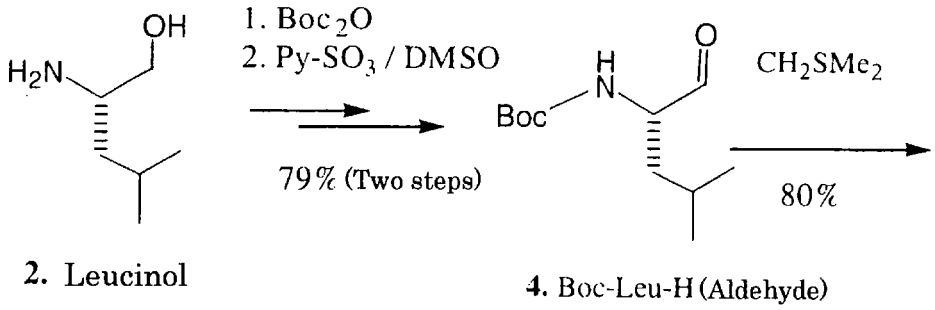


2. Leucinol

4. Boc-Leu-H (Aldehyde)

Figure 1

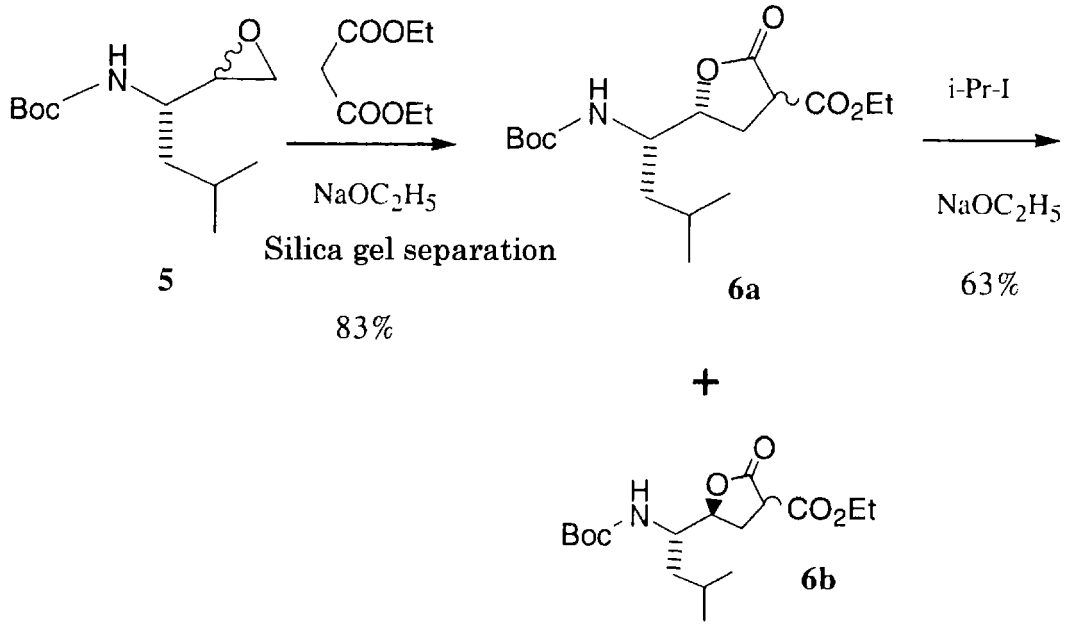


Figure 2

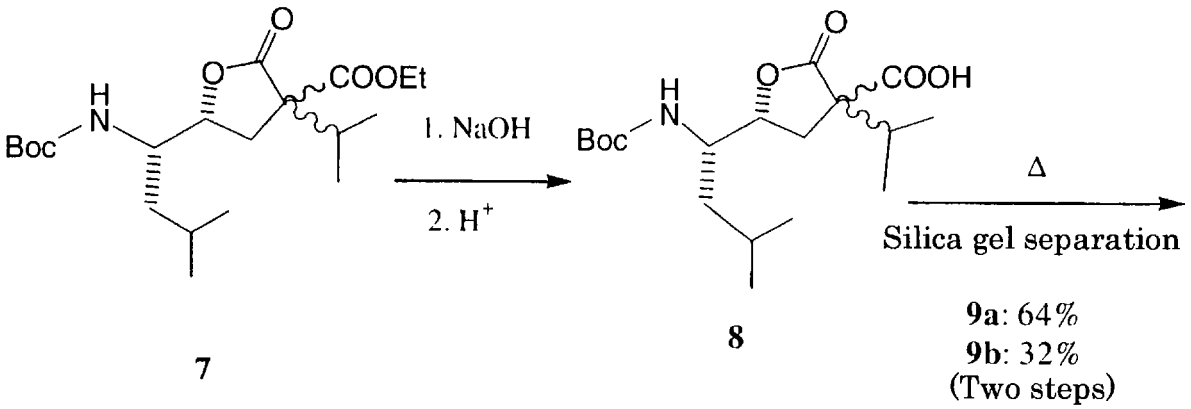


Figure 3

