SEQUENCE LISTING

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<120> STABILIZED RECEPTOR POLYPEPTIDES AND USES THEREOF

<130> A-1450-WO-PCT

<140> to be assigned
<141> 2009-11-24

<150> 61/200,250
<151> 2008-11-26

<150> 61/259,060
<151> 2009-11-06

<160> 50

<170> PatentIn version 3.4

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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
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<400> 1

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Met Thr Ala Pro Trp Val Ala Leu Ala Leu Leu Trp Gly Ser Leu Cys
1               5                  10                  15

gcc ggc tct ggg cgt ggg gag gct gag aca cgg gag tgc atc tac tac       96
Ala Gly Ser Gly Arg Gly Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr
            20                  25                  30

aac gcc aac tgg gag ctg gag cgc acc aac cag agc ggc ctg gag cgc      144
Asn Ala Asn Trp Glu Leu Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg
        35                  40                  45

tgc gaa ggc gag cag gac aag cgg ctg cac tgc tac gcc tcc tgg cgc      192
Cys Glu Gly Glu Gln Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg
    50                  55                  60

aac agc tct ggc acc atc gag ctc gtg aag aag ggc tgc tgg cta gat      240
Asn Ser Ser Gly Thr Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp
65                  70                  75                  80

gac ttc aac tgc tac gat agg cag gag tgt gtg gcc act gag gag aac      288
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Asp Phe Asn Cys Tyr Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn
                 85                  90                  95

ccc cag gtg tac ttc tgc tgc tgt gaa ggc aac ttc tgc aac gag cgc      336
Pro Gln Val Tyr Phe Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg
            100                 105                 110

ttc act cat ttg cca gag gct ggg ggc ccg gaa gtc acg tac gag cca      384
Phe Thr His Leu Pro Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro
        115                 120                 125

ccc ccg aca gcc ccc acc                                              402
Pro Pro Thr Ala Pro Thr
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<210> 2
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<212> PRT
<213> Homo sapiens

<400> 2

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1               5                  10                  15

Ala Gly Ser Gly Arg Gly Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr
            20                  25                  30

Asn Ala Asn Trp Glu Leu Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg
        35                  40                  45

Cys Glu Gly Glu Gln Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg
    50                  55                  60

Asn Ser Ser Gly Thr Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp
65                  70                  75                  80

Asp Phe Asn Cys Tyr Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn
                85                  90                  95

Pro Gln Val Tyr Phe Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg
            100                 105                 110

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

Pro Pro Thr Ala Pro Thr
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<210> 3
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<213> Homo sapiens

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Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

gtc cag tgt gag aca cgg tgg tgc atc tac tac aac gcc aac tgg gag        96
Val Gln Cys Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

ctg gag cgc acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag       144
Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

gac aag cgg ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc       192
Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

atc gag ctc gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac       240
Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

gat agg cag gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc       288
Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe
                85                  90                  95

tgc tgc tgt gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca       336
Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro
            100                 105                 110

gag gct ggg ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc       384
Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

acc                                                                   387
Thr
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<210> 4
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<213> Homo sapiens

<400> 4

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Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80
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```
Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe
                85                  90                  95

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

Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

Thr
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<210> 5
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<213> Homo sapiens

<220>
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<222> (1)..(330)

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gag aca cgg tgg tgc atc tac tac aac gcc aac tgg gag ctg gag cgc        48
Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag gac aag cgg        96
Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc atc gag ctc       144
Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac gat agg cag       192
Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc tgc tgc tgt       240
Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca gag gct ggg       288
Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc acc               330
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
            100                 105                 110
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<210> 6
<211> 110
<212> PRT
<213> Homo sapiens

<400> 6

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Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15
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Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
            100                 105                 110
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<210> 7
<211> 1071
<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (1)..(1071)

