Ser Arg
    130                 135                 140

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
145                 150                 155                 160

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

Glu Asn Asn Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
            180                 185                 190

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

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
    210                 215                 220

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
225                 230                 235


<210> 53
<211> 216
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<400> 53
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
1               5                   10                  15
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Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
20 25 30

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
100 105 110

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Lys Glu Met
115 120 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
130 135 140

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

Tyr Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu
165 170 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly
210 215

<210> 54
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 54
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
1 5 10 15

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

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
100 105 110

Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met
115 120 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
130 135 140

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

Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
165 170 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Lys
210 215

<210> 55
<211> 332
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 55
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
1 5 10 15

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

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

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

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

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
            100                 105                 110

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Lys Glu Met
        115                 120                 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

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

Tyr Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

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

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly Gly Gly Gly Gly Ala Arg Asn Gly
    210                 215                 220

Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu His Thr Val
225                 230                 235                 240

Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val Leu Ser Pro
                245                 250                 255

Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro Ser Gln Phe
            260                 265                 270

Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu His Arg Leu
        275                 280                 285

Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala Ser Tyr Asn
    290                 295                 300
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Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser Leu Gln Thr
305 310 315 320

Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
325 330

<210> 56
<211> 351
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 56
Met Glu Trp Ser Trp Val Phe Leu Phe Phe Leu Ser Val Thr Thr Gly
1 5 10 15

Val His Ser Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
20 25 30

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
50 55 60

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
65 70 75 80

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
85 90 95

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
100 105 110

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
115 120 125

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

Lys Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
145 150 155 160

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

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

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

```
Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
    210                 215                 220

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Gly Gly Gly Gly Ala
225                 230                 235                 240

Arg Asn Gly Asp His Cys Pro Leu Gly Pro Gly Arg Cys Cys Arg Leu
                245                 250                 255

His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly Trp Ala Asp Trp Val
            260                 265                 270

Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys Ile Gly Ala Cys Pro
        275                 280                 285

Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln Ile Lys Thr Ser Leu
    290                 295                 300

His Arg Leu Lys Pro Asp Thr Val Pro Ala Pro Cys Cys Val Pro Ala
305                 310                 315                 320

Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr Asp Thr Gly Val Ser
                325                 330                 335

Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp Cys His Cys Ile
            340                 345                 350


<210> 57
<211> 236
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<400> 57
Met Glu Trp Ser Trp Val Phe Leu Phe Phe Leu Ser Val Thr Thr Gly
1               5                   10                  15

Val His Ser Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
            20                  25                  30

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
    50                  55                  60

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
65                  70                  75                  80
```

```
Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
                85                  90                  95

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
            100                 105                 110

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
        115                 120                 125

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

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
145                 150                 155                 160

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

Glu Asn Asn Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
            180                 185                 190

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

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
    210                 215                 220

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
225                 230                 235


<210> 58
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      6xHis tag

<400> 58
His His His His His His
1               5
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