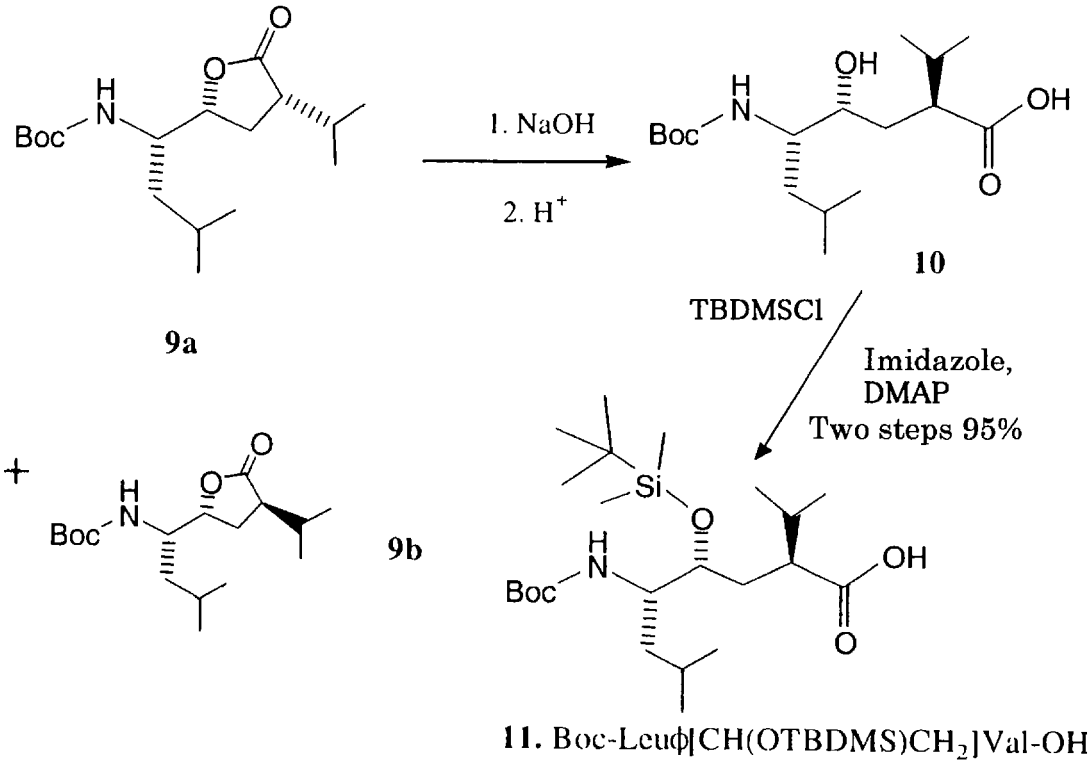


Figure 4

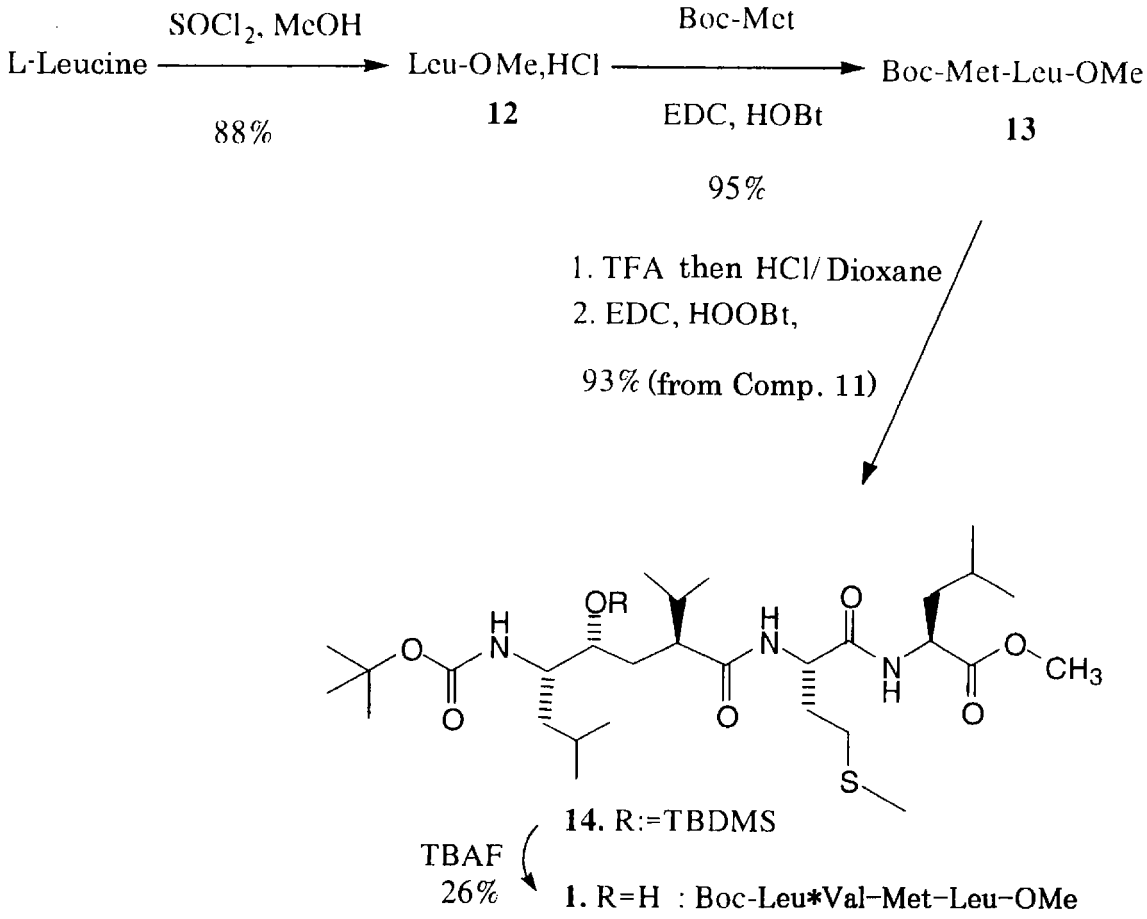


Figure 5

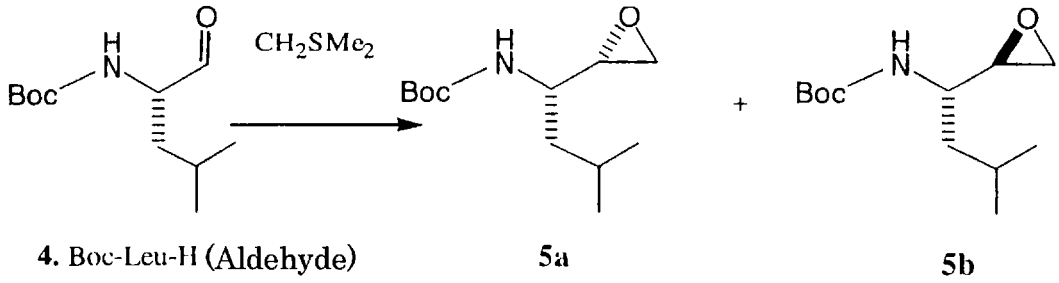


Figure 6

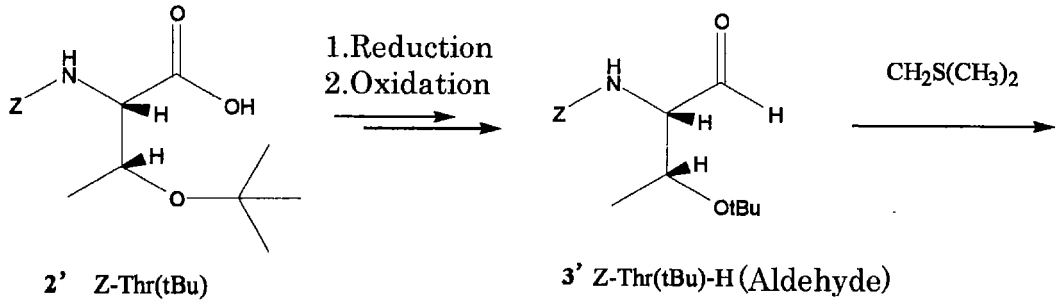