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atg gag ttt ggg ctg agc tgg gtt ttc ctc gtt gct ctt tta aga ggt      48
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

gtc cag tgt gag aca cgg tgg tgc atc tac tac aac gcc aac tgg gag      96
Val Gln Cys Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

ctg gag cgc acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag     144
Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

gac aag cgg ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc     192
Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

atc gag ctc gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac     240
Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

gat agg cag gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc     288
Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe
                85                  90                  95

tgc tgc tgt gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca     336
Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro
            100                 105                 110

gag gct ggg ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc     384
Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125
```

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acc gga ggg gga gga tct gtc gag tgc cca ccg tgc cca gca cca cct      432

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

gtg gca gga ccg tca gtc ttc ctc ttc ccc cca aaa ccc aag gac acc      480
Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
145                 150                 155                 160

ctc atg atc tcc cgg acc cct gag gtc acg tgc gtg gtg gtg gac gtg      528
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
                165                 170                 175

agc cac gaa gac ccc gag gtc cag ttc aac tgg tac gtg gac ggc gtg      576
Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
            180                 185                 190

gag gtg cat aat gcc aag aca aag cca cgg gag gag cag ttc aac agc      624
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
        195                 200                 205

acg ttc cgt gtg gtc agc gtc ctc acc gtt gtg cac cag gac tgg ctg      672
Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
    210                 215                 220

aac ggc aag gag tac aag tgc aag gtc tcc aac aaa ggc ctc cca gcc      720
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala
225                 230                 235                 240

ccc atc gag aaa acc atc tcc aaa acc aaa ggg cag ccc cga gaa cca      768
Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
                245                 250                 255

cag gtg tac acc ctg ccc cca tcc cgg gag gag atg acc aag aac cag      816
Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
            260                 265                 270

gtc agc ctg acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc      864
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
        275                 280                 285

gtg gag tgg gag agc aat ggg cag ccg gag aac aac tac aag acc aca      912
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
    290                 295                 300

cct ccc atg ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc      960
Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
305                 310                 315                 320

acc gtg gac aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc     1008
Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
                325                 330                 335

gtg atg cat gag gct ctg cac aac cac tac acg cag aag agc ctc tcc     1056
Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
            340                 345                 350

ctg tct ccg ggt aaa                                                1071
Leu Ser Pro Gly Lys
        355
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<210> 8
<211> 357
<212> PRT
<213> Homo sapiens

<400> 8

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1 5 10 15

Val Gln Cys Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
20 25 30

Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
35 40 45

Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
50 55 60

Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65 70 75 80

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

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

Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
115 120 125

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

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
165 170 175

Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
180 185 190

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
195 200 205

Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
210 215 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
245 250 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
260 265 270

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
275 280 285

```
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
    290                 295                 300

Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
305                 310                 315                 320

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

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
            340                 345                 350

Leu Ser Pro Gly Lys
        355
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<210> 9
<211> 1014
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1014)

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Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag gac aag cgg       96
Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc atc gag ctc      144
Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac gat agg cag      192
Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc tgc tgc tgt      240
Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca gag gct ggg      288
Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc acc gga ggg      336
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

gga gga tct gtc gag tgc cca ccg tgc cca gca cca cct gtg gca gga      384
Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

ccg tca gtc ttc ctc ttc ccc cca aaa ccc aag gac acc ctc atg atc      432
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Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

tcc cgg acc cct gag gtc acg tgc gtg gtg gtg gac gtg agc cac gaa      480
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

gac ccc gag gtc cag ttc aac tgg tac gtg gac ggc gtg gag gtg cat      528
Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
                165                 170                 175

aat gcc aag aca aag cca cgg gag gag cag ttc aac agc acg ttc cgt      576
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

gtg gtc agc gtc ctc acc gtt gtg cac cag gac tgg ctg aac ggc aag      624
Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys
        195                 200                 205

gag tac aag tgc aag gtc tcc aac aaa ggc ctc cca gcc ccc atc gag      672
Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

aaa acc atc tcc aaa acc aaa ggg cag ccc cga gaa cca cag gtg tac      720
Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

acc ctg ccc cca tcc cgg gag gag atg acc aag aac cag gtc agc ctg      768
Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag tgg      816
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

gag agc aat ggg cag ccg gag aac aac tac aag acc aca cct ccc atg      864
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc acc gtg gac      912
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc gtg atg cat      960
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320

gag gct ctg cac aac cac tac acg cag aag agc ctc tcc ctg tct ccg     1008
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

ggt aaa                                                            1014
Gly Lys
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<210> 10
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<212> PRT
<213> Homo sapiens

<400> 10

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Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                  10                  15

Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

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

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

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

Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320
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Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

Gly Lys
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<210> 11
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(387)

