SEQUENCE LISTING

<110> SANOFI-AVENTIS

<120> Novel antagonist antibodies and their Fab fragments against GPVI and uses thereof

<130> FR2009-113-PCT

<160> 39

<170> PatentIn version 3.3

<210> 1
<211> 1337
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1329)

<400> 1

```
atg tct cca tcc ccg acc gcc ctc ttc tgt ctt ggg ctg tgt ctg ggg       48
Met Ser Pro Ser Pro Thr Ala Leu Phe Cys Leu Gly Leu Cys Leu Gly
1               5                  10                  15

cgt gtg cca gcg cag agt gga ccg ctc ccc aag ccc tcc ctc cag gct       96
Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala
            20                  25                  30

ctg ccc agc tcc ctg gtg ccc ctg gag aag cca gtg acc ctc cgg tgc      144
Leu Pro Ser Ser Leu Val Pro Leu Glu Lys Pro Val Thr Leu Arg Cys
        35                  40                  45

cag gga cct ccg ggc gtg gac ctg tac cgc ctg gag aag ctg agt tcc      192
Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60

agc agg tac cag gat cag gca gtc ctc ttc atc ccg gcc atg aag aga      240
Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

agt ctg gct gga cgc tac cgc tgc tcc tac cag aac gga agc ctc tgg      288
Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

tcc ctg ccc agc gac cag ctg gag ctc gtt gcc acg gga gtt ttt gcc      336
Ser Leu Pro Ser Asp Gln Leu Glu Leu Val Ala Thr Gly Val Phe Ala
            100                 105                 110

aaa ccc tcg ctc tca gcc cag ccc ggc ccg gcg gtg tcg tca gga ggg      384
Lys Pro Ser Leu Ser Ala Gln Pro Gly Pro Ala Val Ser Ser Gly Gly
        115                 120                 125

gac gta acc cta cag tgt cag act cgg tat ggc ttt gac caa ttt gct      432
Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

ctg tac aag gaa ggg gac cct gcg ccc tac aag aat ccc gag aga tgg      480
Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

tac cgg gct agt ttc ccc atc atc acg gtg acc gcc gcc cac agc gga      528
Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175
```

```
acc tac cga tgc tac agc ttc tcc agc agg gac cca tac ctg tgg tcg      576
Thr Tyr Arg Cys Tyr Ser Phe Ser Ser Arg Asp Pro Tyr Leu Trp Ser
            180                 185                 190

gcc ccc agc gac ccc ctg gag ctt gtg gtc aca gga acc gac cct atc      624
Ala Pro Ser Asp Pro Leu Glu Leu Val Val Thr Gly Thr Asp Pro Ile
        195                 200                 205

ccc gag gag ccc aaa tct tgt gac aaa act cac aca tgc cca ccg tgc      672
Pro Glu Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
    210                 215                 220

cca gca cct gaa ctc ctg ggg gga ccg tca gtc ttc ctc ttc ccc cca      720
Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
225                 230                 235                 240

aaa ccc aag gac acc ctc atg atc tcc cgg acc cct gag gtc aca tgc      768
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
                245                 250                 255

gtg gtg gtg gac gtg agc cac gaa gac cct gag gtc aag ttc aac tgg      816
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
            260                 265                 270

tac gtg gac ggc gtg gag gtg cat aat gcc aag aca aag ccg cgg gag      864
Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
        275                 280                 285

gag cag tac aac agc acg tac cgt gtg gtc agc gtc ctc acc gtc ctg      912
Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
    290                 295                 300

cac cag gac tgg ctg aat ggc aag gag tac aag tgc aag gtc tcc aac      960
His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
305                 310                 315                 320

aaa gcc ctc cca gcc ccc atc gag aaa acc atc tcc aaa gcc aaa ggg     1008
Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
                325                 330                 335

cag ccc cga gaa cca cag gtg tac acc ctg ccc cca tcc cgg gat gag     1056
Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
            340                 345                 350

ctg acc aag aac cag gtc agc ctg acc tgc ctg gtc aaa ggc ttc tat     1104
Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
        355                 360                 365

ccc agc gac atc gcc gtg gag tgg gag ggc aat ggg cag ccg gag aac     1152
Pro Ser Asp Ile Ala Val Glu Trp Glu Gly Asn Gly Gln Pro Glu Asn
    370                 375                 380

aac tac aag acc acg cct ccc gtg ctg gac tcc gac ggc tcc ttc ttc     1200
Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
385                 390                 395                 400

ctc tac agc aag ctc acc gtg gac aag agc agg tgg cag cag ggg aac     1248
Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
                405                 410                 415

gtc ttc tca tgc tcc gtg atg cat gag gct ctg cac aac cac tac acg     1296
Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
            420                 425                 430

cag aag agc ctc tcc ctg tct ccg ggt aaa tga gcggccgc               1337
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 2
<211> 442
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Ser Pro Ser Pro Thr Ala Leu Phe Cys Leu Gly Leu Cys Leu Gly
1               5                  10                  15

Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala
            20                  25                  30

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

Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60

Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

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

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

Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175

Thr Tyr Arg Cys Tyr Ser Phe Ser Ser Arg Asp Pro Tyr Leu Trp Ser
            180                 185                 190

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

Pro Glu Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
    210                 215                 220

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