Figure 7

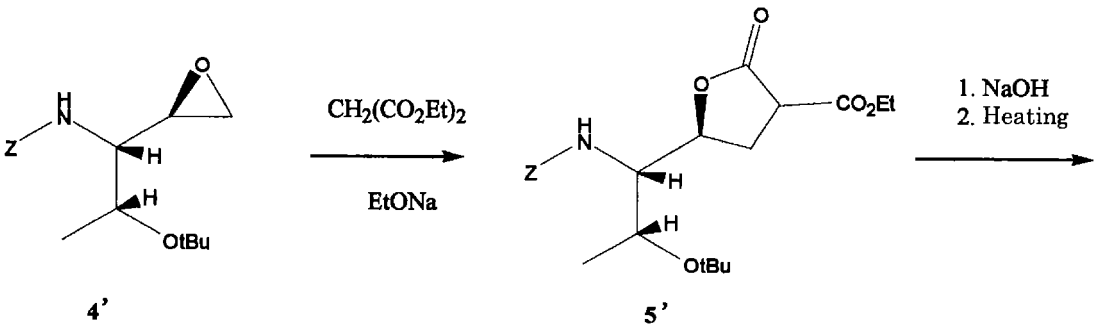


Figure 8

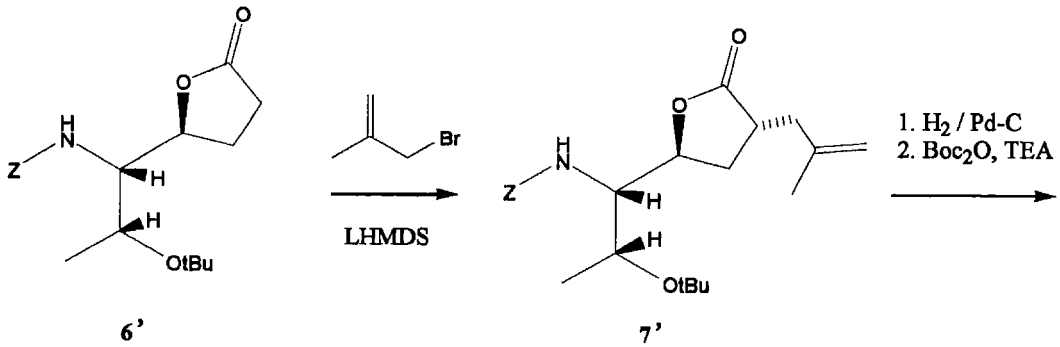


Figure 9

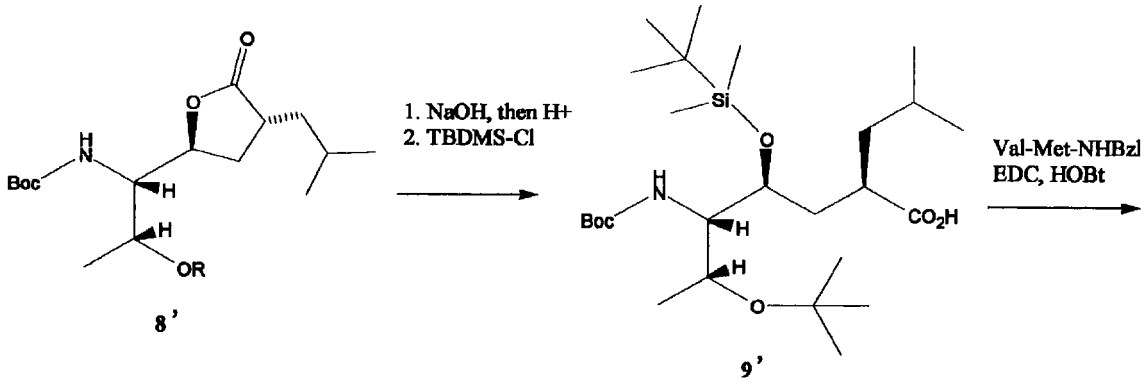
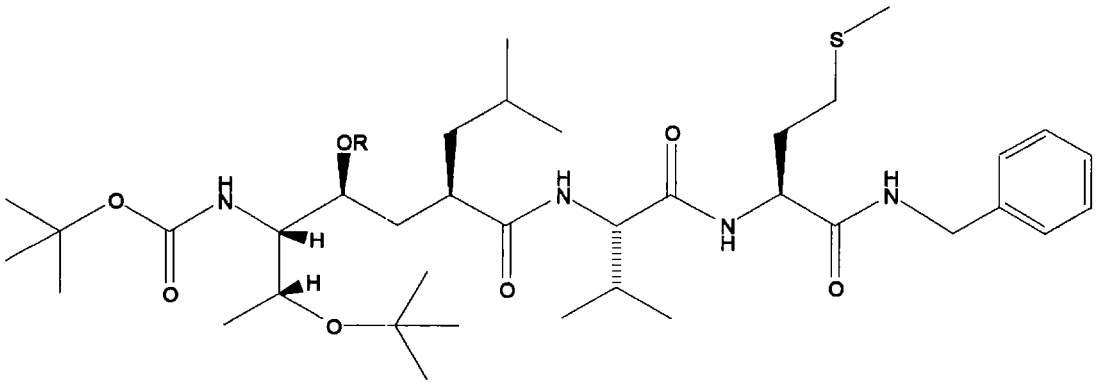