<400> 11

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atg gag ttt ggg ctg agc tgg gtt ttc ctc gtt gct ctt tta aga ggt       48
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                  10                  15

gtc cag tgt gag aca cgg tac tgc atc tac tac aac gcc aac tgg gag       96
Val Gln Cys Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

ctg gag cgc acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag      144
Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

gac aag cgg ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc      192
Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

atc gag ctc gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac      240
Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

gat agg cag gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc      288
Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe
                85                  90                  95

tgc tgc tgt gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca      336
Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro
            100                 105                 110

gag gct ggg ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc      384
Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

acc                                                                  387
Thr
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<210> 12
<211> 129
<212> PRT
<213> Homo sapiens

<400> 12

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Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                  10                  15

Val Gln Cys Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

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

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

Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

Thr
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<210> 13
<211> 330
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<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(330)

<400> 13

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gag aca cgg tac tgc atc tac tac aac gcc aac tgg gag ctg gag cgc        48
Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                  10                  15

acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag gac aag cgg        96
Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc atc gag ctc       144
Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac gat agg cag       192
Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc tgc tgc tgt       240
Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca gag gct ggg       288
```

```
Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc acc              330
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
            100                 105                 110


<210>  14
<211>  110
<212>  PRT
<213>  Homo sapiens

<400>  14

Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                  10                  15

Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
            100                 105                 110


<210>  15
<211>  1071
<212>  DNA
<213>  Homo sapiens

<220>
<221>  CDS
<222>  (1)..(1071)

<400>  15
atg gag ttt ggg ctg agc tgg gtt ttc ctc gtt gct ctt tta aga ggt        48
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                  10                  15

gtc cag tgt gag aca cgg tac tgc atc tac tac aac gcc aac tgg gag        96
Val Gln Cys Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

ctg gag cgc acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag       144
Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

gac aag cgg ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc       192
```

```
Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

atc gag ctc gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac      240
Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

gat agg cag gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc      288
Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe
                85                  90                  95

tgc tgc tgt gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca      336
Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro
            100                 105                 110

gag gct ggg ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc      384
Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

acc gga ggg gga gga tct gtc gag tgc cca ccg tgc cca gca cca cct      432
Thr Gly Gly Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro
    130                 135                 140

gtg gca gga ccg tca gtc ttc ctc ttc ccc cca aaa ccc aag gac acc      480
Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
145                 150                 155                 160

ctc atg atc tcc cgg acc cct gag gtc acg tgc gtg gtg gtg gac gtg      528
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
                165                 170                 175

agc cac gaa gac ccc gag gtc cag ttc aac tgg tac gtg gac ggc gtg      576
Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
            180                 185                 190

gag gtg cat aat gcc aag aca aag cca cgg gag gag cag ttc aac agc      624
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
        195                 200                 205

acg ttc cgt gtg gtc agc gtc ctc acc gtt gtg cac cag gac tgg ctg      672
Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
    210                 215                 220

aac ggc aag gag tac aag tgc aag gtc tcc aac aaa ggc ctc cca gcc      720
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala
225                 230                 235                 240

ccc atc gag aaa acc atc tcc aaa acc aaa ggg cag ccc cga gaa cca      768
Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
                245                 250                 255

cag gtg tac acc ctg ccc cca tcc cgg gag gag atg acc aag aac cag      816
Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
            260                 265                 270

gtc agc ctg acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc      864
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
        275                 280                 285

gtg gag tgg gag agc aat ggg cag ccg gag aac aac tac aag acc aca      912
```

```
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
    290                 295                 300

cct ccc atg ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc      960
Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
305                 310                 315                 320

acc gtg gac aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc     1008
Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
                325                 330                 335

gtg atg cat gag gct ctg cac aac cac tac acg cag aag agc ctc tcc     1056
Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
            340                 345                 350

ctg tct ccg ggt aaa                                                1071
Leu Ser Pro Gly Lys
        355
```

<210> 16
<211> 357
<212> PRT
<213> Homo sapiens

<400> 16

```
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu
            20                  25                  30

Leu Glu Arg Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln
        35                  40                  45

Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr
    50                  55                  60

Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr
65                  70                  75                  80

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

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

Glu Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro
        115                 120                 125

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

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
                165                 170                 175
```

```
Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
            180                 185                 190