```
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
                245                 250                 255

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
            260                 265                 270

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
        275                 280                 285

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
    290                 295                 300

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

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

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
            340                 345                 350

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
        355                 360                 365

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

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

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

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
            420                 425                 430

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 3
<211> 679
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(672)

<400> 3

```
atg tct cca tcc ccg acc gcc ctc ttc tgt ctt ggg ctg tgt ctg ggg      48
Met Ser Pro Ser Pro Thr Ala Leu Phe Cys Leu Gly Leu Cys Leu Gly
1               5                   10                  15

cgt gtg cca gcg cag agt gga ccg ctc ccc aag ccc tcc ctc cag gct      96
```

```
Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala
            20                  25                  30

ctg ccc agc tcc ctg gtg ccc ctg gag aag cca gtg acc ctc cgg tgc      144
Leu Pro Ser Ser Leu Val Pro Leu Glu Lys Pro Val Thr Leu Arg Cys
        35                  40                  45

cag gga cct ccg ggc gtg gac ctg tac cgc ctg gag aag ctg agt tcc      192
Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60

agc agg tac cag gat cag gca gtc ctc ttc atc ccg gcc atg aag aga      240
Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

agt ctg gct gga cgc tac cgc tgc tcc tac cag aac gga agc ctc tgg      288
Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

tcc ctg ccc agc gac cag ctg gag ctc gtt gcc acg gga gtt ttt gcc      336
Ser Leu Pro Ser Asp Gln Leu Glu Leu Val Ala Thr Gly Val Phe Ala
            100                 105                 110

aaa ccc tcg ctc tca gcc cag ccc ggc ccg gcg gtg tcg tca gga ggg      384
Lys Pro Ser Leu Ser Ala Gln Pro Gly Pro Ala Val Ser Ser Gly Gly
        115                 120                 125

gac gta acc cta cag tgt cag act cgg tat ggc ttt gac caa ttt gct      432
Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

ctg tac aag gaa ggg gac cct gcg ccc tac aag aat ccc gag aga tgg      480
Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

tac cgg gct agt ttc ccc atc atc acg gtg acc gcc gcc cac agc gga      528
Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175

acc tac cga tgc tac agc ttc tcc agc agg gac cca tac ctg tgg tcg      576
Thr Tyr Arg Cys Tyr Ser Phe Ser Ser Arg Asp Pro Tyr Leu Trp Ser
            180                 185                 190

gcc ccc agc gac ccc ctg gag ctt gtg gtc aca gga acc gaa aat ctt      624
Ala Pro Ser Asp Pro Leu Glu Leu Val Val Thr Gly Thr Glu Asn Leu
        195                 200                 205

tat ttt caa ggt aag gat cat cat cat cat cat cat cat ggg gat tag      672
Tyr Phe Gln Gly Lys Asp His His His His His His His Gly Asp
    210                 215                 220

cggccgc                                                             679


<210>  4
<211>  223
<212>  PRT
<213>  Homo sapiens

<400>  4

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


Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala
            20                  25                  30
```