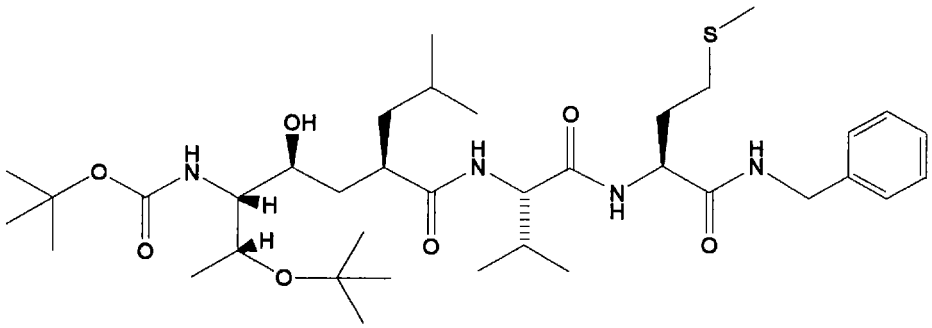


Figure 10

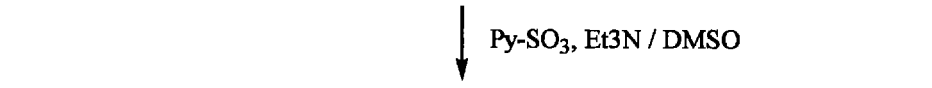


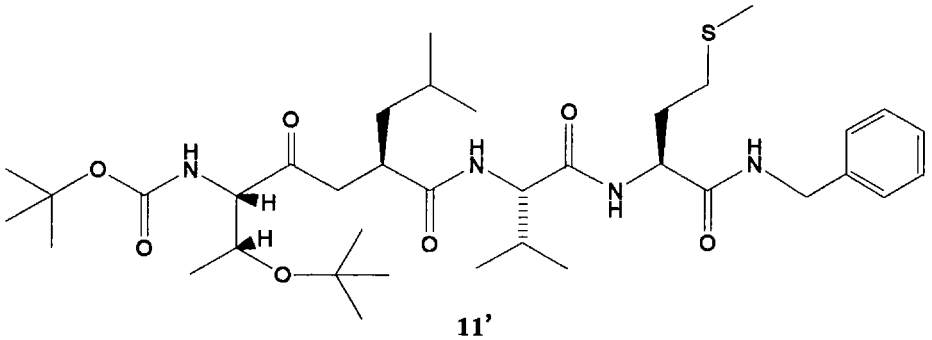
TBAF (10' R=TBDMS
1'b R=H (TLVM-2)