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
        195                 200                 205

Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
    210                 215                 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
                245                 250                 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
            260                 265                 270

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
        275                 280                 285

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
    290                 295                 300

Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
305                 310                 315                 320

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

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
            340                 345                 350

Leu Ser Pro Gly Lys
        355
```

<210> 17
<211> 1014
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1014)

<400> 17

```
gag aca cgg tac tgc atc tac tac aac gcc aac tgg gag ctg gag cgc       48
Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

acc aac cag acc ggc ctg gag cgc tgc gaa ggc gag cag gac aag cgg       96
Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc atc gag ctc      144
Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac gat agg cag      192
```

```
Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc tgc tgc tgt      240
Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca gag gct ggg      288
Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc acc gga ggg      336
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

gga gga tct gtc gag tgc cca ccg tgc cca gca cca cct gtg gca gga      384
Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

ccg tca gtc ttc ctc ttc ccc cca aaa ccc aag gac acc ctc atg atc      432
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

tcc cgg acc cct gag gtc acg tgc gtg gtg gtg gac gtg agc cac gaa      480
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

gac ccc gag gtc cag ttc aac tgg tac gtg gac ggc gtg gag gtg cat      528
Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
                165                 170                 175

aat gcc aag aca aag cca cgg gag gag cag ttc aac agc acg ttc cgt      576
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

gtg gtc agc gtc ctc acc gtt gtg cac cag gac tgg ctg aac ggc aag      624
Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys
        195                 200                 205

gag tac aag tgc aag gtc tcc aac aaa ggc ctc cca gcc ccc atc gag      672
Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

aaa acc atc tcc aaa acc aaa ggg cag ccc cga gaa cca cag gtg tac      720
Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

acc ctg ccc cca tcc cgg gag gag atg acc aag aac cag gtc agc ctg      768
Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag tgg      816
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

gag agc aat ggg cag ccg gag aac aac tac aag acc aca cct ccc atg      864
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc acc gtg gac      912
```

```
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc gtg atg cat      960
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320

gag gct ctg cac aac cac tac acg cag aag agc ctc tcc ctg tct ccg     1008
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

ggt aaa                                                            1014
Gly Lys
```

<210> 18
<211> 338
<212> PRT
<213> Homo sapiens

<400> 18

```
Glu Thr Arg Tyr Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

Thr Asn Gln Thr Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

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

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys
        195                 200                 205
```

```
Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

Gly Lys
```

<210> 19
<211> 110
<212> PRT
<213> Homo sapiens

<400> 19

```
Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

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

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
            100                 105                 110
```

<210> 20
<211> 1014
<212> DNA

<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1014)

<400> 20

```
gag aca cgg tgg tgc atc tac tac aac gcc aac tgg gag ctg gag cgc        48
Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                  10                  15

acc aac cag agc ggc ctg gag cgc tgc gaa ggc gag cag gac aag cgg        96
Thr Asn Gln Ser Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp Lys Arg
            20                  25                  30

ctg cac tgc tac gcc tcc tgg cgc aac agc tct ggc acc atc gag ctc       144
Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

gtg aag aag ggc tgc tgg cta gat gac ttc aac tgc tac gat agg cag       192
Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

gag tgt gtg gcc act gag gag aac ccc cag gtg tac ttc tgc tgc tgt       240
Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

gag ggc aac ttc tgc aac gag cgc ttc act cat ttg cca gag gct ggg       288
Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95

ggc ccg gaa gtc acg tac gag cca ccc ccg aca gcc ccc acc gga gga       336
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

gga gga tct gtc gag tgc cca ccg tgc cca gca cca cct gtg gca gga       384
Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

ccg tca gtc ttc ctc ttc ccc cca aaa ccc aag gac acc ctc atg atc       432
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

tcc cgg acc cct gag gtc acg tgc gtg gtg gtg gac gtg agc cac gaa       480
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

gac ccc gag gtc cag ttc aac tgg tac gtg gac ggc gtg gag gtg cat       528
Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
                165                 170                 175

aat gcc aag aca aag cca cgg gag gag cag ttc aac agc acg ttc cgt       576
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

gtg gtc agc gtc ctc acc gtt gtg cac cag gac tgg ctg aac ggc aag       624
Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys
        195                 200                 205