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

Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60

Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

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

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

Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175

Thr Tyr Arg Cys Tyr Ser Phe Ser Ser Arg Asp Pro Tyr Leu Trp Ser
            180                 185                 190

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

Tyr Phe Gln Gly Lys Asp His His His His His His Gly Asp
    210                 215                 220
```

<210> 5
<211> 1374
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(1374)

<400> 5

```
atg gct gtc ctg gca tta ctc ttc tgc ctg gta aca ttc cca agc tgt      48
Met Ala Val Leu Ala Leu Leu Phe Cys Leu Val Thr Phe Pro Ser Cys
1               5                   10                  15

atc ctt tcc cag gtg cag ctg aag gag tca gga cct ggc ctg gtg gcg      96
Ile Leu Ser Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala
            20                  25                  30
```

```
ccc tca cag agc ctg tcc atc aca tgc acc gtc tca ggg ttc tca tta      144
Pro Ser Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu
        35                  40                  45

acc ggc tat ggt gta aac tgg gtt cgc cag cct cca gga aag ggt ctg      192
Thr Gly Tyr Gly Val Asn Trp Val Arg Gln Pro Pro Gly Lys Gly Leu
    50                  55                  60

gag tgg ctg gga atg ata tgg ggt gat gga agc aca gac tat aat tca      240
Glu Trp Leu Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Asn Ser
65                  70                  75                  80

act ctc aaa tcc aga ctg agc atc agc aag gac aac tcc aag agc caa      288
Thr Leu Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln
                85                  90                  95

gtt ttc tta aaa atg aac agt ctg caa act gat gac aca gcc agg tac      336
Val Phe Leu Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Arg Tyr
            100                 105                 110

tac tgt gcc aga gat ctt cct atg gac tac tgg ggt caa gga acc tca      384
Tyr Cys Ala Arg Asp Leu Pro Met Asp Tyr Trp Gly Gln Gly Thr Ser
        115                 120                 125

gtc acc gtc tcc tca gcc aaa acg aca ccc cca tct gtc tat cca ctg      432
Val Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu
    130                 135                 140

gcc cct gga tct gct gcc caa act aac tcc atg gtg acc ctg gga tgc      480
Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
145                 150                 155                 160

ctg gtc aag ggc tat ttc cct gag cca gtg aca gtg acc tgg aac tct      528
Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser
                165                 170                 175

gga tcc ctg tcc agc ggt gtg cac acc ttc cca gct gtc ctg cag tct      576
Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
            180                 185                 190

gac ctc tac act ctg agc agc tca gtg act gtc ccc tcc agc acc tgg      624
Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
        195                 200                 205

ccc agc gag acc gtc acc tgc aac gtt gcc cac ccg gcc agc agc acc      672
Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
    210                 215                 220

aag gtg gac aag aaa att gtg ccc agg gat tgt ggt tgt aag cct tgc      720
Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
225                 230                 235                 240

ata tgt aca gtc cca gaa gta tca tct gtc ttc atc ttc ccc cca aag      768
Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
                245                 250                 255

ccc aag gat gtg ctc acc att act ctg act cct aag gtc acg tgt gtt      816
Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
            260                 265                 270

gtg gta gac atc agc aag gat gat ccc gag gtc cag ttc agc tgg ttt      864
Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
        275                 280                 285

gta gat gat gtg gag gtg cac aca gct cag acg caa ccc cgg gag gag      912
Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
    290                 295                 300
```

```
cag ttc aac agc act ttc cgc tca gtc agt gaa ctt ccc atc atg cac      960
Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
305                 310                 315                 320

cag gac tgg ctc aat ggc aag gag ttc aaa tgc agg gtc aac agt gca     1008
Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
                325                 330                 335

gct ttc cct gcc ccc atc gag aaa acc atc tcc aaa acc aaa ggc aga     1056
Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
            340                 345                 350

ccg aag gct cca cag gtg tac acc att cca cct ccc aag gag cag atg     1104
Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met
        355                 360                 365

gcc aag gat aaa gtc agt ctg acc tgc atg ata aca gac ttc ttc cct     1152
Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
    370                 375                 380

gaa gac att act gtg gag tgg cag tgg aat ggg cag cca gcg gag aac     1200
Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn
385                 390                 395                 400