Figure 11

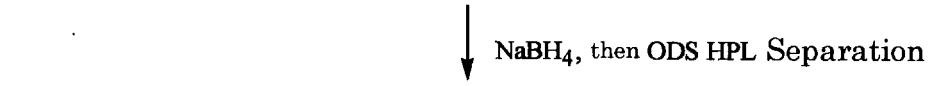


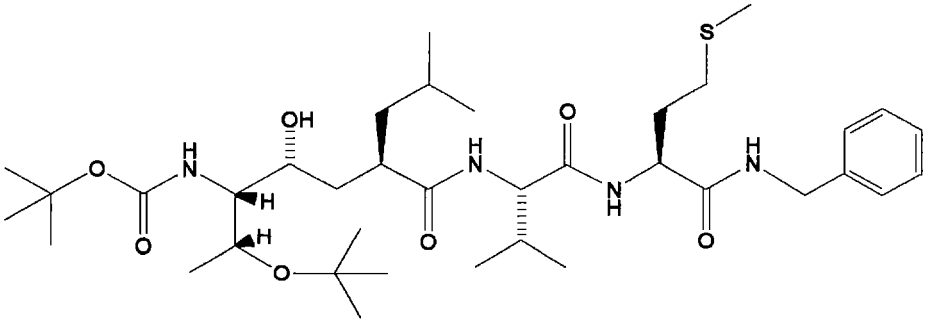
1'b **TLVM-2**





11'





1'a **TLVM-1**

Figure 12

SEQUENCE LISTING

<110> Hiroshi MORI

<120> Gamma-secretase Inhibitor

<130> GP59-PCT

<150> JP 2002-121983
<151> 2002-04-14

<160> 13

<210> 1
<211> 17
<212> PRT
<213> Homo sapiens

<400> 1

Val Val Ile Ala Thr Val Ile Val Ile Thr Leu Val Met Leu Lys Lys
1 5 10 15

Lys

<210> 2
<211> 6

<212> PRT

<213> Homo sapiens

<400> 2

Ile Thr Leu Val Met Leu
1 5

<210> 3

<211> 4

<212> PRT

<213> Homo sapiens

<400> 3

Leu Val Met Leu

<210> 4

<211> 4

<212> PRT

<213> Homo sapiens

<400> 4

Thr Leu Val Met

<210> 5

<211> 11

<212> PRT

<213> Homo sapiens

<400> 5

Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 6

<211> 2088

<212> DNA

<213> Homo sapiens

<400> 6

atg ctg ccc ggt ttg gca ctg ctc ctg ctg gcc gcc tgg acg gct cgg 48
Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
1 5 10 15

gcg ctg gag gta ccc act gat ggt aat gct ggc ctg ctg gct gaa ccc 96
Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
20 25 30