gag tac aag tgc aag gtc tcc aac aaa ggc ctc cca gcc ccc atc gag       672
```

```
Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

aaa acc atc tcc aaa acc aaa ggg cag ccc cga gaa cca cag gtg tac      720
Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

acc ctg ccc cca tcc cgg gag gag atg acc aag aac cag gtc agc ctg      768
Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

acc tgc ctg gtc aaa ggc ttc tat ccc agc gac atc gcc gtg gag tgg      816
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

gag agc aat ggg cag ccg gag aac aac tac aag acc aca cct ccc atg      864
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

ctg gac tcc gac ggc tcc ttc ttc ctc tac agc aag ctc acc gtg gac      912
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

aag agc agg tgg cag cag ggg aac gtc ttc tca tgc tcc gtg atg cat      960
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320

gag gct ctg cac aac cac tac acg cag aag agc ctc tcc ctg tct ccg     1008
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

ggt aaa                                                            1014
Gly Lys
```

<210> 21
<211> 338
<212> PRT
<213> Homo sapiens

<400> 21

```
Glu Thr Arg Trp Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu Glu Arg
1               5                   10                  15

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

Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile Glu Leu
        35                  40                  45

Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp Arg Gln
    50                  55                  60

Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys Cys Cys
65                  70                  75                  80

Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu Ala Gly
                85                  90                  95
```

```
Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr Gly Gly
            100                 105                 110

Gly Gly Ser Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly
        115                 120                 125

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    130                 135                 140

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
145                 150                 155                 160

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

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
            180                 185                 190

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

Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu
    210                 215                 220

Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
225                 230                 235                 240

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
                245                 250                 255

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            260                 265                 270

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met
        275                 280                 285

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    290                 295                 300

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
305                 310                 315                 320

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                325                 330                 335

Gly Lys
```

<210> 22
<211> 216
<212> PRT
<213> Homo sapiens

<400> 22

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

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

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

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


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

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

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

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

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

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

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

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

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

Ser Leu Ser Leu Ser Pro Gly Lys
    210                 215


<210>  23
<211>  217
<212>  PRT
<213>  Homo sapiens

<400>  23

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

Pro Lys Asp Ile 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 Gly 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 Ser Arg Asp Glu Leu
        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 Asp 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 Lys
    210                 215
```

<210> 24
<211> 217
<212> PRT
<213> Homo sapiens

<400> 24

```
Ala Pro Glu Phe 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 Gln Glu Asp Pro Glu Val Gln 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 Phe 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

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


Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu 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 Leu Gly Lys
    210                 215


<210>  25
<211>  5
<212>  PRT
<213>  Artificial

<220>
<223>  Linker

<400>  25

Gly Gly Gly Gly Ser
1               5


<210>  26
<211>  36
<212>  DNA
<213>  Artificial

<220>
<223>  Hinge linker


<220>
<221>  CDS
<222>  (1)..(36)

<400>  26
gga ggg gga gga tct gtc gag tgc cca ccg tgc cca                      36
Gly Gly Gly Gly Ser Val Glu Cys Pro Pro Cys Pro
1               5                   10


<210>  27
<211>  12
<212>  PRT
<213>  Artificial

<220>
<223>  Hinge linker

<400>  27
```

Gly Gly Gly Gly Ser Val Glu Cys Pro Pro Cys Pro
1 5 10

<210> 28
<211> 12
<212> PRT
<213> Homo sapiens

<400> 28

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

<210> 29
<211> 15
<212> PRT
<213> Homo sapiens

<400> 29

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

<210> 30
<211> 12
<212> PRT
<213> Homo sapiens

<400> 30

Glu Ser Lys Thr Gly Pro Pro Cys Pro Ser Cys Pro
1 5 10

<210> 31
<211> 18
<212> PRT
<213> Homo sapiens

<400> 31

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

Pro Gly

<210> 32
<211> 18
<212> PRT
<213> Homo sapiens

<400> 32

Met Thr Ala Pro Trp Val Ala Leu Ala Leu Leu Trp Gly Ser Leu Cys
1 5 10 15

Ala Gly

<210> 33
<211> 512
<212> PRT
<213> Homo sapiens

<400> 33

Met Thr Ala Pro Trp Val Ala Leu Ala Leu Leu Trp Gly Ser Leu Cys
1 5 10 15

Ala Gly Ser Gly Arg Gly Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr
20 25 30
Asn Ala Asn Trp Glu Leu Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg
35 40 45