tac aag aac act cag ccc atc atg gac aca gat ggc tct tac ttc gtc     1248
Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
                405                 410                 415

tac agc aag ctc aat gtg cag aag agc aac tgg gag gca gga aat act     1296
Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
            420                 425                 430

ttc acc tgc tct gtg tta cat gag ggc ctg cac aac cac cat act gag     1344
Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu
        435                 440                 445

aag agc ctc tcc cac tct cct ggt aag tga                             1374
Lys Ser Leu Ser His Ser Pro Gly Lys
    450                 455
```

<210> 6
<211> 457
<212> PRT
<213> Mus musculus

<400> 6

```
Met Ala Val Leu Ala Leu Leu Phe Cys Leu Val Thr Phe Pro Ser Cys
1               5                   10                  15

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

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

Thr Gly Tyr Gly Val Asn Trp Val Arg Gln Pro Pro Gly Lys Gly Leu
    50                  55                  60

Glu Trp Leu Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Asn Ser
65                  70                  75                  80
```

```
Thr Leu Lys Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln
                85                  90                  95

Val Phe Leu Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Arg Tyr
            100                 105                 110

Tyr Cys Ala Arg Asp Leu Pro Met Asp Tyr Trp Gly Gln Gly Thr Ser
        115                 120                 125

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

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
145                 150                 155                 160

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser
                165                 170                 175

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
        195                 200                 205

Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
    210                 215                 220

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
225                 230                 235                 240

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
                245                 250                 255

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
            260                 265                 270

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
        275                 280                 285

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
    290                 295                 300

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
305                 310                 315                 320

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
                325                 330                 335

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
            340                 345                 350
```

```
Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met
        355                 360                 365

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
    370                 375                 380

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

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
                405                 410                 415

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
            420                 425                 430

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

Lys Ser Leu Ser His Ser Pro Gly Lys
    450                 455
```

<210> 7
<211> 702
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(702)

<400> 7

```
atg aga ccg tct att cag ttc ctg ggg ctc ttg ttg ttc tgg ctt cat       48
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
1               5                   10                  15

ggt gct cag tgt gac atc cag atg aca cag tct cca tcc tca ctg tct       96
Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
            20                  25                  30

gca tct ctg gga ggc aaa gtc acc atc act tgt aag gca agc caa gac      144
Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Ala Ser Gln Asp
        35                  40                  45

att aac aag tat att gct tgg tac caa cac aag cct gga aaa ggt cct      192
Ile Asn Lys Tyr Ile Ala Trp Tyr Gln His Lys Pro Gly Lys Gly Pro
    50                  55                  60

agc ctg ctc ata cat tac aca tct act tta cag cca ggc atc cca tca      240
Ser Leu Leu Ile His Tyr Thr Ser Thr Leu Gln Pro Gly Ile Pro Ser
65                  70                  75                  80

agg ttc agt gga agt ggg tct ggg aga gat tat tcc ttc agc atc agc      288
Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser
                85                  90                  95

aac ctg gag cct gaa gat att gca act tat tat tgt cta cag tat gct      336
Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala
            100                 105                 110

aat ctt ctg acg ttc ggt gga ggc acc aag ctg gag atc aaa cgg gct      384
```

```
Asn Leu Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
        115                 120                 125

gat gct gca cca act gta tcc atc ttc cca cca tcc agt gag cag tta      432
Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu
    130                 135                 140

aca tct gga ggt gcc tca gtc gtg tgc ttc ttg aac aac ttc tac ccc      480
Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro
145                 150                 155                 160

aaa gac atc aat gtc aag tgg aag att gat ggc agt gaa cga caa aat      528
Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn
                165                 170                 175

ggc gtc ctg aac agt tgg act gat cag gac agc aaa gac agc acc tac      576
Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr
            180                 185                 190

agc atg agc agc acc ctc acg ttg acc aag gac gag tat gaa cga cat      624
Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His
        195                 200                 205

aac agc tat acc tgt gag gcc act cac aag aca tca act tca ccc att      672
Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile
    210                 215                 220

gtc aag agc ttc aac agg aat gag tgc tag                              702
Val Lys Ser Phe Asn Arg Asn Glu Cys
225                 230
```

<210> 8
<211> 233
<212> PRT
<213> Mus musculus

<400> 8