cag att gcc atg ttc tgt ggc aga ctg aac atg cac atg aat gtc cag 144
Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
35 40 45

```
aat ggg aag tgg gat tca gat cca tca ggg acc aaa acc tgc att gat      192
Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
     50                  55                  60

acc aag gaa ggc atc ctg cag tat tgc caa gaa gtc tac cct gaa ctg      240
Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65                  70                  75                  80

cag atc acc aat gtg gta gaa gcc aac caa cca gtg acc atc cag aac      288
Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
                85                  90                  95

tgg tgc aag cgg ggc cgc aag cag tgc aag acc cat ccc cac ttt gtg      336
Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
           100                 105                 110

att ccc tac cgc tgc tta gtt ggt gag ttt gta agt gat gcc ctt ctc      384
Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
       115                 120                 125

gtt cct gac aag tgc aaa ttc tta cac cag gag agg atg gat gtt tgc      432
Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
    130                 135                 140

gaa act cat ctt cac tgg cac acc gtc gcc aaa gag aca tgc agt gag      480
Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145                 150                 155                 160

aag agt acc aac ttg cat gac tac ggc atg ttg ctg ccc tgc gga att      528
```

```
Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
                165                 170                 175

gac aag ttc cga ggg gta gag ttt gtg tgt tgc cca ctg gct gaa gaa      576
Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
            180                 185                 190

agt gac aat gtg gat tct gct gat gcg gag gag gat gac tcg gat gtc      624
Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val
        195                 200                 205

tgg tgg ggc gga gca gac aca gac tat gca gat ggg agt gaa gac aaa      672
Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
    210                 215                 220

gta gta gaa gta gca gag gag gaa gaa gtg gct gag gtg gaa gaa gaa      720
Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225                 230                 235                 240

gaa gcc gat gat gac gag gac gat gag gat ggt gat gag gta gag gaa      768
Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
                245                 250                 255

gag gct gag gaa ccc tac gaa gaa gcc aca gag aga acc acc agc att      816
Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
            260                 265                 270

gcc acc acc acc acc acc acc aca gag tct gtg gaa gag gtg gtt cga      864
Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
        275                 280                 285
```

```
gtt cct aca aca gca gcc agt acc cct gat gcc gtt gac aag tat ctc      912
Val Pro Thr Thr Ala Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu
    290                 295                 300

gag aca cct ggg gat gag aat gaa cat gcc cat ttc cag aaa gcc aaa      960
Glu Thr Pro Gly Asp Glu Asn Glu His Ala His Phe Gln Lys Ala Lys
305                 310                 315                 320

gag agg ctt gag gcc aag cac cga gag aga atg tcc cag gtc atg aga     1008
Glu Arg Leu Glu Ala Lys His Arg Glu Arg Met Ser Gln Val Met Arg
                325                 330                 335

gaa tgg gaa gag gca gaa cgt caa gca aag aac ttg cct aaa gct gat     1056
Glu Trp Glu Glu Ala Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp
            340                 345                 350

aag aag gca gtt atc cag cat ttc cag gag aaa gtg gaa tct ttg gaa     1104
Lys Lys Ala Val Ile Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu
        355                 360                 365

cag gaa gca gcc aac gag aga cag cag ctg gtg gag aca cac atg gcc     1152
Gln Glu Ala Ala Asn Glu Arg Gln Gln Leu Val Glu Thr His Met Ala
    370                 375                 380

aga gtg gaa gcc atg ctc aat gac cgc cgc cgc ctg gcc ctg gag aac     1200
Arg Val Glu Ala Met Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn
385                 390                 395                 400

tac atc acc gct ctg cag gct gtt cct cct cgg cct cgt cac gtg ttc     1248
```

```
Tyr Ile Thr Ala Leu Gln Ala Val Pro Pro Arg Pro Arg His Val Phe
                405                 410                 415

aat atg cta aag aag tat gtc cgc gca gaa cag aag gac aga cag cac   1296
Asn Met Leu Lys Lys Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His
            420                 425                 430

acc cta aag cat ttc gag cat gtg cgc atg gtg gat ccc aag aaa gcc   1344
Thr Leu Lys His Phe Glu His Val Arg Met Val Asp Pro Lys Lys Ala
        435                 440                 445

gct cag atc cgg tcc cag gtt atg aca cac ctc cgt gtg att tat gag   1392
Ala Gln Ile Arg Ser Gln Val Met Thr His Leu Arg Val Ile Tyr Glu
    450                 455                 460

cgc atg aat cag tct ctc tcc ctg ctc tac aac gtg cct gca gtg gcc   1440
Arg Met Asn Gln Ser Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala
465                 470                 475                 480

gag gag att cag gat gaa gtt gat gag ctg ctt cag aaa gag caa aac   1488
Glu Glu Ile Gln Asp Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn
                485                 490                 495

tat tca gat gac gtc ttg gcc aac atg att agt gaa cca agg atc agt   1536
Tyr Ser Asp Asp Val Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser
            500                 505                 510

tac gga aac gat gct ctc atg cca tct ttg acc gaa acg aaa acc acc   1584
Tyr Gly Asn Asp Ala Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr
        515                 520                 525
```

```
gtg gag ctc ctt ccc gtg aat gga gag ttc agc ctg gac gat ctc cag     1632
Val Glu Leu Leu Pro Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln
    530                 535                 540

ccg tgg cat tct ttt ggg gct gac tct gtg cca gcc aac aca gaa aac     1680
Pro Trp His Ser Phe Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn
545                 550                 555                 560

gaa gtt gag cct gtt gat gcc cgc cct gct gcc gac cga gga ctg acc     1728
Glu Val Glu Pro Val Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr
                565                 570                 575

act cga cca ggt tct ggg ttg aca aat atc aag acg gag gag atc tct     1776
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
            580                 585                 590

gaa gtg aag atg gat gca gaa ttc cga cat gac tca gga tat gaa gtt     1824
Glu Val Lys Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val
        595                 600                 605

cat cat caa aaa ttg gtg ttc ttt gca gaa gat gtg ggt tca aac aaa     1872
His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys
    610                 615                 620

ggt gca atc att gga ctc atg gtg ggc ggt gtt gtc ata gcg aca gtg     1920
Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val
625                 630                 635                 640

atc gtc atc acc ttg gtg atg ctg aag aag aaa cag tac aca tcc att     1968
```

```
Ile Val Ile Thr Leu Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile
                645                 650                 655

cat cat ggt gtg gtg gag gtt gac gcc gct gtc acc cca gag gag cgc     2016
His His Gly Val Val Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg
            660                 665                 670

cac ctg tcc aag atg cag cag aac ggc tac gaa aat cca acc tac aag     2064
His Leu Ser Lys Met Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys
        675                 680                 685

ttc ttt gag cag atg cag aac tag                                    2088
Phe Phe Glu Gln Met Gln Asn
    690                 695
```

<210> 7

<211> 695

<212> PRT

<213> Homo sapiens

<400> 7

```
Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
  1               5                  10                  15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
            20                  25                  30
```