Cys Glu Gly Glu Gln Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg
50 55 60

Asn Ser Ser Gly Thr Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp
65 70 75 80

Asp Phe Asn Cys Tyr Asp Arg Gln Glu Cys Val Ala Thr Glu Glu Asn
85 90 95

Pro Gln Val Tyr Phe Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg
100 105 110

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

Pro Pro Thr Ala Pro Thr Leu Leu Thr Val Leu Ala Tyr Ser Leu Leu
130 135 140

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

Arg His Arg Lys Pro Pro Tyr Gly His Val Asp Ile His Glu Asp Pro
165 170 175

Gly Pro Pro Pro Pro Ser Pro Leu Val Gly Leu Lys Pro Leu Gln Leu
180 185 190

Leu Glu Ile Lys Ala Arg Gly Arg Phe Gly Cys Val Trp Lys Ala Gln
195 200 205

Leu Met Asn Asp Phe Val Ala Val Lys Ile Phe Pro Leu Gln Asp Lys
210 215 220

Gln Ser Trp Gln Ser Glu Arg Glu Ile Phe Ser Thr Pro Gly Met Lys
225 230 235 240

His Glu Asn Leu Leu Gln Phe Ile Ala Ala Glu Lys Arg Gly Ser Asn
245 250 255

```
Leu Glu Val Glu Leu Trp Leu Ile Thr Ala Phe His Asp Lys Gly Ser
            260                 265                 270

Leu Thr Asp Tyr Leu Lys Gly Asn Ile Ile Thr Trp Asn Glu Leu Cys
        275                 280                 285

His Val Ala Glu Thr Met Ser Arg Gly Leu Ser Tyr Leu His Glu Asp
    290                 295                 300

Val Pro Trp Cys Arg Gly Glu Gly His Lys Pro Ser Ile Ala His Arg
305                 310                 315                 320

Asp Phe Lys Ser Lys Asn Val Leu Leu Lys Ser Asp Leu Thr Ala Val
                325                 330                 335

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

Gly Asp Thr His Gly Gln Val Gly Thr Arg Arg Tyr Met Ala Pro Glu
        355                 360                 365

Val Leu Glu Gly Ala Ile Asn Phe Gln Arg Asp Ala Phe Leu Arg Ile
    370                 375                 380

Asp Met Tyr Ala Met Gly Leu Val Leu Trp Glu Leu Val Ser Arg Cys
385                 390                 395                 400

Lys Ala Ala Asp Gly Pro Val Asp Glu Tyr Met Leu Pro Phe Glu Glu
                405                 410                 415

Glu Ile Gly Gln His Pro Ser Leu Glu Glu Leu Gln Glu Val Val Val
            420                 425                 430

His Lys Lys Met Arg Pro Thr Ile Lys Asp His Trp Leu Lys His Pro
        435                 440                 445

Gly Leu Ala Gln Leu Cys Val Thr Ile Glu Glu Cys Trp Asp His Asp
    450                 455                 460

Ala Glu Ala Arg Leu Ser Ala Gly Cys Val Glu Glu Arg Val Ser Leu
465                 470                 475                 480

Ile Arg Arg Ser Val Asn Gly Thr Thr Ser Asp Cys Leu Val Ser Leu
                485                 490                 495

Val Thr Ser Val Thr Asn Val Asp Leu Pro Pro Lys Glu Ser Ser Ile
            500                 505                 510
```