```
Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
1               5                   10                  15

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

Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Ala Ser Gln Asp
        35                  40                  45

Ile Asn Lys Tyr Ile Ala Trp Tyr Gln His Lys Pro Gly Lys Gly Pro
    50                  55                  60

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

Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser
                85                  90                  95

Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala
            100                 105                 110

Asn Leu Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
```

115 120 125

Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu
130 135 140

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

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

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

Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His
195 200 205

Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile
210 215 220

Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 9
<211> 226
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 9

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
20 25 30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Asn Ser Thr Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

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

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

```
Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Ala Ala Ala His His His His
    210                 215                 220

His His
225
```

<210> 10
<211> 222
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 10

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
            20                  25                  30

Gly Val Asn Trp Val Arg Gln Pro Pro Ser Arg Gly Leu Glu Trp Leu
        35                  40                  45

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
    50                  55                  60

Ser Arg Leu Ser Ile Ser Lys Asp Thr Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80

Lys Met Asn Ser Leu Thr Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Arg Asp Leu Pro Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val
```

100 105 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
195 200 205

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

<210> 11
<211> 222
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 11

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
20 25 30

Gly Val Asn Trp Val Arg Gln Pro Pro Ser Arg Gly Leu Glu Trp Leu
35 40 45

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Thr Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
85 90 95

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

```
Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
    210                 215                 220
```

<210> 12
<211> 222
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 12

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
            20                  25                  30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
    50                  55                  60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80

Lys Met Asn Ser Leu Arg Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Arg Asp Leu Pro Met Asp Tyr Trp Gly Leu Gly Thr Ser Val Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
```

115 120 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
195 200 205

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

<210> 13
<211> 222
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 13

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Tyr Tyr
20 25 30

Gly Val Asn Trp Val Arg Gln Pro Pro Ser Arg Gly Leu Glu Trp Leu
35 40 45

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Thr Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
85 90 95

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

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
195 200 205

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

<210> 14
<211> 222
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 14

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
20 25 30

Gly Val Asn Trp Val Arg Gln Pro Pro Ser Arg Gly Leu Glu Trp Leu
35 40 45

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Thr Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
85 90 95

Arg Asp Leu Pro Met Asp Glu Trp Gly Gln Gly Thr Ser Val Thr Val
100 105 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys

130 135 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
195 200 205

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

<210> 15
<211> 213
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 15

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

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

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

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

Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala Asn Leu Leu Thr
85 90 95

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

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

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

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

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

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

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

Asn Arg Gly Glu Cys
    210
```

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

<220>
<223> Mouse-human hybrid sequence

<400> 16

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

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

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

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

Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala His Leu Leu Thr
                85                  90                  95

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

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

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

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
```

145 150 155 160

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

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

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

Asn Arg Gly Glu Cys
210

<210> 17
<211> 213
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 17

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

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

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

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

Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala Leu Leu Leu Thr
85 90 95

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

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

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

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

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

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

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

Asn Arg Gly Glu Cys
    210
```

<210> 18
<211> 10
<212> PRT
<213> Mus musculus

<400> 18

```
Gly Phe Ser Leu Thr Gly Tyr Gly Val Asn
1               5                   10
```

<210> 19
<211> 16
<212> PRT
<213> Mus musculus

<400> 19

```
Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys Ser
1               5                   10                  15
```

<210> 20
<211> 5
<212> PRT
<213> Mus musculus

<400> 20

```
Leu Pro Met Asp Tyr
1               5
```

<210> 21
<211> 11
<212> PRT
<213> Mus musculus

<400> 21

```
Lys Ala Ser Gln Asp Ile Asn Lys Tyr Ile Ala
1               5                   10
```

<210> 22
<211> 7
<212> PRT
<213> Mus musculus

<400> 22

Thr Ser Thr Leu Gln Pro Gly
1 5

<210> 23
<211> 8
<212> PRT
<213> Mus musculus

<400> 23

Leu Gln Tyr Ala Asn Leu Leu Thr
1 5

<210> 24
<211> 23
<212> DNA
<213> Artificial

<220>
<223> Primer 5'-GeneRacer

<400> 24
cgactggagc acgaggacac tga 23

<210> 25
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Primer RACEMOG1-3'