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
35 40 45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
50 55 60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65 70 75 80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
115 120 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
130 135 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145 150 155 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
165 170 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
180 185 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val

195 200 205

Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
210 215 220

Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225 230 235 240

Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
245 250 255

Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
260 265 270

Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
275 280 285

Val Pro Thr Thr Ala Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu
290 295 300

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

Glu Arg Leu Glu Ala Lys His Arg Glu Arg Met Ser Gln Val Met Arg
325 330 335

Glu Trp Glu Glu Ala Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp
340 345 350

Lys Lys Ala Val Ile Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu
355 360 365

Gln Glu Ala Ala Asn Glu Arg Gln Gln Leu Val Glu Thr His Met Ala
370 375 380

Arg Val Glu Ala Met Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn
385 390 395 400

Tyr Ile Thr Ala Leu Gln Ala Val Pro Pro Arg Pro Arg His Val Phe
405 410 415

Asn Met Leu Lys Lys Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His
420 425 430

Thr Leu Lys His Phe Glu His Val Arg Met Val Asp Pro Lys Lys Ala
435 440 445

Ala Gln Ile Arg Ser Gln Val Met Thr His Leu Arg Val Ile Tyr Glu
450 455 460

Arg Met Asn Gln Ser Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala
465 470 475 480

Glu Glu Ile Gln Asp Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn
485 490 495

Tyr Ser Asp Asp Val Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser
500 505 510

Tyr Gly Asn Asp Ala Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr
515 520 525

Val Glu Leu Leu Pro Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln
530 535 540

Pro Trp His Ser Phe Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn
545 550 555 560

Glu Val Glu Pro Val Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr
565 570 575

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
580 585 590

Glu Val Lys Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val
595 600 605

His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys
610 615 620

Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val
625 630 635 640

Ile Val Ile Thr Leu Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile
645 650 655

His His Gly Val Val Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg
660 665 670

His Leu Ser Lys Met Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys
675 680 685

Phe Phe Glu Gln Met Gln Asn

690 695

<210> 8

<211> 2313

<212> DNA

<213> Homo sapiens

<400> 8

atg ctg ccc ggt ttg gca ctg ctc ctg ctg gcc gcc tgg acg gct cgg 48
Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
1 5 10 15

gcg ctg gag gta ccc act gat ggt aat gct ggc ctg ctg gct gaa ccc 96
Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
20 25 30

cag att gcc atg ttc tgt ggc aga ctg aac atg cac atg aat gtc cag 144
Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
35 40 45

aat ggg aag tgg gat tca gat cca tca ggg acc aaa acc tgc att gat 192
Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
50 55 60

acc aag gaa ggc atc ctg cag tat tgc caa gaa gtc tac cct gaa ctg 240
Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65 70 75 80

```
cag atc acc aat gtg gta gaa gcc aac caa cca gtg acc atc cag aac      288
Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
                85                  90                  95

tgg tgc aag cgg ggc cgc aag cag tgc aag acc cat ccc cac ttt gtg      336
Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
            100                 105                 110

att ccc tac cgc tgc tta gtt ggt gag ttt gta agt gat gcc ctt ctc      384
Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
        115                 120                 125

gtt cct gac aag tgc aaa ttc tta cac cag gag agg atg gat gtt tgc      432
Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
    130                 135                 140

gaa act cat ctt cac tgg cac acc gtc gcc aaa gag aca tgc agt gag      480
Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145                 150                 155                 160

aag agt acc aac ttg cat gac tac ggc atg ttg ctg ccc tgc gga att      528
Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
                165                 170                 175

gac aag ttc cga ggg gta gag ttt gtg tgt tgc cca ctg gct gaa gaa      576
Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
            180                 185                 190
```

agt gac aat gtg gat tct gct gat gcg gag gag gat gac tcg gat gtc 624
Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val
195 200 205

tgg tgg ggc gga gca gac aca gac tat gca gat ggg agt gaa gac aaa 672
Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
210 215 220

gta gta gaa gta gca gag gag gaa gaa gtg gct gag gtg gaa gaa gaa 720
Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225 230 235 240

gaa gcc gat gat gac gag gac gat gag gat ggt gat gag gta gag gaa 768
Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
245 250 255

gag gct gag gaa ccc tac gaa gaa gcc aca gag aga acc acc agc att 816
Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
260 265 270

gcc acc acc acc acc acc acc aca gag tct gtg gaa gag gtg gtt cga 864
Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
275 280 285

gag gtg tgc tct gaa caa gcc gag acg ggg ccg tgc cga gca atg atc 912
Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile
290 295 300

```
tcc cgc tgg tac ttt gat gtg act gaa ggg aag tgt gcc cca ttc ttt      960
Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
305                 310                 315                 320

tac ggc gga tgt ggc ggc aac cgg aac aac ttt gac aca gaa gag tac     1008
Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
                325                 330                 335

tgc atg gcc gtg tgt ggc agc gcc atg tcc caa agt tta ctc aag act     1056
Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr
            340                 345                 350

acc cag gaa cct ctt ggc cga gat cct gtt aaa ctt cct aca aca gca     1104
Thr Gln Glu Pro Leu Gly Arg Asp Pro Val Lys Leu Pro Thr Thr Ala
        355                 360                 365

gcc agt acc cct gat gcc gtt gac aag tat ctc gag aca cct ggg gat     1152
Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu Glu Thr Pro Gly Asp
    370                 375                 380

gag aat gaa cat gcc cat ttc cag aaa gcc aaa gag agg ctt gag gcc     1200
Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala
385                 390                 395                 400

aag cac cga gag aga atg tcc cag gtc atg aga gaa tgg gaa gag gca     1248
Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala
                405                 410                 415
```