<210> 34
<211> 426
<212> PRT
<213> Homo sapiens

<400> 34

```
Met Pro Leu Leu Trp Leu Arg Gly Phe Leu Leu Ala Ser Cys Trp Ile
1               5                   10                  15

Ile Val Arg Ser Ser Pro Thr Pro Gly Ser Glu Gly His Ser Ala Ala
            20                  25                  30
```

```
Pro Asp Cys Pro Ser Cys Ala Leu Ala Ala Leu Pro Lys Asp Val Pro
        35                  40                  45

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

Met Leu His Leu Lys Lys Arg Pro Asp Val Thr Gln Pro Val Pro Lys
65                  70                  75                  80

Ala Ala Leu Leu Asn Ala Ile Arg Lys Leu His Val Gly Lys Val Gly
                85                  90                  95

Glu Asn Gly Tyr Val Glu Ile Glu Asp Asp Ile Gly Arg Arg Ala Glu
            100                 105                 110

Met Asn Glu Leu Met Glu Gln Thr Ser Glu Ile Ile Thr Phe Ala Glu
        115                 120                 125

Ser Gly Thr Ala Arg Lys Thr Leu His Phe Glu Ile Ser Lys Glu Gly
    130                 135                 140

Ser Asp Leu Ser Val Val Glu Arg Ala Glu Val Trp Leu Phe Leu Lys
145                 150                 155                 160

Val Pro Lys Ala Asn Arg Thr Arg Thr Lys Val Thr Ile Arg Leu Phe
                165                 170                 175

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

Glu Glu Val Gly Leu Lys Gly Glu Arg Ser Glu Leu Leu Leu Ser Glu
        195                 200                 205

Lys Val Val Asp Ala Arg Lys Ser Thr Trp His Val Phe Pro Val Ser
    210                 215                 220

Ser Ser Ile Gln Arg Leu Leu Asp Gln Gly Lys Ser Ser Leu Asp Val
225                 230                 235                 240

Arg Ile Ala Cys Glu Gln Cys Gln Glu Ser Gly Ala Ser Leu Val Leu
                245                 250                 255

Leu Gly Lys Lys Lys Lys Lys Glu Glu Glu Gly Glu Gly Lys Lys Lys
            260                 265                 270

Gly Gly Gly Glu Gly Gly Ala Gly Ala Asp Glu Glu Lys Glu Gln Ser
        275                 280                 285

His Arg Pro Phe Leu Met Leu Gln Ala Arg Gln Ser Glu Asp His Pro
    290                 295                 300

His Arg Arg Arg Arg Arg Gly Leu Glu Cys Asp Gly Lys Val Asn Ile
305                 310                 315                 320

Cys Cys Lys Lys Gln Phe Phe Val Ser Phe Lys Asp Ile Gly Trp Asn
                325                 330                 335

Asp Trp Ile Ile Ala Pro Ser Gly Tyr His Ala Asn Tyr Cys Glu Gly
            340                 345                 350
```

```
Glu Cys Pro Ser His Ile Ala Gly Thr Ser Gly Ser Ser Leu Ser Phe
        355                 360                 365

His Ser Thr Val Ile Asn His Tyr Arg Met Arg Gly His Ser Pro Phe
    370                 375                 380

Ala Asn Leu Lys Ser Cys Cys Val Pro Thr Lys Leu Arg Pro Met Ser
385                 390                 395                 400

Met Leu Tyr Tyr Asp Asp Gly Gln Asn Ile Ile Lys Lys Asp Ile Gln
                405                 410                 415

Asn Met Ile Val Glu Glu Cys Gly Cys Ser
            420                 425
```

<210> 35
<211> 375
<212> PRT
<213> Homo sapiens

<400> 35

```
Met Gln Lys Leu Gln Leu Cys Val Tyr Ile Tyr Leu Phe Met Leu Ile
1               5                   10                  15

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

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

Lys Ser Ser Arg Ile Glu Ala Ile Lys Ile Gln Ile Leu Ser Lys Leu
    50                  55                  60

Arg Leu Glu Thr Ala Pro Asn Ile Ser Lys Asp Val Ile Arg Gln Leu
65                  70                  75                  80

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

Gln Arg Asp Asp Ser Ser Asp Gly Ser Leu Glu Asp Asp Asp Tyr His
            100                 105                 110

Ala Thr Thr Glu Thr Ile Ile Thr Met Pro Thr Glu Ser Asp Phe Leu
        115                 120                 125

Met Gln Val Asp Gly Lys Pro Lys Cys Cys Phe Phe Lys Phe Ser Ser
    130                 135                 140

Lys Ile Gln Tyr Asn Lys Val Val Lys Ala Gln Leu Trp Ile Tyr Leu
145                 150                 155                 160

Arg Pro Val Glu Thr Pro Thr Thr Val Phe Val Gln Ile Leu Arg Leu
                165                 170                 175

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

Lys Leu Asp Met Asn Pro Gly Thr Gly Ile Trp Gln Ser Ile Asp Val
        195                 200                 205
```