<400> 25
tatgcaaggc ttacaaccac a 21

<210> 26
<211> 24
<212> DNA
<213> Artificial

<220>
<223> Primer CKFOR-3'

<400> 26
ctcattcctg ttgaagctct tgac 24

<210> 27
<211> 615
<212> DNA
<213> Macaca fascicularis

<220>
<221> CDS
<222> (1)..(615)

<400> 27
atg tct cca tcc ccg acc gcc ctc ttc tgt ctt ggg ctg tgt ctg ggg 48
Met Ser Pro Ser Pro Thr Ala Leu Phe Cys Leu Gly Leu Cys Leu Gly
1 5 10 15

cgt gtg cca gcg cag agt gga ccg ctc ccc aag ccc tcc ctc cag gct 96
Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala

```
            20                  25                  30

ctg ccc agc tcc ctg gtg ccc ctg gag aag cca gtg acc ctc cgg tgc      144
Leu Pro Ser Ser Leu Val Pro Leu Glu Lys Pro Val Thr Leu Arg Cys
        35                  40                  45

cag gga cct ccg ggc gtg gac ctg tac cgc ctg gag aag ctg agt tcc      192
Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60

agc agg tac cag gat cag gca gtc ctc ttc atc ccg gcc atg aag aga      240
Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

agt ctg gct gga cgc tac cgc tgc tcc tac cag aac gga agc ctc tgg      288
Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

tcc ccg ccc agc gac cag ctg gag ctc gtt gcc acg gga gtt ttt gcc      336
Ser Pro Pro Ser Asp Gln Leu Glu Leu Val Ala Thr Gly Val Phe Ala
            100                 105                 110

aaa ccc tcg ctc tca gcc cag ccc ggc ccg gcg gtg tcg tca gga ggg      384
Lys Pro Ser Leu Ser Ala Gln Pro Gly Pro Ala Val Ser Ser Gly Gly
        115                 120                 125

gac gta acc cta cag tgt cag act cgg tat ggc ttt gac caa ttt gct      432
Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

ctg tac aag gaa ggg gac cct gcg ccc tac aag aat ccc gag aga tgg      480
Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

tac cgg gct agt ttc ccc atc atc acg gtg acc gcc gcc cac agc gga      528
Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175

acc tac cga tgc tac agc ttc tcc agc ggg gac cca tac ctg tgg tca      576
Thr Tyr Arg Cys Tyr Ser Phe Ser Ser Gly Asp Pro Tyr Leu Trp Ser
            180                 185                 190

gcc ccc agc gac ccc ctg gag ctt atg gtc aca gga acc                  615
Ala Pro Ser Asp Pro Leu Glu Leu Met Val Thr Gly Thr
        195                 200                 205


<210>  28
<211>  205
<212>  PRT
<213>  Macaca fascicularis

<400>  28

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


Arg Val Pro Ala Gln Ser Gly Pro Leu Pro Lys Pro Ser Leu Gln Ala
            20                  25                  30


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


Gln Gly Pro Pro Gly Val Asp Leu Tyr Arg Leu Glu Lys Leu Ser Ser
    50                  55                  60
```

```
Ser Arg Tyr Gln Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg
65                  70                  75                  80

Ser Leu Ala Gly Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp
                85                  90                  95

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

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

Asp Val Thr Leu Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala
    130                 135                 140

Leu Tyr Lys Glu Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp
145                 150                 155                 160

Tyr Arg Ala Ser Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly
                165                 170                 175

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

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

<210> 29
<211> 228
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 29

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
            20                  25                  30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
    50                  55                  60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80
```

```
Lys Met Asn Ser Leu Arg Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Arg Asp Leu Pro Met Asp Tyr Trp Gly Leu Gly Thr Ser Val Thr Val
            100                 105                 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

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

His His His His
225
```

<210> 30
<211> 227
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 30

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
            20                  25                  30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
    50                  55                  60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80
```