gaa cgt caa gca aag aac ttg cct aaa gct gat aag aag gca gtt atc 1296
Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile
420 425 430

cag cat ttc cag gag aaa gtg gaa tct ttg gaa cag gaa gca gcc aac 1344
Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn
435 440 445

gag aga cag cag ctg gtg gag aca cac atg gcc aga gtg gaa gcc atg 1392
Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met
450 455 460

ctc aat gac cgc cgc cgc ctg gcc ctg gag aac tac atc acc gct ctg 1440
Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu
465 470 475 480

cag gct gtt cct cct cgg cct cgt cac gtg ttc aat atg cta aag aag 1488
Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys
485 490 495

tat gtc cgc gca gaa cag aag gac aga cag cac acc cta aag cat ttc 1536
Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe
500 505 510

gag cat gtg cgc atg gtg gat ccc aag aaa gcc gct cag atc cgg tcc 1584
Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser
515 520 525

```
cag gtt atg aca cac ctc cgt gtg att tat gag cgc atg aat cag tct     1632
Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser
    530                 535                 540

ctc tcc ctg ctc tac aac gtg cct gca gtg gcc gag gag att cag gat     1680
Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp
545                 550                 555                 560

gaa gtt gat gag ctg ctt cag aaa gag caa aac tat tca gat gac gtc     1728
Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val
                565                 570                 575

ttg gcc aac atg att agt gaa cca agg atc agt tac gga aac gat gct     1776
Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala
            580                 585                 590

ctc atg cca tct ttg acc gaa acg aaa acc acc gtg gag ctc ctt ccc     1824
Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro
        595                 600                 605

gtg aat gga gag ttc agc ctg gac gat ctc cag ccg tgg cat tct ttt     1872
Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe
    610                 615                 620

ggg gct gac tct gtg cca gcc aac aca gaa aac gaa gtt gag cct gtt     1920
Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val
625                 630                 635                 640
```

```
gat gcc cgc cct gct gcc gac cga gga ctg acc act cga cca ggt tct     1968
Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser
                645                 650                 655

ggg ttg aca aat atc aag acg gag gag atc tct gaa gtg aag atg gat     2016
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp
            660                 665                 670

gca gaa ttc cga cat gac tca gga tat gaa gtt cat cat caa aaa ttg     2064
Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu
        675                 680                 685

gtg ttc ttt gca gaa gat gtg ggt tca aac aaa ggt gca atc att gga     2112
Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly
    690                 695                 700

ctc atg gtg ggc ggt gtt gtc ata gcg aca gtg atc gtc atc acc ttg     2160
Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu
705                 710                 715                 720

gtg atg ctg aag aag aaa cag tac aca tcc att cat cat ggt gtg gtg     2208
Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val
                725                 730                 735

gag gtt gac gcc gct gtc acc cca gag gag cgc cac ctg tcc aag atg     2256
Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met
            740                 745                 750
```

cag cag aac ggc tac gaa aat cca acc tac aag ttc ttt gag cag atg 2304

Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met
755 760 765

cag aac tag 2313

Gln Asn
770

<210> 9

<211> 770

<212> PRT

<213> Homo sapiens

<400> 9

Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
1 5 10 15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
20 25 30

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
35 40 45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
50 55 60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65 70 75 80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
115 120 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
130 135 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145 150 155 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
165 170 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
180 185 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val
195 200 205

Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
210 215 220

Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225 230 235 240

Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
245 250 255

Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
260 265 270

Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
275 280 285

Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile
290 295 300

Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
305 310 315 320

Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
325 330 335

Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr
340 345 350

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

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

Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala
385 390 395 400

Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala
405 410 415

Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile
420 425 430

Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn
435 440 445

Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met
450 455 460

Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu
465 470 475 480

Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys
485 490 495

Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe
500 505 510

Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser
515 520 525

Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser
530 535 540

Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp
545 550 555 560

Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val
565 570 575

Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala
580 585 590

Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro
595 600 605

Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe
610 615 620

Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val
625 630 635 640

Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser
645 650 655

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp
660 665 670

Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu
675 680 685

Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly
690 695 700

Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu
705 710 715 720

Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val
725 730 735

Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met
740 745 750

Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met
755 760 765

Gln Asn
770

<210> 10

<211> 10

<212> PRT

<213> Homo sapiens

<400> 10

Val Val Ile Ala Thr Val Ile Val Ile Thr
1 5 10

<210> 11

<211> 11

<212> PRT

<213> Homo sapiens

<400> 11

Val Val Ile Ala Thr Val Ile Val Ile Thr Leu
1 5 10

<210> 12

<211> 7

<212> PRT

<213> Homo sapiens

<400> 12

Leu Val Met Leu Lys Lys Lys
1 5

<210> 13

<211> 6

<212> PRT

<213> Homo sapiens

<400> 13

Val Met Leu Lys Lys Lys
1 5