Lys Thr Val Leu Gln Asn Trp Leu Lys Gln Pro Glu Ser Asn Leu Gly
210 215 220

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

Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val Lys
245 250 255

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

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

Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
290 295 300

Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln Lys
305 310 315 320

Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser Ala
325 330 335

Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
340 345 350

Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met Val
355 360 365

Val Asp Arg Cys Gly Cys Ser
370 375

<210> 36
<211> 217
<212> PRT
<213> Homo sapiens

<400> 36

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

Pro Lys Asp Ile 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 Gly 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 Ser Arg Asp Glu Leu
        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 Asp 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 Lys
    210                 215


<210>  37
<211>  48
<212>  DNA
<213>  Artificial

<220>
<223>  Hinge linker

<220>
<221>  CDS
<222>  (1)..(48)

<400>  37
gga ggg gga gga tct gag cgc aaa tgt tgt gtc gag tgc cca ccg tgc        48
Gly Gly Gly Gly Ser Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys
1               5                   10                  15


<210>  38
<211>  16
<212>  PRT
<213>  Artificial

<220>
<223>  Hinge linker

<400>  38

Gly Gly Gly Gly Ser Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys
1               5                   10                  15


<210>  39
<211>  42
<212>  DNA
```

<213> Artificial

<220>
<223> Hinge linker

<220>
<221> CDS
<222> (1)..(42)

<400> 39
gga ggg gga gga tct ggt gga ggt ggt tca ggt cca ccg tgc 42
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Pro Pro Cys
1 5 10

<210> 40
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Hinge linker

<400> 40

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Pro Pro Cys
1 5 10

<210> 41
<211> 42
<212> DNA
<213> Artificial

<220>
<223> Hinge linker

<220>
<221> CDS
<222> (1)..(42)

<400> 41
gga ggg gga gga tct ggt gga ggt ggt tca ggt cca ccg gga 42
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Pro Pro Gly
1 5 10

<210> 42
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Hinge linker
<400> 42

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Pro Pro Gly
1 5 10

<210> 43
<211> 54
<212> DNA
<213> Artificial

<220>
<223> Hinge linker

<220>
<221> CDS
<222> (1)..(54)

<400> 43
gga ggg gga gga tct gag cgc aaa tgt cca cct tgt gtc gag tgc cca 48
Gly Gly Gly Gly Ser Glu Arg Lys Cys Pro Pro Cys Val Glu Cys Pro
1 5 10 15

ccg tgc 54
Pro Cys

<210> 44
<211> 18
<212> PRT
<213> Artificial

<220>
<223> Hinge linker
<400> 44

Gly Gly Gly Gly Ser Glu Arg Lys Cys Pro Pro Cys Val Glu Cys Pro
1 5 10 15

Pro Cys

<210> 45
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Hinge linker

<400> 45

Gly Pro Ala Ser Gly Gly Pro Ala Ser Gly Pro Pro Cys Pro
1 5 10

<210> 46
<211> 21
<212> PRT
<213> Artificial

<220>

<223> Hinge linker

<400> 46

Gly Pro Ala Ser Gly Gly Pro Ala Ser Gly Cys Pro Pro Cys Val Glu
1 5 10 15

Cys Pro Pro Cys Pro
20

<210> 47
<211> 217
<212> PRT
<213> Homo sapiens

<400> 47

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 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 Lys Thr Thr Pro Pro Val Leu Asp 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 Lys
210 215

<210> 48
<211> 16
<212> PRT
<213> Artificial

<220>
<223> Hinge linker

<400> 48

Gly Gly Gly Gly Ser Val Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1 5 10 15

<210> 49
<211> 16
<212> PRT
<213> Artificial

<220>
<223> Hinge linker

<400> 49

Gly Gly Gly Gly Ser Val Asp Lys Thr His Thr Gly Pro Pro Cys Pro
1 5 10 15

<210> 50
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Hinge linker

<400> 50

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Val Asp Lys Thr His Thr
1 5 10 15

Gly Pro Pro Cys Pro
20