```
Lys Met Asn Ser Leu Arg Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Arg Asp Leu Pro Met Asp Tyr Trp Gly Leu Gly Thr Ser Val Thr Val
            100                 105                 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Gly Gly
    210                 215                 220

Gly Gly Ser
225
```

<210> 31
<211> 232
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 31

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
            20                  25                  30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
    50                  55                  60
```

```
Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65                  70                  75                  80

Lys Met Asn Ser Leu Arg Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Ala
                85                  90                  95

Arg Asp Leu Pro Met Asp Tyr Trp Gly Leu Gly Thr Ser Val Thr Val
            100                 105                 110

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser
225                 230
```

<210> 32
<211> 319
<212> PRT
<213> Homo sapiens

<400> 32

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

Leu Val Pro Leu Glu Lys Pro Val Thr Leu Arg Cys Gln Gly Pro Pro
            20                  25                  30

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

Asp Gln Ala Val Leu Phe Ile Pro Ala Met Lys Arg Ser Leu Ala Gly
    50                  55                  60

Arg Tyr Arg Cys Ser Tyr Gln Asn Gly Ser Leu Trp Ser Leu Pro Ser
```

65 70 75 80

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

Ser Ala Gln Pro Gly Pro Ala Val Ser Ser Gly Gly Asp Val Thr Leu
100 105 110

Gln Cys Gln Thr Arg Tyr Gly Phe Asp Gln Phe Ala Leu Tyr Lys Glu
115 120 125

Gly Asp Pro Ala Pro Tyr Lys Asn Pro Glu Arg Trp Tyr Arg Ala Ser
130 135 140

Phe Pro Ile Ile Thr Val Thr Ala Ala His Ser Gly Thr Tyr Arg Cys
145 150 155 160

Tyr Ser Phe Ser Ser Arg Asp Pro Tyr Leu Trp Ser Ala Pro Ser Asp
165 170 175

Pro Leu Glu Leu Val Val Thr Gly Thr Ser Val Thr Pro Ser Arg Leu
180 185 190

Pro Thr Glu Pro Pro Ser Ser Val Ala Glu Phe Ser Glu Ala Thr Ala
195 200 205

Glu Leu Thr Val Ser Phe Thr Asn Lys Val Phe Thr Thr Glu Thr Ser
210 215 220

Arg Ser Ile Thr Thr Ser Pro Lys Glu Ser Asp Ser Pro Ala Gly Pro
225 230 235 240

Ala Arg Gln Tyr Tyr Thr Lys Gly Asn Leu Val Arg Ile Cys Leu Gly
245 250 255

Ala Val Ile Leu Ile Ile Leu Ala Gly Phe Leu Ala Glu Asp Trp His
260 265 270

Ser Arg Arg Lys Arg Leu Arg His Arg Gly Arg Ala Val Gln Arg Pro
275 280 285

Leu Pro Pro Leu Pro Pro Leu Pro Gln Thr Arg Lys Ser His Gly Gly
290 295 300

Gln Asp Gly Gly Arg Gln Asp Val His Ser Arg Gly Leu Cys Ser
305 310 315

<210> 33
<211> 226
<212> PRT
<213> Mus musculus

<400> 33

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

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
20 25 30

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

Gly Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Gln Ser Thr Leu Lys
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

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

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

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

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

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

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

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

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
195 200 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Ala Ala Ala His His His His
210 215 220

His His
225

<210> 34
<211> 213
<212> PRT
<213> Mus musculus

<400> 34

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

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

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

His Tyr Thr Ser Thr Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser Asn Leu Glu Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Ala Asn Leu Leu Thr
                85                  90                  95

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

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

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

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

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

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

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

Asn Arg Gly Glu Cys
    210
```

<210> 35
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 35

His His His His His

1 5

<210> 36
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 36

Gly Gly Gly Gly Ser
1 5

<210> 37
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Mouse-human hybrid sequence

<400> 37

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

<210> 38
<211> 6
<212> PRT
<213> Mus musculus

<400> 38

Asp Leu Pro Met Asp Tyr
1 5

<210> 39
<211> 8
<212> PRT
<213> Mus musculus

<400> 39

Tyr Thr Ser Thr Leu Gln Pro Gly
1 5